Learn Access 2013

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Chapter 1 – Introduction

Video: Acquiring Access 2013; Course Overview

Toby: Hello and welcome to our course on Access 2013; the latest version of Microsoft's award winning database software. My name is Toby and I'm your instructor on this course.

In this first section I'd like to first of all talk about who this course is aimed at.

Now I'd like to think that anybody who is going to be using Access 2013 would get a lot out of this course but I'm specifically looking at three types of user; first of all users who are completely new to Access. In fact users who may well be completely new to databases and database technology. I will be assuming that you've got a good grasp of the use of Windows based software so I won't be talking about things like how to use the mouse or how to use the scroll buttons or anything like that. But I won't be making assumptions about any knowledge of databases. So that's really my first group, the complete beginner, somebody who wants to start developing databases from scratch using Access 2013.

The second group of users are the users who've used much older versions of Microsoft Access, say, Access 2000 or Access 2003. For them the changes in the recent version, such as the introduction of the Ribbon Interface, are really quite major changes and if your experience of Access is with one of the older versions, then there'll be a lot to learn both in terms of the Ribbon and those other kinds of change but also the major changes in Access 2013 itself. Now I do appreciate that anybody who's used Access before may well have a reasonably strong knowledge of databases and database technology, but I will try to indicate as we go along any sections that I think you may only need to look at briefly or maybe even skip over. Although I should warn you that in some cases some of the underlying database concepts and tools have changed as well, so you've got to be a little bit careful that you don't skip over something that has changed in recent times.

The third group are those who have used a recent version of Access, such as Access 2010. For you the changes in Access 2013 are really quite major. You certainly have the advantage of having seen the Ribbon Interface before, although there are one or two very significant changes there. But the introduction in particular of web apps is really going to be a major change for you

in Access 2013. So perhaps more than any other component of Microsoft Office experienced users of Access are really in for a bit of a surprise in this latest version.

Now the next thing I'd like to just briefly talk about is coverage and content. Access is a very big product now. There is a lot to learn. But I'm going to try to make the course cover as broad a range of Access as possible without sacrificing depth. So wherever possible, we're going to go into quite a bit of detail as well. Now with such a big product this is actually quite difficult to do. Now throughout the course, I am going to set you some examples and exercises to do and I suggest that if you possibly can make the time you try to do as many of those as possible because with so much to learn it really is important that you practice as we go along. Having said that I'm going to cover a lot of Access and I am basically going to omit programming. So this course does not specifically cover VBA, although I will point out in various places the significance of VBA, programming, coding, and where it would help you; the sort of things you could do. And then if you choose subsequently to learn VBA, hopefully you'll have a good idea of how it fits into the use of Access 2013. However I should point out to you one important thing and this is one of the areas of Microsoft Office that is actually quite confusing and that is that in Access VBA and macros are different things; they're actually different languages, if you like. We will be looking a little at macros.

One of the major new features of Office 2013 in general and Access 2013 in particular is the use of touch. Once again, I'm going to draw distinction on this course. I'm going to assume that whichever touch device you're going to use whether it's a PC with touch or a tablet that basically you know how to use those touch gestures. Now if you've got some areas of uncertainty, don't forget that on Microsoft.com there are various pages that explain how to use touch with Windows, such as this one, and as we'll see in a little while from Office.com you can also access help on using touch gestures. I'm recording this course on a PC which includes touch. In fact, this PC not only has mouse and keyboard but it has touch gestures and it has hand gestures in front of the screen as well. Now I'm not going to use hand gestures in front of the screen because it would be a bit ridiculous because you can't actually see what I'm doing as I'm sitting here. But I am going to use touch from time to time. Now one of the dangers of including touch in a course like this is that we finish up doing everything twice, which is certainly not what's going to happen. So throughout my preference on this course is going to be to use the interface

that is still the most commonly used one for Access development and that is mouse and keyboard. And what I'm going to try to do is that whenever something new is introduced, whether it's a specific touch gesture needed or perhaps touch involves a slightly different approach, then I will make a point of explaining that. In terms of the most straightforward touch gestures, things like tap on the screen as equivalent to click, press and hold as the equivalent to right click, these are explained on Microsoft.com and Office.com in various places. But again, I will try to highlight them in the course from time to time.

Now for many of you, you probably already got Access 2013 installed, possibly as part of Office 2013. But just in case, I should highlight to you a couple of sources of information that are very important. One of them relates to the system requirements for Office 2013. What are the requirements to be able to run Office 2013? Well, you have hardware requirements and software requirements and within Microsoft.com in the TechNet section, if you do a search on Microsoft.com, you can find this; there is a page with system requirements for Office 2013. Now whenever I refer you to any internet pages, either Microsoft's or anybody else's, bear in mind that they may have changed since I recorded this course. So it may look a little bit different. The information may even be a little bit different. So this is as I record, this course which is towards the end of January 2013, Office 2013 has just been released for general sale so this is accurate information as of the end of January. So if we scroll down the system requirements, a couple of things to highlight. The hardware requirements are here; gigahertz processor, amount of ram, amount of hard disk space, and so on. Very importantly, particularly if you're planning to use Access on a PC, are the Windows operating system requirements. Windows 7 and Windows 8 are the two supported operating systems. Windows XP and Windows Vista are not supported. So if you're planning to use Office 2013, you need to upgrade from XP or Vista to either Windows 7 or Windows 8. You can also run Office 2013 on the two most recent server products as well. Further down this document there are specific requirements related to Access and actually they're not particularly onerous requirements because they basically say that Access 2013 internet functionality requires an internet connection. Now one thing you're really going to struggle with Access 2013 is if you don't have a live internet connection. Now you can certainly use Access 2013 in desktop mode if you like, I'll explain what that means later, without an internet connection, but things like Help completely depend on it really and also the ability to create and use web apps, to save to SkyDrive, to share work, many

other aspects do depend on an internet connection. So if you don't have a live internet connection certain things are either going to be a little bit difficult or in some cases impossible.

Again, I appreciate that many of you watching this video already have Access 2013 installed, but let me just have a quick look at the options as they are today for getting Access 2013 from Microsoft. Bear in mind again that they may well have changed by the time you watch this. The subscription version of Office 2013; there are various options. The Home Premium seems to be the one that's the most popular that includes Access and you can get a free month. There is a link from Office.Microsoft.com at the moment to get a copy of that. You get it on five PCs for a monthly subscription and you can get a one month free trial. A month hopefully would be enough time to work your way through this course. You can also get a trial of Business version. Of course, choosing a version will depend not only on your requirements in terms of the components but whether you want a subscription based version or whether you want to buy a version outright. But subject to licensing conditions such as the fact that you can't use a Home Premium version for business use, you need to choose a version that's suitable for your requirements.

So with further apologies to those of you who already have Access 2013 installed, there are various sources available particularly in Microsoft.com, particularly in TechNet within Microsoft.com for how to install Office 2013. There's absolutely no point in me going through an installation because it's all very well covered online. So once you've got your copy of Office 2013, for example, there are some great instructions that you can follow and those instructions if you for example use this set which I think are particularly good and you can find this set just by searching on all or part of that title on Google or within Microsoft.com, then there are also discussions at the end of the article about any problems that people have found, any particular things that people needed to do to make Office 2013 in general or Access 2013 in particular work. So whether you've already got Access 2013 installed or whether you're just thinking about it and maybe just about to go out to your computer store to buy it, from this point onwards I'm going to assume that you have Access 2013 installed.

I'm also going to assume that you can start Access 2013. I'm running this course on Windows 8. So I can start Access 2013 from the start screen. I've also pinned Access 2013 to the taskbar and in fact for much of the course I'm going to be working in desktop mode on Windows 8 anyway.

And of course I've got a desktop shortcut as well as having it pinned to the taskbar. If you're using Windows 7, then I'll assume that you can start Access 2013 either from the start menu. You may have pinned it to the start menu. You may have created a desktop shortcut, etc. But whichever method you're using, you are able to start Access 2013 and the first time you start it up it should look a little bit like the following.

So this is the Access 2013 start screen. Yours should look very similar to this the first time that you run it. You will have different user information on the top right and the content of this information we're going to talk about in quite a bit of detail later on. But basically this is how Access 2013 looks. This is called the start screen.

One other thing to be aware of is that I'm recording this on a screen with quite a low resolution really and it's also a 4:3 aspect ratio. So it's on a fairly square screen. If you're using widescreen and particularly if you've got a widescreen with a high resolution, you may see a lot more on the screen. So for instance, these sort of tiles here they're actually links to Access templates. There may be many more of these on the screen that you can see. Don't worry too much about that. It just depends on the resolution of your screen. The way that everything functions is the same; it's just that sometimes you can squeeze more on to your screen than I can.

Oh and just one other thing to mention, with the course you get access to some sample files and you should know where you've got those sample files. Hopefully you've got them stored on your PC, laptop, other device somewhere where you can easily find them. The list will be a bit like this. The actual number and the names of the files may vary a little but it'll fundamentally look a bit like this. These are the sample files that I'm going to use throughout the course. I'm hoping that you're going to do all of the exercises that I set. It'll take you a little bit of time, but I think you'll find that the value and the reward that you'll get from doing those exercise will make it well worth that time. Make sure you know where they are.

So that's the end of this introduction. The next thing I'd like to do is to talk about what's new in Access 2013. Now if you haven't used Access before, you may think that talking about what's new won't mean a lot to you, but I think you'll find that it does and it's quite a short section and I'll see you in that section next.

Video: What's New in Access 2013

Toby: Hello again and welcome back to our course on Access 2013. In this section I'd like to take a quick look at what's new in Access 2013. There is a pretty good page on Office.Microsoft.com that covers this subject and it includes near the beginning a video which gives you a good overview of what the changes in Access 2013 are. So it's a good idea to take time out to just have a quick look at that. But I want to run through the main new features quickly with you now and as it says just below the video, What's new in Access 2013? In a word, Apps and really an awful lot of what's new in Access 2013 is about apps. So the first thing I need to do is to explain what that means.

One of the great strengths of building Access databases in the past is that they're pretty straightforward to build. If you just want a database for one person to run on their own PC, Access databases have always really been a neat way of putting something really good together. But there have been some disadvantages and some problems as well. One of the disadvantages and problems is that once you get into more than one user, so multi-user access, in theory the tools are there that you need, but in practice once the number of users starts to go up, so does the number of problems. The other problem with Access databases in the past is that the technology behind it means that it's just not suitable for using on the internet. So if you had a database, just leaping ahead a little bit, the database that we're going to build as our exercise is a movie database, then if you build a movie database it's extremely difficult to make it available say on the internet for other people to access that database.

Now the web app version of an Access database is designed to deal with this issue and the way it deals with it is that it gives you access to a good solid database engine based on Microsoft SQL Server and, generally speaking, made available via a technology called SharePoint that I'm going to talk to you about later. You get basically the best of both worlds because you get a storage technology based on Microsoft SQL Server which gives you the underlying strength, but in addition you get the power and flexibility of building the forms that people use to enter and update data and the reports that they can run and many other aspects of what are called the user interface to the database. You get the Access version of that. So it means you get a database system that's both powerful, easy to develop, and flexible, but you get enough underlying

technological strength via Microsoft SQL Server to support running this database, this web app online and making access to the data in the database available online which you just don't have with the earlier versions of Microsoft Access. So that's what Microsoft web apps are basically about and I'll tell you more about those as we go through the course.

What I want to do now is just point out one little section here which is quite important in terms of what I've just said. If you look at this tip here, it says: To learn how you can get started creating an Access 2013 app or desktop database quickly see, and then there are two links. There's Basic tasks for an Access app and there's Basic tasks for an Access 2013 desktop database. Now in essence what this means in Access 2013 is that you have alternative things that you may want to develop. You may want to develop what I'll call a traditional Access desktop database or you may want to develop an Access app. Now although these are two different things, delivered and used in different ways, a lot of the underlying knowledge, skills, etc. that you need is common. And on this course although we're going to develop both of these things I'm going to start with the desktop database in detail because in there I'm going to talk about these sort of basic underlying principles and tools and so on because it's a lot easier really to explain that in terms of the desktop database and then when I've covered a reasonable amount of that we'll then switch our attention to creating the apps. Now having said that we'll have a quick app example early on just to give you an idea of what one looks like.

So let's go through some more of the what's new in Access 2013. This section, Getting started with apps, says Building an app. Now one of the first things it says there is Using your SharePoint Server or Office 365 site as a host. Now one thing you're going to need on this course if you're going to deploy a web app or two is you're going to need a SharePoint Server of Office 365 site. Now you may have no idea whatsoever what either of those are. I'm going to explain those to you later in the course. Shortly before the time that you'll need them I will explain to you how to set them up. They won't basically cost you any money or at least they needn't cost you any money to get one of those setup for a limited time, certainly long enough to complete this course. When you've got one setup and you like web apps, you may decide to pay for one on an ongoing basis. But as I say it's free to setup but you are going to need one in order to be able to setup and run your web apps.

Now you've probably noticed on the start screen that there are a number of templates that we can use as our sort of building blocks or starting points for databases. Within Access 2013, there is a selection of table templates. In many applications that you might build, databases that you build, the sort of data that you include is common to databases that people the world over have built over many years. It always seems a bit sad when you start from scratch on something that somebody has already done before. Now the advantage of table templates is that you can take a predesigned table which is a list of the sort of properties of something, think of it as, say, employees. What sort of information would a company keep about its employees? Well, I'm sure that any two companies would have different information, but a lot of the information would be the same. They'd probably have the name the same, phone number the same, maybe a payroll reference the same. And the advantage of table templates is that you can start with a design that somebody else has made for a particular type of data and then you can just customize it to your specific requirements.

An area of Access 2013 where there have been significant improvements have been in importing data from external sources. This is typically a case where you maybe have an existing database or maybe a Microsoft Excel workbook or even text files or a list from a SharePoint site. So there are a number of improvements to the way that you can get data into your Access databases.

Now the next group of new features of Access 2013 really all relate primarily to web apps. So we have things like opening in a browser, the ability to use a web app from an internet browser. Then it talks about the way that the user interface, the UI is created automatically, including the navigation needed to get through records in the database, etc. And then the new Action Bar which is a standard set of buttons for adding, editing, saving, and deleting data. And then we have straightforward ways of modifying the views of the data in a web app. There are then call outs for setting properties and new controls for working with data related to the selected data. Now I'm not going to go through all of these now because they won't mean a lot to you until you've seen a web app and I'll cover them at that time. But if I just move one down to the bottom a couple of important things there. There are also a number of deployment options for your Access apps and these include improvements to the way that permissions are managed so that you can make sure that other people can't actually change your app without your permission and then different ways of packaging and distributing your apps.

Virtually everything there relates to web apps. The one thing that isn't in that list but which is important is that Access 2013, like the other components of Office 2013, is also optimized for use with touch and we're actually going to look at the use of touch in the next section. So please join me for that.

Chapter 2 – Using Touch

Video: Overview of Principles

Toby: Welcome back to our course on Access 2013. I'd like to quickly talk about using Access 2013 with touch now. I mentioned it earlier on and I did point out that I won't be doing things with touch all the time, but that I will do some things and particularly new things with touch from time to time. There are a couple of really good articles on the Microsoft website. This is a blog on Office.com that you can see here and this one I think is particularly useful if you're new to touch or if you are having difficulty of don't know how to get started with using touch with Microsoft Office. Now I'm not going through all of this myself in detail because it would actually take a very long time to go through all of this. But if you're interested in getting the best use you can out of your touch device, I think this article is a very good place to start. Now if you have no plans to use touch with Access 2013 and really just want to get on and start making some databases, I perfectly understand. You could just move on to the next section, but I think you might find this interesting even if you don't use touch and it is only a few minutes in length and some of the things in it are quite useful things to know about.

First of all, in this particular blog there is an explanation for the first couple of pages of how Microsoft went about designing the touch interface and it tells you a lot about how they see people using the products within the Office suite. But then when you get some way down, you get the first short video explaining how to use touch and this really concerns all of the elements of the Office suite. So if you don't only use Access, if you maybe use Word, Excel, and PowerPoint as well, I think you'll find useful content in that video. It includes things like the selection of multiple objects and the dealing with the size and spacing in tables. Some of the things we're likely to need to be able to do in Access. Further down it talks about the use of what's called touch mode with the Ribbon. Now we're going to be using touch mode with the Ribbon later on. But put very simply one of the main issues with using a touch device with using a tablet or something like that is that the fingers on most people's hands are a lot thicker than the tips of their mouse pointers. So what happens when you switch into touch mode is that the Ribbon, as we'll see in a while, becomes much more spaced out to give you more room to work with your fingers. In many ways that's one of the most common themes when working with

touch is that everything is spaced out a bit more so that you can use it more easily with your fingers.

And just continuing on with that particular idea, if you've used any part of Office 2013 or even Office 2010, right back to Office 2007, you may be familiar with something like the color picker on the left here. Well, the equivalent for a touch device is it's very much got the same content; it's just everything is bigger and more spaced out to allow for use with fingers so that, for instance, here you could select a color from this color palette using your fingertips instead of your mouse and keyboard.

So then further on in the same blog we have information about positioning an object by dragging and then about selecting text and objects. This works in a quite a different way when you're using touch. The markers to indicate a selection, etc. are a different shape and also behave in a different way.

Another aspect of using a device with Office 2013 in general is typing. I am using a physical keyboard attached to the PC that I'm using even though the PC itself also supports touch. My PC also, like other touch devices, has a virtual keyboard, an onscreen keyboard, as well. Now you may or may not like to use an onscreen keyboard. If you're using a tablet it may be the only sort of keyboard you've got. I won't be using an onscreen keyboard at all; although from time to time you may see mine slip up and get rapidly hidden again because if you use Windows 8 with Office 2013 sometimes it's rather hard to stop the onscreen keyboard from flipping up in front of you. But generally speaking, I won't be using an onscreen keyboard and I'll assume that you either are using one successfully or that you've got an attached keyboard, perhaps a wireless keyboard or a USB keyboard attached to your device. Now if you do use a touch device and you do use an onscreen keyboard, you'll know one of the reasons that a lot of people don't like that and that is that the keyboard covers what you're typing. There are various mechanisms that are available and in some cases in place to help you with this. But fundamentally, if you're using an onscreen keyboard, it has to take up some space and therefore there has to be less space for other things. Again, there's a really good discussion within this blog about why that is, what that is, what you can do about it, and so on. Unfortunately, the answer to what you can do about it is not very much, but that's one of the reasons that I tend to use an external keyboard anyway. But

again if you're going to have to use an onscreen keyboard, for instance, if you've got a tablet and no external keyboard, then that's a very good, helpful part of that blog to read.

So there are various other ideas and principles covered in that same blog and there is other related information available on Microsoft.com, but I certainly recommend reading that one if you are going to use touch. As I said before, I will try to point out anything new as we go along and I'll certainly use touch from time to time as we go through the course. That's it on this section. I'll see you in the next one.

Chapter 3 – Getting Started

Video: Database Templates; Creating, Opening and Saving Databases

Toby: Hello and welcome back to our course on Access 2013. In this section we're going to create a first database. But as part of doing this, rather than concentrating on what's in the database, I'm going to talk to you about the Access 2013 workspace. Let's start with the Access 2013 start screen.

In the top right hand corner of this screen you can see the conventional Windows buttons for Close which will close Access 2013, maximize to maximize the window in the available space, and minimize. To the left you have a little question mark icon and the question mark icon is the one that's used to access Help. We'll be looking at Help later on in the course.

Below that we have the details of the current user or, to be more precise, the current account that Access is running in. Now the significance of an account in Office 2013 in general and Access 2013 in particular I will also be talking to you about later on, but you're going to need to have an account if you want to be able to use web apps. That gives you access to Microsoft SharePoint. But as I say, more of that later.

On the right hand part of the workspace when you're in the start screen, these individual tiles represent templates. You can think of templates as sort of half built databases, sample databases, databases you can start from. So if you like, if you were going to build your own house, maybe here somebody's given you some plans, done the walls and windows for you and left you to do the rest, that sort of thing. And we'll look at templates in a lot of detail later on. If I wanted to create a new database, I might choose one of these templates. One of the templates I can use is this one, Blank desktop database. That gives me a blank desktop database that is a blank database; nothing in it. I can start completely from scratch. If I want a database that I'm going to run as a web app, then the equivalent for that is Custom web app. If I want to start my own web app I'm going to start there. Now as I mentioned earlier on in the course, in the initial stages I'm really going to concentrate on desktop databases but I will do a little web app demo in a while just to show you some of the key differences and we will be coming back to web apps in more detail later on.

Now in its most straightforward form, an Access database is a file. And as with any other component of Office 2013, you usually have the option: Do I want a new file? In this case, a new database. Do I want to open an existing file? That's what this option on the left does; open other files. If you want to browse to find another database, you can click on Open other files. But Access 2013 also keeps track of databases you've opened recently. So you also have a list of recent, recently opened databases. Now the note here says "You haven't opened any files recently." Well, that's true. We've only just started. To browse for a file start by clicking on Open other files, that's the button below. Once we get working on this installation of Access 2013 that recent file list, recent database list, will start to build up. And again, we'll talk about that a little bit more later on.

Now let me talk again about the templates in the middle. There are a number of templates here but there are many others available. At the top of that part of the start screen there, there is a box you can type a term in, click on the magnifier as a start searching button, and you can search online in Office.com for other templates that you can use for Access databases, and there are quite a few available. Depending on your screen resolution, etc. you may or may not see more or less templates then I can see here. But probably you'll see a scroll bar on the right of the screen and with the scroll bar on the right of the screen, you can scroll through the available templates. Now as you can see I've only got about, well, there's probably about a dozen there I suppose. The names are quite important because some of them have the word Desktop in them; so Desktop asset tracking. That means that it's a desktop database that will be generated. The ones that don't have Desktop in them generally speaking are web app type databases. You can also normally tell by the little symbol on the folded over piece of paper, the one with the sort of picture of the world, that pattern on it, are really the ones that are going to turn into web apps and they're the ones that don't have desktop in the name. Now as I said, let's just steer clear of web app for the moment. Let's do desktop contacts. If I wanted to create a desktop contacts database, that is a database, think of it as a database that I'm just going to run on my PC just for me to use. I'm going to click on Desktop contacts.

Now when I select one of these templates, what comes up is a description of what the template does. It tells me who provides it. This one was provided by Microsoft Corporation. It tells me how big the download size is; so how big a file is this template. And it gives me a rating based

other people's votes. Now thousands of people will have used each of these templates. Not all of them will have rated them. This one has got 7,311 votes and its rating is about 4 stars, so that's probably not bad. So what I'm now going to do is to create this database. Now it will be created in a default location and with a default name. Note that the file extension on the database that will be created, you can see it there in the file name; the file extension is .accdb which stands for Access database. That's the default file extension for an Access desktop database. You're going to see that file extension a lot. We're going to rename this. We're going to save it somewhere else, etc. but we're going to go with the defaults for now. Note that there are little arrows to the right and the left, little buttons which would let me step through the other available templates. So if I felt like trying another one, I could have a look. I'm going to go back. That's the one I'm going to use, click on Create.

Now the first thing it does is to download the template from Microsoft and although it may not be obviously apparent to you to begin with, I now have a database. Although you'll see many variations on what's in front of you now, this is really the Access 2013 workspace and I want to just talk about a few aspects of this workspace now and then cover it in more detail in the next section. First of all, you will quite often see a security warning like this one and anything that's a security warning I tend to start with. Now let me just click here where it says Click for more details. Let me just click there; security warning in yellow. Active content might contain viruses and other security hazards. The following content has been disabled: VBA Macros. Generally speaking, the most dangerous part of an Access database is any code, any VBA Macros that it contains. If you get a template or a database from a source such as Microsoft, well I certainly would tend to trust it and I certainly trust this particular template. I've used it many times before in fact. If you are happy with what you've downloaded, what you're accessing, what you're getting a warning about, then all you'd need to do is to say Enable content. I would say in this case Enable all content because I'm happy that it's safe enough to use. Now once I've done that, what happens in this particular case is that some of that program code runs and it starts to explain to me how to use the contact management database. Now I don't want to do this at the moment, so I'm going to just close this for now and I'll talk about it again later on. If you downloaded a template or a database from somewhere other than Microsoft, maybe you were browsing the internet, you saw well somebody said we'll try this Access database, you downloaded it, and you got that message and you weren't 100% sure it was safe, then I would not enable content because

it's pretty straightforward for that content to include code that may compromise your Access installation or indeed your whole PC. That security warning system is there for a reason. I always recommend that you take it seriously.

Now I'm going to cover the rest of this workspace in the next section and talk about what all the various things on the screen are that you can see. But before I do that, I'm going to save this database. When I create a new database the first thing I do pretty much always is to save it with a name of my choosing. Now I've got two folders on my PC that I'm using for this course. One of them is the same folder that you've got with the sample files in it. I'm not going to save it there. I have a second folder where I'm going to keep the other files that I'm using as we go through the course. These are the ones that you won't normally have access to and this is one of them. I know where that folder is. Before I save a database, I close any objects in it that are open. That statement won't mean much to you at the moment but it will before too long. So I'm going to close what it says here, Contact List, then I'm going to click on that button up there on the left that says File. Then I'm going to go down here and click on Save As, Save database as, accept the default, click on Save As. I see a Save As dialog. I'm going to browse to the folder that I mentioned just now. There it is. It's currently empty. And I'm going to give my database a name. I'm going to call it Contacts 1. Note that it's a Microsoft Access database. So it has an .accdb extension. Click on Save and my database is saved. Now I once again get the security warning. I know this is safe so click on Enable content and I would now be able to work on my database.

So we're going to look at this workspace in more detail in the next section. For the moment, I've finished working on my database. I've saved the latest version so I can either close the database or, in this case, I'm just going to close Access. So I'm going to use the Close button in the top right hand corner. That's it for now. I'll see you in the next section.

Video: Workspace and Backstage View

Toby: Welcome back to our course on Access 2013. In the previous section we created our first database and we called it Contacts 1. Now that I've exited Access and just restarted it, you can see the recent files list at the top left. Think of it as a recent databases list in the case of Access. Right at the top of that list is Contacts 1. The most recently opened database will appear at the top of that list. Now as I work through a succession of databases with Access 2013 the latest ones I've accessed will be at the top of the list, these will move further down the list and will actually drop off the list over time. But there's a little button on the right, a little picture of a push pin. If I click that, it pins a particular database to the recent list. So if for example, I have a database that I work on quite a lot but maybe not very frequently by clicking on that button, I will pin it to the list and it will always appear in the recent files list until I unpin it again. So that's a pretty useful tip to know about. But for the moment, lets open Contacts 1 again just by clicking it in the list.

Now one thing I should mention here is that as with the other components of Office 2013, there are many different ways of doing most things in Access. At this stage in the course I'm not going to stop at every point and show you every different way of doing something. My emphasis at the moment is getting you up to speed so that you can start to work on databases relatively quickly. I'll come back to some of the alternative ways of doing things later on in the course, depending on the amount of time that's available.

So let's start by having a look in more detail at the Access 2013 workspace. I'm going to take you on a tour in this section and then in subsequent sections we'll go into each part in quite a bit more detail.

For the benefit of those of you who've never used the Ribbon before, let me explain that the Ribbon is this block that you can see outlined here. It's arranged in what are called tabs and at any time, the tab that's selected has a sort of three-quarters of a rectangle around it. So the Home Tab is currently selected. Then we have the Create Tab. If I click on Create, watch what happens in the Ribbon. I get a different content. These are all commands that I can use in Access. I'll talk about those in a couple of sections time. We basically have four tabs here that

are pretty much always here when you're working in the main Access window. So that's the Ribbon.

Above the Ribbon to the top left we have something called the Quick Access Toolbar, and the Quick Access Toolbar contains some buttons that you might want to always be able to access quickly. Now I'm going to talk about the Quick Access Toolbar in detail in a later section as well.

Right at the bottom of the window, you see what's called the Status Bar, and the status bar which currently says Form View on the left and has some buttons on the right, gives us information about what's currently happening; what we've currently got selected in Access 2013. The status bar will also be covered in detail in a later section.

Now on the left we have a panel which is called the Navigation Pane and in many ways, the navigation pane is the sort of nerve center for working within an Access database. It lists the objects that comprise the database. In a database you'll normally have tables; you'll have queries, forms, usually reports, often macros, often modules as well. With each of these, you can list the items in each of these categories by clicking. So for instance, I've just clicked tables to hide all the tables and clicked again to show them. Our current database has two tables in it, a contacts table and a settings table. At any time, I can work on a table or a query or a form or a report, etc.

Now one of the objects in my database is currently open. The object that's open is the contact list and that's what you can see in the main window on the right here. In fact, this contact list is open in such a way that I could actually type the details of a contact in here. So I've actually got the database open in a way that I could enter some data. Now this is called the Contact List and you'll note from the Navigation Pane that the contact list is actually one of my forms. The forms are the main user interface between the database and users. Users use forms to enter data, change data, delete records, and so on; all things that we're going to look at in later sections. So the contact list is a form.

Now if I chose another form such as the Contact Details form and right click on contact details, it gives me a number of options and the options include not only the ability to open the form, the contact list here is open, but for contact details, I could actually go into Design View. Now

when I click Design View, what I finish up with is two of my database objects open. So I've got the original contact list open. Notice when I click on that I can see the contact list. That's what I could see before. And I've got contact details. So I've got two forms open. But one of them is opened in a way where I could actually enter contact details as though I were a regular user of the database. But the other one is open in what's Design View and this is where I can actually change the design of a form, not enter data about a contact but change the design of a form. Going back to the contact list, if I opened the contact list in Design View, I could change the layout of this form, how I present it to my users; more on all of that later on.

Much of the time in Access 2013 we're going to be working on objects by selecting them here in the main window, doing things to a particular form, entering data or changing the layout or whatever we might decide to do. When we finished working on an object, in this case contact details for example, we have a Close button on the right. Note the little tip there that says Close contact details. Click on Close and the object is closed. Contact list is still open; click on Close, the contact list is closed as well now.

Now the Navigation Pane is an extremely important part of the, if you like, infrastructure of Access 2013 because it's the simplest way usually of getting access to an object so that we can work on it. You can make some useful changes to the Navigation Pane. For example, if you want to make it a bit wider, you can drag it to the right. If you want to make it a bit thinner, you can drag it to the left. It's very often the case particularly if you have very complex forms and tables and so on that you just need more space to work and there are various ways of giving yourself more space to work in Access 2013. One of them is to hide the Navigation Pane and there's a sort of double button there and its tip says "Shutter Bar Open/Close button". If you click on that then the Navigation Pane just disappears over on to the left here, you just get a little strip left on the left. If you need to open it up again, you just tick that and the Navigation Pane is back to the size you had it before.

Now the last thing I'd like to show you on this quick tour of the main features of the Access 2013 workspace is what you get if you click on this File button on the top left here. Click on File and you go into what's called Backstage View. I think the best way to think of Backstage View is it's the place you go to do everything to a database that isn't actually part of the database. Now we use Backstage View a little bit earlier on. I didn't actually say then what it was. But it

gives you access to things like Save As. So you would go into Backstage View to do a Save As to save a database with a particular name. You also go there to print. You can go there to close. You also have a couple of other very important options there. Right at the top there is an Info Page, that's the page that's shown at the moment, and there are two things we can do from there in particular: Compact and repair, and Encrypt with password. I'm going to talk about both of those later on. You can also from here access New; so if you want a new database, click on New and it's another way of seeing that list of templates. Further down, we have information about the current account; the account we're running under. That's the account that I spoke about right at the beginning of the course and we're going to look at account a bit later on. And then we also have another page called Options and we're going to look at the options in a couple of sections from now. So the main thing to remember at the moment is that Backstage View has a lot of very important functions to perform when you're working in Access. When you've done whatever you're going to do in Backstage View, there's this left pointing arrow at the top, click on that, and it takes you back into the database you're working on, if indeed you are working on a database at that time.

So that's our quick tour of the Access 2013 workspace and we're now going to have a couple of short sections where I'm going to talk about a couple of things that you really need to know before we get started. We're going to look at Help for example, how to get help. But in the meantime, that's it for this section. I'll see you in the next one.

Chapter 4 – Help

Video: Online, Offline and Contextual Help

Toby: Hello again and welcome back to our course on Access 2013. In this section we're going to look at Help in Access 2013. In common with the rest of Office 2013, it's really focused on Online Help which means that you need a live internet connection to be able to get full access to Access Help.

Now there are two main ways of accessing Help in Access 2013. If I hover over that little question mark that I mentioned earlier on, you can see what's called its Screen Tip, a little panel that opens up with some words on it; in this case, Microsoft Access Help and then in brackets F1. F1 is the keyboard shortcut which will do the same as clicking there. So assuming you've got function keys on your keyboard, click on F1 and it'll do the same as hitting that question mark. So let me hit the question mark now. Now if you're connected to the internet, you should see the Access Help. The Access Help is a browser based system, so that means it works like say Internet Explorer in that its pages that you can step through and there's also a Search facility.

Now immediately under this box, which is the search box, there's a list of popular searches some of the terms that people often search on. But below that, there's some very useful help under the heading Get Started. There's a section on what's new in Access. So if I click on that, that gives me a very useful page with a lot of information about what's new in Access. As soon as I do that, you'll see that the button here on the left that's screen tip is Back is enabled and I can step back to the page I was on before which is effectively the home page for Help or I can step forward to the page that I looked at just now.

If I wanted to search through Help I could type in a term. For instance Navigation Pane, click on the Search online Help button and I can find assorted articles about the Navigation Pane. So for instance, Customize and lock the Navigation Pane, Manage database objects in the Navigation Pane, Show or hide the Navigation Pane, a couple of things we've talked about on the course all ready.

Now at any time, you can go home in Help by clicking on the Home button and you can print a Help article out. To the right of the Print button there is another button that lets you increase the

size of the Help text or decrease it again. So let's go home and just look at a couple of those other Get Started items. We have Access keyboard shortcuts that I'm going to talk about a little bit later on and then Make the switch to Access 2013 which is pretty useful if you are actually changing from an alternative. Below that are some specific articles related to getting started on certain things. So for instance, there's one here: Basic tasks for an Access 2013 desktop database. There's an introduction to tables, introduction to queries. Some of these articles are fairly brief. Some of them have a reasonable amount of detail. Generally speaking, on the course I'll be going into more detail than these articles do, but they do take a different approach on things. It's a different way of looking at things. The articles here are generally well worth looking at. And there's a button over here on the right where you can access more articles of this type.

So that's the basics of online Help. If you call up the Help, press F1 or click on the little question mark icon and you're not connected to the internet, you'll get offline Help and the offline Help in Access 2013 as in the rest of Office 2013 is very limited. It gives you information about which buttons are on which tabs on the Ribbon and not very much else at all. So if you're not online, you'll be very restricted in terms of the help you can get in Access 2013.

Now apart from calling up Help in the way that we've just seen, you will very often see what I will refer to as contextual Help. If you've used Windows software for a long time, even other versions of Access in the past, you'll be familiar that when you see a dialog box, this is a dialog box for datasheet formatting. There'd normally be a button on it saying Help. Now pretty much those Help buttons have gone in Office 2013 and instead of that, you get almost universally on dialogs a little question mark just like the one we saw before at the top right of every dialog box. So it's a much more consistent approach now. So if I've got the Datasheet Formatting dialog open, the little question mark there, click on that, and what it will try to do is to give you recommended help for the topic that you've chosen. Now if it can't find anything relating specifically to the dialog you're working in or the area you're working in, it'll say something like this: We don't have anything particular to recommend for what you're doing, but feel free to look around. And then you could do a search on what you're trying to do instead. But basically it gives you access to the same Help system and often will take you into an appropriate part of the Help system.

So that's it for now on the Help system. If you anticipate using the Help in an ongoing way when you're working in Access, you can minimize it down to the taskbar and call it up again. If you've finish with it, you can just close it by clicking on the Close button and then you're back into Access.

We'll be using Help from time to time during the course. I suggest you get used to using it because it has got some very useful information in it. I'll see you in the next section.

Chapter 5 – Keyboard Shortcuts and Key Tips

Video: Finding Keyboard Shortcuts and Key Tips

Toby: Hello and welcome back to our course on Access 2013. One of the other things that's very important that is apart from the fact that some of you may want to use touch when you're working with Access, some of you may like keyboard shortcuts. Now I must confess that I'm not a great user of keyboard shortcuts themselves, but nothing intrinsically against them. There are just so many and I use so many different pieces of software that it's very difficult to remember them. I do tend to use the keyboard shortcuts that are common across all software or at least all Microsoft software or all Adobe software. But some of the more esoteric ones there are just too many of them to keep in my head. However, I do know that many people do like to use keyboard shortcuts. In some cases it's because it's a faster more effective way of working. For some people the use of a mouse over a long period of time can cause RSI, Repetitive Strain Injury types of issues and for some people certain types of disability may mean that a keyboard is much easier to operate. So in this section I'm going to give you a quick overview of the information that's available about keyboard shortcuts and about what we call key tips in Access 2013.

Now I know that we haven't looked at the Ribbon in any detail yet, but if you look at the commands on the Ribbon when I hover over a command, I normally see a screen tip and in many cases the screen tip includes the equivalent keyboard shortcut. So if you look at the Ribbon as it is now, roughly in the middle there's a button that says New. If I hover over that, I'll see that the screen tip is New and then in brackets, I see the keyboard shortcut which is Control and Plus. If I go down to the command below it, for Save the screen tip says Save and the keyboard shortcut is Shift plus Enter. Now not all commands have keyboard shortcuts but many of them do and one of the quickest ways to find out what the keyboard shortcuts are in Access 2013 is to hover over the commands in the way that I just have.

Another very good way of finding the keyboard shortcuts is to go into the Access Help as we saw earlier on and one of the options there under Get Started is Access keyboard shortcuts and you get a very comprehensive list of the keyboard shortcuts for Access 2013. Now these are arranged into categories. So you've got Access app shortcut keys, desktop database shortcut

keys. Within each category you've got sort of subcategories. If you choose a subcategory like this one, design time shortcut keys, plus sign next to it shows the keyboard shortcut. So to do this press, describes the task you want to perform and then on the right it gives you the keyboard shortcut. Move a table or view selector, use the arrow keys. Show or hide the Navigation Pane, F11. So F11 is a good alternative for showing and hiding the Navigation Pane.

Now if you like using keyboard shortcuts, believe me you have plenty in Access 2013. Apart from going through the individual categories, you even have a Show all button here. If you do Show all, you see all of the keyboard shortcuts in all their glory. I know that some people print this list out and stick it on the wall.

Now in common with the rest of Office 2013, many of the keyboard shortcuts that people use, including some of the ones that I use, keyboard shortcuts for things like Cut, Copy, and Paste when you're cutting, copying, and pasting to and from the Clipboard are consistent. So if you know how to do a cut, Control-X, in Office, it works in Access, works in Word, works in Excel, etc.

Now if for some reason or other, or just by preference, you really do want to use the keyboard, one of the areas that can cause problems is the Ribbon because there aren't actually keyboard shortcuts to get to every command on the Ribbon. But there is a way of doing that using the keyboard and the approach is generally referred to as using key tips. If you look at the Ribbon as you see it now, I know we haven't gone into the Ribbon in detail yet, but if you look at it as now you can see the problem. You've got to try and hit the Create Tab or the External Data Tab or the Database Tools Tab to see part of the Ribbon, and then when you're there, how do you choose a command on the Ribbon? Well, the way we do that is using what are called key tips. Key tips are operated very simply because all you need to do is to tap the Alt key on your keyboard. When you press the Alt key on your keyboard, a set of letters and numbers appear. The numbers give access to the Quick Access Toolbar and the letters to the tabs on the Ribbon. Now let's suppose that I want something on the External Data Tab on the Ribbon. I can see the letter for that is the letter X. So if I hit the X, I then see the contents of the External Data Tab and I see effectively keys to operate each of those commands. Now note that some of the commands are grayed out. So this one here, Linked Table Manager, the key tip, the key to operate it would be the H key but it's grayed out at the moment because I can't use it. Whereas

if I wanted to Import External Data from Excel, I would use the C key which is the one that's underneath the Excel command button. Similarly, to get external from Access I would use the A key, click on the A.

So that's how we can use key tips to access the commands on the Ribbon. When you finish with key tips, all you have to do is to press the Alt key again and they're gone. So that's it on keyboard shortcuts and key tips for now. I'll see you in the next section.

Chapter 6 – Access Options

Video: Customizing the Settings and Use of Access 2013

Toby: Hello again and welcome back to our course on Access 2013. In this section we're going to look at Access Options. To do that, we're going to go into Backstage View and one of the options, the last option in Backstage View is Options. Click on Options and that brings up the Access Options dialog and you'll be seeing this dialog quite a bit. The basic purpose of this dialog is to enable you to customize your installation of Access 2013 and to some extent your use of Access 2013. I'm going to look at a couple of examples of Access Options in this section. But various options will occur throughout the course and we'll be going back into this dialog to look at what the available choices are and to help you to decide how to set it up in your particular situation.

The Options are arranged in a set of pages and the first page, the top one, the one that's selected is General. If I click then on the next page, Current Database, you'll see in the main window there that there's a list of what are effectively options. Datasheet, again; a choice of options: Object Designers, etc. Now some of these such as Add-ins, we're not really going to get to look at much in this course. I might mention it once or twice later on but really this is more to do with adding in extra functionality into Access which is beyond the scope of the course. Whereas things like Language where we make sure that we've got our language setup correctly are extremely important and we'll be dealing with that fairly early on. So let's go back to the General Tab first.

Now I'm going to start with a section near the top of the General Tab here, User Interface Options. I'll come back to Enable Live Preview later on in the course. I really want to concentrate as an example on this next entry, Screen Tip Style. Show feature descriptions in screen tips. I haven't made any changes to the Access Options at the moment so I'm going to press the Cancel key and now I'd like to look at a couple of these buttons on the Ribbon here. And I want to hover first over that one. Now when I hover over a button, I see a screen tip and this screen tip says Query Design. Create a new blank query in Design View. And then it says "You can then use the Show Table dialog box to add tables or queries to the Query Design." Now I already mentioned the fact that you sometimes see a keyboard shortcut there as well. In

this case, there is no keyboard shortcut so that's fine. But note that I have a screen tip and then I have a description of Query Design. Now let me go back into Options again and the selection there in Screen Tip Style said "Show feature descriptions in screen tips." If I click on the drop down, I have two other options: "Don't show feature descriptions in screen tips." and "Don't show screen tips." I'm going to choose the second option, Don't show feature descriptions in screen tips, click on OK, and hover over Query Design again. Now note that it just says Query Design. That's the screen tip. The description has gone. Some people prefer just to have the screen tip. They don't really need the description. Now in this case since the buttons called Query Design, you can say well the screen tip doesn't help much anyway. But in some cases, the screen tip does help particularly where you have a lot of buttons or you have an object which has no words on it at all because many of those will have screen tips. Now the other option of course if I go back into the Options dialog again is to say "Don't show Screen Tips." If I click on OK now and hover over Query Design, I don't get anything at all. Now you may think that's somewhat removing the helpfulness of Access but when you've been using Access for a while, you may well decide that you don't need the screen tips and some people find that screen tips can actually get in the way of what you're doing when you're working on say some very fine design on a form or something like that. You may find that screen tips popping up all over the place can actually get quite annoying and you say, "Ah really I want to switch these screen tips off." Of course, you can switch screen tips off just temporarily if you're working on something. You don't need them, they're getting in the way, you could switch them off, and then you could switch them back on again. For most of this course, I'm going to have screen tips and descriptions switched on. I may switch them off from time to time. In your use of Access, it's now up to you whether you want screen tips and/or descriptions on or off. Let me just go back into Options again. I'm just going to switch them back on again. That change back to having feature descriptions in screen tips on will be implemented when I press OK.

Now the settings for screen tips are not the most important settings in Access Options, but I went over them to show you a very good example of the sort of thing that you control in Access Options. Very few of these things are going to be ones where I say you should have them set one way or the other. Most of them are just your own personal preference. But there are a couple that I think you should setup now, pretty much as soon as you start creating Access databases. And for the balance of this section, I'd just like to run through the ones that you need

to give some thought to now. Now one or two of those are on this General page, and in the middle there's a section of options there Creating databases and you may recall earlier on in the course when we saved that first database, it defaulted to saving it in the latest Access format. Access 2007 to 2013 format is the default that I've got set. So I can save the database in any format I like, but when I first go into Save As that's the default that comes up. Now if you work in an environment where older versions of Access are the default, you may need to save your databases in an older format and the drop down here gives you access to three different formats; the 2002-2003 format and the even older Access 2000 format. Now if you have to use one of these older versions all the time or almost all the time, it may be a better idea to set that as your default. But beware if you save an Access database in one of these older formats certain features of Access, the more modern features, may well not be supported. For the vast majority of people, I would recommend that you save in the latest format.

There is also an entry here, Default database folder. Again, you may remember this from earlier on. When we came to do a Save As for the first time, by default Access puts a database in this folder which is the default for documents for a user in my case on Windows 8. You can save to a different folder. So if for example, you're using a folder like the one I've described which I'm using on this course to save the various databases that I'm sort of using as I go along, then you could set this default database folder to that folder. But I don't suggest that you make it the folder that's got all the sample databases that came with the course. Keep the two lots separate or you may find everything becomes a bit of a mess. Don't worry about the third option here, Sort Order; we'll deal with Sort Orders later on.

Now down at the bottom section here we have some settings for Microsoft Office: user name and initials. This is used for a number of things in Office in general and in Access in particular in terms of identifying you. This is not the same as the account name that I mentioned earlier. The account name has a different significance and use as we'll see a little bit later on. You can then choose from the available Office backgrounds, Offices themes, and so on. I'm not going to go into all of that now, but again you can adjust and adapt those to your own preferences.

Now I'd like to talk briefly about the current database page. When you are working on an Access database, as you'll see there's all sorts of things. There's the Ribbon, there's the Navigation Panes; lots of things going on. But when you actually come to hand that over to

people to use as a database, you obviously won't want them going in and changing things, deleting forms, deleting tables, doing all sorts of things to the database that will stop it working. You also will want to be able to present the database to people in a way that looks attractive and is safe for them to use, gives them plenty of information and so on. Many of the aspects of that that you need to pay attention to are on this current database page. So for example, near the top there's an application title entry here. It says Contact Management Database. That's the name that appears at the top of the database window. You can see it there behind the Access Options dialog. As another example, if you go about halfway down here in the Navigation section, there's a checkbox: Display Navigation Pane. If I uncheck, that then the Navigation Pane for this database will no longer be visible. I would certainly normally want to do that before I hand it over to users or they're going to be able to untold damage to the database.

So let's now go down to Language because in many ways this is the most important one to setup in the early stages. You will normally have a language; your editing language. And the editing language is the one that will be used for proofing, spelling and so on. I have two languages set because I work in both English United States and English United Kingdom. They are actually very different languages. The default for me is English United States. Now you can have more than two languages. You can have as many as you like really and you add additional editing languages by using this drop down here. There is a very long list of languages available, choose a language. When you've chosen one click on Add and that will be one of the options that you can choose as an editing language. You can set whichever one you use the most often as your default, but then in a particular instance you can switch to using one of the others. Now it's very important that you have the right language setup so make sure you've got that. If you've got a language on here that you don't use, just select it and click on Remove and then use the Set as default button to set the correct default editing language. So make sure your language is right. Make sure your user ID is right.

Have a look at a couple of those options on those early pages and if they make sense to you experiment with them. We will be coming back to the Options dialog from time to time throughout the course to look at what some of the other options do, but for now that's it. I'll see you in the next section.

Chapter 7 – The Ribbon and Toolbars

Video: The Ribbon

Toby: Hello again and welcome back to our course on Access 2013. In this section we're going to look at the Ribbon which you may or may not be familiar with. It's been around for a few years now, but it's a common feature across the components of Office 2013.

But in fact the first thing I'm going to do is to point at something on the Quick Access Toolbar because before we look at the Ribbon in detail I'd like to do something which may help those of you who are using touch screen devices. One of the options on the Quick Access Toolbar is a button there which has got a picture of a pointing finger and a drop down arrow on its right. If I click on that it says "Optimize spacing between commands." And basically when you're working in Access 2013, there are two modes. There is mouse mode that presents standard Ribbon and commands and in this mode the interface is optimized for use with the mouse, and there is touch mode where there is more space between the commands and this is optimized for use with touch. Now the basic principle of the Ribbon is the same in both modes. But if I switch to touch mode, you should be able to see the difference. In touch mode, everything on the Ribbon is spaced out more. In fact the buttons that are shown there are actually slightly fewer buttons shown overall. The ones that are shown work the same and all of the other commands and functions are available. But the general idea as I mentioned right near the beginning of the course is to be able to operate the buttons on the Ribbon with the tips of your fingers and that's why they're spaced out more in this mode. Now for the rest of this section and really I suppose for the rest of the course, if you're in touch mode, if you'll be using a touch screen device, you probably want to switch on touch mode now and keep it switched on. If you're using a mouse but you actually like touch mode, you like things spaced out like this, then there's absolutely no reason that you shouldn't use the Ribbon like this except that having the Ribbon bigger and spaced out means that there is less room for everything else I'm afraid. Having said all of that I'm going to go back into mouse mode for this section, but those of you who want to stay in touch mode, hopefully everything will still make sense and everything will still work in touch mode as well. So let go back into mouse mode.

So now let's look at the Ribbon in detail. I already mentioned that we have the tabs of the Ribbon and on each of the tabs you see different items on the Ribbon itself. Now if I start with the Home Tab, the buttons on it are arranged into groups. There's a Views Group, a Clipboard Group, and Sort and Filter Group, Records, and so on. Within a group we have a selection of buttons. Now the buttons don't all work in the same way and they certainly don't all do the same thing. Some of them are simple buttons you click on like that one, Save which saves the current record in the Records Group. Others are toggle buttons which switch something on or off. Others like the View button over here on the left are in two parts. The top part does something and the lower part with the arrow if you click on it, the arrow opens up to offer you a selection. Still further ones have drop downs. Some of them you can type numbers or words into. There's a whole variety of different forms. Now we generally refer to them either as the commands or the buttons. So I might say the View command or the Save button or something like that. So we have Ribbon, tabs, groups, and then buttons or commands within a group.

Now generally speaking in Access 2013 you will see the four tabs that you can see here, but there are other tabs as well and these are sometimes referred to contextual tabs. They're ones that only appear in context. Let me show you an example. Earlier on in the course, we looked at the Contact details form. We opened it in Design View. Contact details Design View. You'll see it open up here. You get three additional tabs and the tabs collectively are referred to as the Form Design Tools. This is a form and we're in design mode. We're in a situation here where we can change the layout of a form that users are going to fill in. Within the Form Design Tools there are three more tabs. There's a Design Tab, an Arrange Tab, and a Format Tab, and each of those has its own groups and its own buttons. So, for example, on the Arrange Tab, in the Row and Columns Group, there is an Insert above command. Now which contextual tabs you see will depend on what sort of object you're working on and in many cases what you're doing to it. So let me close down Contact details again.

Now when the Ribbon was introduced back in Office 2007 and then as it subsequently been introduced into all of the components of Office over a period of time, a lot of people didn't like and still don't like the Ribbon. One of the objections to the Ribbon is that it does take up a lot of space on the screen compared to the old menu system. Now to some extent you can compensate for this and you will have a good chance of being able to use this approach when you've been

using Access for a little while. And what you can do is to minimize the Ribbon. Now on the right hand end of the Ribbon, there's a little up pointing arrow there, and if I click on that, what it does is to minimize the Ribbon. So let me click and you can no longer see the Ribbon. You can see the tabs but not the Ribbon. Now you may say "Well, that's all well and good but now I can't see the commands. How do I execute the commands?" Well, if you know on which tab a particular command is you can just click on that tab. So if you know the command you need is on the Home Tab click on Home and that tab appears, there's the commands. You can go to the one or ones that you need and execute. If you don't know which tab it's on, then you can click on anyone of the tabs and just tab through them until you find the one you want, the command you want, and then when you found the one that you want, let's suppose you wanted to do a copy. As soon as you click Copy, it does the copy and the Ribbon is minimized again and you're back to where you were. Now many people work with the Ribbon in this way. They keep it minimized and then all they do when they need a command is just click on the tab and if they're not quite sure where it is they click through the tabs until they find it. If you want to un-minimize the Ribbon, if you want to restore it to normal, all you need to do is to right click on one of the tab names. Let me right click on Database Tools and then the one there that says Collapse the Ribbon, if I just click on that to un-collapse it, I'm back into using the Ribbon in its normal mode.

Now at the moment I've got selected on the left here the form Contact details. The form isn't actually open. The form that's over here is Contact list. We did open it just now in Design View. When I've got a particular object selected or even if I don't have an object selected in Access 2013, some of the commands on the Ribbon will be enabled; they're the ones that you can see generally in black or dark color, depending on the command. The ones that are grayed out are the commands that I can't execute at the moment. So what I can do and what I cannot do is contextual in Access. I can copy at the moment because I've got something selected. Contact details is selected so I can do a copy. In fact I just did one. But I haven't got anything on the Clipboard. So the Paste button is disabled. It's grayed out.

Now we've talked so far in this section about using the commands on the Ribbon but you normally also have a right click menu, a contextual menu. So if I right click on Contact details, I get a selection of commands on that contextual menu. I don't get all of the commands that are

available on the Ribbon but I get the ones that Access 2013 considers to be the most likely to be the ones that I would want to execute at that time. So in the case of Contact details here, Copy is one of the available options and Delete is another one if I wanted to delete that form. Go into Design View is another one. Now generally speaking with any object in Access 2013 apart from executing commands from the Ribbon, you can also use the right click, the contextual menu, and during the course I'm going to pretty much alternate between those approaches and you may prefer one to the other but it's always useful to know you've got a shortcut menu there available as well.

Now I'm going to show you one other thing about the Ribbon before we move on. This is actually outside the scope of the course. I just want you to be aware of something. If I right click again on the Database Tools Tab, one of the options is Customize the Ribbon and if I click on Customize the Ribbon, it takes me into Access Options. Here we are back at Access Options but with the Customize Ribbon page selected. If you look down the right, you will see a list of what are called the main tabs in Access 2013. So you've got the Home Tab there, the one that's highlighted at the moment. It has its groups listed: Views, Clipboard, Sort and Filter, Records. If I click on the plus sign next to one of the group names, I get a list of all the commands that are in that group. Now this page of the Access Options dialog is the one where it's possible to customize the Ribbon. You can to some extent move around what's there already, although there are quite a lot of restrictions. But normally the best way to customize the Ribbon is to add your own tab so you've got a new tab button, put your own groups on it, and then put whatever commands you want into those groups. So if for example, you were doing a job where it was very repetitive and you had a couple of commands on one tab and a couple of commands on another and a couple of commands on another and you were always going backwards and forwards between them you could make your own tab. You could put your own group or groups on it and then put those commands together into your group or groups to make it as convenient for you to use as possible. Customizing the Ribbon is outside the scope of this course but you may find that useful, particularly if you are doing some kind of repetitive work in Access. You may also find it's useful in terms of actually operating an Access database in putting commands together.

So that's it on the Ribbon. In the next section we're going to look at the Quick Access Toolbar.

Video: Quick Access Toolbar

Toby: Welcome back to our course on Access 2013. In this section we're going to look at the Quick Access Toolbar which is the toolbar in the top left hand corner of the workspace. One of the advantages of the Quick Access Toolbar over the Ribbon is that the commands on that toolbar are visible all of the time and that's where the name comes from Quick Access.

On a fresh installation of Access 2013, you see some default commands in the Quick Access Toolbar. Let's just look at the ones that we've got here. I'll hover over them and look at the screen tips. That one is Save, this one is Undo. That will undo whatever the last command was. This one is Redo. It says can't redo because there isn't anything to redo at the moment. I'll come back to undo and redo later. This one we've already used which is the one to switch between touch and mouse mode.

Now to the right of the last command there's a little drop down arrow, and if I click on the drop down arrow there is a menu. The menu says Customize Quick Access Toolbar. Now most of that menu is made up of a list of the commands that are currently available on the Quick Access Toolbar and there are about a dozen of them. The ones that have tick marks, check marks to the left of them are the ones that are actually shown on the toolbar at the moment. So they're the visible ones. Touch/mouse mode, redo, undo, and save. If I wanted to make one of the others available all I would need to do is to click it. Click on Quick Print, that's now visible, and it appears as one of the buttons on my Quick Access Toolbar. And that's basically the Quick Access Toolbar.

If I click on the drop down again, you would generally check the ones that you want to see on your Quick Access Toolbar, make sure the others are unchecked, and you'll have an array of commands that you can use there. Single click and they're visible in the workspace all the time.

I'm just going to show you one other thing about it though because not only will help you with the Quick Access Toolbar but it'll give you some idea of customization of the Ribbon which I know I said was out of scope but this will give you some idea of what's involved. And that is I want to go down to More commands and click on More commands and this takes you into Access Options but this time the page is the Quick Access Toolbar page. Now let's suppose that I look at the available buttons on the Quick Access Toolbar and I don't see the one that I want.

It's very straightforward to add a new button to it. So let's choose one of these. There is for instance here a Find button which gives me access to the Find dialog. If I select that in the list here and then click on the Add button in the middle, it will appear in the Quick Access Toolbar. So there it is. It's in the list for what's on the toolbar. Click on OK. Now on my Quick Access Toolbar there is the Find button and I can use the Find as though I were doing a regular find within some data in a database. Now whether the Find is enabled or disabled will be determined by exactly what I'm doing in Access at the time, but the button is there available for me to use in situations where it can be used. And if at any time I want to remove it again, I can either go back on to the drop down or in fact while I'm on the Quick Access Toolbar, if I right click, one of the options is Customize Quick Access Toolbar and if I click on Customize Quick Access Toolbar, go to Find in the list on the right, click on Remove, click on OK, and it's no longer there. In demonstrating that I've also demonstrated that you can actually put something on the Quick Access Toolbar as a sort of temporary measure if you're doing something over a period of time and you want a button there available but you don't need to leave it there in the longer term you can add it for a while, remove it again.

There's just one other thing to show you about the Quick Access Toolbar and that is if you click on that drop down again, one of the options down there right at the bottom is Show below the Ribbon. Some people prefer to see this below the Ribbon. So if you select that option, it appears below the Ribbon. I think part of the reason for that for some people is that when they're working in the main part of the Access workspace those buttons are right there, you don't have to sort of reach across the Ribbon to get to them. So that is very much a case of personal preference.

So that's it on the Quick Access Toolbar.

Chapter 8 – Status Bar

Video: Customizing the Status Bar

Toby: Welcome back to our course on Access 2013. In this section we're going to take a look at the status bar which is right down at the bottom of the Access 2013 workspace.

Now like many other aspects of Access 2013, the status bar can be customized. But let's take a look at what's shown on it at the moment.

Now the Contact list form is still open and if you look at the status bar, down at the bottom it says Datasheet View on the left. On the right there are three buttons and these buttons enable us to switch between the views of that particular form. If I go to the Ribbon and click on the Views button, let me change to Form View. I'm going to click now on Form View to make that into a regular Form View and what you'll see, no visible difference there but it now says Form View on the status bar. Let's try a different view. Let's try Layout View. There was a small change. You may have noticed there but note it says Layout View. And then finally Design View says Design View down there. Now a different way of switching between those is to use the buttons in the bottom right.

So first of all, this will normally tell you which view you've got applied and then it will provide some buttons on the right to switch.

Now let me right click on the status bar and what you can see there is a Customize status bar menu. Now the very last thing on that menu is View shortcuts. If I uncheck that option, look at the buttons at the right hand end of the Status Bar; they're no longer visible. It doesn't mean I can't do those things. It just means those buttons are not visible. If I check it again the buttons become visible again.

The basic principle of the status bar; it's really quite straightforward. You have certain things you can show and basically you check or uncheck them to determine whether they're shown or not. Let me give you another example. At the moment, Filtered is not shown. If I click it to show it, it's checked but you didn't see anything different on the status bar. Let me uncheck it again. Nothing changes. But let me now go back to the Home Tab and let me go back into Form

View for this form, Toggle Filter is now available as an option. It's enabled. So if I click on Toggle Filter, look at the status bar. It's still empty. Go back into Customizing and now check on Filtered and you'll see the word Filtered appeared. Now how that works is this. If I have Filtered unchecked, then whether the data are filtered or not, it will not be shown on the status bar. But if I have it checked as it is now, as I toggle up here on the Ribbon, look at the status bar; toggle off not filtered, toggle on its filtered. So what these options on the status bar do is to decide whether you show things or not. They don't generally change things. They just determine whether the values of certain things are shown or not.

So that's the status bar in Access 2013 and that's it for this section.

Chapter 9 – Database Basics

Video: Overview of the Main Features of Access Database

Toby: Hello again and welcome back to our course on Access 2013. In this section we're going to take a bit of a lightening tour of this contact list. We've referred to several features of it so far in the course but it is in effect a working database application. It's a desktop database and I'd like to go through basically what it can do and explain some of the terminology we're going to use later on in the course. After this section and from then onwards we're going to be going into quite a bit of detail. So this is a chance to get a bit of a broad overview of what a desktop database looks like in Access 2013.

Now the first thing I want to do is to just hide the Navigation Pane for the moment and I'm also going to minimize the Ribbon and we're going to look at this contact list because what this database is about is a contact list. Now at the moment, we are looking at this contact list in what's called Form View and if you look down at the status bar, the left hand end, it says Form View. If I right click on the Contact List Tab, I have an alternative of going into what's called Layout View or going into what's called Design View. Now Design View basically determines how the contact list is designed and I can use the information about contacts in different ways. I can lay it out in different ways and I'll be coming back to the design later on.

But when it's in Form View, the contact list is shown on the screen in such a way that I could actually add data. So if I wanted to add a contact all, I would need to do is to click in the first free field there and I'm going to just put in the first name of John, last name Doe, and I can go through and put in information about a person by clicking from field to field. My first person is John Doe. Now once I start typing into that form another line below, it opens up. It says New and if I wanted to put a second person in, I could start typing the second person's details on the next line. But let's go back to John's details. I've got John Doe. Company, I've got a drop down. Oh, that's empty. So I'll say he works for Acme Inc. Job title, drop down; it's empty as well. I'll say he's a director. Category, it says Personal. Let's say he's actually a business contact. Put in his email address. Put in his business phone number. If I've got a home phone number I can put it in there. If I've got a mobile or cell phone number I can put it in there. Zip

postal code. I'll leave those for now. So what I've done is to enter some of the details about one person.

Now while I've been doing that you may have noticed this little pen on the left here and what this pen tells me when it's highlighted like this is that this particular record is in progress. I'm typing in the details but I haven't actually finished entering the details yet and there are various ways that I might finish entering the details. One of the ways that I can finish entering the details is just by clicking on the next row. If I click on the next row, what happens is the little pen disappears and I now have a person in my database. The person I've got is John Doe.

Now notice at the bottom of the workspace, there is a scroll bar down there. I've been using it to scroll left and right through the pieces of information about John Doe. If I go right back to the left again, I can see first name John, last name Doe, and so on. So what I've done is to add a record to my contact management database.

Now one of the very helpful things about this particular database is that apart from that way of adding data on the contact list form, there is an entry here that says New contact. If I click on New contact, watch what happens. What I get a form, a dialog form, a Contact Details dialog. In this I can add the same sort of information that I added just now but I have a dialog to do it in. So if I wanted to somebody else, like for instance Jane Doe. Company, well, oh look there's Acme. Now Jane doesn't actually work for Acme but as if by magic Acme, the company I added just now for John has appeared on this drop down list. Now Jane is not an employee of Acme. What about job title? Well, look directors popped up there as well. That wasn't there just now. Now I could go through now and put in the other kinds of detail for Jane. So let's give Jane a home phone number. Let's assume she's a personal contact and let's go up there and check the list; yeah personal, business, family. Let's say she's a personal contact. That's fine. Let's put Jane's and then there are other pieces of information that I could add about Jane within this same dialog. But let's suppose that that's enough for now and let me click on Save and Close. Watch what happens. If I now look back at my contact list form, Jane has been added there. So although I didn't add Jane using this form, you can see her on the form. So that's two different ways of adding a contact to my contact management database.

Now let me just open up the Navigation Pane again and go back to the section Forms. Now you'll see that there are actually three forms there and we've seen two of them in action. Although they both can be used to add contacts, they're very different forms. The contact list form, the one that you can see there, has a view whereby you can see the contacts as rows in a table or what's normally referred to as a datasheet in Access. And then the contact details form which is a dialog type form. Let me just go into Design View for that again. You see everything laid out as a single dialog that you can use primarily to add a new contact to the database. So there are two forms. They look very different. They have some functions in common and they have some functions that are different.

Now there is a third form there called Getting Started and if I just open the Getting Started up, you'll see that that is more to do with Help explaining how to get started with contacts. So welcome to the contacts management database. This is not primarily about adding a contact or looking at existing contacts. It's really about giving you some help. And actually in this particular form, it's got links through to some videos explaining how to use the database. So there are forms that are not only used for maintaining data but they can be used for information or for giving help.

Now again that's the sort of form in an Access database where we would design it and we would add the functionality to it, including things like these links here, these hyperlinks that take you through to other parts of the system. So they're the forms in this database. Let's go up to, have a quick look at tables.

So let's close the contact list and under Tables, the first table is called Contacts. Now generally speaking, to open something in Access 2013, you can either right click and there's almost always an open at the top or you can just double click and it'll open. Now when we have a table open we're actually looking at data. In this database there really is only one table of data. There's another table over there called Settings but I'll talk about settings in a little while. This is at the moment where all of the data in this contact management database is stored. It's effectively like a huge Excel spreadsheet. It has a number of rows, horizontal rows, and each row represents one person, one contact. Now for each row or each record there are a number of columns and each column is one field. What we sometimes call an attribute. So for Jane Doe who's the second row in our table, the company attribute is blank, the last name attribute is Doe, the first name

attribute is Jane, and so on. Or we might say that for John the value in the job title field is director. And that's how we refer to the individual cells in this spreadsheet, in this open table.

Now when we come to design and build databases, one of the most fundamental tasks is to actually decide what data we're going to keep and then to decide which table or tables to put the data into. It would be an extremely simple database that only had one table and many business level databases will have probably dozens of tables. We're going to be dealing with examples in this course with two, three, four tables maybe, not too many more than that. But once you've got the principles, extending those to a larger number of tables is not particularly difficult, although it can be quite time consuming and it does involve quite a lot of attention to detail.

Now this table, the contacts table, we've got open but now I want to go into Design View. So if I right click on the Contacts Tab there and go into Design View, we'll get a completely different view of this table. The first thing to bear in mind is that we don't see any data at all in this view. This is the view where we're looking at the design of the contacts table and we have each field in the table defined and for each field we've got a sort of grid at the bottom with information about that field. Now this is what we're going to look at in detail in a couple of sections time. We're going to look at table design in a lot of detail, but let's just take one example here to get the general principles. Let's take the example of the last field there, category. Now the category field has a data type of short text, and being short text it means it's a field with some text in it. It'll just be regular words. In the table at the bottom, it tells us that the field size is 100 which means that the most text you can have in there is 100 characters and then there are a load of properties related to that. For instance, if I go down there, is this field required? No it isn't. If I then click on the second tab down at the bottom here, Lookup, it says you're going to look up the possible values here from a list and the list is personal, business, and family. That's why when we were putting that data in earlier on, you could see that list with personal, business, and family.

Now that's a pretty lightening quick look at one table and in fact one field within one table, but hopefully that gives you some idea of what's involved in designing a table of data.

Now one thing you may have noticed is that as I'm now in Design View of the contacts table I've got a contextual tab at the top. I've got the Design Tab in the Table Tools. If I finish

looking at the contacts table in Design View just click on the Close box there. Bear in mind I've made no changes. If I want to open that table again but this time to look at the data, don't forget I can just double click on it, I get Table Tools again but this time I get a Fields Tab and a Table Tab. So again you can see how depending on what we're doing, what we're looking at, we will get different Ribbon tabs including contextual tabs as well.

Now there are one or two things about this database that I'm not going to look at, at the moment. I'm not for instance going to look in detail at queries. We're going to come back to queries later on. In fact this particular database is one we're going to use for a good few examples to get us started on various topics later on. But I would like to look at reports next because sometimes what you want from a database is a report, a sort of snapshot of information from the database. If I take this particular report here, it's called Directory. As with most of the objects that we deal with in Access databases, if I want to design it I'll right click and go into Design View, but if I just want to look at a report, I can just double click on it to open it. Let's open this directory report and what you see is a full alphabetical contact list. This shows the list of the people in the database in some kind of alphabetic sequence and with a selection of the information about each person shown. And as with a form, as with a table, there are mechanisms within Access to design reports. I could have a report showing all the people in the database, just the people of a certain age, just the men, just the women, just the people who work for a particular company, and I can choose an extract of the data and that incidentally is one of the things that we use queries for and I could produce a report containing the information I want in the sequence I want and perhaps date it for the day that I want as well. Now there's a second report there which is called Phone Book. Let me just double click on phone book. Phone book is the same people are in it but the information is presented in a different sequence. Phone book, business is one list; personal is another. If I added more people to the contacts table and ran either or both of those reports again, of course they're always showing me the latest information with the way that they're designed at the moment.

Now particularly if you're new to databases or at least new to Access I hope that quick overview of some of the main features of an Access database has been useful to you. The general principles in there are ones that are going to be very important from now on. Before we start going into the details of how to design and create a database though I'd like to look at web apps

because this is the fundamental new feature in Access 2013 and although the principles behind the databases that you build in web app form is exactly the same as the ones that you've just seen, the finished product and to a large extent how it works has some differences and they're not all subtle differences either. So in the next section we're going to have a look at web apps. I'll see you then.

Video: Web App Basics

Toby: Welcome back to our course on Access 2013. The contact management database that we've been looking at so far is a desktop database. Now this is not restricted to being used by one user and in fact the database can be shared by putting the data part of it on a network and giving other people access through the user interface components of this Access database.

If we want to share a database, that's one approach. But if we want to share a database more widely and in particular if we want to share the database over the internet, then the traditional type of Access desktop database is not the ideal way to do that. However, if we want to share a database over the internet, then Access 2013 includes the ability to build Access web apps which give access to databases using standard internet browsers. In this section we're going to take a first look at how to build an Access web app and what one actually looks like.

Now for this to work, the data in the database has to reside in a central location and the central location will not be your own PC or your own laptop or your own tablet. It needs to be in a location that other people with internet browsers can access. Now the data itself lives in a SQL Server database, a Microsoft SQL Server database and that's where it needs to be put. In order to access it there and to have all of the tools that we need to store the data, manipulate the data, etcetera, we use Microsoft SharePoint.

Now you probably haven't got your own installation of Microsoft SharePoint and most people don't. Even if you work in a company, you may or may not have access Microsoft SharePoint. In order to demonstrate this, I'm going to have to use a standard installation of Microsoft SharePoint. Now in order to do that we need to use what is effectively a trial version of Microsoft SharePoint and by the time you actually come to work your way through this section of the course, that trial version may or may not still be available. So at the time of recording this, the best place to start to get a trial of Office 365 that includes SharePoint 2013 which is the latest version of SharePoint, that's the one you need. Here is the Microsoft page, Office 365 preview and then on the right you have a list of options. Now I've gone with the Office 365 Small Business option. That takes you through to the Office 365 Small Business Premium preview page. It gives you a description of the top 10 reasons to try Office 365 Small Business Premium and then you can follow that through, sign up with the relevant details that you need. At the time

of writing it's free of charge for a limited period. Don't forget that you need Windows 7 or 8 in order to use Office 365. And then once you've gone through and completed the sign up for your Office 365 preview, you should be able to do what I'm going to do next which is to create an Access 2013 web app.

To create an Access web app in Access 2013, choose the requisite App Template. I'm going to go for contact management, the equivalent of the contact management that we've looked at already but as a web app. The web app templates you can recognize by the blue globe on the sheet of paper behind the icon. So this is the contacts one, click on that. Now exactly what you see here to some extent will depend on the SharePoint site that you're using. If you're using an Office 365 account or Office 365 preview account, you'll see details of the web location at the bottom and then the available locations for you are listed in a panel in the middle. Now for me with the account that I've setup, I have two choices. I can either publish this web app to my team site in which case that tells me the web location at the bottom or within my team site as part of the Office 365 preview account that I have I have a personal apps area. Now I'm going to publish this on the team site, selected the team site, that adjusts the web location at the bottom, and then I want to give the app a name. Now the name I'm going to give it is not very imaginative. I just call it Contacts TA. When I've done that, I click on Create.

Now once the app has successfully been created, I have a very basic app in place and it includes a contacts table on the left. I can add further tables. I can either use a table template from Microsoft. So I can search in here for a particular template or I can add a new blank table using this link on the right here. Let's suppose that I want to search for a table related to contacts so I'm going to search on the term Contact. It gives me a number of options. It's got a people table, contacts table, customers. Let's suppose I want a table suitable for customers. So now my database has two tables in it, a contacts table and a customer's table.

Let's look at the customer's table to begin with. I open that up. Obviously it's empty at the moment. I haven't put in details of any of my customers but I can certainly add details of customers and I can also go into the design of the table.

Now it's very important to recognize that when we're working in this way, this is completely different from the Access desktop forms, reports, and so on that we're going to look at during the

rest of the course. The views that we're getting of the data here are views through an internet browser. And although we can go into change the layout of the forms that users fill in they are different forms from the ones that are used in an Access desktop database. So you're basically using the same principles, you're using the same ideas in terms of tables, forms, queries, and the other things that we've either looked at or are going to look at. The application, the implementation of them in a web app is different. So for instance, if I want to change the design of this form, the one that users will use when they access this database over the web using a browser, if I click on Edit, then there's the layout of the form. I can go in. I can change the wording of a label. I can move fields around and do all sorts of things to them, but that's a completely separate set of exercises to the ones where I'm working on a desktop database.

So when I finish working on a particular object, I can just close it in the usual way, save the changes if I'm requested to do so. Once I've setup the tables and views and so on that I want to use, it's very straightforward to launch the app. So I just click on Launch App on the left there and this enables me to view the app in my default browser. So I'll click on Launch App. My default browser is Internet Explorer and there is my app. I have a selection of Internet Explorer toolbars at the top here but basically I have access to contacts and I have access to customers and in each case I have a choice. Here I have List View. I can go into Datasheet View. And in either of these views I can start to add data to my database.

Now I don't really want to spend too much more time just showing you Access web apps at the moment. I just want you to have some idea of what they look like and what the key differences are. If I'm working on a particular record like this one, I can fill in details: first name, company, job title, etc., exactly the same way that I would normally fill in data. I then have buttons on this Action Bar here for things like save. There's also a Delete button that's currently grayed out. This Action Bar which is a common feature of these views in Access web apps can be customized and for instance if you write macros which are supported within Access web apps, you can put buttons here to activate macros.

So here you can see the view that users get of your web app running in Internet Explorer in this case. If I just switch back now to Access where we started from, we can have a look at the information about this web app in Access. And in Access, we can see the form layout that we started with. We have the facility there to go into edit to change the design of that particular

view. And if I just go back to Backstage View to look at the Info, then I have information there about my web app. It gives me a URL for the web app, including this number 6BE, etc. that identifies the particular web app, and then information about data connectivity, the server name that the SQL Server database is actually running on, and so on. So I have pretty full and comprehensive information about where my web app is and links to get access to it. And of course I can control other people's access to the web app, their permissions, etc.

So if you don't already have access to SharePoint 2013 and you do want to try out Access web apps, I've given you at least an outline, the instructions for doing that. You need to get access probably via an Office 365 account which you can get at least on a temporary basis free of charge and then you can setup your SharePoint on your Office 365 account and then create a web app from Access and set about customizing it and using it in the way that I very briefly outlined in this section. So that's it for this section. I'll see you in the next one.

Chapter 10 – Tables

Video: Creating Tables – Part 1

Toby: Hello again and welcome back to our course on Access 2013. It's time now to get started on design and build of a database in detail, and we're going to start with tables. The main sample database we're going to use is a movies database. We won't get terribly far in the design and build of a movies database in the time of this course, but we should make a pretty good start and I hope you'll get plenty of ideas to be able to carry it on later on and after the course is finished.

Now in terms of exercises for you to do, I will be setting these and there is absolutely no reason why you shouldn't work on a completely different database yourself as we go along, maybe something associated with your work, the job that you do, maybe something associated with an interest you have at home. And it's entirely up to you. The examples I'm using will mainly be around the movies database, although there will be one or two others from time to time. If you follow along with what I'm doing, then you will find that you cover all of the main things that you need to know. One thing I should warn you about though before I start is that in the early stages, this movies database is going to be pretty badly designed as you'll see. I'm deliberately going to do a bad job for a while in order to illustrate what a good job is. So let's get started.

Okay, I've been working on a database here. I'm going to close it in the usual way. No changes. And I'm going to go for a new database. Now in this case, I'm not going to use any of the existing templates. I'm going to go for Blank desktop database. I'm going to give it a name and I'm going to number these versions of this database as we go along and that will tie in with some of the exercises that there are to do. So this is Movies 1.accdb and I'm going to create it in that sample folder that I've used from time to time so far. So I'm going to put it in that folder with the contacts ones, and then I just click on Create and my database is created. Now note that when it's created, the number of objects is very small. In fact, it opens a dummy table. One thing's for sure in an Access database, you're going to need a table.

Now let's suppose that I just want to start getting some data into this table. Supposing I type in here the name of a movie, here's a new movie, press the Tab key, and now let me put in the year

of release and let's suppose at the moment all I want to record is the name of the movie and the year of release. Now you may recall from earlier on that in order to save a record to this database or specifically into this table, I just need to go to the next one, the next record, the one that says New, and I've got a record in my database table. It says Identity Thief and it says 2013. But that's a pretty messy job to be honest with you because I haven't really looked at the structure, I haven't really looked at what Identity Thief and 2013 are and so on. Now you may recall that earlier on we talked about the different views of a table and we're currently in Datasheet View. So we're looking at the data. What I want to do is to switch to Design View.

Now there are various ways of doing this. If you look at the buttons at the bottom right hand corner of the screen on the status bar, there are two buttons. The one on the left currently selected is Datasheet View. I can click on the one on the right, Design View. There's also a button on the left of the Ribbon to switch views as well. But when I'm in Design View, I get a little bit more idea of the structure of my new table, although I can't see the data anymore at all in Design View. And what Access 2013 has done is to give me three fields. The first field ID I'll come back to in a moment. The second one where I typed in Identity Thief it's called Field 1. That's a default name. I'm going to change that name. I click in there and I'm going to change that to, say, Title. And of course the third one should be Year of Release. Now before I do that, let me just switch back into Datasheet View again. Note whenever I've made changes, it says you must first save the table so I'm going to save the table. Back in Datasheet View. I can actually click in the top, in the title here, and if I right click on there, I can say Rename Field and I could put in there YearOfRelease. Now my preference is not to put spaces in field names, but it is a preference. There are one or two technical reasons why it helps me a little bit not to have spaces. If you wanted to put Year, space, Of, space, Release that would work fine.

Now let's go back into Design View and as you can see we can put those field names in either way. So we've got Title and we've got YearOfRelease. Now for each of these fields when we enter the data to begin with, Access 2013 took a look at the data and tried to work out what the ideal data type would be. Now in the case of Title, it's selected a data type of short text. A data type of short text if you look down at this grid at the bottom means that there is maximum field size of 255 characters. Now I've no idea what the longest movie title in the world is but 255 sounds about all right for me to cover the vast majority of movie titles. And to be fair, in many

situations it's possible to change the data type and/or the field size later anyway. But for the moment, I think 255 looks fine. Now when it comes to YearOfRelease, Access 2013 has looked at the number we typed in and decide yes this is definitely a number data type. And the type that it's put in is one that's called long integer. Now long integer at the bottom covers very, very large numbers and we wouldn't need them for a year of release, given that in terms of the year we're not far above 2000 now, it's going to be a long time before we need something that goes into the billions. So again we could take the value that Access 2013 has suggested here but we may want to review that later and in some way restrict it to being for example a year bigger than 1890 which is roughly where movies started and probably less than say 2100 which will give us several years for our database to work in, but more of that later. For the moment, I'm going to stick with the Title is short text and the YearOfRelease is number.

Now I'd like to go back to this first field again, this ID field, and talk about this because if you look at the Ribbon, at the Design Tab, note that it's a contextual tab under Table Tools that is there when I'm in Design View on a Table, you'll see that that's highlighted and it's highlighted because the ID field is the primary key for this table. Now when I create a table in Access 2013 under normal circumstances, it will always insert an ID field and the ID field will have a data type of AutoNumber and it will be defined to be the primary key for this table. Now there are quite a few important concepts in all of that. Let's start with primary key.

Now as a general rule, we need to be able to uniquely identify any record in a table. In the case of our movie table, we need to be able to uniquely identify any movie. We must have one thing that says that is specifically that movie. Now you may say "Well, isn't the title a unique identifier for a movie?" Well, let me give you an example. What about the movie True Grit that you may or may not have heard of? Now True Grit is a 2010 movie but in fact it was a remake of a much earlier movie, a 1969 John Wayne movie that both have exactly the same title, True Grit. So True Grit is not a unique identifier. You can't use the title of a movie as a unique identifier. In that particular case, there was also a TV movie made in 1978 called True Grit. Now one option would be to combine together in some way the title and the year of release and say "Well, if you put the two together isn't that unique?" Because in one case we would have True Grit 1969, then we would have another one True Grit 1978, and another one True Grit 2010. Well, that would probably work most of the time and provided that nobody ever brings

out a movie or a couple of movies with the same title in the same year, you'll be fine. When somebody does, there may be a problem. But in fact the preferred method almost always is to use an independent identifier to uniquely identify a movie. What we're doing in this case is saying this number, the number that is assigned automatically by Access 2013, is the unique identifier for this movie. Now that doesn't mean to say that users have to know what this number is or in fact that users ever see this number, but within our database system the unique identifier is the one that we use to uniquely identify an object in the database. Now that is the purpose of this first field, this ID field, and we will very often have an ID field for a table.

Now let's suppose that I did want to use the title and year of release to uniquely identify a record in a table. Now it's very straightforward to do that because all I have to do is to select the two fields, using the mouse I can just sweep over those two fields, and then if I click on the primary key button on the Ribbon, they become together the primary key. They're not individually the primary key. They are only the primary key when used together. So you can easily change, but I don't want to do that. I'm going to go back to making the primary key just ID. The Undo button comes in here. So if I change my mind, click on Undo and I'm back to just the ID on its own being the primary key the unique identifier for a record in the table.

Now I'd like you to see AutoNumber at work. So I'm going to go back to Datasheet View and enter some more data. Watch what happens when I switch back to Datasheet View. As always, you must first save the table. Do you want to save the table now? Yes. Access knows that I've made changes so I click on Yes. Now then let me go to New record and the title of the new record is going to be True Grit. Now as soon as I start entering that next record, it is given an ID, a unique identifier. That number three will never be reassigned in this table again. Three is unique. It will only ever be used once. It'll be completely unique. Press the Tab key to go the next field and enter there 1969, the year of release, then I can click in Title on the next new record, type that again, Tab, put in the year, and so on. Now, if I make a mistake or delete one of these records or I have to go back, Access 2013 will never reuse these numbers. So those numbers, those ID numbers are always unique. That's an important point. And they're AutoNumbered so you don't have to worry putting the numbers in. Access 2013 does that for you.

Now it's time for you to do some work on this database or on your equivalent. I'd like you to take what's in movie-01, if you're following along doing this movie database, and basically what's in movie-01 is what you can see here. I'd like you to add any other two movies. In fact, you can add more if you like, but you need to finish up with at least five movies. In each case, you'll need the year of release as well. And I'd also like you to create a second table. The second table is going to be called Actor and in that I would like first name and last name and year of birth. So straightforward enough, first name, last name, year of birth, and put in, say, three of the actors that appear in one or more of the five movies that you've added to the first table. Now if you're a bit short of knowledge about movie titles and actors and so on, what you want is www.imdb.com, the Internet Movie Database. Thousands of films, thousands of actors, all the information you're going to need for this course. You can get it all from there. My answer to that is example-02 in the files provided with the course.

There's just one thing I need to mention before you start using the sample files for the course. When you open the sample files with all or any of them, you may see a message like this; a security warning. Some active content has been disabled. Click for more details. I can assure you that the content for the course is safe. So when you see that message, you need to just click on Enable content and it will go away. Later on in the course when we look at security issues, you'll get an explanation of why that sort of thing appears. But for the moment, if you see that, click on Enable content and all will be well. I'll see you in the next section.

Video: Creating Tables – Part 2

Toby: Hello again and welcome back to our course on Access 2013. In the previous section we created the first draft of a movies database and we created the movie table, put some data in it, and I left you with an exercise to do to create an actor table and put at least three actors in it. I've got a copy of my answer to that in front of me here. My answer was example-02 in the files that you get with the course. This is a copy of that. There are the two tables. I want to look at the actor table first. So if I want to look at the data, I just double click and it opens the table in Datasheet View.

Now as we can see, I've got three actors in here, fairly well known, although perhaps if you're a young person you may not have heard of any of them. I don't know. And these three actors I've got very basic information: first name, last name, year of birth. Now I want to add some more information about each of these so what I need to do is to add some fields to this table, and the first field that I want to add is each actor's gender. Now I can do that either by using the space on the right here. So for instance, if I thought, well let's just put M and F in for Male and Female. So Humphrey Bogart is M, Ingrid Bergman is F, John Wayne is M and automatically Access 2013 gives me a new field called Field 1 and then allows for another inserted field on the right here. So it's very dynamic in terms of letting you add fields when you realize you need more information. Having added that data though, if I go back into Design View, so click on Design View. I can see that it's added my field. Now I don't want it to be Field 1. I want to change the name to Gender, and the type I also want to change because I don't want it to be short text. I only want there to be two possibilities here. I either want the gender to be M or F. So in the drop down at short text, if I click on that, I want to change from short text to lookup. Now the idea of lookup is that I can look up potential values from a limited list of the possibilities and in this case the limited list is just M or F. So let's look at the Lookup Wizard.

So the first screen says: The Wizard creates a lookup field which displays a list of values you can choose from. How do you want your lookup field to get its values? You get a choice. I want the lookup field to get the values from another table or query or I will type in the values that I want. Now I'm going to type in the potential values. So I'm going to choose the second option and click on Next. What values do you want to see in your lookup field? Now if there is more than

one piece of information to choose from in the sense that you need to show somebody say a number and an explanation you'd have more than one column. But for this we only need one column and the possible values, well the first value is going to be M and the second value, potential value, is going to be F, and they're the only two values that people can choose from. So click on Next. What label would you like? Well, the label of Gender would be fine. And then under that there's a very important checkbox, Limit to list. Do you want to limit entries to the choices? Sometimes when you give people a choice of what to put in a field you say to them you could have this or this or this and in fact you could also type in your own choice if you wanted to. So you're helping them by offering them a choice but you're not limiting them to those choices that you've given them. Now in this case there are only two possible choices, an actor is M or F. So in this case we're going to check Limit to list. The next question on that page we're going to come back to later on. Do you want to store multiple? Well, let's just ignore that for the moment and click on Finish. Now what we get is a still a short text value but on the Lookup Tab in the grid at the bottom we're told that the row source, the third entry here, lists the possible values that will appear as our choices. Now I'm going to save the changes we've made to this table and then show you how this works in Datasheet View. So let's do a save and then let's switch to Datasheet View.

Now watch what happens when I add another actor. Now having put in the basic information, when I get to the Gender field now I get a control that is effectively what's called a Combo box. And I have a drop down arrow to the right. If I click on the drop down arrow I see the choices M or F. I can't type in anything other than M or F. I'm limited to this list. But I select M and that's it and then I'm ready to move on to entering details of the next actor.

Now I want to do a similar thing to the movie table next so I'm going to close actor, save the changes, and I'm going to go into the Design of the movie table. And what I want to add here is the genre of the movie. So I'm going to add a new field called Genre and I'm going to say that it's short text and I'm going to make it lookup as well. Now this time when I say Lookup Wizard, I'm going to say I will type in the values that I want, click on Next. I'm still only going to only have one column but let me put as my genre options Comedy, Mystery and, say, Thriller. Click on Next. I'm going to say Limit to list again but this time I'm going to say "Do you want to store multiple values for this lookup?" And I'm going to say yes I do and then click on Finish.

So save that and then go into Datasheet View to look at my data. Now let's choose the first movie, Identity Thief, click in Genre, click on the drop down, and this time in this drop down I have my three entered options but I get checkboxes next to them and I can choose more than one option. And if I choose Comedy and Thriller and click on OK, look what happens; I get Comedy and Thriller. Now one thing I should just point out, be looking at this a little bit more later on, the Datasheet View works like an Excel spreadsheet. So if a column is not wide enough, you can just drag it a bit wider; there we are. Now we can see that the genre for Identity Thief is Comedy, comma, Thriller. So I've got two values. Now if you know much about database design you'll know that this is pretty bad design for a database and I'm going to change this a little bit later on. So if you're looking at that and perhaps feeling a little bit horrified, don't worry too much about it because I am going to fix that later. But it does demonstrate something that can be useful, which is the ability to get multiple values in a field like the Genre field. And it's a very straightforward way of doing it as well, as you can see. Now the number of possible values for the genre of a movie, it's quite a long list but it's a fine art list, maybe 10, 15, 20 different options, something like that. But supposing that I also wanted to put into my movie table a list of the actors in the movie.

Now let's go back to the design of movie and let's suppose I was going to put in here a list, Actors. How would I put the list of actors in there? Would I do it like Genre? Would I have first actor, comma, second actor, comma, third actor, comma, fourth actor? The answer to that is definitely No, although many years ago some people would have designed databases like that. If you have a long list and particularly if you have a very variable list such as the actors in a movie or the crew in a movie, or what about the special effects technicians? There are sometimes hundreds of them. You wouldn't make a long list of them with commas in between their names. We need a different way of putting long lists of things together. The other alternative is to say have an Actor 1 field and an Actor 2 field and maybe an Actor 3 field, and with all of those you could put in the actor, the main actor, the headline, the second actor, so on. How many of those would you allow for? How many actors is the most that you might need? You can see that it's not that easy to design a table where you're not quite sure how many of something you need. Now what we've got so far in the movie table is very straightforward. We've only got one title and we've only got one year of release and the genre although there could be one or two or three

or four of them there won't be that many. But when it comes to actors or crew, then you're in a different situation altogether and as I say that's what we're going to look at in the next section.

Now in readiness for looking at relationships between tables in the next section I want to do one more thing in this section and that is to create a new table, and the new table is going to be a genre table. Now we just setup a lookup using three possible genre values that I typed in. In reality it would be more efficient and more straightforward to have a separate table with all of the available genre values in it. And bear in mind that the genre values may change over time as well. If we have a separate table, we can add new genre, remove ones that are no longer used, and so on. So it's a pretty straightforward case as before with one interesting question. So I go to Create. I go to Create table. I can say create a new blank table or I can say create a new table design. Let's go straight to table design this time and this time instead of getting the default ID, I'm going to say well maybe I don't actually need an ID; maybe I don't need to number these. Maybe the genre values themselves could be the primary keys. I said earlier on that you'll almost always use an ID but it's only almost used. There are occasions when you don't really need one. So I'm going to actually put in here Genre as the name of the field, the data type is going to be short text, and that's all I'm going to have in that particular table. This will be the primary key. So click on that, click on there, it becomes the primary key. As such it must be unique.

Now I'm going to put in the genre values that I want. I know that when I switch to Datasheet View it will ask me to save what I've done. So click on Datasheet View. You must save the table. Click on Yes. Now I'm tempted to call the table Genre, but I've called the field Genre as well and what I'm going to put for the table name is going to look a little bit strange. Not everybody does this. I do but a lot of people that do quite a bit of database design do this. They prefix the names of the objects in their databases with a system of codes that remind you what something is. So the genre table I would call T-B-L-Genre, tblGenre. That reminds me whenever I see it that it is a table. In fact, I would normally use that same approach for those other two tables as well.

Okay, so let me start putting in the genre values. First one is Action, the next one is Adult, the next one; I'll carry on typing these. Join me again in just a moment.

So that's my Genre table setup. I'm now going to close that table. I'm going to close the movie table. Save changes of course. And then I'm going to right click on Movie and click on Rename and that is going to begin with T-B-L as well, and then I'm going to right click on Actor and do the same to that. From now on I'm going to stick to this naming convention. When we come to things like forms and reports they'll have similar prefixes to help me to identify things later on. It's a very good thing to bear in mind if you are going to try and follow this naming convention that you don't want to wait until much later on to set these names to these prefixed values. Use those names from the outset.

So that's it for this section. I'll see you in the next one.

Video: Relationship between Tables – Part 1

Toby: Welcome back to our course on Access 2013. In this section we're going to look at relationships between tables in an Access 2013 database and we're going to begin by looking at genre for a movie.

Now first of all I want to go to the movie table and I want to open it. So we're going to look at the data. So double click to open. And you may remember that for one movie, Identity Thief, we earlier entered the genre as comedy, comma, thriller. And you may also recall that we can have a number of different genre defined here separated by commas. But as I pointed out that's not really good design and it carries with it a number of problems that will become apparent a bit later on. So what we're going to do is to setup a proper relationship between the movie table and the genre table.

But for the moment let's now go into the table design for movies. So I go into Design View. We had a field there, Genre, which is the one that holds currently the genre values separated by commas. I want to delete that row. It's straightforward enough. When I'm in Design View, the contextual tab Design in table tools is available and one of the options there is delete rows. So I can just literally delete a field. Now note the warning you get if you try to delete a field in a table. Do you want to permanently delete the selected fields and all the data in the fields? When I'm deleting this I'm deleting any data for any record; any movie that's got genre information. Now at the moment, I'm happy with that because I only put that genre info in as a demonstration so I'm going to say yes and the genre information is gone. I'm going to close the movie table again and say yes to saving changes.

Now what I'm going to do is to go to the Database Tools Tab and on there I'm going to click on Relationships and relationships gives me a diagrammatic representation of the relationships between the tables in my database. Now at the moment the diagram there is completely blank. It's behind this little dialog but it's completely blank and I want to add two tables to it. I want to add the movie table. So select it, click on Add, and I want to add the genre table. Select it, click on Add.

Now what I'm going to be doing is to create another table that links movies with their genre values. So for one movie there will be multiple genre values. Now the way I do this is first of

all I will do Create table. So let me go to Create table and I'm going to go into Design View. I'm going to call the table tblMovieGenre just to emphasize the fact that it basically links a movie to a genre or many genre. By default an ID field is created. But I also want two more fields in it. One field I want is a field that will point to the movie that I am referring to. So I'm going to put in here movie. The next field will point to the genre and basically what will happen is that in this table I will have many entries that link the movies to their various genre.

So first of all, let me save this table, the newly defined table. Let me go back to relationships by clicking on its tab here. When relationships is selected I can go back to relationship tools, the Design Tab, and one of the options there is Show table because I now want to show an additional table, and the additional table is the new one, MovieGenre. I'm going to add that, close. I'm just going to pull it down between these two. The way that this works is this acts as a sort of link between movies and genre and the way the link works is actually fairly straightforward but it takes a little bit of getting used to. The way it works is that in the linking record, the record in tblMovieGenre we have a link to the primary key in the movie table which is the ID, and the key here, the movie value, is what's called a foreign key into the movie table. Similarly the genre, the value here, is a foreign key into the genre table primary key.

Now if you've been paying really close attention, you may see a slight problem here but it's a very regular kind of problem and we're going to have to face it sometime so let's face it now. If you look at the genre table, let me just open the genre table up again in Design View, its primary key, genre, is a short text field. If we go into the Datasheet View, we'll see that the sort of thing we've got there, they're words like Adult, Adventure, Animation, that's fine. Let's close that. This field, Genre, in the table MovieGenre, the equivalent, the one that's going to be the foreign key is also short text. So that's absolutely fine. If I look at the movie field in the MovieGenre table, the linking table, that's short text. But if I go into the movie table, so let me open that in Design View, the ID there is not short text. It's something called AutoNumber and these AutoNumber values, the ones where it automatically gives it a number when you add a record are actually what are called long integers. So they're a special kind of number called a long integer. In fact in my linking table, my MovieGenre table, the data types must match. So the movie here in order to link up must not be a data type of short text. It must be a data type of long integer. Now the way we do a data type of long integer is to select number and then just make

sure that it says long integer down there. Now that may seem a little bit strange at this stage if you've not seen this before, but most of the time that you're setting up relationships you'll be setting up relationships to AutoNumbered fields and therefore making the data type of a foreign key into a long integer will be something that you do a lot. So once you've got your head around this, the first time it actually almost becomes routine to do it from that point onwards.

So having changed the data type of movie to number and specifically long integer, I'm going to close the MovieGenre table and save its changes. I'm also going to close the movie table. No changes there anyway. Let's now look at relationships again.

Now what I can do in order to establish these relationships using keyboard and mouse is to literally drag fields on to fields. Now I know that the movie table ID, this field here, let me just click it to select it, corresponds to movie in the MovieGenre table. So all I do is grab the ID, pull it over here and drop it on to movie. What happens is that Access 2013 creates a relationship and what I do in this dialog is to define some of the properties of that relationship. Now perhaps the most important of those properties at this stage is the one that is set using this checkbox, Enforce referential integrity. Now you may or may not have heard of referential integrity before but what it basically means is that if you have something like a movie that has various properties such as the genre it belongs to or the actors who acted in it or the crew that were involved in making the movie and you're setting up all these kind of relationships that we're looking at here, it means that you cannot delete, for example, that movie without clearing up all of these relationships as well. So you can't leave odd bits of data lying around that don't have a movie that they belong to anymore. Now you will almost always enforce referential integrity and when you do there are another couple of options here. I'm not going to look at those at the moment. We'll come back to those later. But basically once you've said you want to enforce referential integrity, you can create the link between those tables. Now there are a couple of other options. There's a join type that again we'll come back to later on, but for now let's just say Create.

What we finish up with is a one, note the one there, to many, note the infinity symbol; a one to many link which means for each one movie there can be many movie genre records, which means one movie could have three or four or five or six movie genre records. It might have none of course. Each of those will specify one genre that applies to this movie. So that's half of the job done. Now let's do the other half.

Let us say we click on the genre in the genre table and we drag on to the genre in the MovieGenre table. Again we're going to enforce referential integrity, click on Create, and we have the other half of the link. What this says is that for each genre there can be many movie genre records because of course if the genre is comedy, there are many comedy movies. In that way we have created all of the linkage we need to create the relationship between movies and genre.

Now what you have there is an example of quite a tricky concept in database design but it's an absolutely fundamental and essential concept to understand because it is at the basis of the design of all relational databases nowadays.

Now I want to just help a little bit on this by going back and putting in some data to explain a little bit more about how this works. So let's close the relationships diagram. We're going to say yes to saving the changes to the layout because we'll be coming back to the diagram again later. Let's go back into the table MovieGenre, let's open that up, and what we would normally do now is to type in a movie number and a genre. So let's go for one of the movies. Let's open the movie table. What about Independence Day? That's by the way that columns not quite wide enough so let's make that wide enough. Independence Day is movie number six. So let's go into MovieGenre. Let's put in movie number six and one of the genre is Action. Let's go to the next one and let's put in Adventure but let's spell it wrongly. There we are. It's spelled wrongly. You cannot add or change a record because a related record is required in the table genre. It will only let me add legitimate values for genre here and that's one of the very important aspects of applying these relationships. You make sure that your database is consistent with itself. So if I now spell that correctly, Adventure, that'll be much better. So let me just go through and quickly put in the rest of these for that movie. So Action, Adventure, Sci-Fi, and the final official one for Independence Day is Thriller.

I could go through the other movies that I've currently got in this database and put in the same sort of information. But typing it in this way is a little bit laborious and there is a better way of doing it and we're going to come back to that later when we look at forms. But for now let's turn our attention in the next section to a different sort of relationship and this time we're going to look at adding actor information to our movies. So please join me for that.

Video: Relationship between Tables – Part 2

Toby: Hello again and welcome back to our course on Access 2013. In the previous section we looked at setting up relationships between tables in an Access 2013 database and in particular we looked at recording the genre for a movie in our movie database. In this section we're going to look at setting up the relationship between a movie and the actors in it.

Now to some extent this is a similar exercise to the one where we setup the genre but there are a couple of important differences. One of them is that when we define the actors that appear in a movie, we define some other information, notably for example their role in the movie. This is not the actors name but the name of the character played by the actor, so some of this is pretty much the same procedure. We're going to create a new table. So we can click on Create. We'll go into table design. We'll start off with an ID field. Note that when you go into table design you don't get one of these by default but we are going to have one. So you can define it yourself if it's not already there. ID defined as AutoNumber. The next thing we're going to want will be the movie. So we put in here movie. Now we know that the movie is the foreign key pointing to the primary key in the movie table so we know that this needs to be a long integer. So type is number, check we get long integer down there which we do by default, that's fine. The next thing is the actor. Basically for the actor table the actor ID is also an AutoNumber field. So again this will need to be a number and a long integer so that's fine. But now I'm going to add an additional field for this one and this field for the moment we're just going to put in the role, the role of the actor in the movie. This will be short text, normally the name of the character. So I'm just about ready to save that. Note that if I've manually added an AutoNumbered ID field to act as the unique key, I need to mark it as the primary key. So let me just click there, click on primary key, and then in order to save it with the name that I want if I right click on the tab, table 1 in this case, and click on Save. Type in my table name MovieActor, click on OK, and then I'm going to close that. Let's now setup the relationship.

So we go to database tools, click on relationships, that's the diagram that we drew before. Now we need to show another table so we click on Show table. We want to show actor and we want to show MovieActor. Close again. Now you can arrange these boxes representing these tables in any way you like. You just drag them round by their headers. I normally try to arrange them in such a way that they're easy to read through the relationships. You could put, for instance, the

movie table on here twice if you wanted to. There's nothing to stop you having the same table several times. But while this database is not yet particularly complicated, let's just stick with one movie table and what we really need to do now is to do the link from movie to MovieActor which will be movie ID to movie, referential integrity yes, click on Create. And then the link from actor, actor ID to actor there, enforce referential integrity, Create. So we've now got our next relationship defined.

Now we're going to enter some data now relating to this new relationship, but let me just point something out to you about this now, one way of reading this diagram that I think helps. If you look at the actor table down here and the line to MovieActor, then you see that for one actor, so for each actor there are many movie actor records. So an actor can be in many of these MovieActor records. For each MovieActor record, for that actor it represents one of the movies that they're in. So an actor has well infinity movies. What it really means is that an actor has many movies. But this end when you look at it from the movie table says a movie table has many actors. So one movie many actors, one actor many movies and that's how it works.

So let's close the relationships diagram, save the changes, and let's go to the actor table. Let's just open it up, find an actor, Will Smith is actor number six, and let's setup a MovieActor record. Open it up, movie number we had before was six for Independence Day, actor number by coincidence is actor number six and the role played was Captain, I'll just make that column a little bit wider so you can see it all, and there we have the first actor in a movie and the role that they played in that movie. So let me just do one more example of that. Actor: actor Ingrid Bergman; that's actor number four. Let's go back into movies, Casablanca's number five, MovieActor, movie number five, actor number four, and the role is Ilsa Lund. That's the role that Ingrid Bergman played in Casablanca.

Now hopefully from that you get the general idea of how these relationships work, but you're probably also looking at this and thinking that's actually quite difficult to keep track of isn't it? Because you've got to worry about all those numbers. Well, in this basic form that's true but as we will find out in a little while and particularly when we start to look at forms in detail, there are various ways to make this whole process much easier. But the important thing to know is to know what's going on under the hood or, as you say in the U.K., under the bonnet. It is

important to understand how this linkage is working but there are ways to make it all an awful lot easier to use and that's what we're going to look at a bit later on in the course.

So now it's time for the next piece of work for you to do. I want you to take this which is currently example-03 in the supplied files and I want you to make sure that we have data, at least one actor for every movie and at least one movie for every actor. So every actor should be in at least one movie and every movie should have at least one actor in it. You may have to add an actor. You may need to add a movie. I'll leave that to your discretion. And the answer to that will be example-04, but in addition I would like you to add genre values for each of the movies that is in this version of the database. Now most of them you can get three or four genre values probably by looking at IMDB. It doesn't particularly matter that they're accurate. It's more important that you understand how the MovieGenre mechanism works.

So that's it for this section. I'll see you in the next one.

Chapter 11 – Datasheet View

Video: Inserting and Formatting Fields; Field Validation; Navigation Buttons

Toby: Hello again and welcome back to our course on Access 2013. In this section we're going to take a more detailed look at Datasheet View.

So let's take a look at the movie table. I've added some more movies. We've got what are supposedly the top 50 movies of all time now included in the table. And in Datasheet View you're basically seeing one row per record in a table.

Now as I'm sure you've realized by now when you're working on a table such as the movie table here, there are basically two things that you're going to do to it. One of them is to design the table and I include in that its relationship with other tables, but also you're going to actually want to work on the data. You want to add movies. You want to change the details of movies. You maybe want to delete movies. Datasheet View to some extent can be used for both purposes. But I would pretty strongly recommend against using it for design. Now Datasheet View over recent versions of Access has been modified quite a bit so that you can do quite a bit of design in Datasheet View, as I'll show you in just a moment. But I really don't think it's a good idea to do design in Datasheet View. I think you do design in Design View and you can work on the data in Datasheet View. Having said that, Datasheet View is not necessarily the best way to work on the data either as we'll see later on in the course. But let's first of all look at the sort of thing we can do from a design viewpoint in Datasheet View.

So for the purposes of this, I'm going to minimize the Navigation Pane. You may recall as I mentioned earlier on that at any time when we're working on a table in Datasheet View, we can add another field just by clicking in that last column, the one that says Click to add, start putting some data in there, and we'll have a new field in our table definition. Similarly, we've got two fields here, Actor 1 and Actor 2, that are still in the table even though we know that we don't need those because we've setup the relationship with the actor table. If I select that first column and then hold the Shift key down and click on the second column, then if I go to the Fields Tab and click on Delete. Do you want to permanently delete the selected fields and all the data in the fields? Click Yes. Then I've actually deleted two fields from a table.

Now when we're in Datasheet View, we see this pair of tabs. I've just used the Fields Tab and the Delete button to delete a field from the table. Note I'm not deleting a record in the table. I'm not deleting one set of data relating to one movie. I'm effectively deleting a property of the information about a movie. So I deleted Actor 1 and Actor 2 because we're not using those. Now on this Fields Tab, we have a group here: Add and Delete. We've just used the delete part. There's an add part. We can add a field. We can change the design of this table by adding a field. The most commonly used fields, short text, number, currency and so on, have all got their own buttons, but there's also a drop down here More Fields that gives a list of all of the different types of field that we might want to add. So for instance, if we wanted to insert a short date, we now have a short date field. Its name is Field 1. So we might have something like release date for the actual date of release rather than the year of release of the movie. And then within that we can type in dates, a release date for each movie. So it's actually very straightforward to insert fields within a table in Datasheet View.

Now having inserted a field into our table, I can put data into it. So for instance, for the first movie there if I put in a release date of March 22, 2013, press the Enter key, that is formatted according to short date. If you look at the Fields Tab again, there's a group there, Formatting, where I can set or change the formatting of a field. This one has been set with format short date. That's the one I specified when I inserted the field. I've got an option here for any Date/Time Field to change it to, say, long date. If I do that, Access 2013 automatically changes the format to the long date format for my locale. If I can't see all of a field, of course I can pull that over there to make it wider and now in that field the format is long date.

So in Datasheet View, you can insert fields, you can set properties for them, you can change the formatting of fields. There's an awful lot that you can do. I still suggest that you don't use Datasheet View for this purpose. But if you really want to, there's an awful lot you can do.

I want to just look at one other thing here and that is field validation. Now field validation is something we're going to look at later on but I just want to give you a basic idea of what's involved. If I go to the YearOfRelease field and click on field validation, it gives me the option to set a number of things. For instance, is this field actually required? Must I have a year of release? If I must I can just check that. Must the year of release be unique? Well, certainly not. If it was unique that would mean you could only have one movie per year because once I got a

movie with a release year of 1966, I couldn't have another one. So that's definitely not. Indexed; we'll talk about index later on. But let's go into validation. Now I can put in a field validation rule and I'm going to do a quick field validation rule just to show what that involves. So say we'll talk about this later. And I can say for example that the year must be greater than, that's the greater than symbol, 1890 for example. So I can't put a number in there less than or equal to 1890. So let me click on OK. Now let me make a mistake. Let's suppose that I accidentally say that Casablanca is 1842 not 1942. Watch what happens when I go to the next field. It tells me that validation on year of release means that it cannot accept that value, and until I put a valid value in there, I won't be able to save that record.

Now that's just the general idea of field validation. So as you can see there's an awful lot we can do on table design in Datasheet View and if you really want to do it that way that's up to you, but I always do my design in Design View.

So I'm going to remove that new field that I inserted. Select the column, use the contextual menu, right click, delete field. The usual warning about losing any data it contains. That's fine. Now I'm going to look at the data side of Datasheet View for a while and I want to start with the set of navigation buttons that are down in the bottom left hand corner just above the status bar. Now this set of navigation buttons are a very convenient way of stepping through a large table of data. You can see a little counter in the middle. It currently says 1 of 55. I'm on the first record in the table and if I use the little single arrow to the right of where it says of 1 of 55, next record. I can step through the records in the table one at a time. Similarly, there is a previous record button and then I can go to the last record or I can go back to the first record. The last button here, that one, is a new blank record. If I click there it takes me right to the end of the table and to the next empty record. So I could start putting my next movie in there if I wanted to.

So the navigation buttons provide a very easy way of stepping through records, going to the end and so on. If you want to make a change to a particular item, particular movie, one of the fields, it's very straightforward. You can just click with the mouse. So for instance, this movie with ID 39 Sunset Boulevard, just click in there or alternatively just tap with your finger. So if I wanted to change the year of release of Saving Private Ryan, I just tap in the field. And of course don't forget if I'm using touch, I've currently in touch mode on the Ribbon at the moment, I've got

more room to operate the buttons on the Ribbon and everything that I've talked about in this section in terms of Datasheet View, it's exactly the same way when you're using touch as well.

Now the last thing I'd like to cover in this section on Datasheet View is the other one of the table tools tabs, the one that's called Table. Some of the things on there we've seen before. So for instance, we've looked at relationships before. But many of the other things we won't be covering in detail on the course and these are basically what are called Events. Now I'm going to look at events briefly later on but not in any great level of detail. But let me just explain what they're about. If you were changing data in a table, maybe one record in a table, there may be consequences to that change. So for instance, if you were say looking for the highest grossing movies, maybe you'd got a report of some kind or an associated table where a change in a value in a field in a table would change something in another field in another table somewhere else. Now in this case what Access can do is to trigger things to happen, and the triggers can happen either before the change takes place or after the change takes place. The sort of changes that we're talking about are inserts of records, changes to records, deletes to records, and so on. Now, if we want to define events that need to happen when certain things change, either before they do, before a records inserted, after its deleted, any combination of those things, then we can define those using the commands on this tab. Now as I say we're not going to look at those in any kind of detail on this course, but if you look into Access for more advanced use later on, then the use of the before and after events will be a very important aspect of your use of Access. I'll tell you a little bit more about that later, but for now it's just something to be aware of.

So that's it on Datasheet View in this section. In the next section we're going to look at Datasheet View again. We're going to look at getting more information, sorting, filtering, and actually entering data in a bit more detail. So please join me for that.

Video: Sorting, Filtering and Finding Data

Toby: Welcome back to our course on Access 2013. In the previous section we started looking at Datasheet View and we're going to carry on looking at Datasheet View in this section.

We saw in the last section the navigation buttons that we can use to step through the records in a table. We also have scroll bars. If we have more than a few records there is a scroll bar on the right that we can use to scroll up and down through them. If we have many fields in a record, a scroll bar appears at the bottom of the window to let us scroll from side to side through the fields in any of the records in a table. The next thing I want to look at though is sorting and filtering.

Now let me start with filtering. Filtering is very contextual depending on the type of data. I've currently got the cursor in the Title field and if you look at the heading where it says at the top of the column Title, there's a little drop down arrow to the right, click on that, and this brings up the sort and filter options. We'll come to sorting a little bit later on. Let's look at filtering.

Now with filtering in its very simplest form, we have a list of all of the contents of that column. So we have that property, the title property or the title attribute for every movie. If I just wanted to show certain fields, currently select all is selected. Let me just uncheck select all and let's suppose I just wanted to see those three movies. If I check those three, click on OK, they're the only three movies that I would see in Datasheet View. Now it's important to realize that I haven't deleted the other movies, they're just not shown. You can tell that the view is currently filtered because in that column, the title column a little filter symbol has appeared just to remind me that I've got a filter on at the moment. If I click on that filter again, I could select all again and I'll see all of the movies. But you can do more than just filter by selecting the specific movies that you want to see.

So let's once again click on that drop down and this time I'm going to select text filters. Now I'll see text filters when I'm dealing with a field which is basically a text field. Now I have a number of options. I have equals, does not equal, begins with, does not begin with, contains, and these are all ways of defining textual conditions. Let me give you an example. Let's say contains, and I'm going to say filter to show me all the movies whose title contains The, T-H-E. Click on OK and what I have there is a list of all the movies that have "The" in the title. Now the "The" may have a capital T or not, but anything with a "The" in appears in that list. Let's

just go back into that again, another text filter we could use is begins with and I could say show me all the movies that begin with "The", click on OK, and I just got the ones that begin with the word "The". And at any time if I click again on the filter there, I can say clear filter from title, there's no longer any filter, and I see all of the movies in my movie table.

Now as I mentioned before, the use of filters is very contextual. Let's look at the YearOfRelease field next, click on the equivalent drop down on that and I have a list of all the years that are used. But if I clear all of those and instead go into number filters, the number filters are based on numeric comparisons. So I can say equals, does not equal, is less than, is greater than, between. What about greater than? Let me say I want everything that is 21st century. So I'm looking for everything where the year of release is greater than or equal to 2000. Click on OK and you see all of the movies in my table whose year of release was 2000 or greater.

Let's now look at sorting. Sorting is pretty straightforward in its basic form. If I wanted to sort the records in the table by year of release, all I do is click on that drop down on year of release and I can either do sort smallest to largest or sort largest to smallest. Access 2013 knows that we're dealing with a number, so if I do largest to smallest it'll put the most recent movies at the beginning of the list and there we are. When it comes to sorting, if I wanted to sort, say, by title, it's actually one of the options on the contextual menu. So if I right click on title, I get sort A to Z which would sort the movies into alphabetical order of title.

Now it's worth noting that quite often when you're dealing with textual fields like title sorting works in a slightly unexpected way if you're not careful. So for instance, here 12 Angry Men, you sort of think well shouldn't that be in with the T's? T for 12. Well, you need to be a little bit cleverer to make that work. We're not going to cover this on this course, but very often in a database of this type where you're dealing with very important textual fields like in this case the title of a movie, there would be an associated field called the sort title which would be the one that you would use to actually sort into order. The other classic case of that is where you have "The" and many of these movies begin with the word "The". You may prefer to have The Dark Knight sort in the D's as in Dark Knight, as though the title were Dark Knight, comma, The. Now that's outside the scope of this course, but it's a sorting issue that comes up very often in database design.

By default, in our movie table the table will be sorted by ID. The IDs are assigned as the records are added. So if I want them in their original sequence, I would say sort smallest to largest on ID and that puts them back in the order that they were entered into the database.

We've looked at how to use Datasheet View for design, although I don't recommend it, and we've looked at how to navigate through a table in Datasheet View and at sorting and filtering at least to a basic kind of level. The main thing we're really going to use Datasheet View for though normally is entering data and we've already done some of that. Generally speaking, if you want to write a new record, you could use the new blank record button on the navigation buttons at the bottom of the window there. On the Home Tab, there is a Records Group and within the Records Group one of the options there, that one, is new. It's got a keyboard shortcut of Control and Plus and that's a very useful way to get to the next new record in a table. Now when you get to the new record, you'll see an asterisk on the left. But as soon as you start typing anything in there, the first character you put in, it assumes that you're working on a new record and it will turn into a pen. The little pen icon that we saw before. So, go to the year. Now when I finish typing the data for my record in my table, if I just go to the next record, the next new record that is as I said before, it will save our record to the table to the database. But there is also a Save button in the Records Group; so immediately below New there is a Save and that's Shift and Enter to save the current record without starting on the next one. So let me press Shift and Enter now and that saves the record. Now in doing that, it will also validate to make sure that none of the fields are going to fail the validation when I try to add the record to the database, before it actually adds the record. Once the record has been added, the little pen symbol on the left disappears and that record is just now another record in the table in the database.

Now when you're working on entering, changing, or deleting data in a table, don't rely too much on undo. Many things you can undo but some things you can't. Let me put in a dummy movie after Vertigo. Let me suppose I put in one by accident. Now immediately after I've inserted that, there is an undo facility. So if I click on undo, it says "You are about delete one record." If you click this, you won't be able to undo this delete operation. Click on Yes and effectively we've deleted that record. But if I went back to Vertigo and this time did a delete, there's actually a Delete button there in the Records Group or I can right click on it and click on Delete the record. I get a warning, but this is not undoable. Deleting a record is not undoable. If you

delete it, it's gone. You can undo an insert of a record but you can't undo a delete of a record. So you need to be very careful about that.

Let's now look at one or two other important features of Datasheet View. There is a Find facility. So if I want to find a particular value in a specific field in a table or anywhere in a table I can use the find facility. It's actually a find and replace facility. So I can use it to automate the replacement of something with something else. On the Home Tab in the Find Group, there's a Find button and it brings up a Find and Replace dialog. Now in this Find and Replace dialog, you specify what you want to find. Let's suppose that I want to find the word Star. I can say that I want to find it anywhere in the current document which is basically in this current table or in the current field. Now let's suppose that I knew that the word I wanted was only going to be in the title field, I could select the title field first and then it would only look in the title field. I've currently got the ID field selected so I'll just say current document. I can then say do I want to match any part of the field, the whole field, or the start of the field? I'll say any part. I can say do I want to search anywhere? Do I want to search up from where I am or down from where I am? And then I can also say whether I want to match the case. So if for example I had capital S on Star, if I have match case checked it would only find the word Star when it had a capital S. So click on Find Next, there's the first occurrence, Star Wars Episode 5, Find Next, there's the next one, and I can step through and that's what happens when it's found the last one. Optionally, if I want to replace Star with something else, if I click on the Replace Tab, it lets me specify what I want to replace it with. So that's Find and Replace. It works in a very similar way to the way that Find and Replace works in other Microsoft Office functions such as Word.

Now I have just a few more things to cover on Datasheet View which I'm going to cover in the next section. But I'm going to leave you in this section with one more exercise to do and this is an exercise using the filters that we looked at earlier on in this section. What I'd like you to do is to identify the movies that were released in the 1980s. You're not allowed to cheat and sort of read through them. I want you to use a filter to find the movies that were released in the 1980s and for each of those movies I would like you to add at least one of the actors in that movie and then setup the link between the movie and that actor.

So the database as it is now is example-05 on the supplied files. My answer to that is saved as example-06. And as I say in the next section we're going to just cover a few remaining points on Datasheet View, so please join me for that.

Video: Entering Data; Changing the Order of Columns, Field Width and Height

Toby: Hello again and welcome back to our course on Access 2013. In the last couple of sections we've been looking at Datasheet View. We've looked at things including sorting, filtering, find and replace, and various aspects of designing a table in Datasheet View. There are still a couple of other things that we need to look at and that's what we're going to cover in this section. I'm going to start by looking at actually entering and changing data in Datasheet View.

Now let's take a close look at actually what happens when you're working on data in Datasheet View. We've already seen how to enter, save new records. But what about changing existing records? Well at the moment, the cursor is in the ID field on the first record. So it's flashing to the left of the two, the ID of the first movie. If I press the Tab key, generally speaking the Tab key takes me to the next field which in this case will be the title field of the first movie. So press the Tab key. When you tab, you actually have the whole contents of the field that you finish up in selected. If I start typing now, say, I wanted to just retype that title, as soon as I type a character I overwrite the whole of the field that was there before. So that's the first important thing; when you tab between the fields you select the whole field. Sometimes that's useful because you can delete the whole contents of a field. Sometimes you don't want that to happen. If you do, do that then you've got two choices. You can press the Escape key, it takes things back to where they were or let me just do that again or you can press the undo which achieves the same effect. However, if instead of tabbing into a field, I just click with the mouse then the cursor will appear wherever I've clicked with the mouse or tapped with my finger. Now tapping with your finger if you're using a touch device it's intrinsically a more inaccurate way of doing things. You may be very good at tapping with your finger if you're using a touch device. I'm afraid I have somewhat fat fingers so it's quite difficult for me to tap very accurately. But however you place that cursor, once you place that cursor, as soon as you start typing the characters appear in the cursor position.

Now as with the other components of Office, you have two modes of typing. By default, you're usually in what's called insert mode which basically means that as you type, the characters are inserted at that point. There is normally a key on your keyboard which will switch between insert and overtype mode. So I'm just going into overtype mode and I am now going to type R-

T-Y, notice how the characters replace the characters that are already there, R-T, so I'm in overtype mode. Again, sometimes overtype mode is good; usually it isn't. Usually you want insert mode, but there's very much a matter of personal preference in some situations. Again, to get rid of what you've done in this field you just press the Escape key and you'll be back to where you started from.

What I want to look at next can also be very useful when you're using Datasheet View and particularly if you have many fields in a table. Now in this particular table we've only got three fields at the moment: the ID, the Title, and the YearOfRelease. But let's assume instead of three, we had 30. Sometimes the order that they appear on the screen may not be a particularly convenient order for you to work on them. In fact you may sometimes find that one of the fields you're not particularly interested in is getting in the way. Now it's important to emphasize that when you make these kinds of change in Datasheet View, you're not changing the data; you're just changing how it's shown. If I select the YearOfRelease column and then click with the mouse on the header, I can drag it to a different position. I can put it to the left of Title. I could even do that say with the ID field, put it over there. So it's very easy to change the order in which the columns appear in Datasheet View.

Now largely speaking, these things work exactly the same with a touch device. So I've currently got the Title column selected. Supposing I now select the YearOfRelease column using my fingers and now if I press and hold, I will bring up a contextual menu. This is a touch menu so it's a little bit more spaced out than the equivalent mouse version. But partway down there, there is an entry in that menu that says Hide fields and I can actually hide the field just by tapping on that. You can no longer see the YearOfRelease field. Now again of course the data's still safe it's just hidden. This can also be very useful if you want to look at possibly update the data in a table in Datasheet View and you've got so many columns that you're not really interested in at that time that are cluttering up what you're doing that you can just make sure that the only columns that aren't hidden are the ones that you need to see. When you finish what you're doing, tap to select the column again, tap and hold, up comes the menu, and then just tap on Unhide fields. You're shown the fields that are not hidden; they're the ones that are checked. You're shown the fields that are hidden, the one that's unchecked. So you can just check the one you want to see and then close that little dialog.

Now one more thing to show you really or a pair of things to show you on Datasheet View before we finish on this section; if you look at the Title field, the Title column here you can see we can't quite fit the titles in. If you right click on the header with the mouse one of the options there is field width. If you select field width, that little Column Width dialog comes up. Column width currently is 29.875 units. I could type in a guess at a better width. Say I could say 40 or I could click on Best fit. If I click on Best fit it will use a width which basically fits all of the titles in which would seem like a pretty good idea when you've some quite long movie titles. So let's try best fit. Now if I scroll down, I should find that all of my titles fit okay, although in fact there's one there that doesn't. If it doesn't quite work, I can either bring up that dialog again and put in a better width or I can use the mouse or my finger to extend that to whatever width works the best. There is also a way doing the same for row height. If you select one of the rows, right click, you get row height which leads to the Row Height dialog. You can manually put in a row height or revert to standard height or in fact you can make the rows taller by pulling down on the border between two successive records. So if I click there and pull down, I make the row heights bigger. This can be particularly useful when you're working with touch to space things out a little bit more.

So that's it on Datasheet View. I'll see you in the next section.

Chapter 12 – Table Design

Video: Design View; Field Properties

Toby: Welcome back to our course on Access 2013. In this section we're going to look at table design in more detail. Now I mentioned earlier that using Datasheet View you can actually perform many of the functions of table design, and the facilities within Datasheet View have been extended over recent versions of Access to improve the capabilities to do design. But I still prefer to do design in Design View, partly because it is a more compact way, partly because it's also more comprehensive in terms of the facilities that are offered, but partly because Design View is really designed for design and I think Design View helps you to do design in a methodical and effective way. So let's take a look at the actor table and look at the design of the actor table.

So we select that object in the Navigation Pane, right click, and select Design View and then I'm going to minimize the Navigation Pane. Now once you're in Design View of a table, you have table tools and there is a Design Tab. Some aspects of this should look familiar to you; for instance, the primary key button you should know what that does and we have things like delete rows and insert rows. When we're in Design View, the rows are the fields, the attributes within the table and we can delete and insert these to change the design of the table. So let's first start by looking at some of the existing design. I'm going to go back to the very first field, the ID field which is the AutoNumber data type field. Its name is ID and it's the primary key in this table. If we look at the grid at the bottom, it gives us virtually all of the essential information about that field. There's a General Tab and there's Lookup Tab. In this case, this isn't a lookup field so that particular tab is empty. Under General, we have a field size which is long integer which AutoNumber data type will virtually always be just a long integer. For the new values property of an AutoNumbered field, we'll normally have it set to increment which basically means that as you add a record, the value of that ID is incremented by one. There is an alternative but it's outside the scope of this course. Now the next two properties, Format and Caption are really not particularly relevant to an ID field. I'll come back to them in a moment in relation to one of the other fields. However the next property is very important and that is indexed.

Now when you've got a database with many tables and each table has many fields, many attributes and when you've got thousands, tens of thousands, hundreds of thousands, millions of records as people use the database they'll want to search the information in the database. And if you want particular properties, particular things to be searchable relatively quickly, then you will have indexes on those things. Let me give you an example. Let's suppose that you know that people are going to generally want to search the database on the last names of actors and crew. If you make as part of your design of the database, in the actor table in this case, the fact that the last name is indexed, then any search on last name will become much quicker, much more efficient, particularly as the size of the database grows. Now there is a bit of a price to pay here because in order to keep the index up to date, every time somebody adds an actor or makes a change to an actor, the index or indexes have to be updated. But that tends to be something that takes a tiny fraction of a second and yet when people are searching the information in the database having an index on, for example, the last name can save a huge amount of time. Now conversely you don't put an index on absolutely everything because the maintenance, the time it would take Access to maintain those indexes would tend to grind the whole thing to a halt after a while. So indexing needs to be treated with a little bit of caution and its best really to look very carefully at what your users are likely to be doing with your database and indeed what people are actually doing with your database and then deciding which fields, which attributes to put indexes on.

Now one field where you don't have a choice is your primary key. Your primary key must be indexed. So the answer to the question indexed must be yes and it cannot have duplicates. Generally speaking, if I wanted to change the indexing on a field, I have three options. I have No not indexed, I have Yes with duplicates okay, and Yes with no duplicates. Watch what happens if I try to change that for my primary key field. Access won't let me do it. Removing or changing the index for this field would require removal of the primary key. It will not let me change that setting on the primary key. It must say Yes no duplicates.

The last property here, the text align property we have several choices. The first choice, the one that we have here at the moment, general, basically says for text it's aligned left, for numbers and dates it's aligned right. You can force the alignment to left, center, or right or you can use

distribute whereby text, numbers, and dates are evenly distributed in the available space. So in the case of our ID field, they are the properties that are currently set.

So now let's look at the first name field. You can see that it's got more properties than the ID field. It's a short text field. We currently have a field size of 255. That's the maximum number of characters. That's certainly a lot of characters even bearing in mind that we don't' have a middle name. So if somebody had two first names, we'd probably put them both in that first name field, although of course we may choose later to change the design of the table to allow a middle name. 255 is rather high. There was a time when having a number like this too high would have tended to waste a lot of space in a database, but that doesn't really apply nowadays because of the way the data's stored. Let's give it a lower value. This is probably still a bit generous but let's say a hundred as a maximum. I can't think of anybody with a hundred characters in their first name or even their first name and their second name, but let's go for a hundred.

Now format is the formatting which we want something displayed. In the case of a name, we really want it displayed the way that it's entered. If in fact this was a numeric field, so let's suppose that it's a field where we wanted it say displayed with two decimal places, we could specify that format here and say we want it displayed with two decimal places, and there's a coding system for doing that. But in the case of a short text field like this, we don't really need to put in a specific statement about format. It would be just whatever that person's first name is.

Input mask is sort of the opposite of that because an input mask says in what way do we want to control the way that somebody enters the data in a field. In this case, we really don't want to control it because we want people to just be able to put in whatever first name they like. So I'm going to leave that blank as well and that moves us on to caption.

Now later on we'll be creating forms and reports that we will use to both maintain and report on the data in our database. When we do that, when we look at a particular field value on a form or in a report, if we specify a caption here that caption is what appears above or next to that particular value on the form or report. If you leave caption blank, then what appears is the field name. Now in this case a field name like first name would actually do the job fine, although I've quite deliberately didn't put spaces in there. I might choose as a caption here First, space, Name

as my caption and that will appear whenever I use this field in a form or report as my default caption. I can always change it, but that's what will appear.

Also, when I'm entering a value, I can specify here a default. Now in text fields, you'll quite rarely have a default. This will be much more likely to be a default for say a year number, say in our year for movie we might have a default value of 2000. Also with first names or names in general, we're probably unlikely to have a validation rule or validation text. The validation rule will be applied when we try to enter data. For instance, we could check that the year was in the range that we talked about earlier on and then if the validation rule is broken, the validation text basically says what message is given to the user. Now with text fields like this you would rarely have validation rule and validation text in general.

So now we get to a very tricky question and that is: Is this field required? Is a value in here required? Now sometimes this is a very straightforward question to answer, sometimes it's very difficult. The first name field is probably in the difficult category. There are actors who only use one name and when we're setting up the database we need rules about how we're going to deal with that. Do we, for instance, if somebody's only got one name automatically put it in the last name field? In which case there could be a situation where the person doesn't have a first name. Now we'd need to look very carefully into how we're going to deal with these special cases and that's really outside the scope of this course. We don't really have the time to go into all the intricacies of that. So what I'm going to assume for the moment is that for an actor who only has one word in their name or where their name is such that it's difficult to split it as first name/last name, we will always put the name in last name and first name may be blank. So I'm going to leave this set at required No.

Now the next property is Allow zero length and this is one that tends to confuse people a little bit, but it's actually quite a good question. Let's suppose you were setting up a customer database and one of the questions you ask your customers was for their email address. If you didn't know whether somebody had an email address or not, that is a very different situation to one where you know that the customer doesn't have an email address. Now if you know that they don't have an email address, you would effectively want to say there's the email address; it's blank. It's a zero length field. So I've sort of got an entry in there but it's empty. I know that they don't have an email address. Whereas if I just don't know whether they've got an

email address or not I would store that as what's called a null value in the database to indicate I don't know and then I might later on chase up the question of whether they have an email address or not. So allowing zero length means I'm going to allow somebody to say they haven't got one of those.

The next property is indexed and this is where we decide whether we want an index or not. For first name I probably wouldn't have an index but it's a very subjective decision and if you wanted to index first names so that later on when people search by first name, it's going to speed up those searches. Entirely up to you. I would tend to leave first names not indexed.

Now the next three fields here are really technical ones in terms of coding systems. I'm going to ignore those three. They're really outside the scope of this course. You don't really need to worry about those certainly at this stage. And the last one text align I talked about earlier on. In the case of a short text field you could leave this just saying General because the text will be left aligned anyway. But if you wanted to be absolutely certain, you could actually specify I want it left aligned.

So I've reviewed all of the properties of the first name field in the actor table.

In the next section I'm going to look at the remaining fields in this table and bear in mind that we've got one more short text but then we've got a number field and then a gender field which includes a lookup. There are quite a few more properties where we have to take a different approach. So we'll carry on reviewing the design of the actor table in the next section and I'll see you then.

Video: Saving Data; Data Types, Attachments and Field Size

Toby: Hello again and welcome back to our course on Access 2013. In the previous section we started looking in detail at the design of the actor table in our movies database, and in this section we're going to look at the design of the other fields in that table. So let's start with the last name field.

Now some of the arguments that apply to this short text field are the same ones that apply to the first name field, but there are some important differences. Let's look at the field size first. 255 does seem rather a big size for a last name but bear in mind that it may be a hyphenated name, foreign language name, and that we may be using it to hold a name that doesn't follow the normal pattern. What we said in the last section is that if that happens, we would always make sure that we have something in the last name field but we may not have something in the first name field. I still feel comfortable with setting that maximum length at a hundred.

Now format we're going to leave blank as before. Input mask, the same. I'll demonstrate both of these a little bit later on. Caption I'm going to put Last with a space, Name. Default value, well we don't really normally have one for a text field. The validation rule and validation text also, we're not really going to validate the entry of a last name. However, when we get on to required, it's a different story because what we're saying here is that there must be a last name. That is the name by which we identify an actor. They may not have a first name but they must have a last name. So we change that from No to Yes.

Now the next one is Allow zero length, and if you think back to the discussion in the last section about email address where we said well we may know that somebody doesn't have an email address in which case we might have a zero length field there. That doesn't apply in the case of a name. If somebody has a last name, it must have at least one character in it. So we say to Allow zero length No.

Indexed. Well, yes I want to index this field because I want people to be able to search quickly so this one is going to have an index. Are duplicates okay? Well, yes they are of course because there'll be plenty of actors whose last name is Smith, for example. Skip the three coding properties. The last one, text align, General. I normally change this to the correct one which in the case of a last name is going to left aligned.

So there we are. They are the properties for the last name field.

Now what I want to do is to look at a couple of the changes that we've made in action to illustrate what they cause. In doing that, I want to demonstrate some of the warning you're going to see when you're working on table design and explain what they mean. Just remember about a couple of the changes that we've made. We've reduced the field size for first name and last name to a hundred and we've said for example that the last name field is a required field. Now before we made this change, of course we didn't have most of these restrictions and so the data that we already have in the table in the database may not obey that. So let's suppose I want to go into Datasheet View to look at my data. So I'm going to go to the View button on the Ribbon, click on Datasheet View. Now the first thing is as always that Access says to me you must first save the table. If I've been making changes to the design, it will want to save those changes to the design before I look at the data. So I'm going to say Yes to that. Now we get a question related to one or more of the changes that we've made. Some data may be lost. The size of one or more fields has been changed to a shorter size. Access knows that I've done that. It knows that I've reduced those field lengths from 255 to 100. And of course when I had the field size of 255, I may have put very long contents into those fields and its warning me that if I go ahead with this change to 100, I may lose some of that data. Now we know that we haven't put any very long first names or last names in so we know in this situation that we're not going to cause ourselves a problem. But it's giving us a warning to say that may happen because we've shortened the size of a field. So, do you want to continue anyway? Yes.

Now we come to the next warning. Data integrity rules have been changed. Existing data may not be valid for the new rules. Now what happens here, for example, is that we've said that the last name is a mandatory, a required field, and therefore what Access needs to do is to make sure that for every actor in the database, there is a last name. Now with the very small number of actors we've got in the database, it won't take Access very long to check that. But of course in a very big database, it may take it quite a while to check that all of the validation rules are still satisfied once we've made our changes to the table design. So again, it gives us a warning. This process may take a long time. Do you want the existing data to be tested with the new rules? Now you usually will want to do that because you don't want to impose a new rule on your table design and then find that the data that's already in it breaks those rules. So we're going to say

Yes to this one as well. Now fortunately, but perhaps not surprisingly, all of the data that we've got satisfies the new rules.

Now let's look at the consequences of a couple of the changes that we've made so far to the design of this table. First of all, if you look at the first name and last name columns, the first name and last name fields in Datasheet View, you notice that those spaces have appeared. When we've specified a caption for a field instead of putting the field name at the top of these columns, what Access does is to put the caption at the top of the columns. So that's useful if you want a more informative phrase at the top of these columns rather than just the field name. And because I prefer not to have spaces in field names, that's good for me as well because it means that using captions I can make everything a little bit more readable.

The other thing that's changed of course is the need to have first name and last name. Now before we didn't have either of them as required fields, but let me go down and add a new actor. Let's suppose my new actor doesn't have a first name and all I'm going to do is to put in the last name. Let's suppose that I do it wrongly and the actor in this case is that actor. So there's his first name, there's his last name, year of birth, male, okay. Let me go on now to one of the other actors and I get a validation error. You must enter a value in the last name field and at that point I realize that I put the name in the wrong field. Now I should point out that you can cut, copy, and paste in the normal Windows way here. So if I select Eminem with the mouse, Control-X is the keyboard shortcut for cut, click into the last name field, keyboard shortcut for paste is Control-V. Now let me try clicking on Harrison Ford and this time, of course, that's an acceptable name because I have content in the last name field.

Now before we move on to the next field in the actor table, I'd like to take a look at a couple of pages of Access Help. The first of these pages is the one that's called Data types for Access desktop databases. Now it would take a very long time for me to go through all of this information sort of reading it out to you, but the things that you need to know about the various data types are summarized on this particular page. So when you're creating a table or when you're modifying a table and adding or modifying fields, this is the choice of types that you have. If you're used to an older version of Access, say 2003, 2007, you will know for example about a data type called Memo. That's now been replaced by a new data type called Long Text. That's this one here. Now the data type names are in the first column, the middle column

describes the situations in which you would use that data type, and on the right there is the amount of space that the data type takes up. So short text which was formally just known as text is typically used for alphanumeric data; names, titles, etc. You can have up to 255 characters. You've already seen that by default you get a maximum of 255, but you can set a lower one for a particular field if you want to. For long text this is for large amounts of alphanumeric data; sentences and paragraphs. You might use this data type, for example, to store a review of a movie which might be very long. And you can have up to about one gigabyte of data in a long text field. So the actual capacity of it is very large but when you want to display that amount of text you're limited in the controls, the sort of boxes that you can display it in. So you wouldn't actually have 1 gigabyte of text as one long field on a screen.

Now the other data types, we're using some of them. One or two of the others we'll come back to later, but we've already seen Lookup Wizard. A little bit later on we'll look at calculated. You can have attachments. So you can, for instance, attach a picture or a document or a spreadsheet to one of these fields. You have other things like hyperlinks, links to internet addresses, straightforward Yes/No fields and so on. This list agrees with the list that you see when you select data type when you're working in Table Design View. But that's a very important page, a very useful page to be able to flick back to just to check the usage of each of the data types in Access 2013.

There is another very useful page in Access Help which is going to help us now to look at this year and this page is called Set the field size. Now this tells you quite a bit about what happens when you set the size of a field and what happens if you change the field size, but the particular thing we're interested in at the moment is the size of a number field. Now we've used long integer in a couple of situations. One of them is in a situation where we're linking to an AutoNumber field and we'll almost always use long integer there. But for numbers in general, you don't always use long integer. There's actually a range. What is explained here is what each of the number types can represent. So for instance, a byte type can represent integers in the range zero to 255. That stores a single byte of information. And integer as opposed to a long integer can store numbers from -32,768 to +32,767. That uses two bytes. A long integer stores numbers in that very big range. You then have single precision floating point numbers and double precision floating point numbers. These are basically numbers that can have very large

numbers of decimal places, very big numbers and very small numbers. And then you have replication ID type which we're not going to go into. It's for a thing called a GUID, for storing GUIDs. That's Globally Unique Identifiers. But that's outside the scope of this course. And then we also have straightforward decimal.

Now for something like year of birth, if you look at this list you can see that integer would be perfectly good because it'll take us up to 32,767. I honestly don't think that any database we design now will still be in use in the year 32,767. Bearing that in mind, let's go back to our design.

So there are two things now to point out in relation to year of birth. The data type in this column is currently number and if you click on that drop down you can see that available list. It agrees with the list on the first Help page I showed you. So if you go through that list that's going to explain what each of these is used for. Number is definitely the one that we're going to use. And then for field size which is currently long integer that gives us those huge numbers, I'm going to change that to integer. That's the one that goes up to 32,767. So when I come to save this change, of course Access is going to check that none of the data currently in that field is incompatible with being an integer. But I want to make a couple of other changes to the properties of this field as well and that's what we're going to look at in the next section so please join me for that.

Video: Input Masks; More on Field Properties

Toby: Hello again and welcome back to our course on Access 2013. In this third and final section on table design we're going to complete our review of the actor table in the movies database. We were looking at the YearOfBirth field at the end of the last section. We talked about the various number options in terms of field size and decided that for year of birth the ideal field size is integer. Now we're going to continue to look at the YearOfBirth field and this time we're going to look at a couple of other properties of that field.

Now the first property we're going to look at here is input mask and an input mask is a very straightforward way of restricting what users can enter and helping them to enter only the correct sort of data. Now if you click within the input mask property, a set of three dots comes up on the right and that can take you to a thing called the Input Mask Wizard and this can help you to create an input mask. This will only work for text fields and date and time fields. It doesn't work for number fields, but you can still enter an input mask manually for a number field. In the case of a year, I know exactly what format I want. I want the user to enter four digits and just four digits. To get four numeric digits and only four numeric digits, the input mask I need it 0000. So let's go into Datasheet View and see how that works.

So now I'm going to add another actor, Matt Damon. Now when I get to the YearOfBirth field, let me try to put a letter in there. I'm going to type the letter R. It won't accept the letter R. In fact, it gives me a flag there which indicates that there is an input mask. I need to try to enter a digit. Now let's try a digit. Notice that it knows it needs four so it positions the first digit where it needs to go and anything I try to type other than a digit will not be accepted. If I get to 19 and press the Tab key, it won't let me get any farther. I have to put in four digits. So let me put in 7-0, press Tab, choose Male, and then I'm okay. So I'm forcing the format of entry to be four numeric digits.

Once again there is a very useful page on Access Help, Guide data entry by using input masks, and apart from explaining about input masks, it lists the characters that you can use in an input mask. Now the one we used was a zero which says user must enter a digit between zero and 9. If I'd put in four 9s, it would say user can enter a digit. So that would make the digits optional. If they really must enter four, then you want four zeros. The hash means that a user can enter a

digit, a space, a plus or minus sign. L means the user must enter a letter and so on. So the list of all the characters you can put into an input mask is there. The Input Mask Wizard is also something to experiment with if you're using a text field or a date and time field.

Now further on, on this same page of Access Help there's a little section, When to avoid input masks, and it lists a couple of situations where you shouldn't use input masks. And that's very good advice. I've discovered over time though that sometimes input masks need to be avoided for other reasons. As you're going to see later on in the course we'll very often be adding data through forms and when we're adding data through forms sometimes an input mask in a table might conflict with how we want data to be entered in a form. Now this is only a case of sometimes and it does only create difficulties in a few particular situations. But I think it's a good idea not to just put input masks on every field in every table because some of those will cause problems. I think in the particular example we've seen here with a year, a four digit year, then it's probably not going to create any problems, but in other situations it may. So just be a little bit cautious about the use of input masks.

Now in terms of how to actually set them up, there's a little bit more useful information down here further on in this section and there are some examples farther on there to do with how to enter things like Social Security Numbers, phone numbers, ISBN numbers, and so on. So there's a lot of very useful reference information on input masks there.

So we're back at the YearOfBirth field in our actor table. The caption I've already entered "Year of Birth" with spaces. Default value for the year of zero will be fine for the moment. Let's look at a validation rule.

Now we've entered a validation rule before. We're going to look at these rules in a bit more detail later on in the course when we look at expressions. But for the moment, if we just click on the triple dot on the right there we bring up that Expression Builder. We'll be spending time on that later. For now, for a year of birth I don't know what the oldest actor is in any movie but it's probably going to be probably the early 19th century and some of the very early movies if there were some very old actors they may have had dates of birth of say 1820 or something like that. Let's put as the restriction on our year of birth greater than 1800. I would've thought that would be enough. Click on OK and now validation text. This is the error message that appears when

you enter a value that is prohibited by the validation rule. So choose my text. So I've typed in the actor must have been born after 1800. So let's try that out. So I've started typing in a new actor, get into the year field. I want to put in 1949 but let's suppose that I make a typing error and I try to put in 1749, 1-7-4-9. Now I'm going to go for the gender field and there's my message. The actor must have been born after 1800. Click on OK, look back at what I've typed. Ah, there's my typing mistake. It should be 9-4-9, press Tab now, Access knows that I've got valid data in the YearOfBirth field, click away to another record and the new record has been added successfully. So we can see how the validation rule and validation text work fine on the year of birth there.

So next we have required. Do we need a year of birth? I think the answer to that question is yes. I think if we don't have a year of birth we increase the chance of getting two actors with the same or similar names confused and that information is generally available. So I'm going to say that that is a required field; so yes to that. Do we want to index on the year of birth? That's an interesting question because if you wanted to find all the actors born in a particular year, having an index there would be useful. Is it the sort of search or query that people will do? I don't really know. I'd say I'd leave it un-indexed, non-indexed for now. You can always index something later on if you change your mind. And then text alignment as this is a numeric field it will by default be right aligned if you say General, but as usual I normally like to be specific about how I want things aligned so I'm going to specify right for that. I think the YearOfBirth field is now setup correctly.

Now let's look at the Gender Field. Now in the Gender field the field size is currently 255. That's clearly completely unnecessary because we're only putting an M or an F in there. So a field size of 1 is fine. Do we want to specify a format or an input mask? Well, these are really unnecessary in this case because this is a field where we're using a lookup. The lookup has as row source M, F. So you can only put an M or an F in there. A users got to choose one of those as well because limit to list further down here says yes, so you can only put M or F in there so it's not necessary to say for example which input mask to use because you can only choose an M or an F. Caption, well it's gender but the field name is gender anyway. Do we want a default value? Again, we could M or F in there but it's unnecessary really. A validation rule, again you can't put anything other than M or F. Is it required? Now this is a definite yes. So let's put yes

in there. Do we allow zero length? No we don't. You can't have that field empty. It must be M or F. Is it indexed? Well, this is a similar argument to the year of birth one. Do people just search for males or just for females? And if they do would it help? Would it speed things up to have an index? Difficult to answer. I'm going to say yes on this occasion and of course duplicates are okay because you're going to have many M's and many F's. And finally text alignment, well it's M or F, male or female. It's always going to be one character. Sometimes when you've only got one character it's quite nice to center align always. So there we are. That's the Gender field and I've finished with the actor table. I can close it, save the changes, and that actor table is really fit for purpose now I believe.

So having checked through and corrected the design of the actor table, we've now got four other tables where we ought to perform the same operation. I'm going to have a quick look here at the MovieGenre table, remember this is one of the ones that act as a linking table. On the MovieGenre table we only have three fields. We have the ID field which is the AutoNumbered one so we don't have anything to correct there. The Movie field really is the long integer that links to the ID of a movie. The main thing here is that it currently says required no. Now we always must have a value in there, otherwise we're trying to link a movie to a genre but we've got no movie. So that is definitely a yes. So that's really all that I really need to do to that one. So let me close that one, save the changes, it'll do a validation run, and it's happy with that. I'm going to do the same to MovieActor.

So again ID is fine, movie is fine, although that's required. The actor that's also a long integer that links through to the ID of an actor, that's also required. And then role, well that's another tricky one but I'm going to say that it is required. So you do need to put a role in there. I'm also going to say that it can't be zero length. So you really must know the part that the actor played. So I think that's enough on MovieActor.

And that leaves us with two tables to go. The Genre table looks very straightforward. We've got a field size of 255. Genre is required although we do allow zero length which can't be right. But this table will also demonstrate a very important point and that is watch what happens if I try to change this field size. Supposing I say, well it only says things like Western and Action; 255 is much too big. Why don't I go for a smaller size like, say, 30? Watch what happens if I just try to click somewhere else and have 30 accepted. I get a message to say that you can't change the

data type or field size of this field. It is part of one or more relationships. If you want to change the data type of this field, first delete its relationships in the relationships window. Now there's a very important principle at work here and that is that when you're doing designer tables, you really need to do that before you create your relationships. Having said, that the occasion will occur when this happens; you've got a relationship setup and you realize that you want to change one of the properties or perhaps more than one of the properties on one of the tables involved in the relationship and that property, that field is involved in the relationship. Now that really isn't a big problem because basically what you do is you go to the relationships diagram, you break that relationship temporarily, you make the change, and then you put the relationship back again. So in this case that won't be a difficult thing to do. However, we need to move on to start looking at forms so I'm not going to go through that exercise now. It's pretty straightforward. I will perform it on this Genre table offline and example-07 will have that change in it. That's going to leave you with just tidying up the design of the Movie table.

Now the Movie table apart from the ID we have a Title field and we have a YearOfRelease field and I'd like you to do a similar exercise to the ones we've done in the last couple of sections on the design of the Movie table. My answer to that is in example-08. I'll see you in the next section.

Chapter 13 – Forms

Video: Creating Forms; Form Wizard

Toby: Welcome back to our course on Access 2013. In this section we're going to start to take a look at forms and forms are the primary means by which we allow users to interact with our database.

During most of the course, so far we've been looking at tables and table design and entering data directly into the tables in that general spreadsheet style, the Datasheet View as we call it in Access. But that's not really a good way to get users in general working with the data in a database. It's far too dangerous. It doesn't present the data in a way that's easy for users to understand and generally speaking it's asking for trouble really. So what we do is to provide forms and with those forms not only can we control what people are able to do with the database but we can do many other things as well, such as perform calculations and checks in the background. We can fire those events which I mentioned earlier on whereby when we change a piece of data in one place, it causes something else to happen elsewhere in the database. So forms are a great way of both protecting the database and perhaps more importantly helping users to get the best out of the use of the database.

Now as we'll see there are a few ways of creating forms in Access 2013 and I want to start with a very simple case. What I'm going to do is to open the genre table, so just double click to open the genre table and then I'm going to minimize the Navigation Pane, then I'm going to the Create Tab and then there's a Forms Group. Now in the Forms Group there are really four ways, or four main ways I should say, of creating a form. There is this button, Form, where you create a form that lets you enter information for one record at a time. There's form design which gives you a blank form and then lets you layout the form in exactly the way that you want by adding controls to the form in exactly the positions you want. This one, blank form, which creates a form with no controls or formatting whatsoever and lets you start literally from scratch, and then there's also a Form Wizard and we'll look at the Form Wizard a little bit later on. That's a very helpful way of creating forms, but given that the way it does things may not quite agree with the way you like to do things. Sometimes the Form Wizard, although it looks as though it's going to save you time, can actually take you longer to create forms and this probably particularly the

case when you've been using Access for a while and created quite a few forms. Now the other on there, the navigation form, is very often a feature that you'll use as what I would call the front end to the database. It's the way that you control in the broadest sense what users are able to do in your database and we'll be looking at a navigation form much later on in the course. Now the drop down here with more forms gives us access to modal dialogs, split forms, etc. and we'll come back to a couple of those later on as well.

The first thing I want to demonstrate is the Form Wizard. So in the Forms Group I'm going to click on Form Wizard. It's actually a sequence of dialogs. Given the table that is selected which is the genre table at the moment there is only one available, field. All of the available fields are here but there is only that one, genre. So I choose the available field or fields that I want on my form and click on the arrow there and that becomes one of the selected fields that will appear on this form. Having chosen the fields that I want, in this case there is only one, I click on Next and then I'm given a choice of four layouts for a form. Now datasheet layout, the third one, is pretty much the same as a datasheet. You can try that yourself, but it doesn't really help us very much. There are some situations where it's useful as we'll see later on. But the one I want to demonstrate first is a very straightforward form. It's tabular form. And what happens in a tabular form is that we have a table with the fields that we've chosen across the page. So the first field is one column, the second field is another column, and so on. So having chosen tabular layout, click on Next, now we're asked to give our form a name. The prefix I use on form names is F-R-M and I'm going to call this frmGenreTabular for the moment just so we can remember what it is. Now when I click Finish, I get a choice here. I can either open the form to view or enter information or I can modify the forms design. I'm going to open the form, click on Finish, and there is my form. Now it may not look very different from a datasheet but it's actually really quite different. We have still one row per record and the tabular, the tables in this case, there is only one column. The column is genre and the genre we've got are Action, Adult, Adventure, and so on. Now what the Form Wizard has done is to look at our table definitions and to decide how wide to make these fields. Now we changed the size of this field to 30 characters maximum and it's pretty much allowing for 30 characters maximum. Clearly looking at the data that's there already, that field is probably a bit too wide but never mind. If I wanted to change any of the data in this using this form, I could literally just click in a field and delete, type, whatever I want to do. I get the familiar pen symbol in the left there, the little icon that tells me I'm

changing that field and I can either click undo or press Escape if I want to undo any changes. When I insert new records, they're always inserted at the end. I've even got a set of navigation controls down here. So if I want to go to new record, new blank record, click there and I can add a new genre at the end and that's where it will appear.

Now that's a pretty straightforward form updating genre and you probably look at it and think, "Well, that's not really giving me anything over Datasheet View" and to some extent that's true. But at the moment I'm just trying to look at the overall features of forms.

So let me close that form and I'm going to close the genre table as well and I'm going to open up the Navigation Pane again and we've now got a new section in our Navigation Pane for forms. Don't forget if we're interested in one particular type of object, we can collapse the list for another object like tables and we're just concentrating on forms at the moment.

Now with the form we've just created, I'm now going to go into Design View. I'm going to take a look at it in Design View because in Design View it looks like a very different thing altogether and you can see the structure of that form. In fact, at the moment, the structure has really three parts. There is a header, there is a detail section, and there is a footer. So we've got a form header and a form footer and they will be common features in forms, headers and footers. Now this particular form doesn't currently have a footer but don't worry about that. We'll come back to that in a while. The detail section is very important because this is the part that is repeated for each record in our table. So basically at the moment the detail section is one field; it's the genre field and you can see there the size of the field.

Now what I want to do is to look at the properties of that field. If I click just on the edge of that field, you'll see that the field now has a sort of orange border around it. That indicates that the field is selected. If I right click right down at the bottom, you may just about see it; it says Properties and that opens up a property sheet on the right here and this contains the properties of that one field. Now as you can see there are a lot of properties. You can do an awful lot of things with a field on a form in Access and the first time you see that it probably looks a bit scary. But we're just going to concentrate on a couple of the main points to begin with.

Now one thing to be careful of whenever you're looking at properties on forms is to make sure that you have the right object selected. Sometimes you'll have an individual field selected as we

have here. Sometimes you might have the whole form selected. You can always check your selection over on the top here because it says the selection type in this case is a textbox and the particular control we've got there holding the text for the genre of the field is a textbox. It's one of the simplest controls you'll see on a form. By the way, let me just move the Navigation Pane out of the way there.

Now let's look at some of the other properties of this particular textbox. It has a name. It's called Genre. It gets the same name as its next property control source. What this means is given the table or query that this form is being populated by, so where the data's coming from, which field goes in here. The field that goes in there is the genre field.

We then have format. Now we talked about format in relation to tables earlier on and I also mentioned that you don't necessarily make all of your definitions in your table design. Sometimes you may want to do some of your definitions in your forms. And this will apply to things like input mask, format, etc. Now most of the other properties we'll either come back to later or they're a little bit detailed. But just to give you one or two further examples down there, you have a text align option here of general. You could change that if you wanted to. If you, for instance, wanted the text here to be right aligned on this particular form, you could select right align here instead of leaving it at general. There are many other properties some of which we'll be looking at later on.

Now this is a very long list of properties and in fact we are looking at the All Tab here which lists all of the properties of that field. There are tabs here whereby the properties are categorized. So properties associated with the format are on that tab, with the data are on that tab, with events are on that tab. So for example, what happens if the user double clicks on that field and then we have a category of other as well? So when you're used to using these properties you'll probably be able to go more quickly to a particular property that you might need in a given situation.

Now when I right clicked on that field before, you may have noticed that one of the options was not properties but form properties; let me just click on form properties down at the bottom and now what I have selected is the whole form. You can see selection type is form and what we see is the properties of this form. Now we've currently got the other tab selected. Let's just select the All Tab and what we can see is, first of all, the record source. Let me just pull this over.

Note we can make that property sheet bigger; make it a bit easier to read what each of the properties are. The record source is the table genre, tblGenre. The caption on the top is F-R-M-GenreTabular. Why don't I change that caption and say. There I think that's probably better. Is it a pop up form? No. Is it modal? No. Now the significance of modal will become apparent when I talk about that a bit later on, but basically a modal form is one where you have to deal with it and click OK or cancel it before you can do anything else. That's rather oversimplifying, but that's the general principle. The default view if this form is continuous forms. That's very important. That's the thing that makes it work in the way that it did, like a datasheet if you like. You scroll through all of the records and that's because it's a continuous form. Now there are various other properties and several of those we're going to look at in detail later on. But it's very important, as I said before, to know whether you're looking at the form or one of the fields on the form.

So let's close this property sheet. Let's close the form, saving changes, open up the Navigation Pane again, and let's just open our form again. You can see the revised caption at the top there, the one that I typed in. Don't worry too much about what's in the heading because we're going to tidy up the heading later on. But as you can see, the form works in the way that it did before and the continuous form part of it is the bit that means that we scroll continuously through all the records in that particular table.

In the next section we're going to look at another type of form so please join me for that.

Video: Single Forms; Inset, Delete, Modify, Sort and Filter Records

Toby: Welcome back to our course on Access 2013. In the previous section we started looking at forms and in this section we're going to continue. We're going to look straightaway at the genre tabular form that we created in the previous section and we're going to change this form into a different type of form.

The form is open in the database so I'm going to click on property sheet in the Tools Group there on the Design Tab. Property sheet is shown on the right. I can check that I have the form selected and the default view for this form is continuous forms. Now if I click to the right of that, I get a choice of types of form and I'm going to go for the form type that we're really going to use probably most of the time at this stage in Access and that is single form. Now let me close property sheet, close the form, save the changes, and then double click it to open it again. What I've now got is a single form style of form, not a continuous one, and as you can see all I can see at the moment is one of the genres, in fact the first one, Action.

Now, the way that this single form type of form works is fundamentally different to the way that the continuous form works. Let me, first of all, just minimize the navigation bar and then just look towards the bottom there. You'll see we've got our usual navigation buttons, but in this case the content of the form at any stage shows one record. So the first genre is Action. If I use the next and previous buttons, next record, previous buttons down at the bottom, I will step through all of the records in my genre table. I can go to the last one with the last record button and back to the first one with the first record button. If I want to insert a genre, then all I need to do is to go to the new blank record.

Now one of the things to note at the moment is that we are in Form View, and in Form View we are able to work on the data in this table. The Home Tab on the Ribbon in Form View contains the main functions we might want to perform when we're in Form View. So we have a Views Group which I'll come back to in just a moment. We have a Clipboard Group where we can cut, copy, and paste data between records or in fact between other applications. We have a sorting and filtering group and a records group, and the records group we can use to do things like delete records. We also have a Find Group and a Text Formatting Group. I'll come back to that later as well.

Now if I click on the View button in the Views Group, I have three options. Form View, Layout View, Layout View is a special case of Design View really. We haven't looked at Layout View so far but I'll come back to that later on. Then we have Design View. Let me just switch back into Design View for just a moment and I'm going to bring up the property sheet for the form and two things to note here. First of all, when I changed this from continuous forms to single form, note it says Default view as though you could have others and of course we've just seen that we can switch it into Layout View or Design View. But there are some properties immediately below that that we also need to check. The default view is single form. Do we allow Form View? Yes, we do. Do we allow Datasheet View? No, we don't. Let me change that from no to yes. Let's say I'm going to allow Datasheet View and allow Layout View, yes. Now let me close the property sheet and if I click on the drop down button, now I get a choice of Datasheet View. So this particular form which I changed to have a default view of single form I now have a choice. I can go back into the Datasheet View which is effectively the continuous forms version or I can go into Form View and see one genre per page if you like. So we will often be maintaining data using this single form type of form.

So let's look at those main data maintenance functions. Let's start with an insert. If I go to the new blank record position at the end of the data set in this table, I can use the button with the navigation buttons at the bottom down there. So click on that, it takes me to an empty record, and I can type in my own genre. I need to think of a new genre. I'm going to say Satire. Note that I get the little pen icon on the left there which indicates that I'm changing that record. If I want to very specifically save the record that I'm working on, I can use that save button there in the records group. But generally speaking if I move to another record, I will save what I've done. So let me go back to Record 28, previous record, and Record 29 is automatically saved. So that's how to insert a record.

If I wanted to delete one what I'm going to do is I'm going to go back right to the beginning to delete that very first record because I need to demonstrate one or two important things.

Now what I want to do is to delete this first record. So that's pretty straightforward. All I need to do is to select the record. To select the record specifically, if you click this selector bar on the left here, then all I need to do in theory is in the records group on the Home Tab click the Delete button, but watch what happens. The record cannot be deleted or changed because the table,

MovieGenre, includes related records. What that tells me is that this particular genre is used in at least one of the movies as the genre for that movie. So because of what we called referential integrity, I cannot delete this particular record; it's in use elsewhere. I would have to stop it being used elsewhere in order to delete it.

Now I should just point out something else to you there. When I got to that record and clicked on that bar to select it that selects the whole record. If I hadn't done that, note what's selected; the word Action is selected in the only field in this record. If I just clicked delete watch what happens, I actually delete that data; whatever's selected gets deleted. If I want to delete the whole record, that's how I select the whole record, by clicking on that bar. So let me just press the Escape key to undo the delete of just the text there.

So let me try the next record. Let me try Adult. Select the record and click delete. Now this time I get a warning about deletion. There's no referential integrity issue here but it always warns me about deletions. So in this case, I don't actually want to complete the deletion of that record. Although if you look at the form behind the message, you'll see that the selected genre already seems to have been deleted, but I don't want to do it so I'm going to click on No. And of course, it's back again.

So that's how we insert, modify, and delete records in Access 2013.

Now the next issue I want to look at with working on data in Form View is the sequence of the records. They were originally in alphabetical sequence. That's because I entered them into the table originally manually in that sequence. I've inserted a new genre but that just gets inserted at the end. We've seen that the way we've been inserting records in Access means they always get inserted at the end. And by default, as we'll see later in this particular case because of the way this form has been created, the records are shown in the sequence that they were added to the table; so the newly created ones will always appear at the end rather than in alphabetical sequence. Now if I wanted to control that, if I wanted to get Satire, the one I added in the correct alphabetical sequence it's quite straightforward using the Sort and Filter Group here because one of the buttons is ascending and if I click on that, it will have reorganized the records in the table to be in ascending alphabetical order. So let me go to the last one, that is now Western, and then let me just step back one or two and there it is. That's Satire, the one that I inserted. Now of

course it's physically still the last record in that table but I've controlled the sequence within Form View using the ascending button there. I can also arrange them in descending order. So if I go back to the first record, it's now Western and the last one is Action.

So I've also got a very good set of filter facilities here. Note that I only have one field here and it is the name of the genre itself. If I had multiple fields I could choose which field to filter on, but let's just do a quick filter here. Demonstrate how it works. It works very much the same way that it worked in Datasheet View. Let's suppose that I want to apply a text filter, and the text filter I'm going to apply is that it begins with the letter D. So let's find all the genre that begins with the letter D, and we find that there are two. That is one of two, Drama, and two of two is Documentary. Now there's a button at the bottom there to the right of the navigation buttons. You can see that it's currently colored, Filtered. If I want to switch the filter off I just click it to remove the filter from the records and I'm back to seeing all the records in that set again.

I also have a Search facility. So let's suppose that I want to find the Satire entry. There's a Search box down the bottom to the right of the filter button that we just looked at. Click in there and type in Satire, and it finds the only record that there is with the name Satire. Let me select the record. I should be able to delete this one because I haven't used it anywhere. So let's say delete on delete records. I get the warning about deleting one record. I'm going to say yes in this case and that record has actually now been deleted.

Now I want to do some more work on this form later on. So I'll be coming back to it a bit later, but for now I want to leave it as it is. I'm going to close it and let me just go back into Navigation Pane. I'm going to rename it. I called it F-R-M-GenreTabular because we created it as a tabular form. It's quite straightforward. Right click and one of the options is Rename. I'm going to treat that now as my main genre maintenance form and I know that I can always switch it from single form view which it is by default into continuous forms view if I want to deal with it more on a sort of Datasheet View style. But for the moment, that's my maintenance form.

In the next section we're going to create the equivalent form for actors. We're going to do it in a different way and we're going to look at some of the properties of the controls on a form and in particular how we can add new fields, add new controls, etc. So please join me in the next section.

Video: Layout View; Adding Existing Fields

Toby: Hello and welcome back to our course on Access 2013. In the last section we setup a form for maintaining a genre. It's there under forms in the Navigation Pane and what I want to do in this section is to start by setting up the equivalent for actors. So we'll open up the tables, we'll choose the actor table, go to Create, and this time with create we're going to say create form. Create a form that lets you enter information for one record at a time. There is our actor form. Now I just moved the Navigation Pane out of the way and the first thing I want to do is to talk about what Access has done here to produce this form.

Now the first thing to note is that we can see the detail of one actor and to step through the actors in the table we use the navigation buttons at the bottom. So it currently says 1 of 12, current record, and I have all of the normal controls to step through the actor's one at a time. I can go to the last one, I can go back to the first one, and over on the right here I have the new blank record button. Click there and I can put in details of a new actor.

Now within that information, I have basically five fields: the ID, first name, last name, year of birth, gender. They're the fields, of course, that we setup in the table, and below that we have this rather strange looking datasheet. Now this datasheet is actually something quite clever that Access has done because what it's done is to recognize which movies this actor has been in. Now the way it's presented that information is a little bit strange. Let me just explain to you what it's done and this is something that we're going to put right a little bit later on in the course. But what this datasheet down here contains is a list of the movies with the actor ID number three, Humphrey Bogart in. There is only one and its movie number five. Now it'd be quite nice if it said in there Casablanca not five. That's one of the things we're going to fix in a moment. It also gives the ID of the movie actor record that links the movie Casablanca to the actor Humphrey Bogart and you might think, "Well, we don't actually need to see that ID." All I really want to know is that Humphrey Bogart was in Casablanca and he played the part of Rick Blaine. So there's a bit of tidying up to do here and we're going to come back to that a little bit later on.

Now the next thing I want to talk about is that if you look at the top half of the information here, there's an awful lot of wasted space. Take that ID for example. It's number three and obviously

as we build our database up and we get into the hundreds and thousands and maybe tens of thousands of actors, we'll get a longer number there. But we'll never get a number that's long enough to fill that whole space. Similarly with year of birth, we can't possibly need all this space for a four digit year of birth. With gender male or female, it's even worse. We've got a whole width there, loads of wasted space, and given that the amount of information about an actor, we actually want to grow quite considerably; we don't want to be wasting space. So one of the things we need to do is to make better use of the available space on this form. But before we look at that, I want to talk about this dotted rectangle that you can see with that little shape up in the left hand corner and I'm going to click on that little shape in the top left hand corner.

Now in terms of what's happened here I'm going to use the word Table in two different contexts. We know that we're dealing with the actor table in terms of data but when Access 2013 created this form, it also created a table in the sense of a table on a sheet of paper if you like and it used that table as the basis for creating these various fields that we see in front of us. Now that means you can just about see the dotted line. That means that each of the fields in the actor table has one row in the table on the form. So we've got ID, first name, last name, etc. And right at the bottom, this thing that I talked about before, is a subform. Now we're going to look at subforms later on as I said. So don't worry about that too much now. Just think about the top five rows in the table.

Now one advantage of using a tabular layout is that it's very straightforward to keep everything nicely, neatly aligned. One of the disadvantages of course is that everything tends to have the same width. So fields that don't need to be nearly as wide as they are here just take up that space anyway. Now we'll look at how to get round this a little bit later on but I just want you to know that you don't need to worry about that at the moment because what we're going to look at now is the content of the form and not so much the layout and design of the form. They're things we're going to come back to.

So when it came to create this form, it looked at the actor table, saw that there were five fields in it, and it put each of those into a row in the table on this form. That's how it came up with this layout. Now it's actually very straightforward for us to change the contents of this form.

So let's look at how we can change the content of the form when we're in Layout View. In the form layout tools, one of the tabs is Arrange. If you click on Arrange and if you're familiar with using say Microsoft Word, you will be familiar with these kinds of command for dealing with columns and rows in a table. Let's suppose that I decide that I don't want that first field on the form at all. I don't really need to see the actor ID. Well, if I click on select row to select that row in the table. I don't mean the actor table. I mean the table on the form. All I really need to do then is to press the Delete key and that has now disappeared from the form. The table's still there of course, but one of the rows is missing. Now let's suppose I do that and then I think, "Ah, well maybe I should have the ID on there." All I need to do then is to select the top row or wherever else I want to put it, click on Insert above, and I get a blank row in my table and I can put something into that blank row. So how do I put something else into the blank row? Well, if we go back to the Design Tab, one of the options there on the right within tools is add existing fields and from there I can choose from the fields available to me which one I'd like to put into that space. Now the contents of this field list is determined by the table or query that is used for this particular form. Now we've created this form based on the actor table so the list of fields available to us is the list of fields that's in the actor table. The one I want is ID so I can drag it into that new row that I've created, release the mouse, and that is now in position. Close the field list again. It's come out a little bit on the thin side but it's very easy to resize in Layout View, just click with the mouse on the bottom of the row edge, drag it down, make it a little bit bigger, and there we are. I've put the ID back into position.

Now I talked just now about the wasted space that we have on this form and it is possible to work around that, in fact fix that within Layout View. It's not necessarily the best way to do it but many people like Layout View because it does tend to make it easier to keep forms looking well aligned and tidy. If I click back on that top row again, go back into the Arrange Tab and insert above. Note I've got those two fields there, corresponding to the two columns in this table. If I say click in the wider right hand column, one of the options I have there is split horizontally and I can split that cell horizontally into two parts. Now let me go back to the Design Tab again, add existing fields. I could, for instance, drag the first name into that position and the last name into that position, close this again, make it all a little bit taller, and you can see how within the use of Layout View I can actually rearrange the form in quite an effective way

and start to avoid some of the wasted space. So there's a lot you can do with the layout of the form overall in Layout View.

Now I'm going to leave those two fields at the top there for the moment and I want to talk about some of the other features of this form in relation to Layout View. I want to go back to the Design Tab and on the Design Tab right in the middle, there's a Controls Gallery and this lists all of the available types of control for a form. Now when Access made this form, it used an appropriate control for each of the type of data in the actor table. The box here you can see with the three in it for the ID number for Humphrey Bogart is actually what's called a textbox and it's a textbox control. So all of these different things we're going to call controls from now on. That bottom one there with the gender in it, if I select it, click on property sheet on the Ribbon, it tells me the selection type is combo box. So whatever I have selected, the property sheet will tell me what it is. Most of these are textboxes. If I go over to first name though, that's a label. Now let me just close the property sheet for a moment and step back through the records in the actor table. Look at first name as I step through. First name is fixed. It's a label. It's always the same. It's there to tell me either something about the form or something about the data. It identifies some aspect of what I can see in front of me. Whereas this word Will in this textbox as I step through the records it changes. It's the first name of the actor. Now if I wanted to put a new label on to this form I could use this label command here in the controls gallery. So that's how I'm going to start adding controls to the form later on in the course. That's the button for label. This is the one for textbox. And then amongst the others you have for instance that one, that's the one you'd use to add a combo box, a checkbox, and so on.

Now for any control that I select such as the label here, if I click on property sheet I can see all of the properties of that control. Every control will have a name. This one is called Label 57, and the caption which in this case is the actual words that appear in the label is First, space, Name. Note that when Access created this form it will have used the field name for first name, but as you may recall I'd specified a caption for that field and the caption for that field overrode the field name and therefore in the form I get the caption from the field becomes the caption for the form. So that's why it says First, space, Name. Is it visible? Yes. If I go down, I can change width, height. It's top in relation to the form. It's left in relation to the form. I can very finely tune its location. And then there are many other settings that I can change. For instance,

supposing I wanted to change the font size to 16 point and the text align from left to right then that is applied to whatever I've got selected which in this case is a single label.

So they are some of the main features of Layout View. I just want to demonstrate one other thing now quickly. If I go into Form View for this form and I step through the actors, I can click in all of these fields. I could change the name, the year of birth, and so on. One thing I should never be able to change, and I'd run into a lot of trouble if I tried to, would be the ID and yet I can click into that field. Let me go back into Layout View, select that ID field in Layout View, bring up the property sheet, and one of the properties is enabled. It says Enabled is yes which means if you like that you can get to that field; that you can actually go in there and do something to it. Let me change that to No, close the property sheet, go back into Form View, and now I'm going to step through the actors. Ingrid, Bergman, but I can't get to the four. I can get to everything else but I can't get to the ID. That effectively in this case makes that a sort of read only field in a control that is not enabled. I can see the ID but I can't go in there and change it. So that's the sort of thing we're going to need to be able to do to make our database application more robust and more difficult for people to run into any kind of trouble due to misunderstanding with.

Okay, so that's the basics of Layout View. In the next section we're going to look at Design View. I'm going to save this form now so I'm going to click on Close. I'm going to say yes to save changes. I'm going to call this form F-R-M-ActorMaintenance, click on OK, and I just got an exercise for you to do now. I'm going to save this form as example-09. I've got a little bit of tidying up to do but I'll do that offline. What I'd like you to do is to take example-09 and create a movie maintenance form. You don't need to do anything very fancy to it; the same sort of things that we've done in the actor maintenance form. And then in the next section we're going to look as I say at Design View. My answer to that is example-10. I'll see you in the next section.

Video: Design View; Arranging Fields

Toby: Hello again and welcome back to our course on Access 2013. In the last few sections we've been looking at forms and in the previous section we looked at Layout View. In this section we're going to look at Design View. But before we do, I just want to look at the other options for creating forms that we haven't considered so far.

So first of all, if we go to the Create Tab, one of the options that we haven't looked at so far is blank form. Now if you click on blank form you get, not surprisingly, a blank form and the blank form really has nothing on it at all. It is in Layout View as you can see from the status bar down there at the bottom and as soon as we put anything on it, then the sort of features of Layout View that we saw in the previous section will start to take effect. But of course at the moment, we don't have any fields to put on it because this form is currently unbound. That means that it's not associated with a particular table in the database. Now if I wanted to associate it with a table in the database, if I wanted to bind it to a table in the database, then I could do that in a couple of ways. The simplest way really is to bring up the property sheet. Currently, the record source is empty which means it is unbound. If I click on the drop down, I get a list of tables. Let's suppose I want to bind it to the movie table, if I click on movie, close, and now if I click on add existing fields, then it has available to me the fields in the movie table which are basically the ID, the title, and the year of release. Now I could manually build the form by either dragging as we did before. In fact if you just double click on the fields, they're added to the form. So that's the title added to the form, that's the year of the release added to the form as well. And of course as you can see if I select there, I've got my normal tabular layout that I have in Layout View. So that's how you can build using the blank form approach.

Now within the form that's built, we have options for resizing, various controls to make it a little bit easier to read, and as we saw earlier on within Layout View we can make quite a lot of improvements to the layout and of course to the functionality of the form as well. But as I pointed out earlier, Layout View is not always the best view to use and in order to achieve the absolute maximum of flexibility you really need to look at Design View.

Now to illustrate some aspects of the difference here, I'm going to take this form and I'm going to switch from Layout View to Design View. And in Design View, again if I click somewhere

within one of the fields, the title field there, you can see the little selector there for the table. Let me just click on that. Now let me go into the Arrange Tab and one of the options on the Arrange Tab is remove layout. Now if I click on remove layout, it basically removes the tabular framework that those fields and controls are held in. So if I now, for instance, just click somewhere on the background and click say the title control, I can actually independently move the title control around without it being constrained by the tabular structure because the tabular structure has gone. Now notice that when I do that, I'm actually moving the label that's associated with it as well. Well, I can actually avoid that. I can actually split the two up, as I'll show you a little bit later on. But let's say I make the form a bit wider and I make the form a bit taller. I could take year of release and move it around completely freely without any kind of constraint whatsoever. Similarly, I can make the year of release field much smaller. I could make the title field much bigger and I could even make the title field taller if I wanted to. So in Design View you have a lot more freedom.

Now as you can probably see already one of the disadvantages of Design View is apparent straightaway and that is that with this freedom comes the ability for things to start to look a little bit scruffy, for things not to be properly aligned. Where there are various tools available in Access 2013 to help you to align things. There's an Alignment button here in Sizing and Ordering on the Arrange Tab and there are various other options for anchoring objects and so on. In some ways, the most helpful thing as well is to look at the property sheet for a particular control because if you right click on the property sheet for a control it gives you very precise information about how wide a control is, it's height, where it is to the top of the form, the left of the form, and so on. So there is information there that can help you to align things just about perfectly. But it's not as easy to align things accurately as it is in Layout View with that tabular structure.

So let me close this form. I'm not going to save it and let me go back to create again and the one we haven't tried so far is Form Design and this creates a new blank form in Design View. In Design View, you can make advanced design changes to forms such as adding custom control types and writing code, and this does indeed create a blank form. It has some grid lines on it that can help with positioning the controls. Let me just minimize the Navigation Pane again. Once again if I click on add existing fields, there's nothing to add because I haven't of course bound

this form to a table yet. So let me just click on show all tables. Now let me again aim to use the movie table. So if I click on the plus sign there to expand that, double click on a field, double click on a field, and so on. Now this time those fields are being added independently. They're not within a tabular structure. It's not in Layout View. It's in Design View. There's no table. I can click one of these and move it around independently.

Now I mentioned before that you can actually separate one of these fields from its label or, I should say, the control from the control that has its label. If you click on the label and then grab the label by its corner, you can move the label around independently. That's quite a useful thing to be able to do sometimes.

So we're in Design View. We've got a brand new form. I'm not actually going to use this form. I'm going to go back and use one of the others, but I want to demonstrate a couple of other things with this form. If I click on property sheet now, bring up the property sheet, year of release is the selected field; so year of release there, textbox. When you've got the property sheet open, sometimes it's quite difficult to change the selection but it's quite straightforward if you use this drop down. If I wanted to select the whole form, I could just click on this, select form. I've now got the whole form selected but look at the record source because normally we'd expect the record source to say the name of a table. But it doesn't say the name of a table here. It has something that's called Select, and it says select, movie table title, movie table year of release. This is a query and this particular form is now based on a query. Now we're going to come to queries as the next sort of major topic that we look at but it's important to realize that very often a form will not be based on a single table. It'll be based on more than one table and probably selections from more than one table based on what we call a query, but more of that later. In fact, to be strictly accurate, what you can see there is not a query; it's actually a part of a query. There's a bit more of it that you can't see in this view.

So let me just close the property sheet now and what I'm going to do is to close this form. I'm not going to save the changes. I'm going to open up the Navigation Pane again and I'm going to do some work on the actor maintenance form, but I'm going to do it in Design View this time.

Now as before I'm going to ignore the subform but if I click in one of the fields to bring up the table control there. I'm then going to go into the Arrange Tab, remove the layout, and I've now

got all of my controls free. What I'm going to do is to decide how I really want this form laid out. Now I'm certainly not going to have those huge fields for first name and last name, so I could select for instance that one which is one of the originals. I'm going to delete it. Select that one which is one of the originals and delete it. This is the information that I'm going to use. ID field here I'm going to resize. In Design View, I can resize any field independently. So that's certainly going to be plenty big enough for that. Note, of course, in Design View that you can't see the data. You can only have the names of the fields that correspond to each control so you can't see the length of a typical ID. So you need to have a good idea of how big they're going to be. Similarly, year of birth, much too big; let's put that down I would think something like that size would be better. As for gender, well I only need a very, very, very small field for gender. And last name is maybe still a bit big. Let me make that a bit smaller. Let me make that a bit smaller. Okay that looks better. Now of course I can bring up the property sheet and if I want to match heights, widths, positions, and so on for these fields, it's a very straightforward thing to do. When I'm designing a database and in particular when I'm designing forms, what I tend to do is to produce a rough version first and then I position everything accurately after I'm pretty happy with the content of the form. Now I'm going to add some more content to this form so there really isn't a lot of point in trying to position everything too accurately at the moment.

Now it's very straightforward to change the width of a form if I need to. I can select the form and then look at the property sheet to get the width or I can just drag it visually. I'm going to make this form a little bit wider and then I can move the controls around. Now let's suppose that I want to move, say, the last name control over to the right and note when I click on first name, I also get a little selector mark there on the label for first name. So I know that those two are going to move together. Now with ID, this is one of my problem fields at the moment because the label that says ID is actually much too wide. It only needs to have a quarter of the width, it's got so I can close that in and the ID itself I need to make sure that's small enough and I can move the whole thing up say to the corner there. And I've just about got room now. If I move first name back and put last name, say, there and then year of birth maybe I could put that just under there and maybe gender. I may decide, for instance, that I don't really need a label on gender because it's going to be obvious if it says M or F that this is male or female so I could just delete the label. Select it, delete it, and then I can move the gender field up there on to the right. Okay

that's quite a substantial change to the layout. Having done that what I'm now going to do is to actually try it out in Form View.

So let's see how that looks in Form View. Click on Form View and we can see ID 3, Humphrey Bogart, M for Male. The M's still a bit wide. The year of birth field is a bit too wide. So we can save some space there. And then if we step through the other records in the table, we'll get an idea of any of the others are going to cause any sort of problem which they aren't. One thing to bear in mind here is that if you were to change the font, so maybe the theme and the font later, you may need more or less space for these fields anyway. So if you change the theme you might change the width of these words because the characters tend to be wider or narrower in different themes with different fonts. So just be wary of that. Don't get everything lined up and then change to a fatter font because you may have to do the whole job again.

Now I want to go back into Design View and just cover one other topic quickly in this section. In Design View, let me just right click on that first name control and click on properties and the control source is first name but the name of the name of the control is Text 56. Now it's a rather strange name. The reason it got that name is that I actually got this control in the previous section by effectively making a copy of the control that was already there that I subsequently deleted. Now sometimes when you copy controls or when you add controls, the finish up with names that aren't particularly helpful. Sometimes it's useful to be able to rename them. If you click on the All Tab here, the name of the control is Text 56. If I wanted to actually change it back to being called first name. In fact if I just close this again and select that other control there, click on properties, that's called Text 62 at the moment, I could change that one to be last name. And then on the Design Tab in the Tools Group, there is a button Tab Order and tab order is very important for users of your forms because it basically determines what sequence they will go through the fields on the form if they use the Tab key. Now what's happened here mainly because of the reorganization of the controls on the form is that we've got a rather strange tab order. Somebody tabbing through the fields on the form would first of all go to first name, then to ID, although of course ID is not enabled so they can't actually put the cursor into that field, then year of birth which is down here, then gender which is over on the right, then Child15 which is actually the subform, and then last name which is up there. So it's a rather bizarre order that they tab through. Now you can control this tab order in a number of ways but usually the

simplest way is to click on Auto Order which basically gives you a sequence of controls when you tab through which is top left to bottom right. So, click on Auto Order and you get the much more sensible sequence ID, first name, last name, gender, year of birth, Child15 which is the subform. So it's basically doing that top left to bottom right sequence. So click on OK and the tab order is now corrected.

So that's it for Design View. What we're going to do in the next section is to add some more controls to one or two of these forms. So please join me for that.

Video: Controls

Toby: Hello again and welcome back to our course on Access 2013. In this section we're going to look at adding some controls to a form. First of all, we're going to actually add a couple of fields to one of the tables we've been working with just to show how over a period of time the scope of a database, the amount of information in it will increase, and when we do start to store more data we need to be able to give users access to that data and enable users to update the data. So what we're going to do in this section is to add two new fields to the actor table. One of them is going to be the actual date of birth of the actor and the other field is going to be the country that that actor was born in.

So let's start with the country. Now for the place of birth of an actor, there'll only be one country that they're born in. So what I'm going to do is setup a list of countries as a table and then I'm going to enter a few countries into that table. So Create, we can go into table design. I'm going to make the first field name country. The data type will be short text. I think probably, say, 30 characters would do it. That will also be the primary key. Is it required? Yes. Do I allow zero length for a country name? No, I don't. Is it index? Yes. No duplicates. Well of course that's the primary key so it has to be. Text align, general. Yep that's fine. So close that and it's going to be T-B-L-Country, click on OK, and I have a new table.

So let me open up the country table and put a few countries in. If you'd like to, join me again in a moment.

So there we have a few countries to get the list started. Now the other entry that I'm going to add here is one that I use, not everybody does, some people use empty fields, but I nearly always in these situations have an entry of unknown. I tend to find that's pretty useful, particularly when you've got things like country somebody was born in because there may be situations where you just don't know. So that's the last record I'm going to put in here for the moment. Close the table, save changes to the layout because I have actually changed the layout. I made the country column wider for example, say yes, and my countries are now setup. Now I need to go into the design of the actor table.

So let's add the country of birth here. You can add the fields to the table pretty much in any sequence you like because when you come to show them on forms, etc. as we've seen already,

you can display them and use them in whatever sequence you like as well. But sometimes it is helpful to keep related items close together so I think I'm going to put country of birth immediately after year of birth in the actor table. So if I select the gender field, then on the Design Tab there is an Insert rows button in the Tools Group, click on that. I'm going to type in there country of birth and the data type will default to short text. Let's just have a quick look at the general properties. Field size, well we've used 30 characters for country so 30 would be good. I'm not going to do anything in terms of format, input mask. Caption I think I'll put that in now because as we've seen that pretty much propagates in various useful places. I'm not going to put a default value or a validation rule in now. It is going to be a required field but a word of warning here. When you're adding a field to an existing table, initially the field will be empty for every record in the table. If I made this a required field now, then Access would complain that every record in the table in the existing database breaks the rule. So it's normally best in this situation to add the values to the fields for each record in the table first, so in other words to ensure the integrity of the data and then make it a required field so that any actors that are added subsequently must have their country of birth shown. Of course the other key factor here is that I have a country of birth of unknown. Am I going to allow zero length? No you can't have a zero length country of birth. If you don't know it, it's going to have to be unknown. Is it going to be indexed? No, I don't think so.

Okay, that's good for a start but now let's setup the lookup because we want to be able to use that country table that we just created. So let's change the type here to Lookup Wizard and let's use the Lookup Wizard again. So first of all, I want the lookup field to get the values from another table or query. I do. Click on Next. Which table or query should provide the values for your lookup field? Well, it's the country table. Next. Which fields of the country table contain the values you want included in your lookup field? Well, there is only one field and its country. Next. Now this is the new one. What sort order do you want for the items in your list box? Now the important thing here is that as we add countries to that table, they'll be added in a sort of higgledy-piggledy order really and we want them to appear in the list box in alphabetical order when we're choosing otherwise we'll have to scroll all the way up and down to try and find the country we're looking for. Now the Lookup Wizard can setup this lookup in such a way that the entries that we're choosing from can be in pretty much whatever order we like. Now you can use up to four fields to determine this order. We only have one field here. It's the name of the

country. So if I select country and stick with ascending, click on Next, it then shows me how that list would look. So how wide would you like the columns in your lookup field? Now that width is just fine. Let's get United Kingdom, United States, they're the wide ones. That's fine. Done with that, click on Next. What label would you like for your lookup field? Well, let's do it like I've done the caption elsewhere. Enable data integrity, not at the moment. I'll come back to that. Do you want to store multiple values? No, I don't. That's fine. Click on Finish. The table must be saved before relationships can be created. Save now? Yes. Now let me look at what it's done on the Lookup Tab below.

Now on the Lookup Tab, I have Display control will be a combo box. The row source type is a table or query. And rather than just say that the table to get this source from is the country table, tblCountry, it says select the country from the table country and order by country. The value in that field is the name of the country. So what it's saying is you want to take all the countries from the country table and put them in order of country which is effectively alphabetical order. So here instead of just having a table in the row source, we have a query. Now are we going to limit the countries to the countries in that list? By default it says no. I'm going to change that. I'm going to say we're limited to what's in the list. Check there's anything else that we need to set. No there isn't, so we should be ready now to use that new field on a form.

So now let's add that second field before we move on to the form updates. Let's now put in the date of birth as opposed to just the year of birth. I'm going to keep these birth fields together. So again I'm going to select here, insert rows, put in here date of birth. Data type this time is going to be one we haven't used before which is date and time. Click on the General Tab and one of the options that's very important in relation to date and time is the date and time format. Now we have a number of choices for possible formats for the date of birth. Now whichever these you choose, you basically get the same value stored. This only really reflects how the value is shown to users. Now the general date format gives date in a short form and the time of day with an AM/PM marker. I don't think we're going to be ambitious enough in our database to say what time of the morning/afternoon an actor was born on. I don't particularly want to use long date because it takes up a lot of space and doesn't really give us an awful lot of additional information. So let's go for this short date format here which in the U.S. locale is month, stroke, day, stroke, year. So let's go for the short date format. For the caption we're going to say date

of birth. Now I'm not going to put in a validation rule at the moment. I'm going to come back to the validation rule for that a little bit later on. Required is going to be no for the moment for the same reason that it was for country of birth. Let's get the dates of birth in first. It's not going to be indexed and it's going to show a date picker. So I think that will do for date of birth. Let's close the actor table. Save the changes and let's now look at the actor maintenance form design.

Okay, let's look at add existing fields. I'm going to move the field list back, give ourselves a little bit more space. Now we now have two more to choose from. We have country of birth and we have date of birth. So let's decide where to put those. For a start, we'll do a bit of, let's put that one over there and let's move country of birth. Now we're only adding these two so we don't need the field list anymore; it gives ourselves a bit more space and let's put that here. Now as I said earlier on at this stage I'm really not trying to get everything lined up perfectly. I'm just trying to get the controls on the form and then I can worry about the layout when I've finally decided what controls I'm having. Now notice with each of these controls, Access 2013 has added a control of the appropriate type. Having added those two to the form let's see how they work.

So let's start with the first actor, Humphrey Bogart. Country of birth, click there, we have our drop down list. United States, that's fine. Probably the control itself here needs to be a little bit wider so that we can see the full length of the country name. For date of birth, we get a date picker control and the date picker control let's you pick a date from the recent past or in the not too far distant future. Now in theory, you could scroll right back to the date that Humphrey Bogart was born but it would take you a long time to get there because he was born a very long time ago, so you can just type the date in, and the date that he was actually born on Christmas Day, believe it or not; 25th of December 1899. And there we are. There's the first person with country of birth and date of birth. Ingrid Bergman, country of birth, Sweden, date of birth, August 29, 1915. So there we are. We could go through and setup all of our data like that.

At this point a couple of things to note. One of them is you might well want to extend the width of this field a bit to allow a bit more space for the country of birth. And you might decide not to use the year of birth field anymore because now that we've got the date of birth, having the year there as a separate field is probably a bit superfluous. But these are the sort of things that happen as a database evolves.

So I've now adjusted the widths of a couple of those fields. I think the layout there looks quite a bit better and as I said before I'm not going to worry too much about it until I'm getting closer to having all of the data on this form that I want. That's it on this section. What we're going to do in the next section is look at the design of the form itself a little bit, try to make it look at little bit more attractive and informative. So please join me for that.

Video: Form Design

Toby: Hello again and welcome back to our course on Access 2013. In the previous section we did some work on adding a couple of controls to this form and I just want to take a quick look in this section at some aspects of form design. Now I've already mentioned that I wouldn't normally try to tidy a form up too much until I was pretty sure that the content was right. And we've still got a certain amount of work to do on this form, particularly the subform which we're going to come back to a bit later on. But I do want to talk about some of the key features of design. We've looked at some of them already but it might just be a good point to recap on a couple of points and to introduce a couple of others.

So I'm currently in Design View, and on the Design Tab in the form design tools there is a Header/Footer Group and there are three commands in there. Let's deal with the bottom one, date and time. If I click on the date and time command it brings up a little dialog and I can select to show the date in the header and/or the time in the header. Let's suppose that I'm going to show both the date and the time on this occasion. There's a sample at the bottom to show me what it will look like. I can choose a different format if I prefer a different format, click on OK, and what I see in Design View is a code on the right. Now that code that says equals, date, brackets and equal, time, bracket is not how that will display when I go into Form View. Let me go into Form View and show you how that looks. It actually shows the current date and the current time. Those equal, date, brackets and equal, time, bracket are a very special feature of Access whereby instead of literally putting those words on a form, you put on a code that says to Access when you open this form put in the current date and the current time and that's how that works. And something else to realize about those particular codes because they're a good example of something that you may move on to later on as you get more advanced in your use of Access, if I click on one of those I can see that it is actually a control in the header of this form and as such I can move it around. Now you may or may not have been able to follow all of the moving around. Generally speaking when I'm trying to move something around on a form, I hover over it and wait until I get that four pointed cursor. The four arrows coming out from the middle, at that point I can click and drag, and for instance if I pulled that over there, it drops underneath the field that's already there or the control that's already there with the title in it. If I now go into Form View, you'll see how that looks. I've now got the date underneath there and

the time is in the right. It's sort of centered, vertically centered. Now I can juggle those around into any positions that I like and the just move around as though they're fields, really a bit like labels but they're dynamic in that they update as the time and the date moves on. So let's go back into Design View. I'm going to undo that last change. That one's managed to get itself left aligned so let me just go back into properties, text align, and I'll change it to right and that's fixed that one.

Now let's go to the middle option in the Header/Footer Group on the Design Tab. It's Title. Click on Title and I can go in and edit that title. Well, let's just put the words Actor Maintenance in there. Now I've got a very wide control here to put that title in. I don't need it that wide and it's going to get in the way of other things. You saw just now when I was moving the date control around. So if I wanted to, I could just say okay I'm happy with that and I can avoid wasting quite so much space in the header. I've got actor maintenance there. That's what I want to see. That frees up a bit of space in the middle. I could put something else in there if I wanted to. Let's see how that looks in Form View. Yep, that looks fine. Let's go back into Design View again.

Now let's look at some of the other aspects of design of a form. I mentioned themes before and some of the dangers associated with themes. Let's click on the Themes button here on the Design Tab. We've currently got the Office theme in use. If we try a theme like for example this one, the Ion theme. Let me just go into Form View with that and you can see what I talked about before in that parts of the labels, parts of the text in some cases, when you see a line of hashes like that in date of birth that means the data doesn't fit in there. Then this particular theme uses a font by default that's just basically too big for the space that we've left available. Now we could change the font size. We could actually change this thing. We could make all of our controls bigger to accommodate it. But it is something to be very careful of if you're going to change your theme. But it is also very important to experiment with themes to get one that looks right for you, for your requirements. So let me just go back into Design View again and I'm going to put the theme back to the one that we were using which was the Office theme, the first one there, and let's talk a little bit about colors, etc.

Now I don't tend to use very bright colors. I tend to use very subdued, light, pastel, very often gray colors. But that's just a personal preference and in some situations a very bright color

scheme may be a very good idea. Now you maybe won't want a color scheme that's quite as bright as the one I'm about to use now, but I want to just illustrate some of the things you can do with the design of a form. I'm going to stick with the theme that we've got, although you've seen it's easy to change it. What I'm going to do is go to the Format Tab now. Now on the Format Tab there are various things you can do, including for example putting a background image in. You could put a whole, a whole picture as a background here. I'm not going to do that now. But if you select part of the form and there's a drop down here, that lets you select the detail, the form footer, the form header. Let's say we select the form header. There is a Shape fill button here which lets you choose a fill color for the header. Now that's the color we've got at the moment and supposing we went for the next darker color. Now let's select the detail section. So we can go up here and say detail, go for the fill there as well. Why don't we go for the same color for that one as well? Now let's go into Form View and see how that looks. Now it looks quite different as you can see. The labels are fairly legible. You might think that you'd actually prefer something a little bit more legible than that, maybe black or even white for the labels. But it does affect the overall look and feel of the form. For one thing when you have the header here and the detail section the same color there's no differentiation between them which may be the effect that you want to achieve of course.

Another thing that we can do here is we can actually do a fill color on individual fields. So let's suppose that I choose the first name field, hold the Control key down, choose last name and gender and year of birth, country of birth, date of birth. Again, go to the Format Tab, choose Shape fill, and let's choose for shape fill that slightly lighter gray-blue that we had there. Let's look at that in Form View. Again, you get a slightly more subtle effect there that you may prefer. I would tend to keep different any fields that the user cannot get into. And sometimes it's best to have them as a more sort of subdued color. At the moment that's the one that stands out. But I hope from that you get the general idea of what you can do.

Now again if I go back into Design View, there's one or two other quick things to talk about there. While I've got that set of controls selected, the ones where you can actually enter or change data, if I go back to format again, I can actually set the shape outline. Now I'll go a bit over the top with this. I could make the shape outlines this much darker gray color for instance and I could change the line thickness which is currently quite thin. I could make it thicker. And

now if I go into Form View, I'll find that each of those fields has a much thicker outline on it. So there's plenty for you to experiment with there in terms of the overall design of your forms.

Just a couple of other things here; again, back to the Format Tab. If you have say the text Actor Maintenance, there you have a Font Group on the Format Tab. You could make that text bold. You could in fact change the color of that text and make it say a nice bright red. Again, let's go into Form View, see how that looks, and there you have a nice bright red Actor Maintenance. Now the forms getting a little bit out of control now, but you can see the sort of effects that we can achieve. And then one other thing just to mention; don't forget back into Design View, still on the Design Tab this time. Just one other thing; go into the detail section, always make sure to check your tab order when you've made changes to fields because it's very easy for things to change without you realizing. In fact, as you can see the two new fields we added, country of birth and date of birth, appear at the end of the tab order so they're after the subform. You need to just Auto Order to correct that.

So I'm by no means claiming that that form is finished. It's got a lot more content on it. I've still got the subform to sort out. But hopefully from that you get the general idea.

Now what I've done is to go through all of the actors and I've put in country of birth and date of birth. So now if I go into the design of the actor table, I can do what I spoke about before which is to make those required fields. So country of birth currently not required, let's change it to required. Date of birth, currently not required, let's change it into required. And there we are.

Now one thing I just want to mention to you is that one of the types of field you can have is Yes/No, just bear that in mind.

Okay, let me close the actor table, save the changes, everything's fine. I'm saving this database as it is now as example-11 and I would like you to produce example-12. In example-12 the movie table has two new fields, one of them is country and one of them is I've seen it is a simple Yes/No type field whether you've seen that movie or not. You might well find that when you come to put those two fields on the movie maintenance form which is the next part of your assignment, that something like a checkbox might be quite useful for I've seen it. Now as far as country's concerned some of the movies if you get the information say from IMDB have more than one country. Their country of origin may be two countries or more. Just put the first

country in or the one that seems most significant. As an alternative, if you want to be a little bit more thorough, use that multiple values feature that you saw in the Lookup Wizard. Now as part of that you may need to add one or two countries to the countries table and unfortunately I'm also going to ask you to go through all of the movies using your new movie maintenance form and enter the country for each movie and also just indicate whether you've seen that movie or not.

So my answer to that is example-12. You might also want to do a little bit of cosmetic work on the movie maintenance form as well. That's it on forms for now. We'll be coming back to the subform later, but I'll see you in the next section.

Chapter 14 – Queries

Video: Query Design

Toby: Hello again and welcome back to our course on Access 2013. In this section we're going to start to look at queries and first of all I'd like to explain a couple of the reasons why we use queries.

Now let's suppose that we'd built up our movies database, we'd added thousands and thousands of movies, thousands and thousands of actors, and may other types of information. It's very unlikely that anybody at any one time would want all of that information. They may want a certain amount of information about all movies. For instance, they may want a count of how many of the movies in our database originated in the United States, how many of them were from Italy, how many from New Zealand. They may also want a lot of information about one specific movie or perhaps all the movies of a particular director. But the common theme in all of these things is that there is usually some element of selection of the information. Either we want a particular movie, perhaps movies from a particular country, perhaps movies by a particular director, or maybe just a particular movie with a particular name. Now this is where queries come in because queries enable us to look for something subject to a virtually unlimited number of criteria. So for example, if I wanted all of the movies by a particular director that were released between two particular years and that was say produced in Italy, then I would use a query to find that information.

So that's one of the main reasons for using queries. The second main reason, we've already seen to some extent when we've looked at this actor maintenance form because in the actor maintenance form we have this strange situation at the bottom with this subform where we've got a movie number but not the name of the movie because of the way we've set the data up. Now there's nothing wrong with the way we set the data up by the way, but the problem is that you need information on this form from a number of places. You need some information from the actor table, you need some information from the movie table, even some from the country table or the genre table may be needed sometimes. And of course as we extended this database, we'd have more tables and maybe need more data from those other tables. So the other thing that queries do is to enable us to get information from many different tables and present it

together so that we can correctly represent the information in things like this subform. In fact it's on the principle of queries that we will make this subform work correctly.

So let's start with creation of a straightforward query. Go to the Create Tab and we're going to go into query design. There is a Query Wizard but I want to start with query design. When you click on query design, you get two windows. You get a window representing the query itself which gets a default name, in this case Query 1, and then in front of that you get a dialog box, Show table. Basically, the principle here is that you first of all specify which tables you want to get data from and there may be one, there may be more than one table, and having done that you close this window, the show table window, and then you build the query in the other window. Now the other window is generally referred to as the query designer.

So let's start by choosing just one table to begin with. Let's choose the movie table. So click on add. Now we can close this. Now, if I wanted to run a query that would just get the titles of all the movies, this is how I'd do it. If I select the title field, I can drag it down to the grid at the bottom and in this grid the top row is the name of a field and the second row is the name of the table the field is in. So the table is tblMovie and the field is title. Now that on its own is a query. If I want to run the query on the Ribbon, there is now a Design Tab. It's the query tools design tab and in the left hand group, the Results Group, there is a Run button. So if I click on run, it will actually run the query. What I see as a result of running the query is in Datasheet View a list of the titles in my database. Now note that the titles are in the order that they appear in the database, so they are in effectively movie ID order. That is a very simple query but it's done exactly what I wanted it to do.

A query is another database object so let's suppose for the moment that I've finished working on this query. Of course, I haven't. If I close it, click on the Close button on the right. Do you want to save changes to the design of the query? Yes I do. Let's give it a name. I'm just going to call it Query 90s Movies. You'll see what I mean by that in a moment. I'm just going to call the query that, click on OK. Let's open up the Navigation Pane and now we've got a new section, a new category in the Navigation Panel; tables, queries, and forms. So the database is beginning to grow.

So let's right click on Query 90s Movies and go back into Design View. Now I'm going to add another field to this query. The field I'm going to add is year of release. Drag it down into the second column in the query grid at the bottom. And when you're working on a query, there are actually three views. If you look at the Design Tab here on the left, to the left of that Run button, there's a View button and there are three views. One view, the one we're looking at, at the moment is Design View. Datasheet View is the one where we see the results of running the query. So let's look at Datasheet View. Now I've got the title and the year of release, and then the other view is SQL View. Now if you're not familiar with SQL, S-Q-L stands for Structured Query Language and it's a pretty much standard universal querying language for relational databases, and what you see here is a statement that describes this query. The SQL statement is select tblMovie.Title, tblMovie.YearOfRelease which is basically saying the title field in the tblMovie table and the year of release field in the tblMovie table from the tblMovie table. That is a very, very simple SQL statement, but SQL statements are an absolutely fundamental part of relational databases in general and Access in particular.

So we've got three views of our query. We've got the Design View using the query designer. We've got the SQL View and we've got the Datasheet View, and the Datasheet View of course shows us the results of running the query. Now when you're working on queries, you may initially find you use Design View quite a bit, but as you get to grips with S-Q-L, with SQL, you may often find it's quicker and easier to use SQL statements.

So let's look at some of the power of queries now and extend this query a little bit. I'm going to go back into Design View and if you look again, at the grid at the bottom the third row says Sort. And what I'm going to do is to add a sort to this query and the sort is going to be added to the year of release column. If I click in there, a little drop down appears on the right. I'm going to choose ascending and I'm going to go to the SQL View. Let's look at what the SQL View says. It says what it did before. Select the same things from the table, but then it says order by year of release; tblMovie.YearOfRelease. Let's look at the results. Let's look at Datasheet View and what I now find is that the movies are sorted by their year of release. Again, let's go back into Design View and in the year of release column let's change it from ascending to descending, look at the results of that in Datasheet View. Obviously, the most recent movies are now at the beginning of the list. And if I go back into SQL View, I can see that it says order by year of

release, D-E-S-C, desc. It just means descending. Now for each data type, there is a default when you do order by. In the case of year, which is a number, the default order will be ascending. So you don't need to say ascending if it ascending. But if you need descending then you just put in D-E-S-C for descending.

So now let's go back into the Design View again. This time what I'm going to do is to select the movies that were released in the 1990s. Now we've already seen how to put something here in the sort row, further down there is a criteria row. If I put in a criterion like greater than 1989 that will give me all the movies 1990 or later. So let's try that one. We can view the datasheet and we've got movies. The oldest one there is Goodfellas, 1990.

But now let's see how we get the ones that were just in the 1990s. Now we can do that in a couple of ways but let's just say that we want to say that it's greater than 1989 but less than 2000. So let's go back into Design View again and let's click in here and say "And less than 2000" and let's see what we get. Of course we get the movies that were just released in the 1990s.

So let's have a look at the SQL statement. Select, title from table movie, year of release from table movie, etc. where the year of release is greater than 1989 and the year of release is less than 2000. Now this notation is very important; this little dot operator here, tblMovie-dot-YearOfRelease. Something before a dot is the name of a table and something after the dot is the name of the field. So it's a familiar notation that you should get used to. It's the year of release field in the movie table, year of release field in the movie table, and here we have a pair of criteria in what's called a Where clause; a Where clause is basically a way of selecting data. So we're saying get the movies out of the movie table where the year of release is greater than 1989 and it's less than 2000 and then ordered by the year of release. The select statement, the SQL statement is getting more complex but you will quite often have statements that are at least as complex as this. Once you get used to the structure of the statement, they're probably a lot easier to understand than they might appear at first.

Right, I'm going to add yet another thing to this query now. I'm going to go back into Design View. I'm going to choose now the country field. So I'm going to drag the country field down to make a new column in my query. This is going to have a criterion as well and the criterion

I'm going to try is Equals, now double quotes, United States. Now you can probably guess what that means. That says I want not only it to be a 1990s film but I want one where the country is United States. Let's look at the SQL statement first. It's got a bit longer. It's got where the year of release is 1989 and the year of release less than 2000 and the country equals United States. So we've got a pair of criteria related to the year of release and we've got a criterion related to the country United States. Let's look at the results of that. There we are. We've actually lost one or two movies but all the ones we've got we can see are United States.

Now if I was running a query like this but there was actually no point in saying United States, United States, United States all the time because I know with this query that they're all United States movies. If I go back into Design View again, the fourth row in the grid at the bottom is Show and if I uncheck that the country field is still involved in the query and I can still use the criterion of Equals United States but it's no longer shown. So if I now go into Datasheet View, I get all the same movies but I don't actually see the word United States over and over again in this extra field, the country field that is actually superfluous within the results of the query.

And then finally let me just go back into SQL View again. I'm going to look at that very last criterion, Movie.Country=United States. I'm going to change the equal sign there to what SQL uses as not equal which is a less than and a greater than symbol. I'm going to look at the results now and what I find is the one 90s movie that is not a United States movie in our database at the moment.

So that's our first look at queries. In the next section we're going to look at queries and joins so please join me for that.

Video: Joins and Query Wizard

Toby: Hello again and welcome back to our course on Access 2013. In this section we're going to carry on looking at queries. We're going to add a couple of points to the points I made in the preceding section, but we're also going to look at joins. So let's get started.

One thing to note is that you can create and use queries using touch in pretty much the same way that you do with mouse and keyboard. So let me just go into touch mode here, using my fingers Create, query design, movie, add, close the Show Table dialog. One thing to note when you are adding the fields to the grid in the query designer you can drag down the individual fields as we did before, but you can also use the asterisk at the top of the list there and the asterisk will get you all of the fields. So if I either tap and drag on the asterisk or double tap, I can drag it down there and drop it on to the grid and having done that, if I now run the query by tapping on Run in the Results Group, I will see all of the fields from the movie table in the result of the query. Now the set of records that we get as the result of a query we normally refer to as the query record set and that's the terminology that we use. But something else that you might find useful; if you wanted to change the sequence of the fields in this record set, it's quite straightforward. Let's suppose I wanted to put country to the left of year of release. If I tap on country, the header of the column and hold to select the column then if I just sort of slide my finger to the left hand edge, I get that vertical bar that denotes that I've got that column selected and draggable to a position before year of release. Let me now drag it to the left and drop it into the year of release position and using touch only I've moved a column in the record set to give the fields in this particular record set a different sequence.

I'm back in mouse mode now and I'm going to create a new query, but this time I'm going to use the Query Wizard. The Query Wizard will use whatever table you have selected before it gets started. I'm going to do a very simple query, first of all, based on the movie table. So I'm going into the Query Wizard. There are four different types of query that can be created with the Query Wizard. I'm going to look at a couple of the others later on, but first of all I'm going to just do a simple query; the first one in the list there, click on OK. It defaults to using the selected table which is tblMovie at the moment and I'm going to choose title. I can either click the arrow or just double click and I'm going to have year of release as well, click on Next. Would you like

a detail or summary query? The detail shows every field of every record. The summary query does a summary of the records. Well, I'm going to look at the detail option on this occasion. Give it a name. Well, let's call it tblMovieQuery for now. I'm going to take the space out. I don't like the spaces in the names of these things. And then open the query to view information. So click on Finish and not very surprisingly, it gives us exactly the same sort of result that we had before.

But what I want to do, I just want to minimize the Navigation Pane and I want to look at the design of this query. So let's go back into Design View and just look at the SQL just to check that it's the same as before. Yep, select that; that from that, that's fine. Now let me go back into Design View because what I'm now going to do is to add a second table to this query and the table that I'm going to add is the MovieGenre table. So click, add, and close. Access 2013 is aware of the relationships that I've already setup and it's aware of the fact that there is already a relationship between the movie table and the MovieGenre table, and the relationship is what's called a one too many. So for one movie there can be many genre. Now at the moment, in my grid at the bottom I am showing the name of the movie, the year of release of the movie, but nothing about the genre. Let me drop genre into the third column down there and what I've now got is fields from two different tables, so I have a multi-table query. So first of all, let's run that query and see what we find.

Now you may be a little bit surprised by what you see here because for a start most of our movies aren't there at all and the ones that are in some cases appear several times. But the explanation is quite straightforward. Access 2013 in this situation only shows the movies that have genre specified. And you may recall very early on that we only put in genre for about five movies I think it was. Now in some cases, for instance the True Grit's, there's actually two movies here and it's difficult to draw the distinction unless you include the year of release field and then you see that three of those are for the 2010 movie and three of the others for the 1969 movie. But basically you have an entry here for each movie where genre is specified and in each case you have one entry, one record in the record set for each genre for that movie.

We're moving into an area of Access now that some people find quite baffling so we need to be a little bit cautious. I want to take this a step at a time and we're just going to go through the sort

of introductory stages of this now and I want to look at the SQL for this query because the SQL to this query holds a very important clue as to what it's all about.

Now if I look at the SQL, I have Select Movie.Title, Movie.YearOfRelease, MovieGenre.Genre from, now what it says is the movie table, tblMovie inner join table MovieGenre. Now inner join means where we have entries in both. And what is the join on? The join is on a situation where the ID of the movie, so the ID in the tblMovie table is equal to the movie in the tblMovieGenre table. We know that the linkage between these tables is based on the ID in the movie table being equal to the movie in the MovieGenre table. But when we say inner join, we mean where the two match where we have entries in both basically. It's what's called an inner join.

So let's go back to the Design View again, look at the relationship line there. One end is ID in tblMovie, the other end is movie in tblMovieGenre. The inner join means that we have an entry in both. Now when this relationship was copied into this query, it took on the same properties as relationship as it was copied from, but I can now supersede those from the purposes of this query. Let me just double click on the line connecting these two and in that dialog Join Properties note that option one here only include rows where the joined fields from both tables are equal is selected. I'm now going to select option two, click on option two, OK, and run the query again. Watch what happens. What I get now is a list including the same items that I had before, although admittedly in a different sequence, but what I have now is a list of all of the movies whether they have genre or not. So in the case of the two True Grit movies, one of the True Grit movies three entries for its three genre, Adventure, Western, Drama; Independence Day four genre. But most of the movies don't have any. However, they still appear.

Now let me look at the SQL for that and the difference here is very important because the SQL now says tblMovie left join tblMovieGenre. What a left join means is include every movie, everything on the left is included, but only include entries on the right where the on condition applies. So if you find something in the right hand table, the MovieGenre table where the value of movie equals one of the movies on the left then include it, but don't include it otherwise. So you get everything on the left with matching items on the right. And that's a left join. It's actually more fully called a left outer join.

So when a query needs to use more than one table, you'll virtually always need to have joins in there. Let's take one more example. This one's a little bit more complex but it illustrates one or two more important points. Let's do the opposite this time. Let's say we will take the genre table and the MovieGenre table. We'll have genre from the genre table and movie from the MovieGenre table. Now don't forget the movie here is the ID of a movie not the title. So let's run that, and of course for the various genre Action is movie number six, Adventure is number six, and so on. Now of course many of the genres are not listed here at all because we don't have a movie on the database that claims to be of that genre. So let's go into the SQL where we currently have tblGenre inner join tblMovieGenre. Now let's change that from inner join to left join. Let's run that again, and now of course we have a list of all the genre. And where we have a genre like Adult with no movie, we just get an entry for Adult but no movie, Animation nothing, Biography nothing, and so on. If I go back into Design View for that and double click on the join line there, of course got option two include all records from genre and only those records from MovieGenre where the joined fields are equal. So I'm getting every genre but I only show MovieGenre where there is a match.

Now what I want to get is the movie titles not the movie IDs. So I'm going to show the movie table and of course I inherit here this relationship. But which way should this relationship work? I've basically my selection is formed or caused on the basis of the relationship between these two because what it's saying is I'm going to show every genre and where there is a record in the MovieGenre table I'm going to include that. So I'm going to show the movie number but in order to get the movie number into a movie title, so to convert it from a number to a title I need to look it up here. So really it's the MovieGenre table that's going to drive this part of the relationship. So every one of these, every entry in here is going to lead us to get something from the movie table, but not everything from the movie table is going to cause us to get something from here. So the MovieGenre table is the one that drives this.

So I want the title. I'm going to put that in there. I won't actually need to show the ID once I've got the title. So I cannot show that, although of course it's of course essential to keep it in the query because that is the linkage between that and that. But what I need to do is to make sure that I get all of the MovieGenre entries in. So when I double click on this join here, only include no, include all records from table movie; definitely not. Include all records from tblMovieGenre.

That's the one that drives it. I want an entry here for every record that comes out in MovieGenre. So click on OK and let's run my query. And now you can see I've got a list of all my genre and then for each genre if there is one or more movies, I get a list. So Action there's only one action movie. It's Independence Day. There are three Adventure movies: Independence Day, True Grit, and True Grit. Well, I should probably include the year of release here otherwise I can't draw a distinction between these two. Similarly, Comedy: Identity Thief, Crime: Identity Thief. So that query now works in the way that I want it to.

The use of joins for multi-table queries certainly takes some getting used to and sometimes it can be quite baffling to get the right result. So I would suggest that in the early stages you just concentrate on a couple of really straightforward examples. We're going to look at one or two more examples as we go through the rest of the course and we're going to look in the next section at one or two of those other types of query as well.

So that's it for this section. I'll see you in the next one.

Video: Query Types

Toby: Welcome to the third section on queries in our course on Access 2013. In this section we're going to take a look at some of the other types of query and before that we're going to look at a couple of the other options within the Query Wizard. We saw the Query Wizard earlier on. We created a very simple query. Let's try a couple of the other options now.

Now two of the other options within the Query Wizard correspond to fairly common tasks when working with a database. The first one of them is finding duplicates. It's quite often the case, particularly when a database is grown over a period of time, many different users, perhaps following some different rules and ideas of how data should be entered and sometimes when you actually merge data from different databases or different tables within a database you may suspect that you have duplicate entries. In the case of our movie database, how would we know that we'd got the movie Casablanca in twice? Now there is a find duplicates Query Wizard that can help. So select that option, click on OK. We're asked to choose a table. So it says which table or query do you want to search for duplicate field values? We'll say the movie table, click on Next. Which fields might contain duplicate information? Well, let's say that we're just looking for a duplicate in the title for now, and of course we know we're going to find a duplicate. Let's click on Next. Do you want the query to show fields in addition to those with duplicate values? For example, if you choose to look for duplicate city values you could choose customer name and address here. So you could say "Well, maybe I'll check year of release as well." Click Next. It says view the results. Click on Finish. Now it does find the duplicate. It finds True Grit as you would expect, but by our suspicion that the difference, if there was one, would be year of release. We can look at that and say of course they are different films. They were released in different years and that's fine. Of course, on cable TV and satellite TV listings people generally put the year of release in brackets after the title nowadays to differentiate. But strictly speaking these have got the same title. If we'd actually seen the same year of release, of course we may well have suspected it's the same movie and we may have needed to look into it. But as you can see that's a pretty straightforward tool for looking for duplicates. If in fact the duplicate may be based on many more fields, so for instance if you were searching for duplicate people in a name and address list, you wouldn't suspect that everybody with the surname Smith was the same person. But if you put together the first name, the last name, maybe the date of

birth, or the age and maybe the city or the county or the state and maybe even a phone number if you'd got one, then they together may form fields where if they all match you would strongly suspect that you'd got a duplicate entry. So that's the use of the Query Wizard to find duplicate entries.

The other very useful option in the Query Wizard is this one. If I click on Query Wizard again, there's an option find unmatched. Let's suppose you've been given the job of making sure that for every movie you've got at least one actor recorded. So maybe by that time you've thousands of movies and you're thinking, "Oh good grief, I've got to go through all those movies and find any of them that don't have any actors." Now to some extent you can use the join features that we've looked at before. But the find unmatched is a pretty nifty tool as well. If I click on OK and say the query, you create will list records in the table you select below that have no related records in the table you select on the next screen. So you say okay movies without actors. Well, I'm looking for movies so let's start with movies, click on Next, and now which table or query contains the related records? So I'm looking for movies where there isn't an entry in MovieActor. So let's click on Next. Now what piece of information is in both tables? Well, the fields in tblMovie are ID and the field in tblMovieActor is movie; that's the ID of the movie. That matches; that's fine, so click on Next. What fields do you want to see in the query results? Well, I'd better have the whole lot really. I'll just have everything in the query results. Click on Next. It suggests a name for the query to be saved as, view the results, click on Finish, and I have a list of all of the movies for which I have no actors. Of course, I didn't put that many actors in. So these really do have no actors recorded, and of course I could do it the other way around. I could say find me all the actors for which I have no movies recorded, although earlier on we did make sure that every actor has at least one movie. So that's the find unmatched Query Wizard.

Now so far we've been looking at the standard type of query which is the select query and you'll certainly use a lot of select queries when you're working with Access. But there are some other options as well and I want to just quickly talk about those and just give you a quick demonstration of one of them. In the query type here on the query tools design tab we can see the main types. We have a make table query which takes the records that are selected by a select query and saves those records, that record set, as a new table. So if you wanted to not just select

the records and look at the selection but actually save it as a completely independent table, you can use a make table query. Then you have an append query and with this you can add a record set to an existing table. This is quite often used in situations where you are, say, merging a couple of databases together. You may be getting data from an external source and you want to append that to an existing table in your database. We then have an update query which does an update of data in an existing table. This can be used for what I'll loosely call bulk updates which I'm going to demonstrate in just a moment, but also can be used for individual updates when you're controlling more closely what users are doing when they're using the forms in your database. We have a cross tab query which basically aggregates data by two sets of values, normally presenting this as a big sort of spreadsheet with rows and columns of data. And then we have a delete query and this is used to delete information from an existing table. Now again this can be used for an individual record or to do a bulk delete subject to certain criteria. But what I want to quickly demonstrate now just as an example is an update query.

So my database development is going ahead fine but I'm having more and more trouble fitting things on forms in my database and I've decided that I need to save a bit of space with some of the fields. So I look at the country table. I've currently got a list of about ten countries in there and I decide that for New Zealand I'm really just going to put NZ for, United Kingdom is going to be UK, United States is going to be USA. I have to be a bit careful about how I do this because referential integrity rules mean that wherever I specify a country and remember that I used country both for actor's country of birth and for the country for a movie. I need to make sure that I've always got the appropriate records in place. So what I would normally do in this case is say well everywhere that's currently United States is going to become USA. So what I'm going to do is I'm going to introduce a new country which is just going to be USA. Clearly, no movies or actors currently have USA. But then I'm going to say that for the movies I'm going to automatically update United States wherever it occurs to become USA. Now I can do that with an update query. So I've also entered in there UK and NZ. So let me close that table for now and I'm going to close this query that I was working on and I'm going to start now with a new update query. So Create, query design; this is all going to be initially in the movie table so click on add, close. That'll make it into an update query.

Now the update query works in a very similar way to the select query but we need to look at an important difference. The field that we're going to update is the country field. So I can drag or double click. It's in the table movie and we are going to update it to in double quotes, USA, double quotes, and the criteria we apply is that it currently equals United States. Now if I look at the SQL statement it actually explains pretty clearly what we're going to do. So let's look at the SQL. Update the movie table. Set the country equal to USA where the country equals United States. So that's pretty straightforward. Let's go back into Design View, double check, okay let's try running that. Now one thing that Access does is to warn us what's going to happen. You are about to update 45 rows. It reckons that there are 45 movies that have United States as their country and note the very important warning; once you click Yes, you can't use the undo command to reverse the changes. Are you sure you want to update these records? Now very often if I'm doing this sort thing, in reality I would take a copy of the movie table before I did this. I'll actually copy the table; keep a backup copy somewhere in case this all goes horribly wrong. But it's not going to go horribly wrong. It's going to be fine. So click on Yes. Now let's go into the Navigation Pane. Let's open the movie table in the normal way and of course under country we can now see USA. So that is an update query.

Now I'm going to close that query. I'm going to save the changes and I'm going to call it Q-R-Y-UpdateCountry, click on OK. Now I've got various other queries here that I've created during this section which I'm going to remove most of them; not quite all of them, but most of them. Selected three, click delete. One of the things that I can do here in either Design View or in SQL View is now to change this query to do a different job. So for instance, I also said I wanted to update New Zealand to NZ. So I can literally and I can run that as well. You are about to update three rows. That's fine. Again, I can go in and have a quick look just to make sure everything looks okay and the ones that said New Zealand, basically the Lord of the Rings films, now say NZ.

So that leads us to your next exercise. I want you to finish off processing the movie table like this. If there are any United Kingdom films, change the country to UK and then I'd like you to do the same thing to the actor table in relation to the country of birth for actors. And then we just open the country table again. In the country table then you should be able to delete the entries for New Zealand, United Kingdom, and United States because referential integrity will then

allow you to get rid of those. The current database is provided to you as example-13 and my answer to this is example-14. So as I say, that's your next exercise.

That's it for this section. I'll see you in the next one.

Video: Operators and Expressions – Part 1

Toby: Welcome back to our course on Access 2013. In this section we're going to start to look at operators and expressions. Now we've been using them quite a bit already in the course but I want to look at them in more detail now and to see how they're used not only in things like validation of field but can also be used in queries. So first of all, let's look at an example of an expression and an operator.

One of the ones we used earlier on was the validation rule for year of birth. Now the validation rule said greater than symbol 1800 as you can see here. Greater than is an operator and in Access 2013 there are a whole load of operators and I'm going to come back to talk about those in a moment. The number it in this case operates on which is 1800 is an operand, and operands are often constant numbers or fixed strings of characters. Greater than 1800 is an expression and in this case we used that expression as our validation rule.

Now what I want to do is to create a new validation rule, but this validation rule is going to be on the date of birth field for an actor. Now the date of birth field we added after the year of birth field and we want the equivalent of greater than 1800, but for a date of birth. Now at the moment we have no validation rule for date of birth, so the validation rules empty. If I click in there I get these little three dots on the right, and if I click on those three dots I get the expression builder and the expression builder is a really good way of building up powerful and valid expressions in Access 2013. Now to be fair when you've been using Access 2013 for a while, you probably won't need to use the expression builder. You would be able to type in an expression like greater than 1800 without it. But in the early days when you're getting used to it and particularly when you're trying to build up quite complicated expressions, the expression builder is a very useful tool as I'm about to show you.

Now if we look at the structure of this builder the top section, this panel, is the one that the expression will actually appear in. And basically you can just type in there. You can type the expression in. But then there are these three panels at the bottom that let us select the right sort of elements, categories, and values that can help us to build the expression in a structured and valid way. Now let's start with these expression elements down here. There's a sort of tree structure here under expression elements and at the bottom of the tree is operators. If I click on

operators, I find that there are various operator categories. There are arithmetic operators. There are comparison operators, logical operators, and string operators. Now I'm going to look at some of the others later but I'm going to start with comparison operators and as you can see the comparison operators include the greater than. I've got a less than which is the chevron on its own, less than or equal to, not equal to, equal to, greater than, greater than or equal to, between, in, and like. Now again, I'll talk about one or two of those later. But you may recall that the original validation rule we had for year of birth was greater than. So if I double click that, that appears in my expression up here; the one I'm building up. And then after that, I can put in a constant. Now the constant I used for the year of birth was just 1800 and I could just type that in there. But if I wanted to go for some very specific constants, if I click under expression elements on constants then the sort of constants I can have are things like an empty string which I might use if I were doing a string comparison, the equivalent of false, the equivalent of null, the equivalent of true. Now that would effectively, the greater than 1800 that I've got up here, that would effectively be a valid expression for the validation of the year.

But what about a valid expression for the date of birth as opposed to just the year? Well, one of the things you need to be very careful of when you're doing comparisons in Access 2013 is that you're comparing data of the same type. If I'm checking the date of birth for an actor to make sure that the actor's date of birth or the proposed date of birth is a feasible one, I need to compare it with a date. Now when we were looking at just the year, we did the comparison with the year number as here, greater than 1800. Now I need to do a comparison with a date. Now the date that would be compatible with the comparison we did before would be the last day of December in 1800. So that would be December 31st. And the way I define date constants in Access 2013 is a little bit unusual but if you just type the date in the way you'd probably think of, so if I type 12, stroke, 31, stroke, so that's December 31, 1800 and click on OK, that will actually do the job. And as you can see down there in the validation rule, what Access does is to put those hash symbols and in fact the hash symbols are the delimiters that Access 2013 puts around date constants. That's probably one of those things that you're going to use quite a bit because you quite often check dates in Access 2013 in whatever sort of database that you're building.

So there's my basic validation rule. But I'm not really quite happy with that because just saying that a date of birth must be later than the last day in the year 1800 isn't enough because

somebody might accidentally type in a date later than today and clearly somebody cannot have a date of birth after today. So what I want to do is to make my validation rule a little bit better by saying it's going to be between the date I've got there, December 31, 1800 and today. I don't want to say what today's date is; I just want today.

So if I go back into the expression builder and now I can edit the expression I've already got or I can erase part of it, start again. I'm going to get rid of the greater than because I know I don't need the greater than. I'm going to look back down at the operators. You may recall before we saw a comparison operator of between so let me double click on between. And what Access 2013 does is to show me the syntax for a between statement. A between statement says between an expression and an expression. Now I know what the first expression should be. It should be that date, December 31, 1800, and what I can do is I can select that and cut it. Now if I click anywhere in the first expression, it automatically selects the whole expression and I can paste in that date. Now for the second expression, I want today's date. Now under expression elements, the top item there is functions and the functions reveal a set of built in functions that Access 2013 provides. You can in fact make your own functions, but that's outside the scope of what we're doing on this course so we're going to use the built in functions. If I select built in functions, I find that there are categories of function that include conversion, date and time, financial functions, general, inspection, math functions, text functions, etc. Now what I want here is one of the date and time functions. And if I choose a function on the right, the whole list here, for instance the first one that's selected there is see date. There is a syntax description at the bottom, see date, brackets, expression, and then a description of what that function actually does. Now the date function, the third one in the list, returns a variant of type date containing the current system date. Now I should point out that of course Access 2013 won't know if you've got the system date on your computer set wrongly, so all we can do for date is to use the date that you're computer thinks it is. But that's the one we're going to use in this case so I'm going to click on expression and then double click on date. Now the expression says between December 31, 1800 and today. Click on OK and that is now my validation rule. So let's put in some validation text and having entered that text, we're ready to take our new validation rule for a test drive. Now to be fair, between those dates would actually include those dates. So it isn't quite what the validation text says but I'm sure we could adapt the validation text quite easily. Let's save the actor table, let's go into actor maintenance, and let's try changing a date of birth. So

let's try to change the date of birth for Humphrey Bogart to 2099. Just click somewhere else to get it validated; no good. Let's try 1799; also no good. Let's try 1899 and we're fine.

So I'm back in the table design now of the actor table and now I think we can get rid of year of birth because we've got date of birth in and it's a required field and I'm pretty confident we can always find the actual date of birth of an actor. So let's get rid of year of birth. So I select that field, right click on it, click on delete rows, get a warning, and that's that. So close the actor table, save the changes, and of course now we'll find if we go into the actor maintenance form that we will have a problem because the year of birth will now be missing. So we'd actually need to go into the actor maintenance form to remove that as well.

But we're actually going to look at the actor maintenance form in the next section when we do a little bit more work on operators and expressions. So let's cover that then and I'll see you in that next section.

Video: Operators and Expressions – Part 2

Toby: Hello again and welcome back to our course on Access 2013. In the previous section we looked at expressions in queries and in particular we built up a pretty good validation rule for the date of birth of an actor. Now right at the end of that section, I mentioned that we needed to make a little bit of a correction to the actor maintenance form. But we're going to actually do a couple of other form changes in this section related to operations and expressions. We'll start with the actor maintenance form though and what I want to do is first of all to correct that problem and then to look at the use of an operator to populate an additional field on that form.

So first of all, I need the actor maintenance form in Design View, just minimize the Navigation Pane. Now I'm going to take out the year of birth field because we no longer populate that in our table of data so that can go. Now I'm going to add a new field, but I'm going to add this new field not in the detail section of the form but in the header. Now to add a new field, you saw how to do that before. We can use the Add existing fields button here, but this time I'm going to add a field that doesn't actually exist in the table. I'm going to use a textbox so I choose the textbox control in the Controls Group on the Design Tab, select that, click somewhere within the header. It doesn't really matter where at the moment and draw a textbox. Now when I've done that the textbox says Unbound. Now an unbound control is one that is not directly linked to a field in a table and you wouldn't use an unbound control to update field data in a table. But you can display data in an unbound control and that's what we're going to do in this case. We're going to display the actor's name in the header section of the form, but we're not going to do it in the way it is in the detail section, separate fields for first name and last name. We're actually going to put together the actor's name as first name, then a space, then last name. In other words, in the format that you would normally say that actor's name and we're going to do it using the expression builder.

Now the first thing we need to do is to right click on that control, our new textbox, and click on properties to bring up the property sheet. And then in the control source on the Data Tab in the property sheet you can see it's currently empty. There is no source for what goes into that control on the form. But I have got three dots on the right there and I can three dots bring up the expression builder. Now although the Expression Builder dialog is the same here, what we see

in the three panels at the bottom, expression elements, expression categories, expression values, is quite different. There are some additional entries. For instance, at the very top of the expression elements we have F-R-M-ActorMaintenance and what this says is that we have the form ActorMaintenance, there is a little plus sign to the left of that which we means we can expand actor maintenance and we can find that there is actually a subform. Depending on whether we select the form or the subform, we have a list of the things that are included and within these expression categories, the middle list, we then get individual values. Now if I look at the main form, so this is F-R-M-ActorMaintenance, I have a list here of all the things that are on that form and amongst the things that are on that form we have the first name of the actor. So if I double click first name, it gives me first name. The fact that it's in square brackets tells me that it's actually a value which is on the form called first name. Now the operator to combine or concatenate two strings, if I go into operators, string, it's the ampersand operator. So if I put an ampersand in there and then go back to actor maintenance and then select last name, I've actually now got an expression of first name, an operand, ampersand, operator, last name, operand. Now if I do that, the two parts of the run will run directly together. So what I put between them is double quote, space, double quote which means that the thing in the double quotes will be between them which is the space and then I just put the ampersand operator in again. So that's first name concatenated with a space concatenated with last name. So that's the expression that will be the control source my textbox and then all I need to do is click on OK.

Now there are a couple of other things that I need to do to that but I'll come back to those in just a moment. Let's close the property sheet and let's give it a try. So we go into Form View, first actor, Humphrey Bogart. Let me step to the next actor, Ingrid Bergman, and as you can see their name, first name, space, last name is being built perfectly well in the header of the form using the information that's on the form. And of course, the controls on the form are bound to individual fields within my actor table.

Now the couple of things that are wrong with this, in fact there are probably more than that, but the two most obvious things that are wrong. First of all, I can click in this field. Now I don't want to be able to click in there; that's really for display purposes only. Also when you add a textbox, you automatically get a label and you may just be able to see a sort of ghostly presence of the label at the back there. So what I'm going to do is to go back into this form and change

this control, the name control up here, to being not enabled so that nobody can tab in there and try and make any changes. I'm also going to delete that label as well.

So there we are. I've now changed the enabled value of that field to no and I've removed that label. It would be possible to other types of field. For instance, you could actually use a label here, maybe even with either this or a label version of this, remove the label here that says ActorMaintenance and just put the full name of the actor in the corner here, maybe bold, different color, and so on. And maybe instead of having actor maintenance just have the name of the actor. So there are plenty of possibilities there to experiment with.

Now I'm going to cover one more aspect of operators and expressions and we're going to look at calculations. We're going to do that in the next section so please join me for that.

Video: Operators and Expressions – Part 3

Toby: Hello again and welcome back to our course on Access 2013. In this section we're going to look at one other aspect of operators and expressions, and in doing that we're going to look at another couple of extensions to what you've seen so far to give you more flexibility and power in your use of Access 2013. So let's get started.

Now the first thing I've done here is to create a new table and it's a table called the movie rental table. Attached to our movie database we're actually going to have access to a rental facility where you can rent a movie either in DVD format or in Blu-ray format and for each of those formats, there is a rate for a movie which is basically a rental rate to cover, say, three nights of use of that movie. Now I've set that up with three fields in a table. The first field is the movie ID so that's the primary key, the unique movie ID of the movie that these rates relate to. There is then the DVD rental rate which is a currency field. I'm currently working in the US locale so that'll be in US dollars. And then there's a Blu-ray rental rate also a currency field. If I switch to looking at the data here in Datasheet View, you can see for the movies I've got where there is a rental rate the rental rate is shown. Now notice some of the movies are new movies. There is currently no rental rate, or in one or two cases, of old movie they're not available for rental, for instance on Blu-ray. So that's the new data that I've setup.

Now whenever you come to add new data to a database, there are always a number of questions to consider. If you were adding something like this rental facility or at least these rental rates, you'd have to consider whether it would actually be better to add a couple of fields to the movie table itself. Now I chose on this occasion to setup a separate movie rental table and that and the movie table are obviously linked by the movie ID. Given the circumstances that might arise, the type of data changes over time and so on, there may be various ways of adding data to the database. I chose this method here partly because it keeps that rental information separate. For instance, I may want to get rental information from different rental companies at some time and I may want links through to alternative rental facilities, but also partly because I want to demonstrate a particular new feature while we're looking at these calculations.

So let me close the movie rental table and open the movie maintenance form. Obviously, there's no sign of these rental rates on the movie maintenance form at the moment. Let's suppose I want

to add those movie rental rates to this form. Go into Design View and of course where we've been looking generally, if we want to add existing fields is on the field list pane here we have fields available for this view, table movie, etc. Now, of course, the rental rates are not there. They're in a different table. The other tables that are available are listed at the bottom. Right at the bottom, fields available in other tables. Now at the moment, this table is not a related table. I haven't actually setup a relationship between the movie table and the movie rental table. But let me suppose that I want to do that now using fields available in other tables. So I can open up there and I can say well I actually want DVD rental rate. I'm going to pull down and make a little bit more space here. That's fine. And I'm going to put the DVD rental rate there say for now. Access 2013 knows that I'm working with the table tblMovieRental and it says choose a table to relate it to. Now of course I'm going to relate it to the movie table and in completing this dialog I'm going to specify the relationship between the two. Now in reality I would never actually do things this way because I would pretty much always setup the relationship first, but it is possible to do it this way and some people prefer to do it this way. So I'm going to specify the relationship. It's the relationship from movie rental to movie. So how do you want to relate movie rental to this table? This field in movie rental; now which is the field in movie rental? Oh, it's the movie ID. And which is the field in movie? It'll be ID. Is it one record in movie rental matches one record in movie, many to one, one to many? It's definitely one to one so I can click on OK, and I've now added my DVD rental rate to that form.

Now having added it to the form, obviously my tblMovieRental is now one of the ones which have its fields available to put on the form. So what I'm going to do is to make the form a little bit taller and I'm going to put the Blu-ray rental rate on there as well. What I'm now going to do is to just change these labels. Now if you click in a label; I don't need the field list anymore and click on the property sheet. If you look at All for a label, it tells you what the caption is. It says DVD rental rate all as one word which for a caption is not so good, so I've change that to DVD rate and this one I'm going to change to Blu-ray rate. Okay. And then I'm going to do a little bit cosmetics to make it the same look and feel as the other fields and leave me with that. I'll join you in a moment.

So there we are. I'm now looking at my form in Form View. It looks absolutely fine. Let's just step through the movies, look at DVD rate and Blu-ray rate and that looks absolutely fine.

Now what I want to do is to add tax to those rates and I'm going to add the tax in the form itself. So we're in Design View now. Let's add another textbox. I'm going to put it just there, and then I'm going to go into the properties of that new control. Now notice that the textbox gets a name of Text 23. So it basically assigns a sort of default name. Let's change the name to make it a little bit more helpful. Let's call that textbox DVD Tax. Now the next question is what is the control source? Now we're not storing the tax on this rate anywhere. We're going to calculate it each time. We're going to use a 10% tax rate for the moment. But we're going to calculate it by multiplying what's in the DVD rental box by 10%. Now let me just select the DVD rental box to check what it's called. It's actually called DVD rental rate. That's fine. So let's go back to this box and in control source we'll bring up the expression builder. Now we're going to do a calculation in this case so it's going to be 10% of the DVD rental rate. Well, if I select that form, under the categories I've got a list of all of the various fields that are on there, and the one I want is that one, DVD rental rate, double click that. Now the multiplication symbol is the asterisk and for 10% tax I'm going to say 0.1, and that will calculate the DVD rental rate tax at 10% of the DVD rental rate. Click on OK and there we are.

Now there's a certain amount of tidying up to do on that field, but the first thing I'm going to do is to just check that it's doing the calculation correctly. So I'm going to close the property sheet and I'm going to go into Form View and let's see what we get. Identity Thief doesn't have a DVD rate. Let's try the next one which does and we get 0.499. Now there we have a problem because this is actually a currency field or it should be a currency field and obviously we should only really be showing two decimal places. So there's something wrong with the type of the field or the format. That's fine. It's actually doing the calculation correctly but we just need to tidy up how things look. The other thing to point out about this is that although we maintain the DVD rate on this screen, so we might be able to go into DVD rate and change 4.99, maybe do a discount of 4.49 or 3.99 or something like that. We shouldn't be able to change the tax because the tax will always be calculated on the basis of a percentage of the DVD rate. We might well want to implement a feature whereby we could vary the tax rate and then use that variable tax rate throughout our database. But that's a little bit beyond what we're doing on this course at the moment. We're going to stick with 10% and I'm going to make those couple of changes to sort this particular tax out.

So let's fix a couple of these problems. Let's start with the fact that we're not seeing the DVD rate with two decimal places and a dollar symbol. On the property sheet, if I click in format, a drop down appears and I can choose a type for this control or rather the data in this control and I really need currency in there so that's fine. The other thing I want to change in this control, as I mentioned just now, is I don't want the control to be enabled. I don't want somebody to be able to click in there. If I go down to enabled, it's currently set to yes. I want that set to no so that somebody can't click in there.

Okay, the next thing I want to do is to untangle these two controls here. If I select the label and note that I've got a selector both on the label and on the control that owns it. I could of course just drag to the right. But if you've got overlapping controls and you're finding it quite difficult get hold of one and move it without moving the control that it's overlapping, once you've got the control selected that you want to move, if you use the right arrow in this case or the left arrow, you can nudge the control a little bit at a time. Similarly, when you've got a label and the associated control both selected, you're having trouble separating them. You can separate them but if you have trouble, you can actually use the sizing handle in the middle say of the main control here. I could pull that back to there which doesn't move the label, pull that back to there as a sort of rough alignment with what's above it, and then within the text of the label, note that the caption if I look in the property sheet currently says Text 23. Let's put in there the word Tax. Let's go down to text align and we'll right align the word Tax, and then we'll go back into Form View and take another look at that. Now that's better. I've got the tax at 10% and that seems to be working fine. Now I need to sort out the fill color, the font there has got something strange about it, and so on. But I'm just going to go into set these up to be the same way as the rest of the form. And then the other thing, I want to do is to add another textbox here and this textbox will be the total rental rate. So it would be the basic DVD rate plus the tax. So I'm going to set those up now. Join me again in just a moment.

So here we are back at our form. I've added the total DVD rate box as I said and if I just step through the first two or three movies, as you can see DVD rate, tax, total DVD rate including tax. Now the other point to make here is that I can change the DVD rate here. This is my way of maintaining DVD rates. So if I was going to make True Grit 1969, change the rate from 4.99 to

3.99, all I've then got to do is to tab to another field, click in another field, and then of course the tax and the total rate are updated as well.

And then I'd just like to show you one other thing about this form now. If we go back into Design View and choose one of the fields, say this field that I just introduced, the total field there. It has a meaningful name. If I click on properties, I've given it the name of Total DVD Rental Rate. Now of course it doesn't correspond to a field in a table because it's actually a calculated field shown in a control that contains the value of that calculated field, and in order to enter the expression I've used here I've gone into expression builder. Now by making every object, every control on the form, have a sensible name, when I now look at the expression categories in the middle everything that's listed has a sensible name. So there are things like DVD tax and DVD tax label and they refer to the tax payable on a DVD rental and the label associated with the tax payable on a DVD rental. By giving everything sensible names, it makes it much easier to work out things like what to put into calculated controls. Anyway that is I think a very useful tip to bear in mind.

You're exercise now is pretty straightforward. I've saved this particular form as it is now as example-15. What I would like you to do is to take example-15 and put in the equivalent entries for tax and total Blu-ray rate. Make sure it works of course. My answer to that is example-16 and I'll see you in the next section.

Video: Subforms

Toby: Welcome back to our course on Access 2013. Now some time ago I said to you we'd come back to the subform on the actor maintenance form and look at the list of movies that a particular actor has appeared in. Now the use of subforms can become actually quite complex in Access 2013, but I'm going to concentrate in this section on just showing you the basics of how they work and the sorts of things that you can do with them and then I'll leave you to experiment with them a bit as well.

Now looking at the actor maintenance form as it is now, we can see that for a particular actor, in this case Humphrey Bogart, we have a subform at the bottom with a list of his movies, but it's not a particularly helpful list because it's got lots of IDs and so on in it and it would be much better if we could see for instance the title of the movie in this subform as well.

So first of all, let's look at the design of this form and in particular if we select the subform at the bottom and look at the properties of the subform it's got a name of Child15, not a particularly helpful name for a subform. So let's call it the movies subform because it lists the movies for the actor. The important thing here is the source object. The source object is the table MovieActor, and what I want to do now is to look at the table MovieActor.

Now the MovieActor table is the table that links movies to actors. So such it's a critical part of our database but the information in it is quite limited because it mostly comprises numbers. We have a unique ID for the record in the MovieActor table itself. We have the number of the movie, so that's the movie ID not the title. We have the number of the actor, that's the actor ID, not their name. And then we have a short text role for the role that the actor plays in the movie. Now that's quite limited information although it's all we need at the moment. But really what we're showing in that subform is just that type of information which makes it not very helpful for somebody who's just looking at two or three numbers and a role as a short piece of text. So what we need to do is to supplement this information with information from other sources. Now the way we're going to do that is we're going to base that subform not on this table but on a new query that we're going to create now.

So we're going to create a query, use query design. We need information from the MovieActor table and we need information from the movie table. Okay. So what we need, we will need the

ID from the MovieActor table; see a reason for that a little bit later on. Then we'll need the movie ID itself, so which movie is it that the actor was in. Then we'll need the title of the movie and we'll put in as well the year of release. And then we'll put in their role and we'll put in the actor ID as well. So we've basically got six fields that we're getting in this query. We'll close the query. We'll say yes to saving the changes and we'll call it Q-R-Y, we'll call it ActorMovies for now. That's fine. Click on OK. That's our query.

So I'm back into Design View and I'm going to now change the source for this subform, but I need to point something out to you first. If I right click on the subform, bring up properties, I can see here yes movie subform. The source object is the table MovieActor. That's fine. But there's a very important pair of properties below that and the pair of important properties say Link master fields and link child fields and what these do is they're absolute heart of how subforms work. In this case, that is that when you're looking at each actor in the actor table who's got an ID and of course the ID is shown here, the thing that determines which roles are shown is the link between that ID and the actor in the MovieActor records. And that's reflected by this pair of fields here, link master fields ID with child fields actor. That's what makes the roles that appear in the subform be the ones for the actor in the main form. So bear that in mind as I change from the table MovieActor to the query ActorMovies because when I do that, not only does it change from that table to that query it's still got link master fields as ID but it's changed link child fields to ID. Now let me just close this and let's have a look at what we can see about the actors now.

Now note what's happened. It's got itself completely confused because according to this, Humphrey Bogart played the role of Sandy Patterson in the movie Identity Thief in 2013. It's a rather difficult for somebody who's been dead for very many years. The reason this has gone wrong if you like, and this is something which causes a lot of people a lot of grief, is that when we changed the source of this subform we didn't make sure that we were matching the child to the master. Now the ID of the child, the actor in the child in the subform is actor. It's not ID. If I go back into Design View again, my subform is still selected, right click, bring up properties. I need to have not ID in there. I need to have actor in there. So in the master, it's ID; that's the ID of the actor. In the child, it's actor. Let's close that property sheet. Let's go back into Form View and try that again. That's a bit more like it. Not only does it now work correctly but you

can actually see the information that we need. We've got all the numbers as well. I'll talk about the numbers in a moment, but basically you can see ID, movie number five is Casablanca, year of release 1942, part played Rick Blaine. Let's try the next actor. Ingrid Bergman, Casablanca, Ilsa Lund; John Wayne, True Grit, Rooster Cogburn. That's fine. The mechanism works and I've got more information now in my subform.

Now one of the things we've done here is to use a query instead of a table. As your use of queries develops, you'll find that very often you use queries for all sorts of things. Now let's suppose we look at this actor maintenance form again and we say well if I wanted to actually use this actor maintenance form to setup the movies that each actor has been in, then one option would be to search for a particular actor. Let's suppose that I wanted to find Harrison Ford. I already know that I can do a straightforward search here. So if I click in the Search button at the bottom, put in Harrison, I'll get to Harrison Ford. And then I could setup another movie for Harrison Ford. In terms of using the form here, the subform, I know now that all I need to do, if I just typed in a movie number, say, number 23 and press the Tab key, that is actually Star Wars Episode 4 and I know that the part he played in there was Han Solo. It's actually quite a small step to replace the need to know the movie number by just putting a drop down here with the titles in and then I could scroll down the known titles and put them in. So this could be further developed. But at the moment, it's a perfectly feasible way of updating the roles that a particular actor has had. But one thing you may have noticed about the actor maintenance form is that it's basically showing the actors in the sequence that we added them to the database, supposing we wanted the actor maintenance to present the actors in a different sequence.

So let's go back into the design of this form yet again and we're going to select the form on this occasion. So if I bring up the property sheet but then select the form, don't forget the record source is the table actor. Given that the current record source is the actor table, what I really want is the contents of the actor table but I'd like the contents of the actor table sorted on, say, last name; so into the builder. This is the query builder. Do you want to create a query based on the table, in this case the actor table? Yes. That brings me into the query grid as normal. For all fields I would literally just drag down or double click on that. But if I want to sort by last name, if I separately pull down last name and say sort, ascending, close that. Do you want to save the changes made to the SQL statement and update the property? Yes. What I now have, let me just

pull the property sheet over, is a select statement; select basically everything from the table actor and order by last name. So let's close the property sheet, go back into Form View. Actor one is now Jason Bateman, actor two Ingrid Bergman, Humphrey Bogart, and so on.

If I eventually say get through to Harrison Ford look at the movies for Harrison Ford; year of release 1991, 1989, 1977. Why don't we have his movies in order of year of release? So again back into Design View. Now with this bring up the property sheet for the subform. The query we've got is query ActorMovies. So let's open query ActorMovies. Let's go into the design of that query and let's say we're going to order by year of release, ascending, close, yes, close, yes. Let's open up actor maintenance again now. So we've got actors in alphabetical order of surname and then when we get to Harrison Ford his movies are in year of release sequence. Now of course year of release might not be good enough. Many actors have more than one movie per year, but just to be going on with I think that's quite an improvement as well.

So that's it on this fairly brief look at subforms in Access 2013 and the end of this section. So I'll see you in the next one.

Chapter 15 – Reports

Video: Report Wizard; Previewing a Report

Toby: Hello again and welcome back to our course on Access 2013. In this section we're going to start to look at reports; one of the very powerful features of Access that has been improved over many successive versions. Reporting in Access 2013 is a very flexible and powerful feature.

Now for many people the main way that they interact with an Access database is per the use of forms. Forms are used to enter data, to maintain data, and to delete data. But for others, they're never involved in the actual maintenance of the data. Their main interest is in the information that it can give them, often in a summary form and this is really where reports come in. Many people really just want to know totals. They want to know the state of things as they are today or perhaps a historical summary of what's happened in a database or maybe just even a snapshot of information about one person or in the case of our movie database they just want information about one movie. They want a report on one thing or a collection of things and these snapshots are really what reports do. Generally speaking, the major difference between reports and forms really is that reports when you see them, when you see a printed copy or when you have an electronic copy emailed to you are a snapshot. Once the reports been run off, it then effectively becomes out of date. You're not looking at it live. If you look at the same report on the same piece of paper next week, you're looking at an old report. So reports also have the feature that they're more of a snapshot in time than the current status of data in a database.

Now I'm going to talk a little more about the general features of reports a little bit later on but I want to demonstrate reports straightaway and then we can start to talk about the structure of the reports in Access 2013. Let's do a very simple report. Let's do a report which lists the countries in our country table. Now if we select the country table and go to the Create Tab, there is a section, Reports, and one of the options in there is the Report Wizard. So let's try the Report Wizard.

Now the Report Wizard by default uses the table that's currently selected which is the country table. It looks at the fields in the table, makes a list of them. Here it is on the left, country. And

as usual we can choose the field or fields we'd like to see in our report. Now in this case there is only one so let's just double click it, click on Next. What sort order do you want for your records? Well again, there's not really a lot to choose here. We've only got the country in it. So country's the only one there is. We're going to do it in ascending order, click on Next, and then we're asked about the layout. Now there are a couple of very straightforward options there. The columnar and tabular layouts are the main distinctions that we draw and I'll talk a little bit more about these later on, but columnar means that we just have the information in columns. If I select on columns, it's not really a very good example with just country in it so the distinction. You'll see that better later on. But columnar means that basically the information follows in sort of flows of columns, like a sort of newspaper type effect with multi-columns, whereas tabular is really a spreadsheet effect, columns and rows. So let's stick with tabular as we only have one field in this anyway and then we get a choice of orientation between portrait and landscape. Let's stick with portrait. And then there's an option down here, adjust the field width so all fields fit on a page. Well, that shouldn't be difficult with country and a single field. So let's again click on Next. Then we're asked to give our report a name. Let's just call it R-P-T, that's the prefix I use, and let's call it CountryList. And then one of the options we get with the wizard is preview the report. So let's click on Finish and preview the report.

Now the report won't generally fit in the space on a screen like this one, especially as the resolution I'm using here isn't very high. But you can get the general idea. There are certain features of the report you certainly should be able to see such as the banding of the rows to make it a bit easier to read across, although that's not so much of a problem when you only have one field. And then to get a fuller view, you can either use the scroll bar at the bottom that lets you go from left to right or if you need to see a whole page, there's a scroll bar on the right and of course they're usable with touch as well. But you also have in this preview mode some zoom buttons down at the bottom right of the status bar. Now I'll come to the zoom buttons in just a moment, but when you're previewing a report you're in a special mode here with the Print Preview Tab enabled. With the Print Preview Tab enabled, you have a whole set of tools that can help you to layout a report to your exact requirements.

Now one of the most common problems particularly in the early stages when you're working on a report and you're just trying to get the overall shape right is seeing enough of it in the view at

once. So apart from the zoom slider at the bottom right there, there is a Zoom Group on the Print Preview Tab that lets you choose to see one page. That will then reduce or expand the size of the report to fill the view. Or two pages. Of course, not really helpful here because the whole report is only about half a page. Or you can choose more pages: 4, 8, 12. Obviously we'd need an awful lot more data to be able to make use of that.

But you also have a zoom control here and with this zoom you have an option of fit to window which does the best fit that it can. Or a number of presets, including a 100% zoom and then right up to a maximum 1000% zoom. Now with some of the reports that you might preview, the detail is quite considerable and these zoom features are very useful. Let me just have a quick look at the slider down at the bottom here on the right. The slider has a numeric indicator to its right telling you the zoom level as a percentage. So we're currently on 48%. To increase or decrease the level of zoom, you can either use the zoom out button on the left there or the zoom in button on the right. They will change the level of zoom by 10% each or you can move the slider from side to side. So let's put it back at 100%.

Now when we're in print preview mode, one of the options in the group on the left there is print. I'm going to talk about printing a little bit later on in a more general way. It's pretty straightforward in Access, but there are a couple of things that I want to cover. But still within print preview we have options for page size. So we have a default page size setup but you can go in and change that. My default is set to A4. Not only can you set your default report size but you can also for any specific report change the size. So for instance, if I wanted to change this now to letter size I could do that and it's automatically changed.

I also have options for adjusting the margins around the edges of my report pages. So if I click on margins, normal is the default. If I wanted to go for wider margins which can be useful sometimes to give you room to sort of write a few notes around the edge of a report or to let people doodle around the edge of a report. But also sometimes it helps to center things in a report or perhaps so that the report isn't a bit too overwhelming having too much on the page. So if I select wide, I get plenty of space round the body of the report. And then if I'm really having trouble squeezing everything in, I can go for narrow margins; easy to reset those using the Margins button in the Page Size Group.

Now when we actually use the Report Wizard just now, we chose a page layout of portrait. Even though we've made that choice earlier on, if you wanted to change it to landscape now you could. Similarly, if you wanted to change it to being a multi-column columnar report, if you click on the Columns button here, it brings up a Page Setup dialog where you can specify the number of columns and the spacing between the columns. Now this Page Setup dialog is also partly involved in the printing which I mentioned a little while ago and I'll come back to a little bit more about page setup later on.

When I finish previewing my report, maybe if I'm happy with it I might decide to print it at that point. But when I finish, click on close print preview. I'm back into the report and in this case I'm into report design mode and report design is what I'm going to look at in the next section, so please join me for that.

Video: Report Design

Toby: Hello again and welcome back to our course on Access 2013. In the previous section we created a report, a very simple country list report and we looked at the print preview facility in Access 2013. In this section we're going to look at the design of reports in Access and we're going to start by looking at that very simple report because it will illustrate quite a few important aspects of report design in Access 2013. So let's get started.

Now the first thing to note is that in the Navigation Pane we have a new category here of reports, and within reports we have a single report; rptCountryList. Note again you get a slightly different icon there just to indicate that it's a report. Now with the report in Design View, we have report design tools. We actually have four tabs there. Some of them largely correspond to tabs forms in some of them; some of the things are different. But the overall structure of a report is reflected well here even though it's a very simple report.

Now if you look at the very top entry on the right here, you have report header, and if you look at the bottom entry, you have report footer. Basically, the header always appears at the beginning of the report, report footer at the end. The report footer here by the way is empty. There's nothing underneath it, whereas the report header has got some content.

Now within the report you have another structure which is repeated and the structure which is repeated is page header and page footer. And basically what happens is that at the beginning of each page you get whatever is in the header here which is a basically a fixed label saying country. And then you have down here a footer which has got equals now, you may remember seeing equals now quite a bit earlier on in the course, and this strange combination over here that I'm going to talk about in a moment.

Now in the body of the reports what's called the detail of the report you have one thing and it's the country. Basically, the way the report works and this is a very common structure for the reports is that the detail is repeated. So you get country and country and country and country. If it runs to more than one page, then for each page you get a page header and a page footer. Right at the beginning of the report, you get a report header and right at the end you get a report footer and that's basically the structure of the report.

Now although this report is actually a very straightforward report, it reflects many of the key features of reports so I'm just going to concentrate on two or three things in this report now before we create a more complex report. The other thing to point out here is that many of the features of reports overlap the features of forms. So we talk about controls on reports in pretty much the same way that we talk about controls on forms. When we look at the tabs, the report design tool tabs, we'll see things like add existing fields, property sheet, and things like that; things that we've already become familiar with when we've been looking at forms. So let's start here with the report header.

So that's pretty straightforward. If I select the control, right click, look at the properties, I see that it's a label. It's got a name of Label 2. I'm not going to make a point of renaming all of these controls. I mentioned earlier on that I always try to give the controls meaningful names, but for the purposes of this very simple report I'm not going to go through that. But let's look at all properties. We can see the caption says R-P-T-CountryList. If I want to change the caption, I can either delete and type here or I can type within it in the report design itself. I'm going to call it, there we are, and then when I've done that if I just click somewhere else it automatically updates the property so that's fine. One of the things about headers, if you look at that particular one that looks absolutely fine, movie database country list; if you actually want say a header to be across a page and centered on it there are a couple of ways of doing that. But one very straightforward way is to actually just stretch the control out to the width of the page. And then if you go back into the properties, when it comes to text align you can change it from general to center. So that's one way of centering things. You don't really have to worry about centering the control. You let the control fill the whole width of the page but center the text within the control.

Now in this particular report we have as a page header just the word Country. It's really a label. In the detail we have the country itself and the detail is repeated throughout the report until the report is completed with the last country. And then we have the page footer. Now to some extent it's a subjective choice what you put into a page footer. I'm going to look at the two entries here in just a moment. But you may also want something in a report footer. Now this particular report has no footer but the page footer is in two parts. On the left you have this control that says equal now and then on the right you have and then this long thing here. Now

let's start with the one on the left. If I click on that and then look at the properties, the content says equals now and as you should realize if I click there, go into the expression builder, it's the now function. If you can't quite remember what the now function does, if you go into the functions, the built in functions we have. This is a date and time function and you can check on now, now is the current system date and time. So this would be the date and time in the case of a printed report that the report was printed. So that's that one. That's quite often a very useful thing to include. Note that now is the date and time as well.

So let's now turn our attention to the item on the right of the page footer, that's this one. Again, we'll go into the expression builder and I want to look at this expression because it's probably an expression that you'll use quite a bit.

Now when we looked at the expression builder earlier on we had a lot less entries in this expression element side here. And as you get into different situations with Access 2013, the list of items in this preview on the left, the expression elements list gets longer or shorter. Now this particular one here where we've got the word Page in a few different ways is one of the common expressions that's used in Access. If I click on common expressions, the expression categories are page number. If you actually want to write page number where the number is, say, 10, so it says Page 10, the way you do it is to write Page and a space in double quotes, ampersand the string concatenation operator, and Page because Page is what's called a system variable. It's a value in Access that Access keeps track on and when it's dealing with reports, it always knows which page you're on in a report. Now in my expression here equals, double quotes, page, space, double quotes, ampersand, and then Page in square brackets, that will actually say Page 1 or 2 or 3 or 4 and then it's concatenated with another string, space, Of, space, and then the next system variable is Pages in brackets and Pages is the total number of pages in the report. So wherever you put this particular expression equals, page, ampersand, brackets, page, dah-dee-dah-dee-dah, that says Page 3 of 9 or Page 2 of 27; whatever it might be. In fact if you look under the expression categories here there we are, Page N of M. If you wanted to use that on a page footer or a page header or a report and anywhere you want to on a report, all you would need to do is to double click this and that will pop that expression into the main panel in the expression builder for you. So let me just delete what's there. I want Page N of M. I just double click on that and there it is.

Now the other common expressions it's got here are the total number of pages and the current date and the current date and time. So these are very common, useful expressions that you can easily pick up in the expression builder.

So let's just see how this footer looks in the report. I'm going to go into preview mode. So if I right click on here and say print preview, scroll down to the bottom of the only page. You can see the date there. Note the times not shown. I'll come back to that in just a moment, but of course on the right we've got Page 1 of 1. So that's exactly how it looks.

So back in Design View again and back at this field, the bottom left hand side of the page footer. If I go back into properties, we saw before that the function that's used there is now which gives us the system date and time and of course there's a format property as well currently set to long date. But if you wanted to try a different format, don't forget the ones that are available; anything that's associated with a date and time field. So we could have medium date, short date, long time, etc. Now when we're in Design View, we can make many of the same kinds of changes that we can make to forms. So for instance, in Design View we can change theme, we can set colors, fonts, and so on. In reports that correspond to numeric data then we have various options for grouping and sorting data, showing totals, hiding details that we don't want to show in any particular place such as when we're dealing with multilevel data and we don't want the very lowest levels to show. And then we can do things like put a logo in the title, add additional fields to reports, all the same kinds of things. Many of these things correspond directly to the things that we can do with forms. So I'm going to leave you to experiment with most of those, although we are going to look at another example or two in the next section and we'll see one or two of those things in use there.

But I want to look finally in this section at one other feature. Given this fairly standard structure for a report, if you right click the contextual menu that comes up includes two entries, page header and footer and report header and footer. If you actually wanted to suppress the page header and footer, if you notice at the moment the little icon to the left, there is actually red colored. Well, it's more pink really; a sort of pinky-red color. Then that means that there is a page header and footer. If you don't want a page header and footer you just click there. It says delete in these sections will also delete all controls in them. You will not be able to undo this action. Do you want to delete these sections anyway? Well, I'm going to say yes here. I know

I've done a bit of work on this particular report but never mind. I delete those sections and they have gone. If I wanted to reintroduce page header and footer, I'd click on that again and I have a page header and footer. But of course they are empty so I've got to start from scratch putting in the controls that I want.

Now that contextual menu there is pretty useful because you can also do things with it like switch off the ruler if you don't need the ruler. It gives you a little bit more working space and you can switch off the grid if you don't need the grid to help you to draw. Again, it can clarify things; make it a little bit easier to see what you're doing. Some people like the grid, some people don't. Easy to switch them back on again.

Just one other thing and that applies to forms as well as to reports. These header and footers you can resize quite easily. So for instance, if I didn't want all this space underneath the words Movie Database Country List, I could literally grab the top of that and move it up. That makes the height of that much smaller. Similarly, I can make if I wanted a bigger page header I could pull that down. The report footer, although a report footer exists at the moment it doesn't seem to have any size. If you actually grab the bottom and pull down, there's some space for you to put controls into a report footer.

So in this section we've looked at many of the main features of designing reports. We've got one more section on reports and I want to consider a more complete example of a report in that section. So please join me for that.

Video: Grouped and Summary Reports; Modifying a Report

Toby: Hello again and welcome back to our course on Access 2013. In this section we're going to look at some of the more advanced features of reporting in Access and in particular we're going to look at using a subreport.

Earlier in the course we looked at subforms and one or two ways of using subforms on forms. In this section we're going to look at subreports and the mechanisms for subforms and subreports are actually very similar. The approach that we're going to use for a subreport in this section is an approach that you could directly use for subforms as well. So it's well worth knowing about and in fact once you get used to one or two of the concepts involved, it's a much slicker way of putting subforms on to forms and subreports on to reports. The report that we're going to start with is a straightforward report of the movies in the database, but then we're going to add a list of the actors in each movie as a subreport. So let's get started.

So I'm going to make this very straightforward to begin with. I'm going to do a report on the movie table. Now to be fair, along with the movie table we also have movie genre and we have movie rentals and I could include either or both of those in terms of the information that they contain. But for the purposes of this exercise, I'm just going to include movie at the moment. So go into Create and I'm again going to use the Report Wizard.

By default the Report Wizard assumes that I want to use the table movie and I'm going to include all of the fields in that table so do the double arrow and then move on to Next. Something that's very straightforward to do in Access 2013 is to arrange the report into various levels of grouping. So if I don't just want a list of all the movies one after the other but I want the movies grouped in some way, I can specify that here. Now I'll talk a little bit more about grouping later on, but for the moment let's suppose that I want my report to be grouped by country. I could group it by year. I could group it by whether I've seen it or not, but let's go with country at the moment. Look at the sort of preview if you like on the right there. Just see what happens if I group by country. What will actually happen is the report will have sections. One section per country and within that section the information about each movie that's shown will be the ID, the title, the year of release, and so on. If I wanted a second level, supposing I wanted

to have a second grouping level by year of release, let's try that, I would get country first, then year of release, then title, and I've seen it. So that gives me, if you like, my multilevel grouping.

So let's stick with those two levels at the moment and click on Next. Now we can select up to four fields to sort the detail records on. Now of course we have very fields in this report at the moment but let's click on the drop down. We have a choice of either sorting them on the movie ID, sorting them on the title, or sorting them by whether I've seen it or not. Let's go for title. So I'm now going to sort within each of those groupings by movie title.

Now there's something else down here, the Summary Options dialog. Let's take a look at summary options. In a report where you have information grouped, it's possible to put in summary totals, sums, averages, minimum, maximum, for each of the groupings in the report and in this way you can use Access 2013 reporting to give you financial summaries. So if for instance your report was for each of your customers and maybe each of your customers places several orders with you over a period of time, your report by customer would give you a total sale for each customer and at the end of each little section within the report you'd have whatever summaries you wanted. The sort of options you've got here are sum, that's the total, the average, the minimum, the maximum, and so on. Now in the case of a movie database, at the moment the information we've got in here doesn't really lend itself very well to putting a summary in, but supposing we were looking at rental income and we had details on how many rentals we'd done on each movie. And let's suppose that we wanted to do an analysis by country or by year of release, then we could setup our report and do a total for each section and maybe do a comparison between those totals. So the summary options in a situation where you're dealing with, say, income are very useful in reporting in Access 2013.

Now in this example although it really won't mean very much, let's put a little summary total in. Let's do a sum of I've seen it in the report and then we'll just see what that looks like. So click on OK and the click on Next.

Now the next page of the wizard lets us choose our layout. There are three layouts and there's a representation of each on the left there. The stepped layout gives you what is a stepped layout. So that would be country, year of release, etc. headings along the top there. Block layout is slightly different in that you get the repeat there for each year and you can see it's in a block

rather than stepping in. And then the outline layout doesn't put the headings along the top, it puts the headings within and just above the detail records. So you choose one of those options. I'm going to go for stepped. You'll see what that looks like in a couple of minute's time.

We choose an orientation, portrait or landscape. I'm going to go with portrait and then we can choose whether or not we want Access 2013 to adjust the field width so all fields fit on a page. I've got very few fields here so let's stick with that option and click Next.

Now we choose a name for the report. Now I'm literally just going to call this R-P-T, report, and I'm going to call it MoviesByCountryAndYear which is really what it is. And then I get preview the report. I also have an option here, modify the reports design. I probably will be modifying the reports design but I'll do that in a couple of minute's time. Let's just click on Finish to preview the report.

And there is our report. Now at the moment, you can only see a corner of it and to be honest there's quite a few things that we're going to need to fix on this report. But let's just take a broad view first of all. Let's use the zoom control in the print preview to look at two pages. I just want to show you how the structure works. You could probably just about make this out. You have country here, Brazil, and that's the first level of grouping. The second level of grouping gives you the year. So in Brazil we have one movie, City of God, released 2002, and then we have the summary entry. So we've got a summary entry there at the year level and a summary entry for the whole country. Then we get to France. We've got 1994 movie from France, Leon. Then we have a 2002 movie from France, The Pianist. We have a summary for each year and then a summary for the country. And that's the structure. You've got the stepping and the grouping clearly indicated there.

Now I've got quite a bit of tidying up to do on this report. I'm not going to do all of it. I'm going to do a couple of things now and then I'm going to look at the subreport that I talked about earlier on. So let's do a bit of tidying up first.

Now when you're in print preview mode if you hover over the preview of the report, you can see you have that magnifying glass and you can zoom in on a particular part of the report to have a look. I'm going to zoom in on that part and it covers three movies in New Zealand, the three Lord of the Rings movies. You can see how I have a summary entry there for each year and the

summary entry are in boxes and the box isn't quite bit enough. It's not quite allowing for the size of the font. Also, the titles are getting clipped. They're a little bit short at the end. I've got the movie IDs at the end. I may or may not want to show the movie IDs, but clearly I need to do something about the titles being clipped. I also have a summary total for the country, so summary for country and then I've got again a box that's not quite tall enough. Let's get rid of that word Sum as well. And I've probably got a little bit too much width for the year. It doesn't need to be that wide. The country needs a bit of width because some country titles, something like Solomon Islands or something could be quite long. So I've got a few things to do there. Let's look at a couple of those. We'll go into Design View and fix those.

In most cases when it comes to correcting formatting issues with a report, it actually tends to be surprisingly straightforward because when you go into Design View, the structure of the report as in this case can be much more straightforward than you think it is. Now we've already seen report header and report footer structure. That's still on the outside level if you like in this design. Within that we have page header and page footer as before. But then within that we have the grouping. So we've got a country header and a country footer, a year of release header and a year of release footer, and then we have the detail records. One of the problems I identified earlier on was that the title is getting clipped and as you can see we've only got about half the width of the page here in use for the title and movie titles can be quite long. One option would be to make this control taller and to have the title wrap within the control; so take a second line, a third line, etc. if it needs to. But there's a lot of wasted space here in the year of release as we saw. The year of release is currently only going to be four digits and it's got loads of space there. So, one very straightforward thing to do would be to reduce the width of the year of release. Now the year of release appears in the year of release header. So when the year of release changes the year is shown in a header. I've reduced the width there as you can see, although that control is probably still far too wide. Let me just reduce it a little bit more and in reducing that the other thing I need to be aware of is that there is a heading on a page in the page header for year of release and that also will need to be reduced in width. Now this heading is a label control so it's just going to say Year of, well actually it will say YearOfRel now. I don't really need to say year of release in that label. I could just put the word Year and that gives me a full extra sort of grid section of width for the title. Note also title appears in the page header as well. So that's a good start on giving myself some more space. Now the other thing I might do

is to go into each of these and change the alignment to center. Also on the right here, I've got more than enough space for the ID. Remember the IDs only going to be a relatively small number. So again I can adjust that as well, and overall that gives me a lot more width for the title.

Now let's just deal with two of the other issues that identified earlier on. The word Sum that seems to be sort of randomly placed there, you can probably just about see that it's in a box with a little marker in the corner. When you see that, if you click on it you will see a little warning exclamation mark there in a sort of, almost like a warning road sign. If you hover over that, Access tells you what the problem is. This is a new label and is not associated with a control. Now that label has been put in there for a reason which is just not working. I believe it's to do with the fact that I put in the sum there for the "I've seen it" field and it's having trouble dealing with that. So that will happen from time to time. All you really need to do is this a label. It doesn't have any useful data in it. It's only a label. Having selected it I can just delete it.

And then the final thing I'd like to fix here is the height of these summary entries, the footer, year of release footer, the country footer each has a summary in it giving the totals for that year of release in that country. They weren't tall enough. I wasn't getting the full text. Now let me just hover over that one, just pull that down to make it a bit taller. Very often with these things it's a matter of doing them by trial and error. The other thing to bear in mind here is that when we're dealing with this summary, we had quite a long summary statement. It said summary for and then it said year of release equals ampersand and then the year of release. Note the year of release in the square brackets. I could say well I don't actually need all of those words. What I really want it to say is summary for and the just year of release. So I could take out quite a bit of what it says in that summary. I won't take all of it now, just that part. I'll leave you to do a similar kind of thing with the country footer, but I will just change the height of the country footer and then we'll do a preview.

So let's right click, go to print preview, and now you can see certainly as far as the section we were in before we have in the NZ, the New Zealand section, we have the full titles; although I still get the feeling we could probably make a little bit more space there. The year numbers fine and the summary. Note how the summary says Summary for 2001, one detail record. Summary for 2002, one details record and so on. And then the summary for it now still says Country

equals. That's the bit where you could take out a bit of text there. And if we go for the zoom out to fit the window option, we can see two pages and the layout still needs quite a bit of work done on it, the heading and so on. But most of the problems have been resolved and now it's really more a matter of cosmetics as to whether you want borders around summaries and so on.

That's the basic production of this movie report. What I'm going to do in the next section is to add to that subreport. So please join me for that.

Video: Adding Subreports

Toby: Welcome to the final section on reports in our course on Access 2013. In the previous section we created a report of movies grouped by country and within country by year, and now we're going to add a subreport to this report and the subreport will be for each movie we will list the actors that have roles in the movie. Now of course with most of the movies in our database we don't have details of the actors yet. That data has not been entered. But a few of the movies have actors and I really want to demonstrate in this section how to insert a subreport in a different way to the way that we handled a subform, although you could use the approach we're going to use in this section to insert a subform in a form as well. So first of all, I'm going to close the report as it stands now because we need to work on a separate query and report. So close print preview and let's get started.

First of all, I'm going to create a new query. So I go into query design. I need movie actor and I need actor and then the query is going to give me a list of the movie ID first of all, so that will do there. And then I'm going to want for that movie the actor's first name, the actor's last name, and the role that the actor played. Okay. So let's run that to see what I get and I get, don't worry about the fact we've got movie IDs. You'll see about that in a moment. Humphrey Bogart, Rick Blaine in movie number five, Ingrid Bergman, Isla Lund, movie number five, and so on. That's fine so I'm now going to close that query and I'm going to save it as Q-R-Y-MovieActors and click on OK. So now I'm going to make my subreport and my subreport will really have the details of an actor as I've retrieved using the new query MovieActors. So I'm going to go into report design this time. I'm given a completely blank report to work with. I won't need page headers and footers on this report. So in the design I can just say switch off page header and footer. I only have detail. And then I can make the page quite low. I don't need it to be very wide. And then what I do now is to say that the report itself, the source of the report will be the query MovieActors. So if I go into the property sheet for the report, the record source is the query MovieActors and now I can start to add controls to the report. Now I'm only going to put three controls on here. On the Design Tab in the report design tools there is a control section. We don't have the gallery looking quite the way that it does when we're doing form design but you get the same effect if you click on the bottom of the Controls button here, a list of controls. We're going to have a textbox. In fact we're going to have three textboxes. So let me just draw

three textboxes. Now as I mentioned before, I usually do this in quite a rough style to begin with and I can tidy it up later. Each of these textboxes currently has a label that's going to get in my way so I'm going to get rid of those. So if I select for instance that label, press the Delete key, that labels gone. Let's get rid of that one and then there's another one just in there, get rid of that one. And then each of the controls is currently unbound. I'm going to bind each of them to one of the fields in my query. So the first one is first name, the second one is last name, and the third one is going to be role. I'm going to name each of those controls accordingly. Again, I didn't put spaces in the names myself but that's a personal preference really. And there we are.

Now all I really need to do is to align those three boxes and there are tools within the report design tools that enable us to do this. There are actually equivalent ones in the form design tools as well. If I select say these three items first name, last name, and role and then click on the Arrange Tab, on the right there is a sizing and ordering group. One of the buttons in there is align. Click on the drop down and there is an align top. I click on align top, it aligns the tops of those three controls. So that's pretty straightforward. So for the moment that's all I'm going to do on this report. I maybe just make it a little bit narrower. That's fine. And then I'm going to click on close, save the changes, and it's going to be movie actors subreport. Click on OK.

Now although I've taken out the heading, the page headings, report heading, and so on, it's still a report and it's still a report in its own right. If I preview it, I can see that it says it's got a list of actors, the roles they played. It doesn't currently show the movie that they played the role in. Now the query that I used, query MovieActors, of course return the movie ID. But for reasons you'll see in a moment I don't want to actually show it in this report, although the value is available. So that's my report. Now let's use it as a subreport in the main report that I created before. So I'm going to close this and I'm going to go back into the design of movies by country and year.

Now the next bit is the important bit really and that is that we're going to put this subreport into the main report by dragging and dropping it. Where it goes is in the detail section because in the detail section we have the title and ID of a movie. And if I take the year of release footer bar and just drag it down, let's say I drag it down to there to make some space, what I'm going to do is to drag and drop the subreport into the space that I've created. So I'm going to drop it in there. Now don't worry too much initially about exactly how things are laid out because one thing is

for certain, no matter how well you try to do all these calculations and figure all of this out, you are going to discover that you have to do an element of reformatting, adjusting widths, sizes, heights, and so on. Now I'm going to get rid of that label. I know I'm not going to need that label so I'm going to get rid of that. Now let me preview the report. Now I can assure you it's not actually going to work yet but it nearly works. So let's go into print preview and see what we see.

Now the first thing we see is that we have got a problem with page width. I'm not going to worry about that at the moment. I'm just going to click on OK and what you can see is that the subreport, the list of the actors and their roles is included in full for the first movie. So Brazil, 2002, City of God, and then I've got a full list. In fact if we moved on to subsequent pages, let's do a two pages view, and then let's step through. We've got a page width issue here. You can see where the page width is hanging over there. In fact, let's change it to landscape for a moment, that'll make it a little bit easier to read. Now let me step through the report and what you'll find is that I'm getting the full list of actors and roles for every movie. Now if you remember what we did on forms, you'll probably immediately recognize exactly what the problem is here and that is that the linkage from the report to the subreport, the master and child linkage is not setup. And that's what we basically need to do to make this report work. So let's close the print preview and let's go back into the design again.

So what I do now is to select that subreport and bring up the property sheet, make sure I've got the subreport selected. There's its name. If you look at the link master fields and link child fields, you'll see that that's where the linkage is missing. Now the linkage is via the movie ID and the movie ID as we know is going to be in the master. In a movie its ID is just ID, whereas in the child field which is based on our query the movie ID is movie. That's the value we've got in our query for the movie ID because it actually comes from the movie actor table. So ID in the master field, movie in the child field, close; let's preview that now. Now I just need to, I think I'll go back to one page for that. We can see City of God has no actors and if I keep going through eventually I'll find, there we are, Casablanca and I've got the actor Humphrey Bogart who plays Rick Blaine, Ingrid Bergman who plays Ilsa Lund. So that's where my movie actor linkage works and that really illustrates how this master-child relationship works not only between a report and a subreport, but it works in exactly the same way between a form and a

subform. And what you've seen here is that you can create a subreport containing the information that you want and then drag and drop it into a main report and almost always the reason you'll do this is that something in the main report or the main form corresponds to something that's repeated in the subreport or subform.

Now clearly if you look at this, it's not a particularly impressive looking report. There's lots of space here and there, things need to be aligned properly. We've got banding. We've got borders round some of these fields and not round some of the others and it does look quite a mess. But I hope that you can see from this mechanism that with a certain amount of work now on the cosmetics you could actually make this not only a useful report but also quite an attractive looking report as well.

So we've seen here how to create a subreport and then embed it into a report and setup the master and child relationship. I'm not going to go into the cosmetics and formatting here. We don't have time. We need to move on. But that's it on reports for now. So I'll see you in the next section.

Chapter 16 – Printing

Video: Documenter; Print Properties and Options

Toby: Hello again and welcome back to our course on Access 2013. In this section I'm going to take a look at printing and there are actually a lot of tools in Access 2013 associated with printing. Some of the more obvious things are the ability, for example, to print reports which I'll look at in just a moment. But there are also features such as the database documenter that you might find very useful and let's start with that.

Now of course our movie database is still at a pretty basic level in terms of the content and the information for example that we keep about an actor is quite small. We have field names and data types. We haven't used this description field over here, this optional description field at all. But you can probably imagine that if you had a database with maybe dozens of tables, in each of those maybe dozens of fields. You may even put descriptions and each field with a data type may have a lookup. There are different field size values, validation rules, etc. It's okay when you're actually sitting with a copy of Access but what about actually documenting this? How can you write all this down? Have you really got to sit down and type all this information in if you need to document it? Well, the database documenter will help you with this. I'm going to close this table and I'm going to go to the database tools tab and on there we have database documenter in the Analyze Group. Click on that and it comes up with a Documenter dialog where we can choose which items we would like to document. Now we have tables, queries, forms, reports, etc. Let's go back to tables. Let's suppose we just want to document the actor table and this is the design of the actor table primarily that we'd want to document. But if we click on the Options button down here, we can actually choose which aspects of the table definition we print. So do we want the properties? Do we want to show the relationships? Do we want to show permissions? We can actually set Access permissions for users. It's outside the scope of this course but we can do it. And for each field we can include nothing at all, the names, the data types and sizes, or the names, data types, sizes, and properties. So we can specify in quite a lot of detail exactly what we want to show in our document. Once we've made the selection, we can choose more than one and we can go in, set the options, and so on and click on OK. Access 2013 produces a print preview. Now the print preview is of the report that it will

print out. And if I step through the pages at the bottom, that's the second page, third page. How many pages altogether? Five pages just on that one table, so there's quite a lot there. And then if I want to print it I just hit the Print button.

Once I've hit the Print button, I see the Print dialog. Now the first thing you'll notice here is the name and I get a choice of printers. You're choice will almost certainly be different from mine. In fact, I'll be amazed if your choice is the same as mine. I can choose to print this database document, this report on the design of the actor table in this case. I can print it to a fax device. I can print it to my actual printer, the one that's connected to this PC. I can write it to the Microsoft XPS document writer. So I can actually write this out as a Microsoft XPS document or I can send it to OneNote. If you got OneNote installed, that may be an option that you can use. Once I've chosen the device, I can then choose whether I want to print all the pages, selected pages, how many copies, whether I want it collated, whether I actually want to print the document to a file which would sometimes be very useful if I'm trying to build up an electronic document documenting my database. So given all of these choices, I can choose which one I want to choose, click on OK, and my print will happen.

Now the other thing to bear in mind here is that depending on your choice of printer, and bear in mind when we say printer we include things like sending it to another piece of software like OneNote, if you click on properties you'll be shown some properties you can choose between. So if I'm sending it to OneNote; there aren't actually that many properties I can choose from. I can choose orientation portrait or landscape. And then I also have an advanced option here that tells me about the size of paper, how many copies I want, and so on. Exactly which properties you see for a given printer will depend on the printer. And in particular if you look at a physical printer like mine which is an HP PSC2500 Series printer, that's quite an old printer but it works fine with this version of Windows and Access, if I click on properties for that if you've got an HP printer, you may see a very similar dialog to this. You will see a dialog but it will depend on your printer and it may have all sorts of features such as what color system to use and then other settings such as choices of paper quality, paper size, whether you want print quality to be normal or whether you have high quality, real life digital photography. You probably wouldn't use that for printing out a report on a database design. And then you'll probably have other tabs

including something like this where you can change the color management settings and so on. So depending on the physical printer you'll have a combination of setup options like this.

Now although I've talked about this in relation to printing the output from the database documenter, whatever we're printing in Access the general approach is the same. Let me just look at another couple of examples and let's start with that report that we made earlier on.

Now I did do quite a bit of tidying up of this, but let's now go into print preview and if I want to, say, see two pages at once just to check everything out, that's fine. I can use the page setup option in the Page Layout Group to choose from settings such as the size of the margins and then on the Page Tab portrait and landscape, size, etc. I can even here choose the printer. But basically, if I go to the Print button in the Print Group at the left on the Ribbon there on the Print Preview Tab, go into print, I get the same dialog that we saw just now and I can make the same selections there.

The other main option for printing in Access 2013 is the facility to print various database objects using the print command in Backstage View. If you say have the actor table selected and go into Backstage View, there is a print command. Click on print and you have three options. You have the quick print option that sends the object directly to the default printer. You have the print command where you can go in and make that same set of selections that we've seen already. You also have the print preview option which lets you preview what's going to be printed and make changes if necessary. So if I click on print preview, let me just zoom in a bit, I can see basically the datasheet for the table that I had selected and I can just print out the contents of that datasheet. Now obviously the amount of data in the actor table is quite small so that would only involve printing one page. You have to be a bit careful that you don't print hundreds of pages when you don't mean to. But that's quite a useful facility for printing out a data set. Similarly, if you had a query, say, this query MovieActors that we've run before, go into Backstage View, print, print preview. It will show you the record set that arises from running that query; so again useful.

Finally in relation to the database objects, we can actually print out forms as well. So if you select say the actor maintenance form, go into Backstage View, select print. Again, let's do a print preview. You can actually print that form. You may want to change it in this case to

landscape format to fit it all on to a single page but that's a great way of taking a design away or perhaps sharing a design with other people looking at it, marking up changes you want to make, and so on. So, many of the database objects in Access 2013 can be printed in that way.

There's just one more thing to point out. You may recall on the Quick Access Toolbar there is a Quick Print button and mine is actually shown. So if you just want to quickly print something out, make sure you've got that enabled on the Quick Access Toolbar, then all you've got to do is click on Quick Print and away you go.

So that's the basics of printing in Access 2013. I'll see you in the next section.

Chapter 17 – Importing and Application Parts

Video: Import and Append; Copy and Paste; Export Access Database

Toby: Welcome back to our course on Access 2013. So far, all of our Access database has really been in one file, one .accdb file, and very often if you're using Access for a database it will all be held within one file. The data in the tables and the user interface components, the forms and reports, etc. all sit in one file and when you use the database, everything's neatly in one place. In reality it's quite often the case that an Access database is not only used by a lot of people but there may well be some of the table sitting in another database. You may be reading data from a different database altogether. Now the use of external data like this is outside the scope of this course but there is one aspect of external data that I do want to look at and that is that sometimes you may want to bring in data from outside into your Access database and you may also want to provide your data to somebody else. Now these two processes are called importing and exporting of data and I'm going to look at those in this section with a couple of examples.

Now when I setup the movies that we currently have in our movies database, you may think that I sat there and typed all of those in. You may also be surprised to find that I didn't. I actually imported the data from another source and I took about 50 of the best known movies from another source and there's another 50 here in this Excel spreadsheet, so it's on Sheet 2 in an Excel workbook. Now we're going to import now another 50 of these movies. The titles are in column B on the sheet and the years are in column C. In theory, we should be able to import those directly into our Access database, but we're going to have a little problem here and the problem that is with our current Access database, a movie in our movie table must not only have a title and a year of release but it must have a country as well. So if I tried to import these into my database as it is the import would fail because I don't have countries for all of these movies. Now of course it wouldn't be at all difficult for me to go through, add another column, and type all of those countries in. But I'm not going to do that on this occasion because I want to demonstrate another couple of features of Access that you might find useful. In the end, I will of course have to go through and put those countries in; but not just yet.

So let's start by getting that data into Access, first of all. On the External Data Tab, there is in the Import and Link Group an Excel command, so click on Excel. That comes up with the Get external data Excel spreadsheet dialog. I'm going to browse to that Excel spreadsheet that we looked at just now. That's the one, Movies 51 to 100. And then I have three options: import the source data into a new table in the current database, append a copy of the records to an existing table, or link to the data source by creating a linked table. Now the third option I definitely do not want. This is the option where you leave the data in the spreadsheet and you access it there. So Access is actually looking outside of the current database and getting some of its data from a linked Excel spreadsheet. That's not the option I want here. I would rather like to append the records to an existing table, the movie table, but for the reason I said just now about not having the country codes in I can't do that directly. So what I'm going to do is to import the source data into a new table in the current database.

So now in the Import Spreadsheet Wizard, Access shows me which sheets are in that workbook. There's a Sheet 2 and a Sheet 3. Sheet 2 is the one I want and it shows me the data on that sheet just to confirm that I'm looking at the right sheet. I don't need that first column there. I don't need those numbers but I need the movie titles and I need the years of release. So click on Next. Does the first row contain column headings? No, it doesn't. The first rows got the name of the first movie. So I'm going to leave that box unchecked, click Next. Now it says you can specify information about each of the fields you're importing. Select fields in the area below, you can then modify field information in the field options area. Now the first field name I've got there is Field 1 and I don't actually need that so I can click on here, Do not import field, skip. Now let's try the second field. This is one that I do want and this one is going to be the movie title. So I'm going to say that's title. Indexing, I'm not worried about at the moment. Data type, short text. That's fine as well. The third one, third field is year of release. It's going to be an integer. That's what we used before. It's not indexed. There we are. That's covered all three fields. Go on to Next. Do I want Access to add a primary key? Yes, I'll let Access add a primary key because for reasons you'll see in a moment that really doesn't matter. Okay, click on Next and now a name for the table. Now I'm going to call it tblMovieTemp, my sort of temporary movie table. I would like the wizard to analyze my table after importing the data. That's not necessary so I just click on Finish. Access has finished importing the file. Do I want to save these import steps? If I've done this setup and I expect to go through importing similar files again in the

future, I can save these input steps to avoid having to answer all the same questions again. I'm only doing this as a one off so I'm going to click on Close.

Let's have a look at table MovieTemp. Open it up and there we are. I've got IDs. I've got movie titles and I've got years of release. Now I'm now going to add those to the main movie table and I'm going to use an append query to do that, but before I do I need to put the countries in which is going to be a little bit of a boring job so I'm going to have a quick cup of coffee, put those country codes in, and I'll join you in just a moment.

So I've entered the country codes. I've had to setup one or two countries that weren't in the country table before. I'm going to close the MovieTemp table now and I'm going to write an append query. I haven't done one of these before. It's pretty straightforward in this case. We click on create and then we want a query so we're going to go into query design and what we're going to do is to first of all specify the table that we want to get the records from, which is the MovieTemp table. So add that and then I'm going to close this and we're going to select Append query. Make the query add records to an existing table. Now we want to append it to, we choose the table name either from the current database or another database. So in the current database we want to append to the movie table, click on OK, and then basically we decide which fields from the MovieTemp table we want to append. Now we're not going to append the ID field, the unique AutoNumber ID, the primary key of the records in MovieTemp because they're completely inappropriate for the movie table because as we add a record to the movie table, the movie table will assign its own ID to it. So I don't need the IDs but I do need the title so I select the title here and I decide which field I want to append it to in the movie title, the target table. Now Access 2013 looks at that name title and says, "Ah, you probably mean title in the movie table." But of course if that isn't the case, if I click here in the drop down here I get a list of all the fields in the movie table. So if for any reason it isn't title, I can choose something else, well I know that it is. Similarly, when I drag down year of release that will correspond to year of release and country that will respond to country as well and they're the only three things that I need. So all I've got to do now is to click on Run. Now the message that I get says you are about to append 49 rows. Once you click Yes, you can't use the undo command to reverse the changes. Are you sure you want to append the selected rows? I'm going to say Yes. So let's have a look in the movie table and see what we've got.

I've got my original 50 something movies but as I scroll down now I find that I've got a lot more and in fact I've now got well over a hundred movies in my movie table. What I would probably do now is to go through and check off the ones that I've seen in the "I've seen it column". But that's a straightforward append query.

So that's an example of an import, in this case an import from an Excel workbook. Export; there are many possibilities as well. One of the possibilities for export is to export the contents of a table or the results of a query to an Excel workbook or to a text file or to an XML file. One very common use of export is to export to a PDF file. Now let's have a quick look at that in a moment, but let me just run through some of the others. We can export as an email attachment and then we have other export options such as export to Word. So where we have something which is basically textual in nature you can export it to Word or as an HTML document and possibly use it on a webpage. But let's have a look at one or two very quick examples there. Let's have a look at the export to PDF option.

So let me open up our movies by country and year report. Of course since we've added all those extra movies, it'll be a longer report now. So we still only have one film from Brazil but we have now a number of movies from France. We've got four movies from France and more from Germany as well. If I wanted to export this to PDF, click the button that says PDF and it will give it a default name corresponding to the name of my report and I can store it in an appropriate folder. I'm going to stick with the default name. There are PDF publishing options. So I can choose whether I want all pages, a range of pages. I'm going to stick with all pages and I'm going to click on Publish. I think there were about 15 pages there; close the export to PDF dialog. Let's have a look at the exported PDF.

So I've opened my report in Adobe Reader. There were in fact 15 pages. Let me just go to a bigger magnification. If I go up to 100%, I can scroll through and see all 15 pages of this report in Adobe Reader. So that's the export of the contents of a report to PDF format.

And then just one other point to quickly go over here, the objects in an Access database can be copied and pasted. So if I say wanted to make a copy of the movie table, if I just select it and then choose copy and then click on paste the dialog, I see "Paste table as". It gives it a table name, copy of table movie and I can choose to copy either the structure only, the structure and

data, or I can choose to append the data to an existing table. So I can just copy and paste objects in an Access database in the usual way. Now corresponding to that if I've got something like the table movie, click on external data, I can actually export that to a different Access database. So if I selected my movie table and clicked on Access, it will let me export this to a different Access database. I can browse to the database that I need and then when I've found it follow through with this wizard, click on OK, and I can export a whole table, a query, a form, a report, just about any object in an Access database can be exported to another Access database. So that's a useful thing for you try out as well.

But that's all we have time for in this section. I'll see you in the next one.

Chapter 18 – Templates and Application Parts

Video: Database Templates and Application Parts

Toby: Hello again and welcome back to our course on Access 2013. Now that you should have a pretty good grounding in the basics of Access 2013, I'd like to turn our attention back to something we talked about right near the beginning of the course which is the use of templates. I want to quickly discuss some of the desktop templates and how they can help in building desktop applications in Access. I'd also like to take this opportunity to look at what are called application parts.

Now you will have seen this start screen now many times and of course using this start screen we can use one of the desktop database templates. This is a blank desktop database template that we've a couple of times. But we have things like desktop asset tracking, desktop issue tracking, and desktop task management and as I mentioned earlier on, we can also search online for suitable templates. So let's search for a template, say, related to project. So I'm just going to put in the word Project in the search box there and click, and Access 2013 comes back with a list of available project templates. Now apart from the Access project templates that it's found, some of which specifically have project in the name and some of which just it believes to relate to projects, it also gives a list of other resources that might be used in relation to other Office applications. So there are 41 Word items related to project, 83 PowerPoint's and so on. So let me scroll through these, have a look through these. What about a desktop bug tracking database? So if I click on that one it will come up with the details of the template as we saw earlier on and it will come up with a rating. It's a four star so maybe not too bad. Now I choose a location to save this. This is going into my default location. I want to put it into my general, that one, and I'm going to save it as BugTrack1 and then I just click on Create.

Now one of the important things about using a template is that you get usually tables, not very often data but sometimes data. You get forms, you get reports, you get queries, you sometimes get macros or even VBA code, and it's always a good idea to have a look at that first to work out exactly what you do and don't need. You've got to be careful not to throw away something that you might subsequently need.

Now something that's often the case with templates that you might download and use, particularly the ones from Office.com is that they're reasonably well packaged. If somebody uses them, they are packaged in such a way that their either difficult to break or easy to use or hopefully both. This one in particular comes up with a message at the beginning that says, Welcome to this sample database. In order to use the sample, click the options on the message bar and select enable this content. Well, things have moved on a little bit since then. We just need to click on enable content and then we have a getting started screen. Now this particular database on its getting started screen gives us a couple of videos. It gives us a video on how to configure the bug database template; a video on how to use the bug database template, and then it's got some configuration steps. Want to customize your bug's database? Simply complete three steps and you're done. Import your contacts, customize your categories, and customize your projects. Once you've had a chance to use the bug database please let us know how we're doing, provide feedback.

Now there's an important little checkbox down at the bottom here which says Show getting started when this database is opened. If a user of this database wants to see getting started each time they start up, then they just have this checkbox checked here. If they don't then it won't appear. We'll leave it on for the moment. But a getting started screen is actually a very good idea and for most of the rest of the course, I'm going to concentrate a little bit on showing some of the aspects of packaging your database.

Now this is quite a nicely packaged database because although it doesn't have an awful lot in it, there's quite a bit of information there for users to see how to use it and it also gives them some control whether they want to see this getting started screen or not. Now some of the aspects of this such as putting the videos in and controlling whether the getting started screen is shown are actually dependent on a bit of coding, a few macros, and in one or two cases a little of VBA code; outside the scope of this course. But some aspects of it we can do and I'm going to introduce you to those over the next couple of sections. But for the moment, let's close the getting started screen and let's have a look under the hood of the database.

Now first of all, there is a login form and a very common and useful feature is to require your users to log in. Now even if you're not particularly worried about securing access to your database, you may want to log the changes that users make. So if somebody goes in and makes a

change to your database by recording who does what you can work out who makes the change. Now there's a facility here for an anonymous user so that'll be me for the moment. I'll go in as anonymous. But there is also an option here to add a new user. One of the important things about this form is that it is modal. I spoke about modal earlier on. And that is that until I've completed the use of this form, I can close it with the Close button or I can click on OK. But until I finish with this, I can't go and do anything else. So I've got to log in. Now to be fair, these particular templates are not that secure and it's not that difficult to work round these things. But once you know in a bit more detail how to do it you can make Access databases reasonably secure and certainly secure to the point that most every day users will have a lot of trouble breaking into them or abusing them. So I'm going to log in as anonymous at the moment, click on OK. Now I'm in the database and I can see a bug list. Now the bug list is in Form View. You can see the view at the bottom on the Status Bar of course. I can go in and I can just enter a bug, details for bug, summary, priority, category, date, and so on. But of course I know that I can open the Navigation Pane and see what's actually in this database.

Now to give you some idea of how two or three of these things work, I'm going to start with a macro. We haven't looked at macros at all. If you're a bit worried about programming, don't worry because I'm just going to show you something very simple and this is the AutoExec macro. Now macros are a special type of programming language that's used in Access 2013. The components of Office 2013 generally talk about macros. There are actually subtle and not so subtle differences between them and the macros that you see in Access are different from the others in many ways. So don't think that you've got a macro here that's exactly the same as you'd say get in Microsoft Word. But if I go into Design View, I just want to talk about this macro even if you're not familiar with macros and programming. I just want to point something out to you.

The way this is structured is there's a set of questions at the top. If this current project is not trusted, the way that's written in programming language is "If not current project trusted", then it shows a form and the form it shows is called startup screen. It's there. Okay? Now if I go up to the forms and look at startup screen, let me just go into the design of startup screen. That's that one that we saw with that message about it. So what happens is AutoExec runs when you open the database and the very first question is, Is this not a, if you like, a trusted database? If it isn't,

show that form. So that's actually really quite straightforward. Then we get down to the next bit of code. If it is trusted open the form login. So let's go back up to the forms up here. There's a form there login. Let's have a look at that one, Design View. Now that's the one we saw about logging in. So basically there is a definite sequence of events that's put together by the use of a macro that takes us through that sequence. The next form we've got or the next optional form we've got is getting started. If we look in the Design View of getting started, that's the getting started form. So it's not magic in any way. There's a definite programmed logic to how this program starts up. Now this also means that if you've got no programming knowledge but you now know a bit about forms and a bit about tables, queries and reports, it's actually relatively straightforward to go in and customize what's here. So for instance, you could change the theme on some of these forms. You could put different words. You could change the terminology and you wouldn't necessarily stop the whole thing working if you were very careful about the changes that you made.

Now this particular template, the bug list template, is one of the more complex ones that you can use. It's got quite a bit of code in it and although the functionality is not very complex itself, it's actually put together to make it very convenient for people to use and relatively safe.

Let me close this database and let's go into New again and this time let's choose desktop issue tracking. I'm going to once again choose a location in my standard folder for that and I'm going to call this one Issues01, click on Create. Now in this particular case, we get something that's not nearly as complex. We get the usual warning about content from a non-trusted location and then if we look in the Navigation Pane, it's much more straightforward. We've got issues. We've got some tables, some reports, and some relatively small amounts of other items. In this case, what we've got is a much simpler kind of database.

So with some of the templates that are available either the ones that are on the start screen or ones that you can download from Office.com, they are much less complex than the bugs one and can give you a very convenient and straightforward starting point. But then I just want to demonstrate one other thing. I'm going to just close this database. I'm going to go into New and I'm going to say blank. I've selected a location for my new database. I'm going to call it Customer01, click on Create, and I get of course a blank database. It has a single table, Table 1, which is open in Datasheet View as we saw right near the beginning of the course and I can start

to put data in. But if I actually have a couple of features that I want to include within that database, sometimes it's not necessary to either use an existing template or to start from scratch. You can use what are called application parts. Now if I go to the Create Tab on the left, there is a button there, Application Parts. If you read the screen tip "Insert or create portions of a database or an entire database application", now if I click on application parts I've got a little sort of mini gallery here of things I can put in. In some cases we're talking about particular types of form. But there's actually a quick start section here and amongst the entries in the quick start section is one for users. Now if I click on users look at what happens.

First of all, I've got to close the table that I'm working on. That's not a problem. But what I get is a table, users, which is already setup. Obviously they are no users in it. But if I go into Design View I find that the user table includes an email address, a full name, and a login name, and then I get two forms premade for me. There's a users details form. Let's go into Design View for. A very simple form but it's there. I can get me started. And then we have a user main form; again into Design View for that. So I get with these application parts the beginnings of some components, in this case, to incorporate users into my application.

Going back to what I was talking about earlier on, it's very often a case that you want to track what the users of your application are doing so that you can do things like have an audit of changes and additions and so on. So in this section we've seen that there are templates of varying complexities that we can use to get us started on all sorts of databases in Access 2013. And that whether you've used a database of your own design or a template, even if you're starting with a blank database there are some application parts that can help you to put in individual components, individual aspects of a database, and again help you to get started on some of those.

That's it for this section. I'll see you in the next one.

Chapter 19 – More on Forms

Video: Navigation Form

Toby: Hello again and welcome back to our course on Access 2013. In the previous section I spoke about ways of presenting and packaging an Access database to make it safe for people to use and also to make it as straightforward as possible. We looked at some things like a getting started screen.

In this section I'd like to look at a couple of first steps towards that with the level of access that you should have now. The couple of things we're going to cover in this section should be straightforward enough and I hope you'll begin to see how you can start to think about presenting your database to users in a pretty safe, secure, and straightforward way. Now I should point out that to make this really bullet proof needs a reasonable amount more in terms of knowledge of macros and VBA and also to understand some of the sort of shortcuts and workarounds that people are aware of. But what I'd like to cover in this section is really a couple of the more basic things, the fundamental steps that you can take that will really make quite a considerable difference to how users see and react to your Access database. And we're going to start with a thing called a navigation form.

Now one of the most obvious problems with the current database in terms of presenting it to people is that if you gave them the .accdb file and they opened it and they saw this lot, they really wouldn't know where to begin. You could certainly give them some instructions but there are many things here such as the queries and some of the tables such as the MovieGenre table where if they open them up and had a look at them they'd probably be quite baffled and they could potentially do quite a lot of damage as well. Apart from the fact that you don't want them to get frustrated by not being able to use the database, you certainly don't want them to break it. Now as we'll see a little bit later on one of the things we will normally do when we distribute an Access database to people is to actually hide the Navigation Pane altogether. People don't generally see the Navigation Pane unless they're going to do design work on a database. Now to be fair, somebody who uses a database they've built them self may always see the Navigation Pane but then that will be somebody who knows what they're doing. But what we're going to do first is to provide the users with a means of getting to the things that they need to get to and for

most users this is only really a means of accessing forms and reports. Now we're going to start with accessing forms and we're going to build a thing called a navigation form.

Just before we do that let's look at the forms we've got. I think all we're going to do to begin with is to give people access to the actor maintenance form and the movie maintenance form, and the navigation form will provide them with access to those two things.

So let's create a navigation form. Click on Create. In the Forms Group one of the options is navigation with a drop down to the right of it. Click on the drop down and there are six different layouts, and I'm going to use the first one which is in many ways the simplest one. That's horizontal tabs. When you get a chance, experiment with the others. Horizontal tabs, as you will see, means the form will actually comprise a number of tabs along this sort of horizontal outlined area that you can see here and all you do is you click in the first add new area there and just type the name. I'm going to make this one movies. Now as soon as I've finished typing movies and pressed Tab, I get another add new and in this case I'm going to put actors. So they're the two that I want. I'm going back to the first one again, movies, and then if I bring up the property sheet while the movies tab is selected I've got the name of the button. It's called Navigation Button 7. I don't particularly like names like Navigation Button 7. I'm going to call it Movies Navigation button. Then I'm going to go back to data and I'm going to specify what the target is. Now the target is the form that is going to be on that tab. So if I click on the drop down, it gives me a list of the forms and reports and I want movie maintenance so I click on movie maintenance and that's what I get there. Now click on actors, again I'm going to change the name. I'm going to call that the Actors Navigation button and the target for that will be the actors, actor maintenance form. Then I'm going to close that. I'm going to close the navigation form. I'm going to save the changes. I'm going to call it F-R-M-Navigation form, click on OK. So let's take our navigation form for its first test drive. If I double click to open it, I can see my navigation form there. I've got movies. That's movie maintenance. I can't quite see the heading there, but if I click on the tab Actors, then I get actor maintenance. Now I can see that things are not wide enough here so I've got a little bit more work to do on this navigation form and I may want to put the genre form on there so that genre can be maintained.

Now this is an interesting question in itself in that when your users are using your database, do you want them to be able to maintain the genre? Possibly not, maybe that's something that

should be under your control. But maybe as part of building this database, you're giving your users the option to maintain genre. You could of course also have a form there for maintaining country codes as well.

So I'm going to go back into Design View with my navigation form, click on Design View, and I'm just going to move the Navigation Pane over to the left to get a better idea of how big this form should be. If I select the tabbed area here, I've got a sizing handle. I can pull this over to make it bigger. I wonder if that's big enough. Well, movie maintenance will fit there. Actor maintenance will fit there. There's probably some fine tuning needed but that's not too bad. The other thing that I can do here, I get a default header up there saying navigation form. Let's call it Movie Database and let's close that, save the changes.

Now I want to do something else. I want to go into Options and I want to go into the options for the current database. I've got an application title of Toby's Movies Database which I've had set for some time. But I've also got down just below that a display form here which basically specifies the default form. Now I want to make that navigation form my default form. So let's click on OK. You must close and reopen the current database for the specified option to take effect, OK. So what I'm going to do now is to close Access and open it up again.

I've just opened the database up again and you can see what an improvement that has made. Now to be fair, there's still quite a lot more to do on this and as I said earlier some of this would be dependent on a few more settings. I'll show you one of them in just a moment. Some of it ideally would be dependent on a little bit of macro and a little bit of VBA code in one or two cases. For instance, you might decide that you wanted the Ribbon to be minimized and the database would then appear like that. It's actually fairly straightforward to provide your users with a customized Ribbon. The other thing that is particularly useful to be able to do is to actually hide the Navigation Pane altogether. Now at the moment if a user clicks on there and opens the Navigation Pane, they can still do a lot of damage. I'm going to show you how to hide that in a moment. Many of the things that you can do like hiding the Navigation Pane, it's not that difficult to get round as I will show you. But as your knowledge gets more advanced, you will find that you can cut off a lot of these options for people quite successfully with a bit more knowledge. But I think you can already see with this navigation form how much better the

interface looks. We're only giving people access to those two forms and that's basically how they're going to view and maintain the data.

So let's see how to hide the Navigation Pane. We go back into Options and in the Access Options, if you go to the current database, scroll down there a little way, one of the options in the navigation section is Display Navigation Pane. If you uncheck that, you must close and reopen the current database. So let me do that. Close the current database and now when I reopen it, I have no Navigation Pane. Now somebody who knows what they're doing would not have a lot of trouble going into Backstage View and re-enabling that. Similarly, there's actually a keyboard shortcut. If you press the F11 key that brings the Navigation Pane back anyway. But you can suppress these things. There are code ways of stopping these things from happening. So once you get really serious about security and making your database as they say bullet proof, there are ways of doing it.

Now we've got the basics of our database in place and what I'd like to look at now is the one outstanding issue. We set up this subform here as a fairly inelegant way of adding roles for actors to in movies and what I want to do now is to show you the alternative way of doing that and we're going to do it by creating a Modal dialog. That's what we're going to cover in the next section, so please join me for that.

Video: Modal dialog – Part 1

Toby: Hello again and welcome back to our course on Access 2013. In this section we're going to create a completely different kind of form that does completely different kinds of things for our movies database and the form we're going to create is one that's going to add a movie actor record. So there's two ways of looking at this. You could either say it's adding a movie for an actor or if you like it's adding an actor to a movie. In both cases we'll be specifying the role, but we'll be using the same form to do both jobs.

Now we're going to go through the early stages of this quite quickly because it's all things that you've seen before. The first thing I'm going to do is to create two new queries. So click on Create, query design. I'm going to make a query on the actor table. It's only on the actor table and all I need is the ID, the first name, and the last name. Very important that you see that they're in that order: ID, first name, last name. And I'm going to sort ascending on last name. So that's my first query. I'm going to close that and save it as Q-R-Y-Actors. Now I'm going to create another one. This is movie. This is ID, year of release, and title and I'm going to sort this on title. So, there we are; two new queries. That's the first stage.

By now you should be familiar with the fact that the table MovieActor is the one that links a movie and an actor together. So let's just refresh our memory in terms of what's in that table. We have an automatically assigned ID for the records in the table. We have a movie field which is actually the ID of the movie, then actor field which is the actual ID of the actor, uniquely identifies a movie in the first case and an actor in the second place. And then we have a role, short text, up to 2-5-5 characters that describes the role of the actor in the movie.

Now what we're going to do is to create a form that specifically adds records to this table. Now we haven't had a form like that so far. So we go into Create, note that I'm keeping the Ribbon minimized now. I don't need to see the Ribbon all of the time. I know where the commands are that I need and I'm going to start with form design.

That gives me a blank form. The first thing I need to do is to associate the form with the MovieActor table. So if I click on the Design Tab, bring up the property sheet, and then what I need to do is to say under data under the record source I want a record that goes in the MovieActor table. So what I'm going to do with this form is to add records to the MovieActor

table. To add a record to the MovieActor table I need to know three things. There are actually four fields in the MovieActor table but one of them is automatically assigned by Access. Access puts that unique ID in. So I need to know the movie ID, the actor ID, and the role. And I'm going to start by adding the movie ID, but the movie ID is not just a textbox. I want to be able to choose the movie from a drop down list of all the available movies. I don't want to have to type it in or work out what the ID is. So I'm actually going to put a combo box in here for the movie as the first field. So first of all, if I go to the Design Tab and look at the controls in the gallery, one of those controls is the combo box. It's that one. Click on combo box and now I can draw a combo box. Now I'm going to put the combo box there and let me do a tiny bit of resizing there and I'm going to change the names a bit. So where it just says combo there I'm going to call that the Movie label and the caption is going to be Movie.

Now this control is currently unbound, so it's not linked to one of my fields. So I need to say which of the fields this is linked to. Now if I click in there, click on the drop down, obviously the choice I've got is ID, auto-assigned, movie. That's the one I want. And that will show the movie ID, but I don't just want to see a list of numbers when I click on this drop down. What I actually want to see is a list of movie names. Now you might think that sounds a little bit unlikely but the way I do it is to use that query Movies that I created just now. Now the query Movies has got three things in it. It retrieves the ID, the year of release, and the movie title, and I'm going to see all three of them in this drop down. So where it says column count I'm going to put column count three and where it says column widths I'm going to give them all widths of one of my units which are inches. Now the next question is where does it actually get that data from to put into that drop down? Well, if I go back to the Data Tab, that's where row source comes into it and my row source is going to be that query, the query Movies. Okay? So what I'm going to do now. I'm just going to close this property sheet for a moment and I just want to show you how that's going to work. But the first thing I'm going to do is to save this form as it is so that I don't lose my work. So click on close, save the changes, and this is going to be F-R-M-MovieActorAdd. This is the form I use to add a movie actor record.

Now let's open that form up and see how it works. Note it currently says six because it's actually looking at the MovieActor records that are currently in the database. That's unimportant at the moment. I'll fix that in a while. But let's click on the drop down and see how it looks.

What you can see is that we have a full list of all of the movies and when I'm setting up my movie actor records, I can actually scroll through and find the particular movie that I want to record the fact that an actor was in. Now there are a couple of problems with this. One of them is although the IDs there are the right IDs, they're still a bit of a nuisance. I'm not really interested in IDs to be honest with you. They're used throughout to uniquely identify things but you're rarely going to want to actually know what an ID is. So I'd really rather not have those IDs. And also I'm seeing much too much of this year here. I'm seeing twice as much width in that column as I need to and I could really do with seeing a bit more of the movie title. So let's go back into the design of our form and fix that particular problem.

Now one of the key things here is that we must have the movie ID because it's the movie ID that we store in the movie actor record. So we can't do away with the movie ID but what we can do is in the property sheet for that combo box where we have the column widths currently 1 inch, 1 inch, 1 inch, we can make the first column width there zero inches. The ID will still be there you just won't be able to see it, but you don't really need to see it. And as far as the year goes where it currently says 1 inch, I think half an inch is probably enough for that. And then we can use as much as we like for the movie title. Let's bring up to say 3 inches. Now what we should see is a much better use of the space we've got there. We could even make this field a little bit wider if we really wanted it to, to make sure that we can pretty much be certain to get the full movie title. But obviously that's something we could adjust later on.

So I'm going to try that out again in just a moment, but I'm also now going to add a combo box for the actor. I'm going to use exactly the same approach with the combo box for the actor. So again, there are three fields. In this case the three fields are ID, first name, and last name. I'm going to make the ID column width zero. I'm going to adjust the other two so that I can pretty much be certain to see all of the first name and last name of an actor and I'll join you again when I've done that.

So let's take a look at our form now. I've got both combo boxes: a movie combo box and an actor combo box. They're currently looking at the first record in my MovieActor table that as I said earlier we'll get rid of in a while. Now we click on the movie drop down and what we can see is a list of those movies with the year first and then the movies of course are in title sequence. So if I know the movie I should be able to scroll through to find it. And then if I now look at the

actor drop down, the actor drop down I've got a sequence of actors. They're in alphabetical order of surname. So again I can scroll down the list of available actors, find the one that I want, and both of those are working absolutely fine. The important thing to remember with both of those is that the bound column is column one, but in both cases the width of column one in the combo box is zero.

So there's one more thing to do to this form now in terms of the data and that's to put on a box to specify the role. So I'm going to do that next.

So I've added a textbox for role and I've really now got all of the data I need to create a movie actor record on this form. But now I need to do a couple of different things to the form and one of the first things I'm going to do is to change the size of this form. I just want it to be big enough to contain those three fields and a couple of other things. The couple of other things are a couple of things we haven't used at all so far and they are command buttons.

In the next section we're going to look at how to add some command buttons and to finish off and implement our modal dialog. So please join me for that.

Video: Modal Dialog – Part 2

Toby: Hello again and welcome back to our course on Access 2013. In the previous section we created this form with the three controls on it that we need to establish the data to create a movie actor record in our movies database. In this section we're going to look at how to add command buttons and to make this into a modal dialog as a particularly convenient and straightforward way of adding records to the movie actor table. So let's get started.

Depending on your installation of Access 2013, you may have access to a thing called the Command Button Wizard which would certainly help you to add command buttons to this form. But I'm not going to assume that. I'm going to add these buttons manually and there are only a couple to add. It's pretty straightforward. You will see a little bit of code but the code is extremely straightforward and I think it's probably a pretty good introduction to coding to add just a couple of buttons like this.

Now the first button that I'm going to add to this form is a button that doesn't actually do anything with the data, it just closes the form; in effect it's a sort of Cancel button. So I'm in Design View at the moment. I'm on the Design Tab and one of the controls in the controls gallery there, that one, is the one that's called Button. So I'm going to click on button and I'm going to draw on the form a button and all this button will do when it's clicked is to close the form, the movie actor add form. So release that and right click for properties and I'm now going to setup the properties of that button. Now first of all, I'm going to go to the All Tab here and the name of the button is currently Command 11. I normally call these buttons with a C-M-D prefix and I'm going to call it Close, and the caption on it currently says Command 11 by default. I'm going to say Close. You can put a picture on a button if you want to. I'm not going to in this case. So it will actually look like that. It'll say Close.

But now I need to say what happens when I close and this is where we look for the first time at the Event Tab in the property sheet. Now as I mentioned much earlier on, there are many events when you do things in Access. But at the moment, the only one we're interested in for this button is what happens if we click it, so the on-click event. Now with the on-click event, you've got a drop down arrow there which lets you choose from an even procedure you've already written which is beyond the scope of what we're doing here, but you also have three dots on the right

and it actually gives you an opportunity to build the code that you need pretty automatically. So if I click on the three dots, I'm given a choice of a macro builder. So I can actually go in and write the macro code, expression builder. So if I can do this by defining an expression, I can. And if I want to actually write VBA code, I can use this option to give me access to write VBA code. Now on this occasion I'm going to use the macro builder. Click on OK and then what I get is a straightforward sort of blank page here where I can define what I want to happen when I click that button. Now what I want to happen when I click that button is that I close this form. Pretty straightforward. So let's click on the drop down and if I look down the list here, what I want is Close window because a form is a special type of window. So I just choose Close window, it brings me up some straightforward choices to make. What type of object is this window? Well, it's actually a form so I select form. And what's the name of this form? It's the form MovieActorAdd. So basically what I've got there is a straightforward case of closing this form and that's all there is to it. Let me close that. I'm going to say save the changes. Now I'm going to close that property sheet. I'm going to close the form, save the changes, and then let's see our new form in action. So open the form up, click the Close button, and it's closed again. Open it up, click the Close button; very straightforward.

Now I'm going to add another command button and I'm going to draw this one just to the left of the first one and a little bit of alignment needed there. I'll worry about that later on, but if I right click to bring up the property sheet and again go to All, this is going to be C-M-D-Add. This is going to be the button that adds a record to the table. So the caption is Add. Now because the whole form has as its source that table, the MovieActor table, whenever I do an add of a record it will add a record to that table.

So the next thing I need to do is to say how do I tell it to actually add a record? Well, I go back to the Event Tab. I'm going to go back into the three dots, macro builder, click on OK. Look through the available commands. There are quite a few, but the one I want, again it's pretty straightforward, it's save record. Now I don't need to specify anything else because Access 2013 knows what sort of record it is because it's a record for the source associated with this form. Click on Close, save the changes, click on Close again.

Now we should be pretty much ready for this form to add the sort of records that we want it to add. But we need to do a couple of things to the form itself first, so I'm going to open the form

up again in Design View. I've got the buttons on it but now I want to look at the properties of the form. So bring up the property sheet with form selected and I want to talk about the all properties for the form.

Now first of all, for the caption we're going to say put add actor to movie for now. That'll be fine. Now the pop up, we're going to say this is a pop up form. Is it modal? I.e. have we got to deal with this before we do anything else when we're using the database? Yes, it's modal as well. So we've got a modal pop up dialog. The default view is single form. Do we allow Datasheet View? No, we don't. Do we allow Layout View? Yes we do. Now we need to move down. There's a few other properties here that need to be set.

One of the most important things is that we need to enable this form to add new records. But while we're moving our way these properties, there's a couple of other important things as well. We're not going to use this form to step through the records in the table. It's purely for adding new records. So in this property here where it says Record selectors, the answer to that is no. Where it says navigation buttons the answer to that is no. Where it says scroll bars the answer to that is neither. We could also stop the form from having a Close button. I don't mean the close button we've just added, I mean the one you get in the top right hand corner of a window. Now before you do that, you need to know about a couple of other things. So we'll leave that there for the moment. Let's move further down these options here. And then one of the most important changes we make is this one where it says Data entry. We need to change that to yes. So having made all of those changes to this form, let's close the form down, save the changes, and let's try the form again and see what it looks like.

So now we open up the form and let's do a little test on it. Let's choose a movie. Let's say 2001: A Space Odyssey. Let's choose an actor, maybe an actor who's not very likely to have been in that, say, Humphrey Bogart, and let's say a role like Not There. Now immediately when you see this even assuming that this is going to work which I can assure you it will, you realize that well actually showing the year here doesn't really help and having the first name doesn't really help. Maybe it'd be better if we had the movie title and then we had the last name rather than the first name. Well these are easy things to fix, but first of all let's see whether the adding works. So we'll click on Add and what should've happened is a records been added to our MovieActor table. The controls have been cleared so we could add another one if we wanted to.

Whenever we finish working on this we can click on Close. So let's have a look at the MovieActor table and there is he right at the end we've got a new record entered. The role is Not There. The actor is actor number three; you can see up there that that must be Humphrey Bogart and 101 is 2001: A Space Odyssey.

So let's delete that record and let's supposing then that we did want to put those fields the other way around. So we wanted to have the movie title first before the year and then the last name of the actor before the first name. It's actually pretty straightforward to do because if you went say into query actors, into Design View for that, all you've got to do to change the order of the fields here we've got ID, first name, last name. All you've got to do is drag to change the sequence, close, save the changes, and then Design View for the query movies, again we can put the title before the year of release, close, save the changes, close the table again. And then we'll need to do one other thing which is to change the widths of the columns on those two combo boxes. So if we go into MovieActorAdd again, go into Design View, and then for the movie, let's look at the property sheet. We've got zero, 0.5, and 3 as the widths. I just need to swap the last two round really. So that's 3 and 0.5. That's fine. And then for the actor combo box we've got zero, 1.5, and 2. So let's change those round and we've got 2 and 1.5. Close the form again, save the changes. Let's try it again. So open the form up, select a movie. Now we have the title followed by the year of release. We still need to see the year of release because we may of course have a couple of movies with the same title. Don't forget True Grit down here with two years corresponding to the two different versions of the movie and then for the actors obviously we can't work on only the last name. We need to see both. Generally speaking, actors do not have the same first and last name. I'm not sure it's an absolutely true rule. Maybe we ought to also show their date of birth in here, but now you should be able to work out how to do that. The important thing to remember here though is that whatever you display, you're actually going to be saving the ID of the movie in that case and the ID of the actor in that case.

So the add actor to movie form now seems to work fine. What I now need to do is to attach it to my individual forms and to set it up in my navigation form. We're going to do that in the next section. I'll see you then.

Video: Modal Dialogs – Part 3

Toby: Hello again and welcome back to our course on Access 2013. In the preceding section, we finished getting our form to add an actor to a movie ready. It's a modal dialog and it includes a couple of combo boxes that really help in terms of identifying an actor and a movie. I'd say they're not perfect. There's still a couple of things that ideally we would do but they're relatively straightforward things to do. Now what we're going to do is to put in a mechanism whereby we can actually call up that form from within our database application.

I think you'd really call this the easy bit really because what we do is we say take our movie maintenance form, go into Design View. So what I'm going to do is to make the detail section of the form a little bit bigger, then once again I'm going to go to the controls on the Design Tab and once again I'm going to add a command button. Now I'm going to put the command button here. It gets a default name and then I'm going to look at the properties. So click on properties and let's put the properties of that button in place and I'm going to call it. Now in this case, it's a button on the movie maintenance form and in this sense we are adding an actor to a movie. So what I'm going to say in this case is Add actor. Now in terms of the event, now I've got to decide what the event is that's going to happen when somebody clicks on that button. So click on the three dots, macro builder, click OK, and in this case what we want to do when somebody clicks on that button is to open a form. So we click on open form, choose the form name, and the form name is MovieActorAdd. For data mode we can select add because we're always going to be adding a record with this form at the moment and that's it really. Then all we have to do is to close, close, close, close, and we can try that out.

So let's start the movie maintenance form. You can just about see the Add actor button there. Click on add actor. Let's choose a movie. Let's choose one of the Star Wars movies. Let's go for Star Wars IV, choose an actor. That'll be Harrison Ford. Choose a role and then all we need to do is to click on Add. When we've finished adding, click on Close and we can check that that's worked okay by having a look in the MovieActor table. So let's look in the MovieActor table and there we are. We've got a new entry for Harrison Ford at the end. He's now in movie 18 and movie 23 as Han Solo and of course we might want to put in another one as well. So basically that's working fine.

Now let me just click on Add actor one more time. As you learn to use Access, like most users you tend to become more and more demanding and the sort of thing you might want to do now having seen this working and thinking, "Oh yeah, that's pretty good. Isn't it?" Is well really if I'm on the movie maintenance screen and I'm looking at a movie like this one, Identity Thief, wouldn't it be a good idea if the initial value selected here in the movie combo box on this Add Actor dialog was Identity Thief? Working on the assumption that the person operating the database is going to add an actor to the movie that they've currently got in the movie maintenance form; so you basically want to set an initial value there, but the person could actually choose a different movie if they wanted to. Well that's true. That's straightforward to do. We're not going to cover that now because we're pretty much out of time on this.

The other thing we might want to do is this. Let's suppose we were going to add Harrison Ford to the other Star Wars movie that we've got in the database. Supposing by accident we chose the wrong Star Wars movie and we chose one of the ones that he's already recorded as an actor in. At the moment, we don't have any check to make sure that we're not making a duplicate entry. So again, as part of clicking on Add, we would normally have a check to make sure that we're not trying to add the same record twice. So as you can see there are still quite a few more things you'd want to do to make something like this work really well in what I would call a sort of production environment. Having said that, they are very common things to do; they're not particularly complicated. Some of them ideally use some code, a little bit of macro code or some VBA. But as your knowledge of Access increases and your use of it becomes more sophisticated, you can learn how to do those things and start to make your application, your database really sophisticated.

So what I'm going to do now is to close our dialog, close the form, and in fact I'm going to close the database and reopen it so that we see the navigation form and we just give this one last run through. So there we are. I'm not convinced by the color of the Add Actor button. Maybe that needs a bit of work. I maybe not even convinced about the words Add Actor, maybe that sounds as though we're going to add a new actor altogether. Maybe it should say Add Role or Add Actor to Movie. But these are the sort things that you will make decisions about; possibly change your mind about as you go through developing a database.

Let's click on Add Actor to see this in action. Let's choose a movie. Now one of the good things about Access is that there are many features built into Access, particularly built in to the user interface of Access that might quite surprise you. If I wanted to add Jack Nicholson to the movie One Flew Over the Cuckoo's Nest, I don't actually have to scroll down to find One Flew Over. I can start to type. So I could say O-N, One Flew Over the Cuckoo's Nest. There it is. Actor, that'll be Nicholson, Jack. His role in that was R. P. McMurphy. Click on Add. I'm not going to add any others at the moment. Click on Close. Now if I go back to the actors form and find Jack Nicholson. There he is. I've got him in One Flew Over the Cuckoo's Nest and I've still got the mechanism here of course that I can do an add via this screen. It's a bit inelegant, this one, because I have to know the movie number. But to be fair we could now go through and change this so that we could see the movie name appearing here as well. But we've done enough on this for now. That's all we're going to cover in the course.

So that's a working version, a couple of ways of adding actors to movies there. It basically works. Plenty of room for improvement, but I hope that gives you enough ideas of what the approaches are and what the possibilities are in terms of the relationship between two tables in a database because in relational databases that's probably the most important aspect to get to grips with.

And that brings us to the last exercise in the course. I'm going to save the database as it is now as example-17, and what I want you to do is to add a button to the actor maintenance form that will do exactly the same thing as the button on the movie maintenance form currently does. You might want to change the wording. It's going to do the same thing and then there's an optional part as well. This takes a little bit more bravery and not only do you need to think about how we did this originally but you could also look back to that subreport section that we covered earlier on. See if you can put together a subform here on the movie maintenance screen with a list of the actors that we've got in the selected movie. It doesn't need to be able to do an add because we've got an Add button here now, but just does a list of the actors in the movie. That's an optional part. If you're feeling brave then that's a good one to have a go at as well.

My answer to this is going to be example-18. I'll see you in the next section.

Chapter 20 – Macros and VBA

Video: Actions; Example of VBA; Creating AutoExec Macro

Toby: Hello and welcome back to our course on Access 2013. Now that you've created a modal dialog and have added some command buttons, I'd just like to spend a little bit of time looking at macros and VBA. Now we'd need quite a bit of time to go through this in any level of detail and certainly for you to become proficient at writing macros and VBA in a general sense, but I want to show you two or three fundamentals. But I hope it will inspire you to find out a little bit more about them and to extend and improve your use of Access by learning about these two valuable tools. Now first of all, let's have a look at the buttons that we just created and the macro code that goes with them.

The first thing I'm going to do is to erroneously add another actor to this first movie, Identity Thief. So I click on Add Actor to Movie, choose the movie. As we know I can just start typing Identity Thief, there we are. Choose an actor. Let's choose say Ingrid Bergman, a suitable role, click on Add, click on Close. Now one of the things you may have noticed when you did this yourself, assuming you have done it yourself, is that Ingrid Berman does not appear in that list. However, if I closed the movie maintenance form and then opened it up again, I would find that Ingrid Berman is actually there. The reason that Ingrid doesn't appear as soon as I add Ingrid is that the form that we're displaying there, the subform in particular, is not automatically updated when we make a change to the underlying data. Now there is a way to make that happen and I'm going to use that as a way of just showing you something more about how macros work in Access 2013.

So we're going into Design View for the movie maintenance form and we're going to select the Add Actor to Movie button, look at the properties, go to the on-click events and click on the three dots, and we can see the macro that is run when we click on the three dots. Now if you look at this macro, what you've actually got in the main panel is the sequence of commands that are executed. It's actually a sequence of actions and with each action you can expand or collapse that action. If I collapse this open form action, you can see that in this particular case when we click on that button we only have one action; it is open form. For the details of the open form action, you can see we've got open form. The form name is F-R-M-MovieActorAdd. In Form

View, the data mode is add. We're going to use that form to add data, not to edit data or do anything else, only to add data. And the window mode is dialog. That means that it's going to be opened in such a way that the user will deal with it with usually an OK and/or Cancel option on it as well. So somebody will make some choices, enter some data, and then normally click OK or cancel. So, that's basically what that button does.

Now in some cases, we'll actually need to execute more than one action to do what we want to do. Let's take this one as a particular example. Let's suppose that we're going to open the form; that's what we're doing here. We're going to let the user use the form, add as many actors to the movies as they want to, and then after that what we're going to do is to force Access 2013 to update what's displayed. Now the way we do that is by adding a second action and to do that there's an add new action option down here with a plus sign next to it. So let's add another action to this button. Now even if you know what you want to do in a situation like this which is to update what's displayed on the form for the user, you probably won't know what the command is that you need. Even a command like open form that we've used already okay once you've seen it once, you may remember that if you want to open a form, the command is open form. But you probably have no idea what the command we need is to update the display of what's on the form at the moment. Now this is where learning macros and VBA come into it. You would need to spend probably quite a bit of time learning what all the different commands and what all the different options are. I'm going to just tell you in this case what the command is that you need. But in the process of doing that, let's just look at one or two other important commands. There is an action catalog on the right which is a sort of structured list of the available macro commands. The sort of things you have, for instance, data entry operations, this section at the top here includes commands to delete a record and to save a record. The one that we want in this case is under filter, query and search, and the command we want is the re-query command. Now you can see the comment about re-query underneath it there. Forces a re-query of a specified control on the active object which in this case is the form that the user is using or a re-query of the object if no control is specified. Now that's basically what we're going to do is we're going to say we've got some content in that subform and we want you to update it, we want you to re-query the database to update it. So it's the re-query command that we want, we double click on that. Now the control name that we want Access 2013 will help us with. We've got various controls on this form. Let's start typing in the name of the subform. I know it begins

F-R-M. As soon as I get that far, it reminds me what the name of the subform is and that basically is my command, re-query the subform. We'll close the main form again, save the changes.

Now let's open the form. So I'm going to add another actor erroneously to this so I'm going to click on Add Actor to Movie. I'm going to stick with the same movie. I'm going to add Humphrey Bogart this time. I'll put him as not included as well. Now last time we did this of course when we added Ingrid Bergman her name didn't appear straightaway and we had to basically go elsewhere, come back, and it was shown. This time when I click Add watch what happens. Close and straightaway the name of the added actor appears.

I'd just like to point out one or two other important things here. There is no facility within this fairly neat looking arrangement to delete these roles. So having added two erroneously, if I was looking at the movie maintenance screen and thinking, "How am I going to fix those two?" I'd have to think in terms of going into the MovieActor table and deleting a couple of records. You certainly don't want your users having to do that. You may recall that if you went back into actor maintenance, you've still got the old style Datasheet View here. So if I actually stepped through to Ingrid Bergman, say, entry on Casablanca there and then the one on Identity Thief, did a right click on the Identity Thief one and clicked on Delete record, then I could fix that that way. But of course that's one of the advantages of Datasheet View; it gives you a lot of flexibility. You can do the adds, the modifies, and the deletes, but of course the users able to get themselves a lot more confused and in a bit of a mess as well. If I went back to movie maintenance, of course what I'd really probably want to do here is to add a button to delete these, add a button to edit them, and so on. Notice how also although I deleted Ingrid Bergman in actor maintenance from this movie, it's just marked as deleted for the moment and Access will actually clear the delete up on a sort of timed cycle, but talking about that is really outside the scope of what we're doing here.

Much as you can do an awful lot of things using macros in Access 2013, the real power of programming in Access 2013 is in the use of VBA code. With VBA code, you can do pretty much anything that can be done in Access 2013. Now it would take us a very long time to get to the point that you could write your own VBA code, but I'm just going to show you one example because this is really quite important because I think it will give you a flavor of the sort of thing

that you can do and it's an example that a lot of people start with. You may recall that I mentioned quite a bit earlier on in the course that you can hide the Ribbon for your users and I want to quickly show you how to do that. It's a combination of a bit of VBA code and a bit of macro. So let's start with the VBA code.

So this time we're going to create a module and if you go to the Create Tab right over on the right, macros and code, there is an option there create module. Click on that and we go into the Microsoft Visual Basic for Applications, VBA editor, and we get a module which is empty except for a standard line, Option compare database. And then what we do is to type in our VBA code. Now I'm not even going to try to explain to you exactly why I'm going to type what I'm going to type. But I think that when I've typed it you'll get a reasonable idea of what's going on.

Now first of all, I've typed in Public function hide Ribbon. This says that I'm writing a piece of VBA code and its name is Hide Ribbon. The significance of the word Public is that it's generally available to my database; all the other bits of my database can use this function Hide Ribbon. What I'm going to do in this function Hide Ribbon is surprisingly to hide the Ribbon. Now note as I type I'm getting help from Access to suggest what I might want to type. Now that command says Show the toolbar, the toolbar in this case is the Ribbon, and the setting is No. It's actually a way of saying don't show the toolbar. Now the situation with this is that if I run that function, it will hide the Ribbon. So all I need to do is make sure that for all of my users when they open up the database, this function gets run. That's all I need to do.

Now I should point out that I could actually put this code as the event code for a button on the form. So I could actually say to users click that button and I'll hide the Ribbon. They may not cooperate and I don't want to be in the position I'm relying on my users doing something. I'm forcing this on them. And the way that I force it on them is to put it into a macro so it's run from a macro, a very special macro that's run when somebody starts up a database and it's called the AutoExec macro.

So first of all, I'm going to close this module and I'm going to create an AutoExec macro. So click here on macro and we choose our macro action. The macro action we need in this case is run code. What run code does is to run a function, a VBA function, and I know the name of my VBA function; it's Hide Ribbon. I'm going to close that macro. It's very important that I give it

the name AutoExec because the name AutoExec will mean that it's executed when the database starts up. So click on OK and that should be it. Now what I'm going to do is to close the database and I'm going to just open it again and what should happen is that the AutoExec macro gets executed and the Ribbon is hidden. So let's see how that goes.

And here we are. The database has now been opened. There's no sign of the Ribbon. No sign of the Navigation Pane.

I should mention there are two or three other things we could do here to improve this as well. We don't need all of these minimized buttons and maximize buttons and close buttons. We could in fact have a close database button somewhere on the navigation form if necessary. But as you saw earlier although you can't see the Navigation Pane, F11 will bring the Navigation Pane back. And as far as the Ribbons concerned given that we've actually imbedded the hiding of that into the AutoExec, you can override the AutoExec anytime you open the database by holding the Shift key down as you open the database. So if I just close this again and open the database again but hold the Shift key down, I will see the Ribbon as normal. And of course with the Ribbon there and the Navigation Pane there, I can change any of the options that I've chosen here. Obviously I could change the AutoExec or even delete the AutoExec if I wanted to. These tricks and techniques do rely to some extent on your users not knowing how to get round them. But for most applications in most situations they're very useful things to be able to do and believe me most users will not be aware of how to get round them.

I hope that's given you a reasonable idea of what macros and VBA look like in Access 2013. If you're aiming to improve your Access development skills or your database development skills in general, it's well worth finding about macros and VBA. As we've seen in this section, you can use them not only to perform a specific task but also to generally improve the ruggedness, the usability, the security of your Access 2013 database applications.

That's it for this section. I'll see you in the next one.

Chapter 21 – Additional Topics

Video: More Access Options

Toby: Hello again and welcome back to our course on Access 2013. Much earlier on in the course we looked at Access Options in general and quite a few of them have cropped up during the course. But there are a few that we haven't seen yet and I'd like to go through the most important ones of those in this short section. I'm going to start with the ones that are on the page that says Current Database as they relate specifically to the current database.

Now as the name implies, many of the settings here specifically relate to the current database. So for instance, I've put in here an application title of Toby's Movies Database and if I hadn't put in an application title, as I mentioned earlier, I'd see the file name across the top of the window where I'm working on the database instead of Toby's Movies Database. I also have a setting that we considered earlier, display form F-R-M-NavigationForm. That's the one that means that the default display form is my navigation form. But some of the other settings relate more to how we work on the current database. I'm certainly not going to go through all of these now. It would take quite a long time. Some of them are there also to support people who are used to working in a different way with Microsoft Access.

So for example and just to demonstrate one of the differences in the document window Options section here, we have a choice between overlapping windows and to tab to documents and I've currently got tab to document selected. That's the default setting. I'm going to change that to overlapping windows. Now for that to work, I'm going to need to close and reopen the database. So you must close and reopen the current database, that's what I'm going to do. Now watch what happens as I open some of these objects to work on them. Let's say I want to go into the design of the country table. You notice it no longer has a tab along the top. Supposing at the same time I want to go into the design of the MovieActorAdd form, and what I finish up with is overlapping windows. These are windows that I can move around. They don't have tabs as such. I can move them round in my workspace. Instead of clicking on tabs, I can put them into position using the mouse, just drag them into position, and access whatever part of the form I want to access. Some people prefer to work that way. My preference nowadays is to use the

tabs, but I must confess that I used to work with the overlapping windows in the way that you can see here. It's very much a matter of personal preference.

Now there are a number of other such options that you can choose from relating to the current database. We, for instance, already looked at the fact that we want to suppress the Navigation Pane; so we unchecked the display navigation box there. There's also a Navigation Options button there. If I click that, it brings up the Navigation Options dialog and from there you can customize the display of the database objects in the Navigation Pane. So let me just cancel, come out of there. At the moment, we have the default arrangement whereby the tables are within this table's category that you can expand and collapse, queries again expand and collapse. We've now of course got forms, reports, macros, and modules as well. Well if you're dealing with a particularly large, possibly quite a complex database, you may want to arrange these objects in a different way that suits your requirements more. Well you use the Navigation Options button to do that. You can create your own groupings and customize to your own taste.

Now we move on to the Datasheet page in Access Options. You'll probably use Datasheet View quite a bit in Access 2013. Well on this page you can basically customize the way that datasheets look in Access. So you can decide whether to show horizontal and vertical grid lines, whether you want the default cell effect to be flat cells or whether you want them either raised or sunken. You can also change the default column width and you can go in and change the default font. You can include things like underline and italic as well. So there's quite a bit of customization you can do there. If your users are using Datasheet View, of course you may well want to customize it to suit what you see their requirements as being.

Now the next page is also an important one, Object Designers. This really doesn't relate to Layout View or to the table Datasheet View. It's really for when you're in Design View and it really let's you set defaults for many things, such as what is the default field type? It's short text. What is the default text field size? 255 characters. These are the things that we've seen throughout the course so far. Well you can largely customize what these defaults are and if you find, for instance, that you never have 255 characters in a text field but most of your text fields are 100, you could set the default to 100. It would save you quite a bit of time over designing maybe hundreds of fields in dozens of tables. So go through those, check through those, check the defaults. Some of them are fonts and things, look and feel things, but again if you're used to

doing things in a particular way or you find a particular way that saves you time, then it's well worth going through and checking through what all of these options are.

The last page of Access Options that I'd like to look at in this section is the page that's called Client Settings and here you can really tune the way that Access 2013 works to suit your requirements. So let's look at a couple of the options on this page. The second one in the editing group is behavior entering field. Now you probably noticed already that when you enter a field, so for example if you're working on a form and you tab into it to enter some data or modify some data, by default the entire field contents are selected when you enter the field. Now you don't have to have it work that way. You can by changing this option, say, for example that when you enter a field, the cursor goes to the start of the field but nothing in the field is selected or that the cursor goes to the end of the field but that nothing already in the field selected. Now these are defaults so you wouldn't want to change these just for one particular field. This is really how Access 2013 works in general and by default. So obviously in a particular case even if you had that first option set, select entire field, you tab into the field, it's all selected. You can just click to the left of the beginning of the content and you would deselect and be able to start at the beginning anyway. So don't forget these are default settings.

There are some more important settings down here in the display section such as the number of recent databases, whether you want to see the Status Bar or not, and then when printing default values for the margins. There are also a set of advanced settings and some of these relate to multiuser settings for Access 2013. Now we haven't really talked about multiuser aspects at all on this course. They've been outside the scope of this course, but if you are going to have more than one person accessing a database at once, you will need to consider these settings that include things like whether you lock records when people are working on them. So if one person is working on a record, can other people see it or can they even try to change it while that persons working on it? You also have things like database refresh intervals, the number of attempts to retry an update to a database if there's some sort of conflict. And then right down at the bottom of the page you've got things like the default theme which I've got set to whatever my default Office theme is, but you could change it to a specific different theme if you wanted it to. So the settings on this page are very much a combination of just personal preference and also

what makes things most efficient and effective for you in the way that you work with Access 2013.

So there are many settings for you to go through. Try them out; see which ones work best for you. That's all I'm going to say about Access Options on this course. I'll see you in the next section.

Video: Info Tab

Toby: Welcome back to our course on Access 2013. In this section we're going to look at a couple of important options that are available from Backstage View and in particular we're going to look at options on the Info Tab. So if I go into Backstage View, select the Info Tab, and we're going to look at database properties, compact and repair, and encrypt with password and we're going to look first at view and edit database properties.

Earlier on in the course, we looked at the database documenter as a good way of producing pretty detailed information about the design of a database. In addition to that, there is a database properties feature in Access 2013 that you access by clicking on this link here and it gives access to a tabbed dialog where you can view and record database properties. Now the first tab of this dialog is the General Tab and it will give you the name of the database file and then what is really referred to as the metadata about this database. So the General Tab tells us that it's a Microsoft Access database. It gives us its location. It tells us how big it is. It's about 4 megabytes, just under 4 megabytes at the moment. And then it gives us the date that it was created, the date it was last modified, the date it was last accessed.

In some ways the most useful and important tab is the Summary Tab because here you can record a title for this database. You can record the subject, the author, the manager, the company, and then you can enter a category name, enter some key words, put in some comments, and so on. This information can be very useful for somebody else who is going to need to say do some maintenance on the database because it enables them to identify who wrote it, which company it came from, maybe who's responsible for it. You can access some of this information from within the database itself which can also be very useful.

The next tab is the Statistics Tab which again gives you summary information about the usage of the database. The Contents Tab which basically gives you a list of the objects in it. Things like the tables, the queries, the forms, the reports, macros, and modules. And then you have a Custom Tab whereby you can create custom values. Again, you can access these from within the database, but you can also use this information for other people as well.

So the database properties at the very least I would suggest that as a matter of fact, you always make sure you've entered the title, the author, and the company that the database is coming from

if indeed it's been created by a company. If you look at the examples in the example files provided with the course, you'll find that in each case the title, author, and company are included.

The next option I'd like to look at on the Info Tab is compact and repair database. As Access 2013 does its work as you change objects, maybe change a table, delete a table, change a query, Access does not always clear up very well after itself. Now in some cases, what it does is quite deliberate behavior, but in others the main problem you get is that the usage of space within the database file becomes very inefficient. The objects of the database as their stored get fragmented, split up, or bits of space are left lying around, and the size of an Access database file can grow at a rather alarming rate. One of the ways of dealing with this is to compact the database and when you compact a database what happens is Access just reorganizes all the contents to make better use of the space. Almost always this will mean that the size of the database file becomes smaller and it often means that the performance of the database itself improves as well. So compacting a database is generally a good thing.

The other situation that sometimes occurs is that because of the rather complex interrelationships between tables and you've seen some of those already, as I'm sure you can imagine they can get a lot more complex than the ones we've seen so far. You can get a situation where the database gets corrupted, it gets broken in some way, a bit of linkage doesn't work. Now in many cases, Access 2013 can fix this itself and it does this as part of this compact and repair database process. So when you run compact and repair, what it does is to not only make optimum use of the space, but very often it will be able to repair any faults that have occurred in the database as well. However, it's not infallible. There are ways that a database can get broken whereby it can't be repaired. So it's very important that you keep backup copies of your database files.

So I'm going to close the current database. I'm going to open example file 18. Now if I just scroll down there, you can see that it's 3968 kilobytes. So it's just about 4 megabytes. Let's open that, go the File Tab, click on compact and repair. I'm afraid you don't see very much happen here. It's not very exciting. Just click on compact and repair. That was it. I'm going to close that. I'm now going to go back into open of that again, down to 18 again. You can now see that it is 1,500 kilobytes. Now that will not have changed the functionality of that database at all. There'll be no difference. But it's less than half the size that it was and as I mentioned

earlier, it will often improve the performance as well because the storage of everything within the database can be improved by the compact and repair process. So that's compact and repair and as you can see it's pretty straightforward.

Security of an Access database is one of the most critical aspects and if the data in your database can only be seen by certain people with permission from you, then it's very important that you can make sure that nobody else can see what's in the database. Now in the past, in much earlier versions, it was quite often the case that there would be a password on the database but that somebody using a different piece of software could in some way read the data in the database. How this is overcome in the current version of Access is that not only can you protect the database with a password so that somebody needs a password to open the database, but the data is encrypted as well so that even if somebody uses a different piece of software to try to read the data in your database, the data is encrypted and they still can't read what the content of the tables in your database are. To achieve both these things, to stop people getting access through Access but also to stop them reading the data, what you do is to encrypt the database with a password and that's the option that we're going to look at here.

Now one of the key things about encrypting an Access database is that you must have the database open for exclusive use in order to do it. Even if you're the only user of your Access databases, you never expect anybody ever to open one your databases and you're encrypting it with password purely for your own protection, you still have to open it for exclusive use in order to be able to switch that encryption on. So what I'm going to do, I'm going to use this movies 18 database. First of all, I'm just going to close it, then I'm going to go back into Backstage View and click on Open. I'm going to go to the folder where that file is. It's called Movies 18. I'm going to select it but with the Open dialog so far, we've just selected the file and clicked on Open but there's a little drop down to the side there and one of the options is Open Exclusive. We need to open exclusive in order to be able to enable the encryption. So click on Open Exclusive. Now I go into Backstage View, Info Tab is there, and I can click on Encrypt with password. So I enter a password. I tend to use relatively strong passwords, so a mixture of letters, numeric digits, and punctuation characters. And then in order to make sure that I entered it correctly because if I think I enter one thing but actually entered something else, I'm going to finish up in a lot of trouble. And then I type in the same password again to verify for that reason. Click on

OK. Now you actually get this warning message, Encrypting with a block cipher is incompatible with row level locking. Row level locking will be ignored. We won't be looking at that in this course and for the purposes of just protecting this database at the moment and using the built in locking mechanisms within Access 2013, you don't need to worry about this message. If you were going to take over some of the responsibilities of dealing with the multiuser aspects of your database, so how you lock records while one persons working on them, you would need to take notice of this message, but that's outside the scope of this course. When you get to that point, if indeed you do get to that point, then you will need to look at the issue of row level locking and encryption. But for the moment, we can just click on OK and now the database is basically locked. So if I close the database down, open it up again, I'm required to enter that password. Click on OK and the database is open.

Now to decrypt again, all I need to do is to go back into Backstage View and on the Info Tab what was the Encrypt button is now a Decrypt button. So I click on decrypt; note you must have the database open for exclusive use to set or remove the database password. So I would need to say OK, close it again, choose my database, click on Open Exclusive, type in the password, and now that I have the database open exclusively, I can just go to File, Info, click on decrypt database, type in the password, click on OK, and the database password is unset again.

So having looked at the three options on the Info Tab in Backstage View, that's the end of this section. I'll see you in the next one.

Chapter 22 – Security

Video: Trust Center

Toby: Hello again and welcome back to our course on Access 2013. In this section I'm going to look at one of the most important aspects of security when you're working with Access 2013 and that is the use of the Trust Center.

The Trust Center is actually a feature of many of the components of Office 2013 and understanding basically what you can do with it is very important. It's particularly important if you regularly get resources from the internet, perhaps from sources that you haven't used before and you want to make sure that you don't start to use something that's going to damage your computer system or you're working environment.

So first of all, if you open the Access Options Trust Center is the bottom page there and what you'll see when you access that is the screen that you can see in front of you here. Now on this particular page, you have some links to some general information from Microsoft, including the Microsoft Access privacy statement and Office.com privacy statement and information about the Microsoft customer experience improvement program and Microsoft trustworthy computing. But the links we're interested in are the actual Trust Center settings. So if you click on Trust Center settings, you get another list of pages and I want to go through these pages one by one and explain basically what each of them does. We'll start at the top with Trusted Publishers.

Now first of all, let me just explain what digital signatures are. A digital signature is an encrypted secure file that can accompany a macro or a document and basically guarantees the identity of the person or organization sending you that macro or document. Now if you receive a database, macro, document from somebody who provides a digital signature, you can decide to make that supplier one of your trusted publishers. That is somebody who can send you material with a digital signature so that you can be sure on each occasion that it is from that person or organization. Then if they're in your trusted publishers list, then Access 2013 won't ask you to verify the source each time and will basically treat that content as being safe. Now if on a regular basis you expect to get material, usually from a large organization and you don't want to have to go through some sort of procedure each time to confirm that you're prepared to accept

that, you've seen already in this course several times where you've had to enable content over and over again. Well to avoid this, to make it as straightforward as possible to accept resources from an external source, then by putting that source in your trusted publishers list you make that acceptance procedure as straightforward as possible. It's generally the case that private individuals don't spend the money on getting digital signatures. It's not something you can do for free so it will generally be with organizations, particularly large organizations that you may have the opportunity of setting them up as trusted publishers.

Another mechanism you can use is the use of trusted locations. With trusted locations, what you do is to declare that a folder is a trusted location and that means that any file that Access 2013 finds there, it will trust and it can be opened without being checked by the Trust Center at all. So again, if you regularly say download databases from a source, if you were to save them in a trusted location when you then try to open them from Access 2013, the Trust Center will not check them or warn you about them. It will just obediently open them. It's pretty straightforward to add a new location. Click on the Add new location button there. You can setup, browse to a folder, put in a description of what that trusted location is, and probably why it is a trusted location. You can also elect whether the subfolders of this location are also trusted and then a couple of important options at the bottom of the page here, "Allow trusted locations on my network." You've got to be a little bit careful about that of course because the network by nature being a network is probably not only accessible by you and therefore somebody else could possibly interfere with what's in there. But you can also check the box here that says Disable all trusted locations. So if you'd got say a whole load of trusted locations setup, but for some reason you suspected that something was wrong, you could check that box at least temporarily to disable the trusting of all locations. As you can see I've got one location here already trusted and this one as you can see from the description is the Access default location for Wizard databases.

The next page in the Trust Center is the trusted documents page. Now as we've been working through the course so far, on various occasions we've seen that message bar that appears across the top of the working area when working in Access 2013 and we've clicked on the button that says enable content. Now once you've done that on each database or other document that you might open, that is then a trusted document and basically a list of these trusted documents is maintained in the registry on your computer. You don't need to manually add the documents

there because by clicking on enable content, that's exactly what you're doing. But there are a couple of controls. One of them is that you can from time to time click this Clear button which clears all trusted documents so they are no longer trusted. That basically clears out all these records in the registry. You can also use this checkbox to declare whether you allow documents on a network to be trusted and again you have a checkbox here that enables you to disable the trusting of documents at least temporarily while you maybe sort out an issue.

Now the pages in the Trust Center that we've looked at so far generally relate to whole documents, often whole databases, or the equivalent documents in other components of Office 2013. But it's also possible to get dangers from individual components and the rest of the settings in the Trust Center mostly relate to individual objects within a database or that we can use in a database application. So for example, you can download, buy, and use add-ins. These are pieces of software that provide additional functionality, in this case, to Access 2013. Now there is danger from add-ins. They can contain code which could be damaging. You may, for example, require as the top option here says, you may require the application Add-ins to be signed by a trusted publisher. So it may be that you will only allow add-ins to be used if they've come from one of your trusted publishers. You may also at the other extreme say that generally speaking I want to disable all application add-ins. Now if you have no reason to use add-ins that you know, at the moment leaving this setting as it is is fine. If you suspect that add-ins in general or a particular add-in is causing you problems, you can use the disable functionality while you sort that problem or those problems out.

Another type of control that can be suspicious or perhaps look dangerous is an ActiveX control. There are many perfectly legitimate ActiveX controls around, including the ones used by Microsoft example in order to do software updates and you will when you come across those, if you don't already have them, probably want to allow them. But there are also some dangerous ActiveX controls about so the default setting here which applies across the Office suite of Prompt me before enabling all controls with minimal restrictions. That's the ideal setting and you may under some circumstances say for instance say disable all controls without notification. That would limit functionality in some areas, although it would also greatly increase security as well. At the other end of the extreme, enable all controls without restrictions; that's definitely not recommended. If you generally don't need additional controls, ActiveX controls, or any

others for that matter, if you're quite happy with the ones that are intrinsically built into Access 2013, then once again the default setting is absolutely fine and you'll be prompted if anything that you're trying to use, any service that you're trying to access needs to use an ActiveX control.

Now the default setting for macros in the Trust Center is disable all macros with notification. That's pretty much for certain how you'll want to leave it. What that basically means is if you open a database from somewhere else, you downloaded it, maybe provided by a colleague, when you open it, the macros will not run. You'll be given a notification and be given the option of enabling the macros, but it's no good running the macros and then asking the questions later. You need to disable them at the outset and then you can decide whether you trust the macros in a particular situation. There is a slightly easier going option just below that. Disable all macros except digitally signed ones that some people go for. Again, it might be useful if you regularly get content from people that digitally sign what they provide to you. But at the extreme, enable all macros, that really is dangerous particularly if you're going to get content say from the internet or occasionally from people you don't know very well. If you generally don't need to run macros at all anyway, you can always set disable all macros without notification and then they won't run and you won't even be told they're not running. For some people that is a workable, usable setting. But obviously, it'll only work if you never run macros at all.

Now the message bar that we've seen quite a few times on this course I'm afraid does drive some people mad and they get really irritated by it and don't really appreciate the reason for it. I also get a little bit annoyed about it but I do know why it's there and I do accept that sometimes you do need to have a warning just to remind you about something. But perhaps more so with the message bar it's really saying not so much there is a problem here, it's more saying I have dealt with a problem, you may want to make a further decision about whether you want to change my decision or you've got a decision to make. It's really telling you that something is going on that you may need to be involved in. You can basically switch off the showing of the message bar and then it will never show information about blocked content. Again, if you really aren't going to run macros, you want no possibility of having ActiveX controls used, etc. if you really do work on a database in your own world and for a period of time or all the time, you really don't want to see all these warning messages and so on and you don't want to run things, then you

could switch it off. I would strongly recommend though that you leave that on its default setting of showing the message bar.

And then the final page, the privacy options. There are one or two very general things here. For instance, the top one "Allow Office to connect to the internet." Well if you don't allow Office to go online, then you are not going to be able to get the latest online content. The sort of thing you're restricted on is online Help as we saw much earlier in the course. All you get is a little bit of information about where things are on the Ribbon and there are a number of other options here such as whether you've signed up for the customer experience improvement program. The default settings here are actually a combination of default settings and options you've chosen yourself. So for instance, I am not in the customer experience improvement program. You may wish to be so and have your experiences used by Microsoft to improve future products.

So that's it on the Trust Center. It's an area of Access Options that some people barely look at but as somebody who once admittedly quite a long time ago really came unstuck with a piece of software that got on to a computer and it took me many, many days to clear up after the mess it made, I do consider that a combination of a good antivirus program and good understanding of what the Trust Center is and how it works can save you an awful lot of time, trouble, and aggravation. So I suggest that you go through the settings in the Trust Center, make sure that you understand them, and accept things like when the message bar appears, it's actually trying to be helpful. It's not just trying to be a nuisance.

I'll see you in the next section.

Chapter 23 – Conclusion

Video: Updates; Closing

Toby: Hello again and welcome to the final section in our course on Access 2013. There's just one other topic that I would like to very quickly cover in this section and that is to advise you to make sure that you have your Office 2013 updates switched on.

Now if you go to the Account Tab in Backstage View, the details of the product you're using and background Office theme, etc., some of the things that we've talked about and looked at before, but there is also a section over here Office updates. If you click on that, you've got three options normally. You've got a section about updates. You've got a view updates option which shows the update history for the current product and then you can disable updates here. Now generally speaking you're strongly encouraged and I strongly encourage you as well to have updates switched on. But there may be situations where you do at least temporarily need to switch the updates off. This may happen for instance if you need to work with a very specific version of the product, say, Access in this case, and you don't want it updated for a particular reason for a period of time. But generally speaking, you should have the updates turned on.

Let me just click on the bottom option about updates, learn more. See what it says there. Updates to this Office product are enabled by default and are downloaded through your internet connection and installed automatically. That's really how Microsoft wants you to handle updates and it probably is the best way to do it.

To check your update status and turn on or off updates, select the File Tab, click the Account, just one that we've done, and under Office updates you can view your current update status and turn the updates on or off. That's basically the choice that you have is you can say when it's on you can switch it off, if it's off you can switch it on, and then you can view the update history. Make sure that you've got updates set correctly.

So that's it on our course on Access 2013. I hope you've enjoyed working through it with me as much as I've enjoyed preparing and delivering it. I hope to see you again in online soon. My name is Toby. I'll see you again. Bye.