



Microsoft Access 2016

An Introduction

INFOCUS COURSEWARE

Designed to fast-track you through the process of learning about computers and information technology, the *In Focus* range is a unique and innovative concept in learning.

A quick reference summary of key procedures is provided at the bottom of each page together with handy tips and additional information.

Each title in the *In Focus* series can be used as:

- a classroom workbook for instructor-led teaching and training;
- a self-study guide for self-paced learning;
- a tutorial guide for distance education programs;
- a resource collection of just-in-time support and information for help desk users and support staff;
- a handy, desk-side reference for computer users.

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Microsoft Access 2016
An Introduction

MICROSOFT ACCESS 2016

AN INTRODUCTION

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READ ME FIRST

In case you're not familiar with the terminology, *Read Me First* is quite often the name given to a computer file that contains important information for people to know prior to using an application.

This section contains some important information to help you use this book so we thought we'd start with a *Read Me First* section.

What skills and knowledge you will acquire...

The skills and knowledge acquired in Microsoft Access 2016 - An Introduction are sufficient to be able to use and operate the software effectively.

What you'll need to know before beginning this course...

Microsoft Access 2016 - An Introduction assumes little or no knowledge of the software. However, it would be beneficial to have a general understanding of personal computers and the Windows operating system environment.

The objectives of this guide...

At the completion of this course you should be able to:

- understand how **Access** is used and how to navigate around it
- create a database structure using **Access**
- create a relational database file with multiple tables
- modify the structure of an existing table
- set table relationships and join tables together
- add records to a new table
- add transactional records to a lookup database
- work with the records in a database table
- format the data in a table
- sort and filter records in a table
- export records to and import records from a wide variety of sources and applications
- create and use forms
- modify and adapt an existing form according to specific needs
- create simple and effective queries
- create meaningful reports from tables

What you get in a chapter...

Each chapter begins with a summary page listing the topics covered in that chapter. The chapter then consists of single-page topic sheets pertaining to the theme of the chapter.

What you'll need to have before commencing this course...

Many of the topics in this learning guide require you to open an existing file with data in it. These files can be obtained from your instructor and need the product code for this course which is AccessIntroduction.

As you work through this guide...

It is strongly recommended that you close all open files, if any, prior to commencing each new chapter in this learning guide. Each chapter, where relevant, has its own set of exercise files and any from a previous chapter are no longer required.

Where to from here...

Have a look at the next page which explains how a topic page works, ensure that you have access to the exercise files (see above), and you're ready to make a start.

WORKING WITH TOPIC SHEETS

The majority of this book comprises single-page topic sheets. There are two types of topic sheets: **task** and **reference**. The layout of both is similar – an *overview* at the top, *detail* in the centre and

additional reference (optional) material at the bottom. *Task* sheets contain a *Try This Yourself* step-by-step exercise panel in the detail area as shown below.

Word Processing Simple Documents

1

3

5

OPENING A DOCUMENT

Although there are a number of different ways to open a Word file, which include using the **Start** menu or clicking directly on an icon of the file, perhaps the best and simplest way to do it is from within the Word program itself using the **File > Open** command. The **Open** dialog box has tools that help you to identify file types and location.

Try This Yourself:

Before you begin ensure that *Word 2000* has started.

- 1 Select **File > Open** to display the **Open** dialog box.
- 2 Click on the drop arrow for **Look in** to display a list of possible locations available to your computer where documents may be found.
- 3 Click on **Drive C (C:)** or its equivalent on your computer.
- 4 The contents of drive C: will now be displayed in the **Open** dialog box...
- 5 Double-click on **Course Files For Word 2000** – this is the folder where files for this course can be found.
- 6 The contents of the folder **Course Files For Word 2000** will now be displayed...
- 7 Click on **W002 Document Essentials_1.doc** to select it as the file that you wish to open, then click on **[Open]** to open the document on the screen.

For Your Reference...

To open a document in Word:

1. Select **File > Open** to display the **Open** dialog box.
2. Locate the file and folder (if necessary)
3. Click on **[Open]**

Handy To Know...

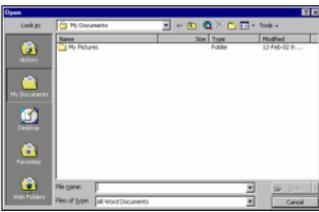
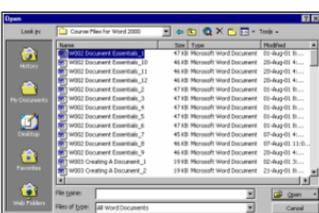
There is more than one way to open a document in Word. Alternatively you could:

- Click on the **Open** tool
- Select a recently opened file from the **File** menu.

2

4

6

Skilgate Learning Centres
Page 10
Chapter 2: Working With A Document

- 1 Topic name
- 2 General topic overview provides an introduction to the topic
- 3 *Try This Yourself* (Task-based topic sheets) is a detailed step-by-step practice exercise for you to work through. In *Reference* topic sheets this is usually replaced by a box with reference information.
- 4 In *Task* topic sheets screen shots and graphics provide a visual clue as to what will happen when you work through the *Try This Yourself* practice exercise. In *Reference* topic sheets the screen shots and graphics are used to visually represent information and concepts.
- 5 The *For Your Reference* (optional) element provides a quick summary of the steps required to perform a task. These usually only appear in Task-based topic sheets.
- 6 The *Handy To Know* (optional) element provides additional information such as alternate ways of accomplishing a task or further information providing handy tips.

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Preface

- ii -

CONTENTS

Chapter 1 Getting To Know Access 2016	1
Understanding Microsoft Access 2016	2
Starting Access From The Desktop	3
Understanding The Start Screen	4
Creating A New Blank Database	5
Understanding The Backstage View.....	6
Opening An Existing Database File	7
Understanding The Access 2016 Screen	8
Using The Ribbon	9
Working With The Navigation Pane	10
Adding Commands To The QAT.....	11
Working With Touch Mode.....	12
Working With A Table	13
Working With Other Database Objects.....	14
Closing A Database File	15
Exiting From Access 2016	16
Chapter 2 Creating A Lookup Database	17
Creating A New Database File.....	18
Creating The Lookup Table	19
Defining The Primary Key	20
Saving And Closing A Table	21
Creating The Transaction Table	22
Understanding Lookup Table Relationships	23
Connecting To A Lookup Table	24
Viewing Table Relationships.....	25
Chapter 3 Creating A Relational Database	27
Creating A New Database File.....	28
Creating Lookup Tables.....	29
Defining A Primary Key.....	30
Saving And Closing A Table	31
Creating The Expense Type Table	32
Creating The Transactions Table.....	33
Creating The Details Table	34
Chapter 4 Modifying Table Structures	35
Opening An Existing Table	36
Adding Fields To An Existing Table	37
Understanding Field Properties	38
Changing Field Size	39
Changing Field Names	40
Changing Decimal Places.....	41

Changing Date Formats	42
Indexing Fields	43
Deleting Fields From A Table	44
Copying A Table Within A Database	45
Deleting A Table From A Database File	46
Chapter 5 Setting Table Relationships	47
Understanding Table Relationships	48
Understanding Lookup Relationships	49
Looking Up The Employees Table	50
Looking Up The Expense Types Table	51
Viewing Table Relationships	52
Understanding Table Joins	53
Editing The Employee Table Join	54
Editing The Expense Type Table Join	55
Creating A New Join	56
Creating A Relationship Report	57
Chapter 6 Adding Records To A Table	59
Typing Records In A Table	60
Adding Records Using A Form	61
Saving A Form Layout For Reuse	62
Adding Records Using An Existing Form	63
Adding Additional Records	64
Importing From Microsoft Excel	65
Chapter 7 Adding Transactional Records	67
Typing Transactional Records	68
Adding Transactional Records Using A Form	69
Adding Additional Transactional Records	70
Adding Records Using A Subdatasheet	71
Removing A Subdatasheet	72
Inserting A Subdatasheet	73
Chapter 8 Working With Records	75
Table Navigation	76
Navigating To A Specific Record	77
Editing A Record	78
Deleting Record Data	79
Undoing A Change	80
Deleting A Record	81
Deleting Several Records	82
Searching In A Table	83
Searching In A Field	84
Finding And Replacing	85
Printing Records From A Table	86
Compacting A Database	87

Chapter 9 Formatting Tables.....	89
Changing Column Widths	90
Formatting Cells In A Table	91
Changing Fonts.....	92
Moving Columns In A Table.....	93
Freezing Columns In A Table	94
Hiding Columns In A Table	95
Unhiding Columns.....	96
Chapter 10 Sorting And Filtering.....	97
Simple Sorting.....	98
Sorting On Several Fields	99
Simple Filtering	100
Working With Filters.....	101
Filtering Between Dates.....	102
Chapter 11 Importing & Exporting Records	103
Exporting Records To Microsoft Excel.....	104
Exporting Records To A Text File	105
Importing From Microsoft Excel	106
Importing From A Text File	107
Linking To An External Source	108
Chapter 12 Creating And Using Forms	109
Understanding Forms	110
Creating A Basic Form.....	111
Creating A Split Form.....	112
Binding A Form To A Query.....	113
Using The Form Wizard	114
Working With Existing Forms.....	115
Editing Records In A Form.....	116
Deleting Records Through A Form	117
Deleting An Unwanted Form.....	118
Chapter 13 Modifying Forms.....	119
Understanding Form Design And Layout.....	120
Switching Between Form Views.....	121
Selecting Form Objects.....	122
Working With A Control Stack.....	123
Changing Control Widths	124
Moving Controls On A Form	125
Aligning Controls	126
Understanding Properties	127
Changing Label Captions.....	128
Adding An Unbound Control	129
Adding A Control Source	130
Formatting A Control.....	131

Checking The Current Tab Order	132
Changing The Tab Order	133
Inserting The Date Into The Form Header	134
Chapter 14 Creating Queries	135
Understanding Queries	136
Creating A Query Design	137
Working With A Query	138
Changing A Query Design	139
Applying Record Criteria	140
Clearing Selection Criteria	141
Saving A Query	142
Running Queries From The Navigation Pane	143
Deleting A Query	144
Creating Additional Queries	145
Chapter 15 Creating And Using Reports	147
Understanding Reporting In Access	148
Creating A Basic Report	149
Working With Existing Reports	150
Previewing And Printing A Report	151
Changing The Report Layout	152
Using The Report Wizard	153
Creating A Grouped Report	154
Creating A Statistical Report	155
Working With Grouped Reports	156

Microsoft Access 2016 is described as a **database management system** (DBMS).

A database is a structure that contains data. You enter data into the database via a variety of sources including typing (data entry), importing from other sources, and even electronically and automatically from other equipment (data logging). The data can then be manipulated by the DBMS to provide a range of useful information.

In this session you will:

- ✓ gain an understanding of how **Access** works and what it can be used for
- ✓ learn how to start **Access** from the desktop
- ✓ gain an understanding of the **Access Start** screen
- ✓ learn how to create a new blank database
- ✓ gain an understanding of the **Backstage View**
- ✓ learn how to open an existing database file
- ✓ gain an understanding of the **Access** screen
- ✓ learn how to use the ribbon
- ✓ learn how to work with the **Navigation** pane to filter database objects
- ✓ learn how to add commands to the **QAT**
- ✓ learn how to work with **Touch Mode**
- ✓ learn how to work with a table
- ✓ learn how to work with other database objects
- ✓ learn how to close a database file
- ✓ learn how to exit from **Access** .

UNDERSTANDING MICROSOFT ACCESS 2016

Microsoft Access has a reputation for being a more difficult application to learn and use than other Office applications such as Word, Excel and PowerPoint. There are many reasons for this

and a good orientation to Microsoft Access will greatly help in understanding how this powerful application can be used to perform a range of useful jobs.

How Access Is Different

Unlike other Office 2016 applications such as, Word, Excel and PowerPoint where you can start to create something useful almost immediately and directly on the screen, with Access you must first design and create structures to hold your data, and then create special template layouts for displaying, manipulating and presenting that data in a useful and meaningful way. In other words, rather than just creating something through trial and error, Access requires more thought, more planning and good designs in order to be used effectively. While there is a lot of 'learn by doing' involved with Access, there is also great deal to learn before you start using it.

How Access Works

Basically, Access allows you to do two main things:

- it allows you to **store** huge amounts of data
- it allows you to **manipulate** that data to produce relevant and useful information. This is what **Database Management Systems** (DBMS) are all about, and the good news is that Access is one of the easiest of these to learn and use.

Data is **stored** in **tables**. Tables are structures made up of rows and columns and are similar in appearance and operation to Excel worksheets. You need to design and create these tables yourself before the data can be entered.

The data in tables is manipulated using **forms**, **reports** and **queries**. A **form** is mostly used for data entry (although you can enter data directly into a table). A **report** is used to manipulate the data and present it either on the screen or printed on paper in a more pleasing way. A **query** is used to produce a subset of the data – for example, in a sales system you may only want to see the sales in the northwest region.

Forms, reports and queries are created as layout frameworks. Once the framework has been designed you can then run the data from the tables through them. Indeed, this is a common theme throughout Microsoft Access: **design** versus **display**. You create or modify a form, report or query in **design mode**, and then preview the data in **display mode**.

Even tables (that store your data) conform to this design/display metaphor. You **design** a table structure, then enter the data in a **display** (they call it a **datasheet**) view.

Tables, forms, reports and queries are known as **database objects**. In fact, each of these is like a mini-application within the broader Access application. Each has a very large range of commands and options that you can use to both design the structure or framework, and also use to display data.

What Can Access Be Used For?

You can use Access to create a system for managing your music or stamp collection, membership at your local soccer or polo club, petty cash, inventory and stock control, or sales at work and much, much more. Any situation where you need to store data, manipulate it, and then present it as useful information is a perfect contender for Access.

The only disadvantage with Access is that unless you use one of the pre-created system templates, you need to plan and design the system and the database objects (the tables, forms, reports and queries) used in that system. This is what takes time and learning to do.

STARTING ACCESS FROM THE DESKTOP

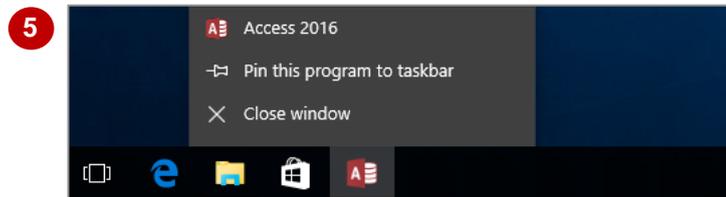
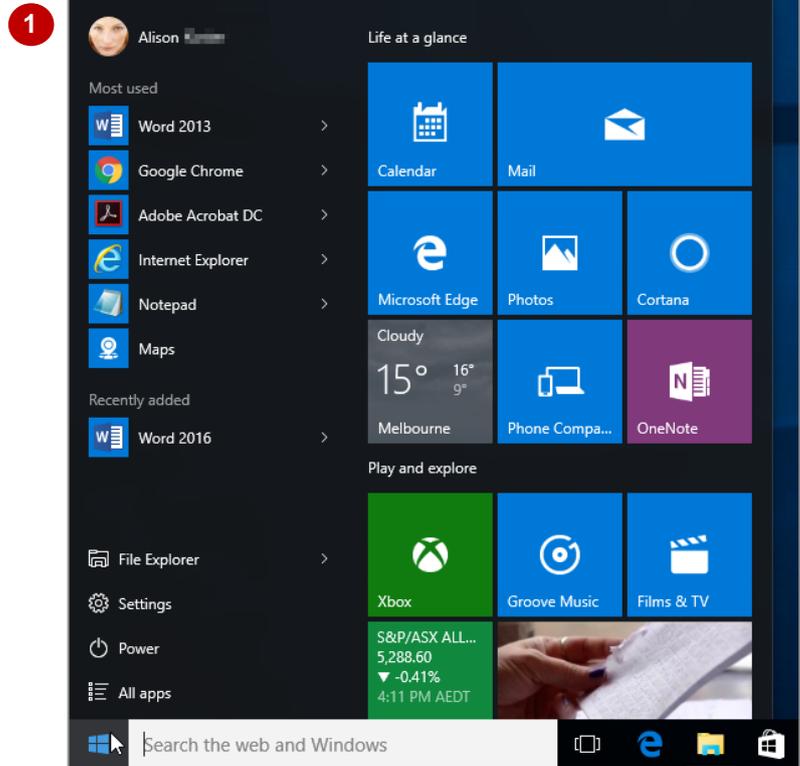
To create a new database or work with an existing one, the first thing you must do is to start Microsoft Access. The first time you use Access you need to open it from the taskbar **Search the**

web and Windows bar or the **All apps** list in the **Start** menu. You can choose to pin it to the **Start** menu or the taskbar so that you can access it more quickly and easily the next time you use it.

Try This Yourself:

Before you begin, ensure that your computer is switched on and the desktop is displayed...

- 1 If there is no **Access** icon in the taskbar at the bottom of the desktop, click on the **Windows** icon in the taskbar, as shown, to display the **Start** menu
- 2 Click on **All apps** to display a list of all the apps on your computer
- 3 Scroll down to the **A** section *Access 2016 is listed here...*
- 4 Click on **Access 2016** to start Access
- 5 Right-click on the Access icon in the taskbar to display a menu of options, as shown, then select **Pin this program to taskbar**
You can now click on this icon to open Access from the desktop. This icon will remain in the taskbar unless you remove it...
- 6 Repeat step 5 to select **Close window** to close Access
- 7 Click on the Access icon in the taskbar to open **Access** again



For Your Reference...

To **pin Access** to the **taskbar**:

1. From the **Start** screen, click on the down arrow icon to display the **Apps** screen
2. Locate and right-click on **Access 2016**
3. Click on **Pin to taskbar**

Handy to Know...

- You can start Access by clicking in the taskbar **Search...** bar, typing **access**, then clicking on Access in the list of search results.
- You can pin Access to the **Start** menu by displaying the **All apps** list, right-clicking on **Access 2016** and selecting **Pin to Start**.

UNDERSTANDING THE START SCREEN

Most times you open Access, a **start** screen will display. From this initial screen, you can choose what kind of database you want to work with. You can choose to work with one of your most

recently accessed files, open a database which has been saved to **Computer** or **OneDrive** or create a new database using the available templates.

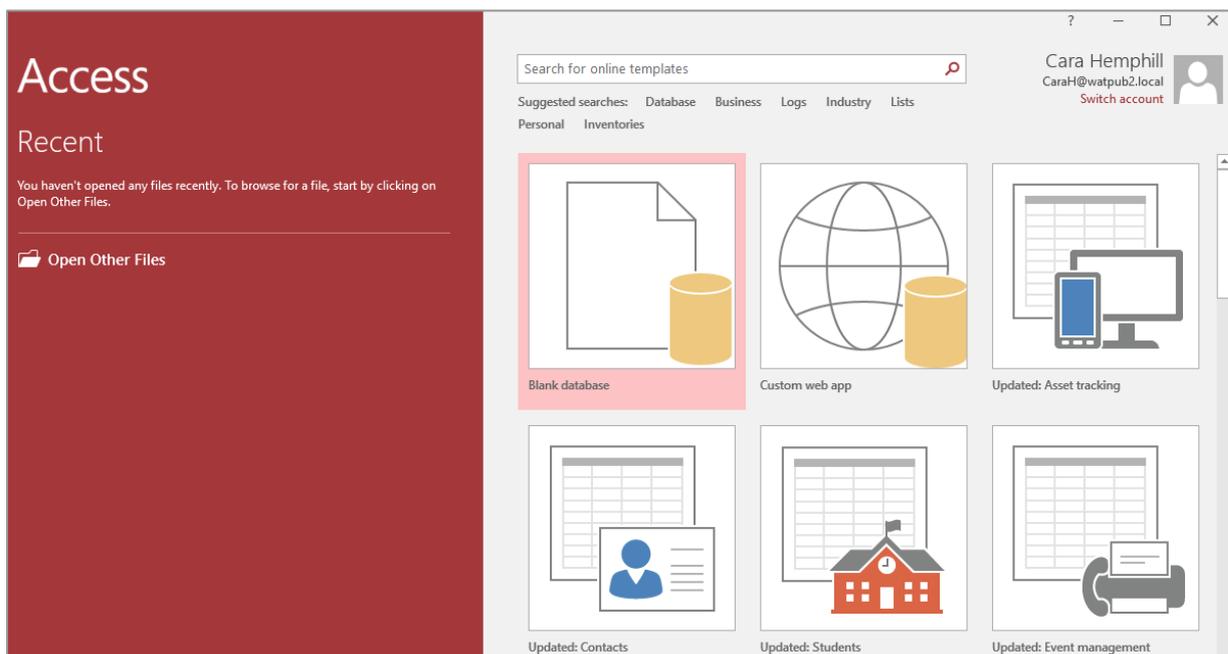
Microsoft Access 2016 Start Screen

The Microsoft Access 2016 **start** screen is very helpful if you want to quickly access a database you have worked on recently or create a new database based on one of the available templates (including the default **Blank desktop database**).

If you have already worked on a database or several databases in Access, a list of recent databases will display below **Recent** in the pane to the left of the screen. If you haven't worked on any databases yet, you can still open existing databases by clicking on the link, **Open Other Files**, located below **Recent**. This lets you open an existing file from your computer or OneDrive.

The main pane of the **start** screen displays available templates you can use to create a new database and a search box you can use to search the internet for additional templates. Templates are simply layouts that have already been created which you can customise to suit your needs and then enter relevant content. If you want to start with a clean slate you can choose the **Blank desktop database** template – you'll probably find this is the one you will use the most. Templates displaying the globe icon (e.g. **Asset tracking**) use the web-based SharePoint servers to host your database and make it available over the internet (note that these templates require subscriptions).

In the top right corner of the screen you'll see information about the account you've used to sign into **Windows** as well as **help**, **minimise**, **restore down**, and **close** tools.



The **start** screen will only display when you launch the **Access 2016** application directly – that is, by clicking on the Access tile on the Windows 10 **Start** screen, clicking on the application on the **Apps** screen or under search results, or clicking on the taskbar icon if the application has been pinned to the **taskbar**.

Access 2016 can also be started in Windows 10 by double-clicking on an Access database in **File Explorer**. When this occurs **Access 2016** will start with the database open on the screen and the **start** screen shown above will be bypassed.

CREATING A NEW BLANK DATABASE

When you launch Microsoft Access 2016, you will be presented with the **start** screen, which enables you to open an existing database or create a new one based on one of a multitude of

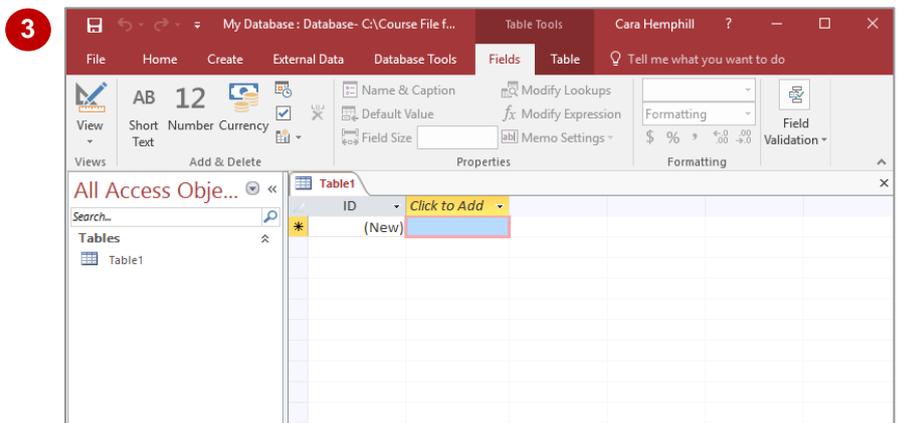
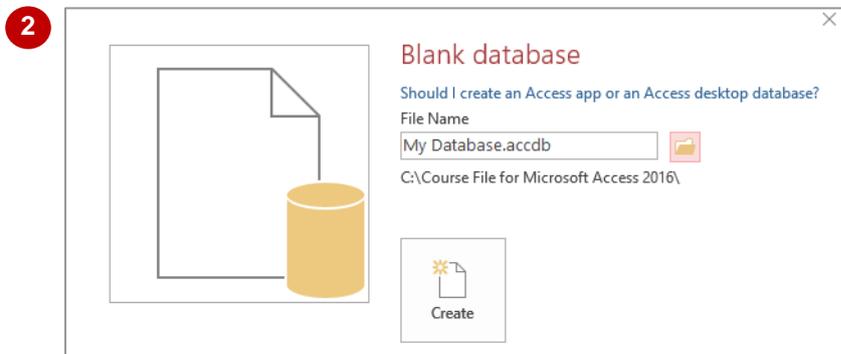
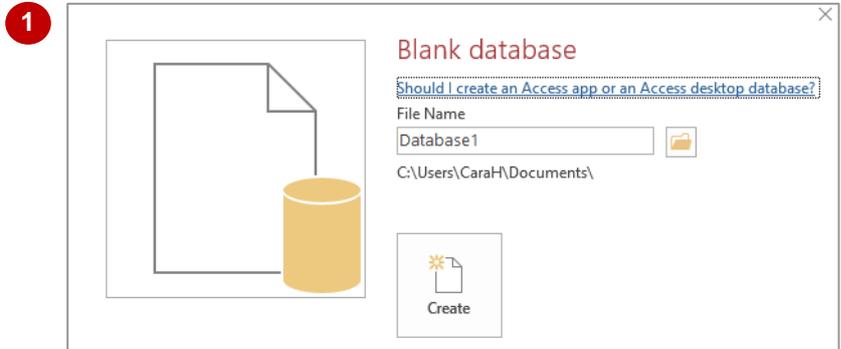
available templates. Most of the templates shown are web-based and may involve a subscription to Office 365. You can also simply create a new, blank desktop database which is free.

Try This Yourself:

Before starting this exercise you **MUST** ensure that the Access 2016 Start screen is displayed...

- 1 In the right pane, click on **Blank desktop database**
You will be asked to name the database...
- 2 Type **My Database** in **File Name**, then click on the **Browse** icon to display the **File New Database** dialog box, locate and double-click on **C:/ Course Files for Microsoft Access 2016** and click on **[OK]**
You could click on the **Next** arrow to display the other built-in templates and use one of those instead, but we will stay with the blank template...
- 3 Click on **[Create]** to open the new blank database in Access

Access has created a single blank table for you to begin with



For Your Reference...

To **create** a **new blank database**:

1. In the **start** screen, click on **Blank desktop database**
2. Type a **File Name**, click on **[Browse]** and select a save in location
3. Click on **[OK]** then click on **[Create]**

Handy to Know...

- If you already have a database open and want to create a new one, click on the **File** tab to open the **Backstage**, then click on **New** and click on **Blank desktop database**.

UNDERSTANDING THE BACKSTAGE VIEW

Before you can properly enter Microsoft Access 2016, you must have a **database file** open. A database file is where your database objects (*tables, forms, reports, queries* etc) for a

particular system or project you are working on are located. The **Backstage view** is accessed using the **File** tab and provides you with file information and enables you to print, save and more.

The Backstage

The **File** tab on the ribbon is not a standard tab. Clicking on the **File** tab launches a mini-program within Microsoft Access called **Backstage view**, also called simply **Backstage**.

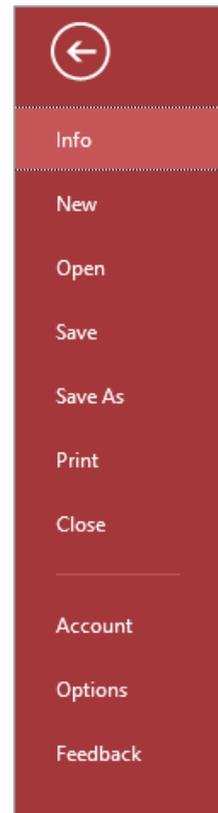
A navigation pane occupies the left side of the **Backstage**. The options in this pane enable you to access a number of operations, such as printing and saving and can also provide you with information about your database such as size.

Click on the options in the navigation pane to change the display in the pane on the right.



The Backstage Options

- Info** Provides status information about the current database and lets you compact and repair the database and encrypt it with a password.
- New** Enables you create a new database and provides access to inbuilt templates as well as ready access to a range of online templates.
- Open** Provides a list of recent documents as well as the option to search through your Computer, SkyDrive or other place, to find what you are looking for.
- Save** Saves your current object (table, query, form etc).
- Save As** Enables you to save the current database in a different format (e.g. as .mdb, compatible with versions earlier than 2007) and/or in a different location.
- Print** Enables you to print the current object and preview it.
- Close** Closes your current database.
- Account** Contains product and user information.
- Options** Displays the **Access Options** dialog box, which presents you with options for setting up how Access works in general and options (preferences) for the current database.
- Feedback** Allows you to provide Feedback to Microsoft on any issues or suggestions you have about Access.



OPENING AN EXISTING DATABASE FILE

A good way to see how Access 2016 works is to open an existing database file. To open a database file, you need to use the **Open** option in the **Backstage**. If the database file has recently

been opened, it may appear in the **Recent Database** list. However, if it doesn't appear there, you will need to use one of the other **Open** options to search for and open it.

Try This Yourself:

Before starting this exercise ensure that Access has started...

- 1 Click on the **File** tab to open the **Backstage**, then click on **Open** to display the **Open** options

Let's change the folder location to display our existing database files...

- 2 Click on **This PC** under **Open** in the middle pane

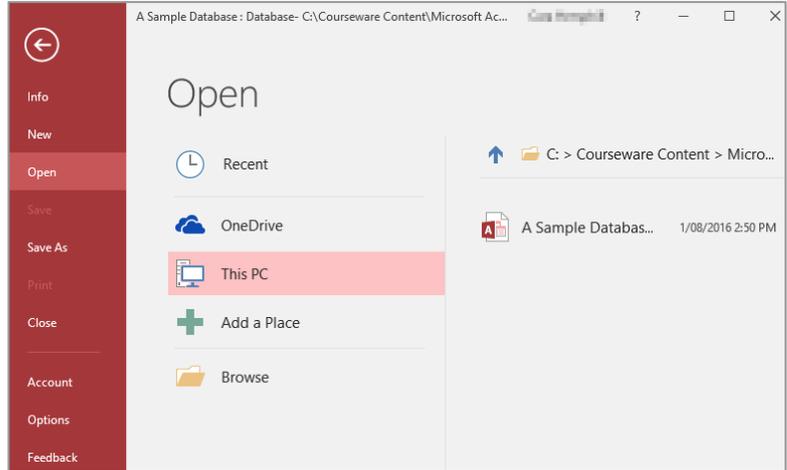
This will display the current folder and any recent folders. Let's assume these are not the folders that we need...

- 3 Click on **Browse** to display the **Open** dialog box

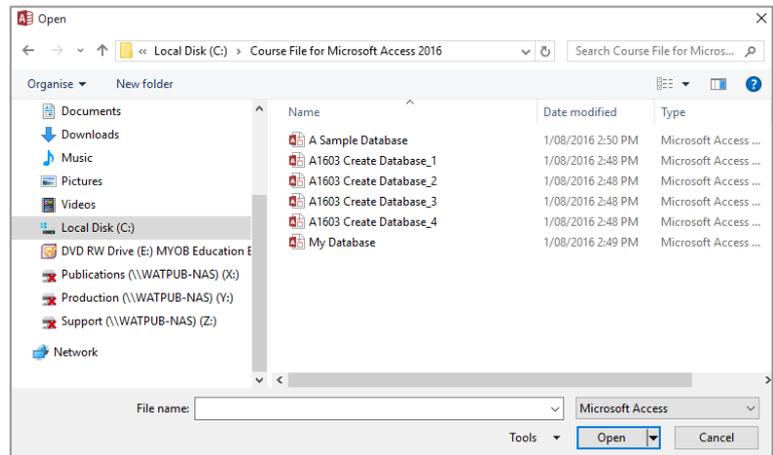
- 4 Double-click on the icon for **C:** drive, then double-click on the **Course Files for Microsoft Access 2016** folder

- 5 Click on **A Sample Database.accdb**, then click on **[Open]** to open the database

- 6 If a security warning displays in the yellow info bar just below the ribbon, click on **[Enable Content]** to close the info bar



2



4

For Your Reference...

To **open** an **existing database file**:

1. Select **Open** in **Backstage** view
2. Move to the folder that contains the file
3. Click on the file to select it
4. Click on **[Open]**

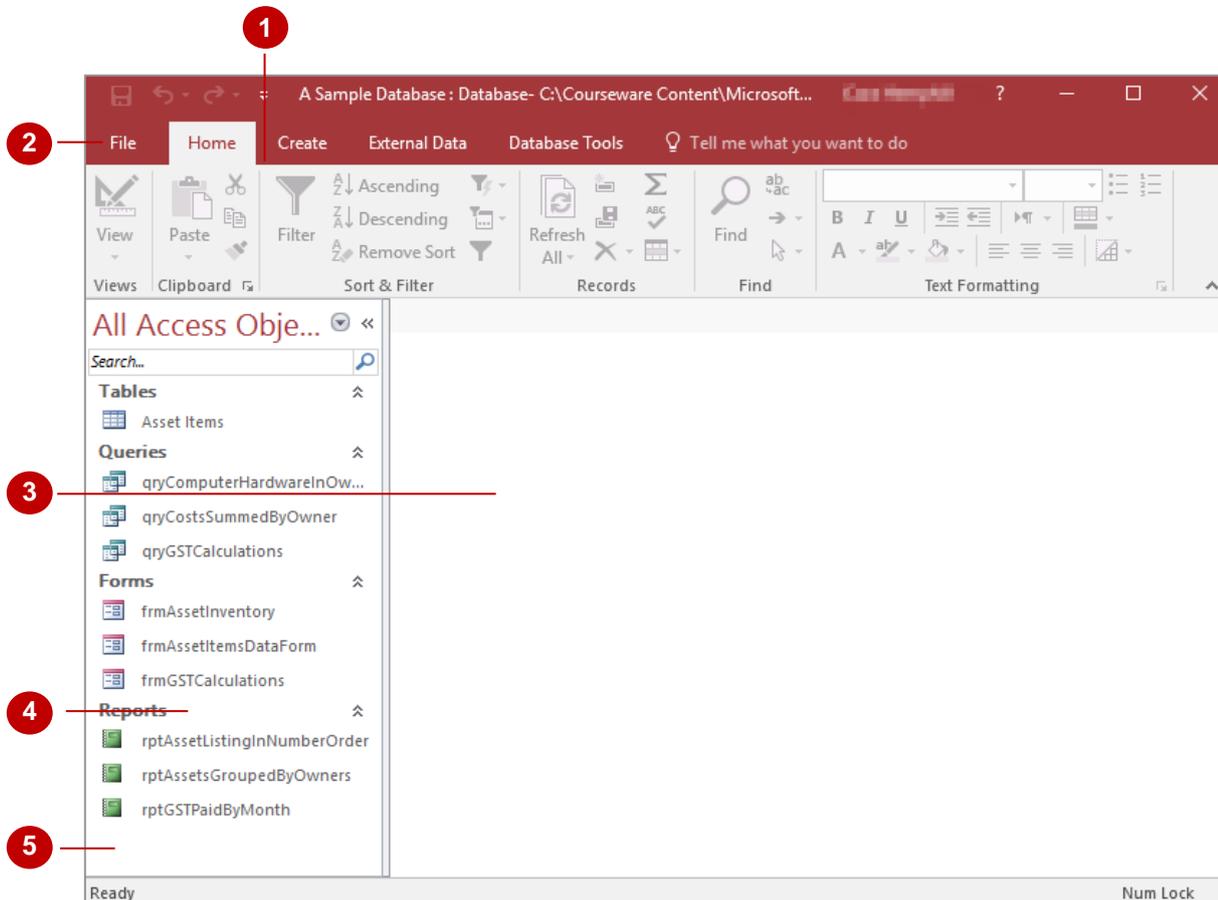
Handy to Know...

- You can use the keyboard shortcut **Ctrl** + **O** at any time to display the **Open** area in **Backstage** view.

UNDERSTANDING THE ACCESS 2016 SCREEN

At first glance there's not much to an Access 2016 database screen. The screen really only gives you access to either *create*, *modify*, or *run* one of the **database objects** in a database file

(tables, forms, reports, queries, etc). It isn't until you choose to perform one of these operations that the screen really becomes more intricate.



- 1 The **ribbon** is the tabbed band that appears across the top of the window. It is the command control centre of Access 2016. You use the **tabs** on the ribbon to access **commands** which have been categorised into **groups**. Commands can be buttons or sometimes include **galleries** of formatting options that you can select from. This area really comes to life when a database object is opened.
- 2 The **File** tab of the ribbon is used to access file management functions such as saving, opening, closing, printing, etc. *Access Options* are also available so that you can set your working preferences and options for Access 2016.
- 3 The main part of the screen is the data area. Here a **database object** will appear either in design or in preview mode. The database object must first be opened before it will appear so, even though **Asset Items** in the screen above is selected, it hasn't yet been opened.
- 4 The **Navigation** pane is used to list and navigate the various database objects (*tables, forms, reports, queries, etc*) that exist in the database. By default, all objects are displayed (as shown above) but it is possible to filter the pane to show, for instance, only objects of one type (e.g. tables).
- 5 The **Security and Message** area displays information about the database object that is currently open. Since there are no objects open the area is not showing much at the moment other than the fact that it is *ready* for you to begin.

USING THE RIBBON

The **ribbon** is the command centre for Access. It provides a series of commands organised into **groups** that are placed on relevant **tabs**. Tabs are activated by clicking on their name to display

the command groups. **Commands** are activated by clicking on a button, tool or gallery option. Although there are often several ways to access an option, the ribbon provides a simple, direct approach.

Try This Yourself:

Continue using the previous file with this exercise, or open the file *A Sample Database.accdb*...

- 1 In the **Navigation** pane, double-click on **Asset Items** under **Tables** to open the object – examine the **groups** on the **Home** tab

When an object is open, more options on the ribbon become active. The **Home** tab contains commonly used commands...

- 2 Click on the **Create** tab
These commands are used to create new objects (tables, queries etc)...

- 3 Click on the **Table Tools: Fields** tab, then click on **More Fields** in the **Add & Delete** group

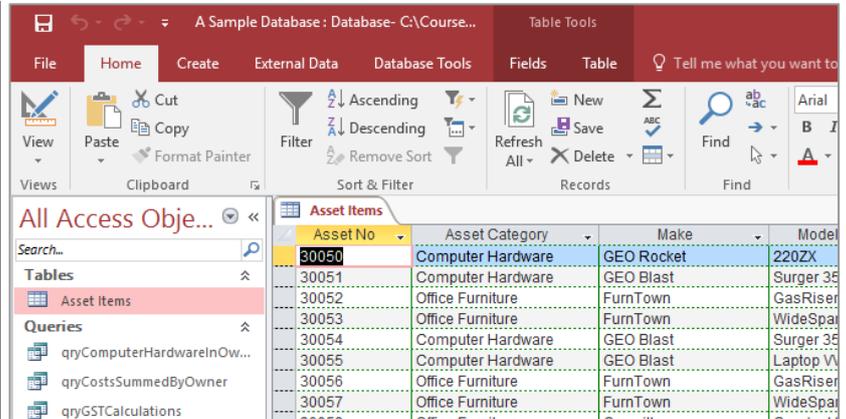
A down arrow indicates the option will display a gallery...

- 4 Click on each of the **tabs** and examine the **commands**

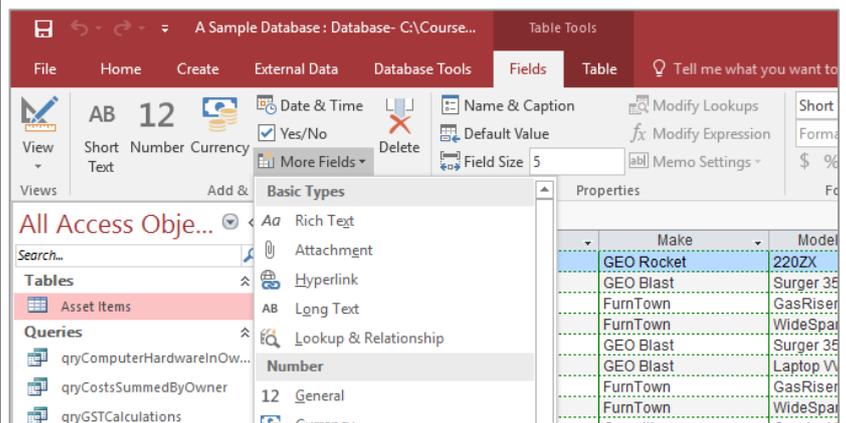
Some commands open dialog boxes...

- 5 On the **Home** tab, click on **Find** in the **Find** group to open the **Find and Replace** dialog box

- 6 Click on **[Cancel]**



1



3

For Your Reference...

To **use** the **ribbon**:

1. Click on a **tab** to display the **commands**
2. Click on a **tool** to activate a **command**, display a **gallery** or display a **dialog box**

Handy to Know...

- Additional tabs, known as **contextual tabs**, appear in specific circumstances. For instance, if you open a table, the **Table Tools: Fields** and **Table Tools: Table** tabs appear. This provides quick access to all of the tools you may need to work with tables.

WORKING WITH THE NAVIGATION PANE

The **Navigation** pane is an essential part of Access 2016 as it provides you with access to the database objects that are in your database file. The pane itself can be filtered to show you

more or less objects and you should get a pretty good grasp on how it operates before you begin to create tables and other database objects.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *A Sample Database.accdb...*

- 1 Click on the **All Access Objects** drop arrow in the **Navigation** pane, as shown

A menu will display...

- 2 Select **Queries** under **Filter By Group** to see only the saved query objects in the database

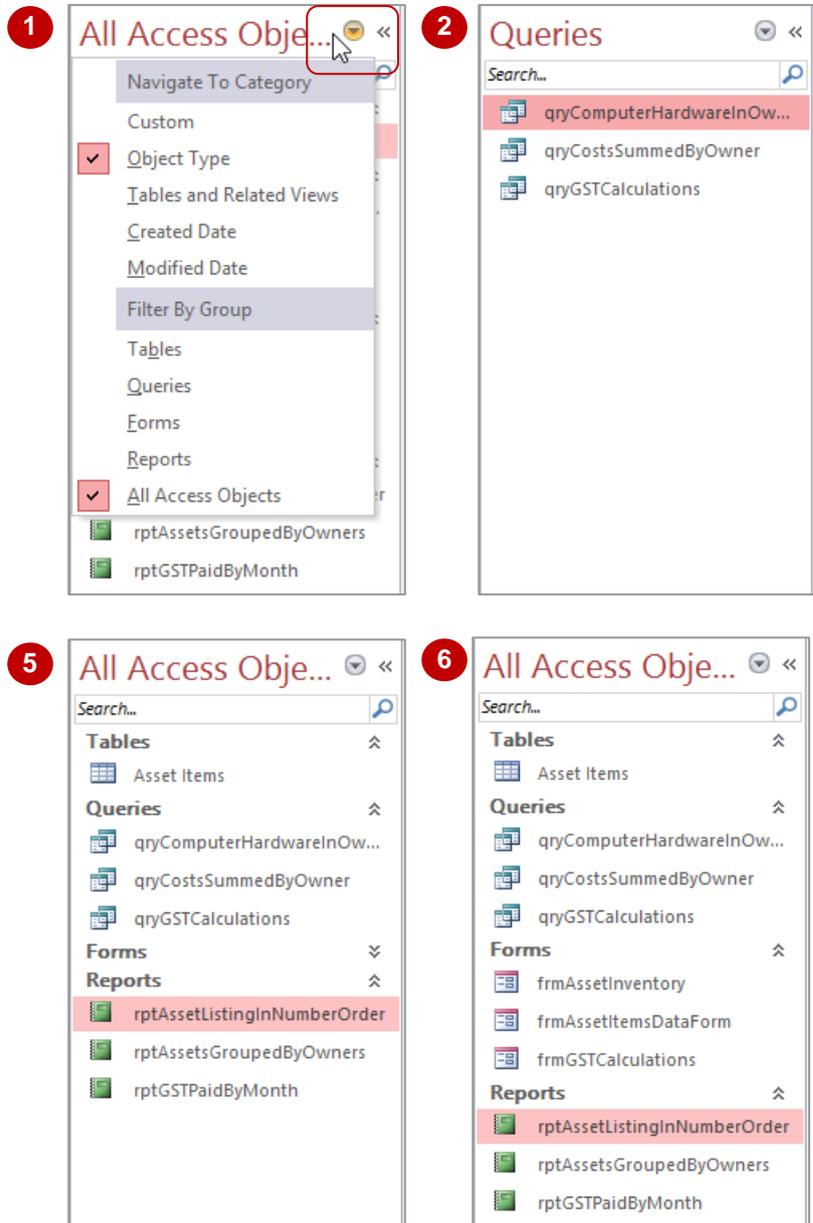
- 3 Click on the drop arrow again and select **Reports** to see only the reports

- 4 Click on the drop arrow again and select **All Access Objects** to see all of the database objects

- 5 Click on the arrow to the right of **Forms** in the **Navigation** pane

The forms will be hidden and the arrows will change to double down arrows...

- 6 Click on the arrow to the right of **Forms** to display the forms again



For Your Reference...

To **filter database objects** in the **Navigation pane**:

1. Click on the **All Access Objects** drop arrow for the object type in the **Navigation** pane
2. Select the desired filter option

Handy to Know...

- The **Navigation** pane menu is quite complex. Once you've become proficient with it you can list the objects by date created or modified. However, the best option is to list objects grouped according to their type.

ADDING COMMANDS TO THE QAT

The **QAT (Quick Access Toolbar)** is a small toolbar that appears at the top left corner of the Access window and is a handy location to place the commands from the ribbon that you use most

frequently. Adding commands from the ribbon involves locating the command, right-clicking on it and selecting **Add to Quick Access Toolbar**.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *A Sample Database.accdb...*

- 1 Point to the first button on the **Quick Access Toolbar** to see the name of the tool and its shortcut

In our case it's the Save tool – by default, only three tools appear in the QAT (Save, Undo and Redo)...

- 2 On the **Home** tab, right-click on **Filter** in the **Sort & Filter** group to display a shortcut menu

- 3 Select **Add to Quick Access Toolbar** to add the **Filter** tool to the **QAT**

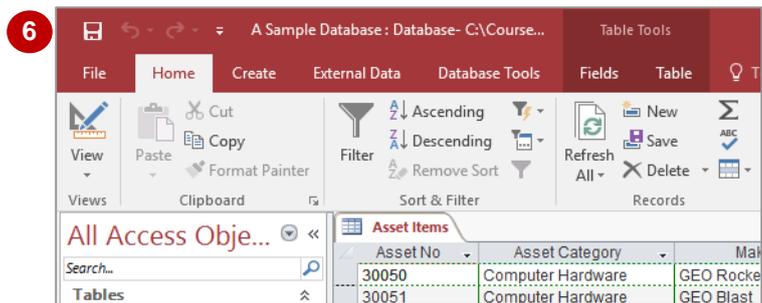
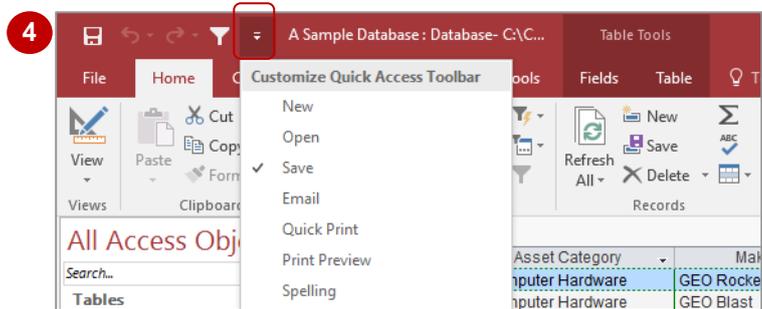
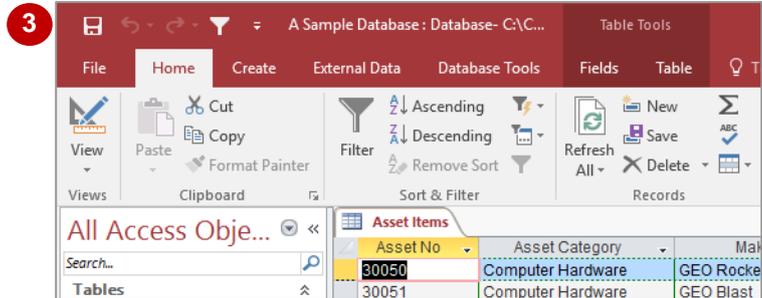
- 4 Click on **Customise Quick Access Toolbar**, as shown, to display a menu

- 5 Select **Open** to add the **Open** tool to the **QAT**

It is just as easy to remove tools you don't want from the QAT...

- 6 Right-click on the **Filter** tool in the **QAT** and select **Remove from Quick Access Toolbar**

- 7 Repeat step 6 to remove the **Open** tool from the **QAT**



For Your Reference...

To **customise** the **Quick Access Toolbar**

- Right-click on the command you want to add and select **Add to Quick Access Toolbar**, or
Click on **Customise Quick Access Toolbar** and select a command

Handy to Know...

- You can position the **QAT** under the ribbon by clicking on **Customise Quick Access Toolbar** and selecting **Show Below the Ribbon**. This puts the tools that you use most frequently closer to your workspace making it quicker to access them.

WORKING WITH TOUCH MODE

These days many people are using Office programs on touchscreen devices such as tablets and even smart phones. Because these screens are small, it is easy to accidentally tap the

incorrect command. To help prevent this, you can activate **touch mode** which creates more space between tools on the QAT, commands on the ribbon, and the tabs on the ribbon.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *A Sample Database.accdb...*

1

Click on **Customise Quick Access Toolbar**, as shown

2

Select **Touch/Mouse Mode**

This will only add the tool to the Quick Access toolbar, not activate Touch mode...

3

Click on **Touch/Mouse Mode** in the **QAT** to open a menu

Mouse mode is selected by default. With this mode the commands are optimised for use with a mouse...

4

Select **Touch**

The tools on the Quick Access toolbar, tabs on the ribbon and each command on the ribbon will spread out significantly. Let's revert to the default Mouse mode...

5

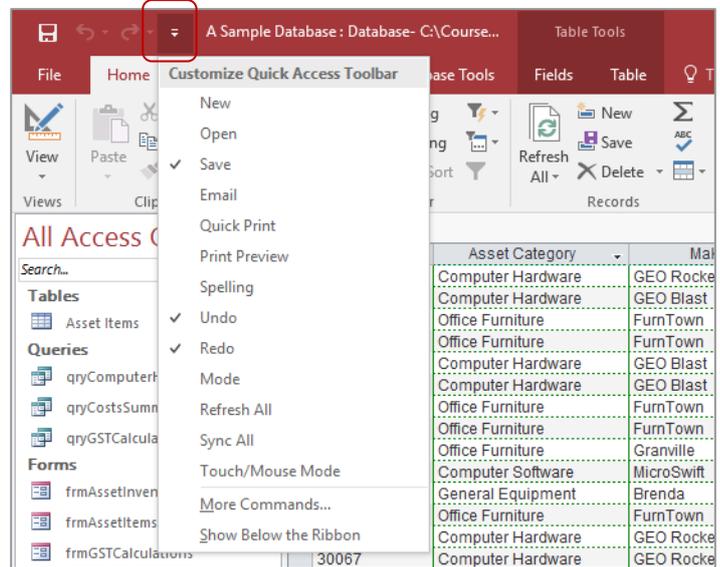
Repeat steps 3 and 4, selecting **Mouse** to activate **Mouse mode**

Let's remove the tool from the Quick Access toolbar...

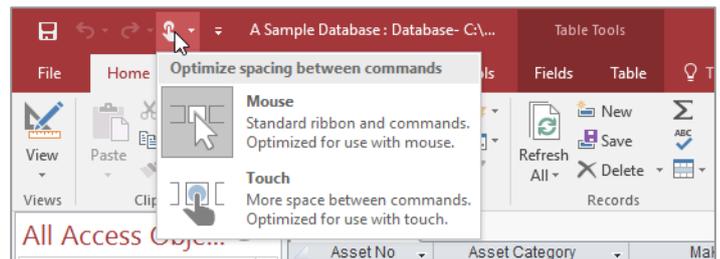
6

Right-click on **Touch/Mouse Mode** in the **QAT** and select **Remove from Quick Access Toolbar**

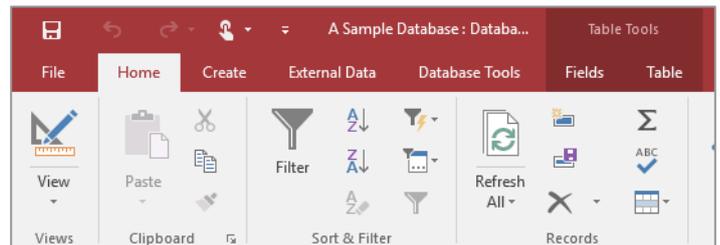
1



3



4



Despite its name, Touch mode can be used with a mouse and may suit people who have difficulty with fine mouse movements.

For Your Reference...

To **activate Touch mode**:

1. Click on **Customise Quick Access Toolbar**
2. Select **Touch/Mouse Mode**
3. Click on **Touch/Mouse Mode** in the Quick Access toolbar
4. Select **Touch**

Handy to Know...

- When you activate **Touch mode** in one Office application, it is automatically activated in **all** other Office programs (Word, Outlook, etc.) immediately.

WORKING WITH A TABLE

A **table** is used in a database file to store data. A table has a defined structure and in Access 2016 whenever the table is open, it is seen either in **Design** mode or in **Datasheet** mode. When it is

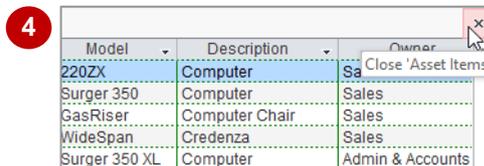
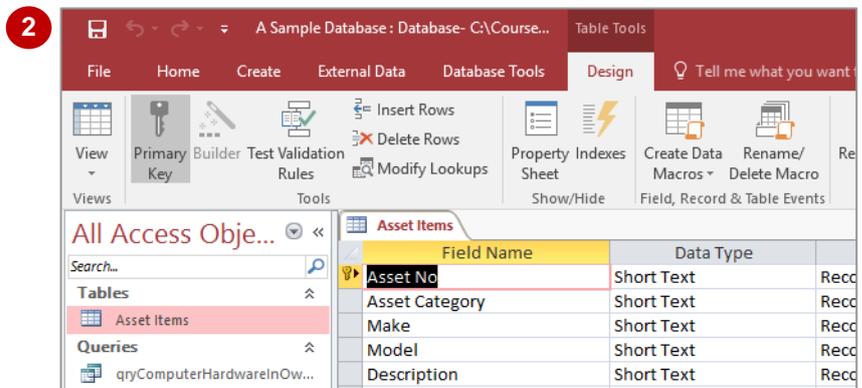
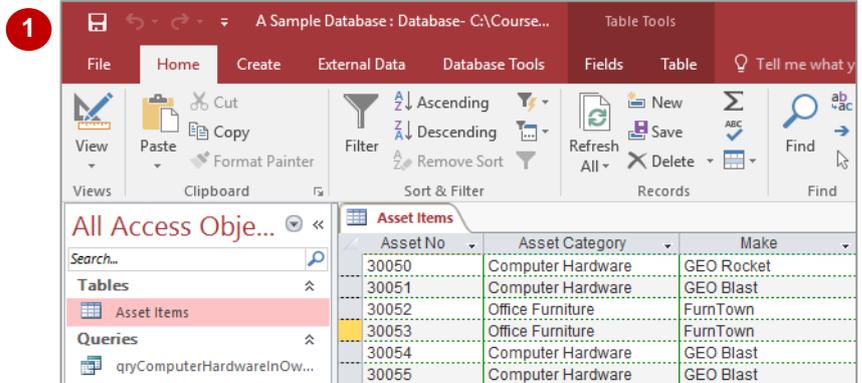
in **Design** mode you can make changes to the structure of the table but not to the data itself, and when it is in **Datasheet** mode you can make changes to the data but not to the structure.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *A Sample Database.accdb...*

- 1 Ensure **Datasheet** mode is active – if not, in the **Navigation** pane, double-click on **Asset Items** under **Tables** – this mode provides access to the actual data
- 2 On the **Home** tab, click on the top half of **View** in the **Views** group to switch to **Design** view
This mode displays the structure of the table.
There are also view buttons at the bottom of the screen which allow you to toggle between Design and Datasheet modes...
- 3 Click on **Datasheet View** in the bottom right of the window, as shown, to see the data again
- 4 Click on **Close 'Asset Items'** in the top right corner of the main pane as shown (just beneath the ribbon) to close the table



For Your Reference...

To **display a table**:

1. In the **Navigation** pane, double-click on the table name to display the table in datasheet view
2. On the **Home** tab, click on **View** in the **Views** group to toggle the view to **Design** mode

Handy to Know...

- Clicking on **View** in the **Views** group (on the **Home** tab) toggles between **Design** and **Datasheet** views for an open table. For example, if you are in **Datasheet** view, clicking on **View** will switch to **Design** view and vice versa.

WORKING WITH OTHER DATABASE OBJECTS

The key thing to remember with database objects including tables is that, when open, they will either be in **Design** mode where you can make changes to the structure or layout of the object,

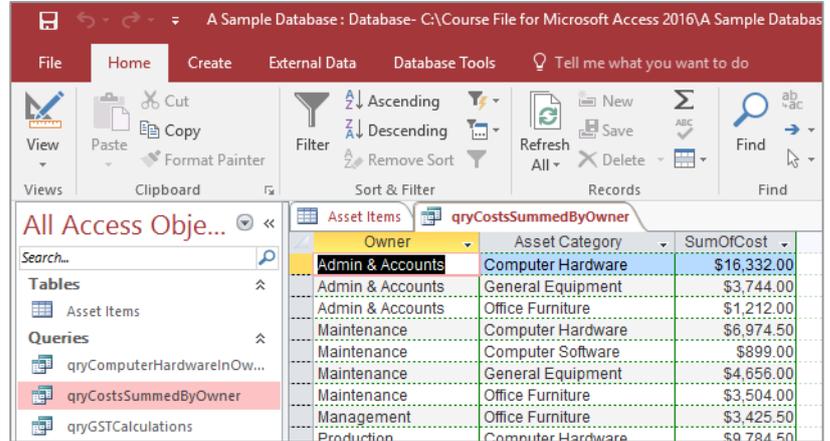
or in **Data** mode where data is parsed through the object's layout and presented to you. Once the object is open, it is easy to toggle between these two modes of operation.

Try This Yourself:

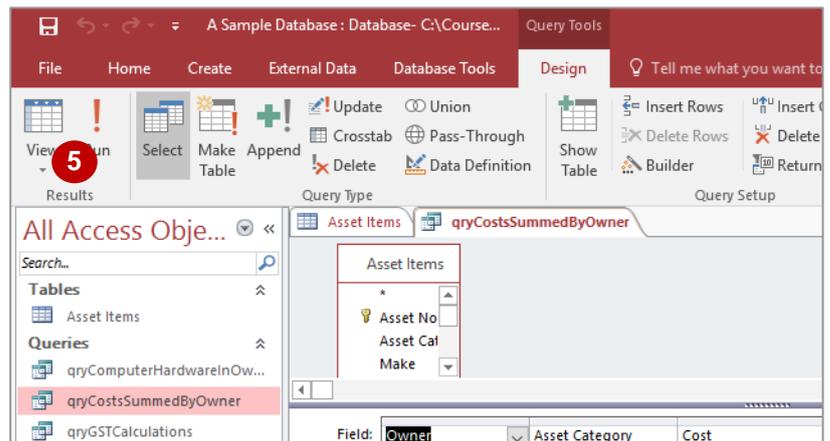
Same File

Continue using the previous file with this exercise, or open the file *A Sample Database.accdb...*

- 1 In the **Navigation** pane, double-click on **qryCostsSummedByOwner** under **Queries** to run the query and display the data parsed through it
- 2 On the **Home** tab, click on the top half of **View** in the **Views** group to display the design of the query
- 3 Click on **Close** to close the query
- 4 Double-click on **rptAssetsGroupedByOwners** under **Reports** to run the report and display it in preview mode
- 5 Click on **Design View** in the task bar at the bottom right of the window to display the design structure of the report
- 6 Click on **Close** to close the report



1



2

For Your Reference...

To **work** with **other database objects**:

1. In the **Navigation** pane, double-click on the object name to run the object
2. On the **Home** tab, click on **View** to see the design of the object

Handy to Know...

- For forms and reports there is a **Layout** view. In **Design** view you see the name of the controls used to display the data. You don't actually see where the data ends up in **Design** view. In **Layout** view you see the data but can still make changes to the actual layout of the form or report.

CLOSING A DATABASE FILE

Closing a database file is a little different to closing files in most other applications. In Access 2016 the data in a database file is saved as it is being entered, while changes to structures and

designs are saved when the objects are closed. You will never therefore be prompted to save new data added to a database file because all of this has already been done automatically.

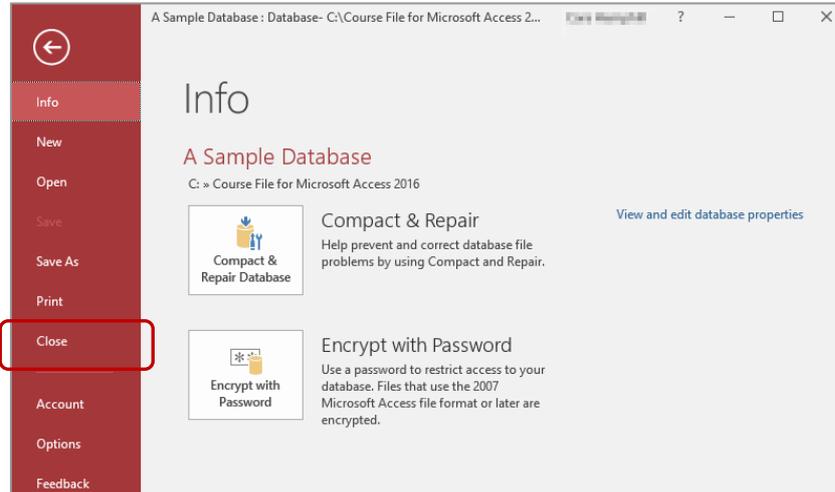
Try This Yourself:

Same File

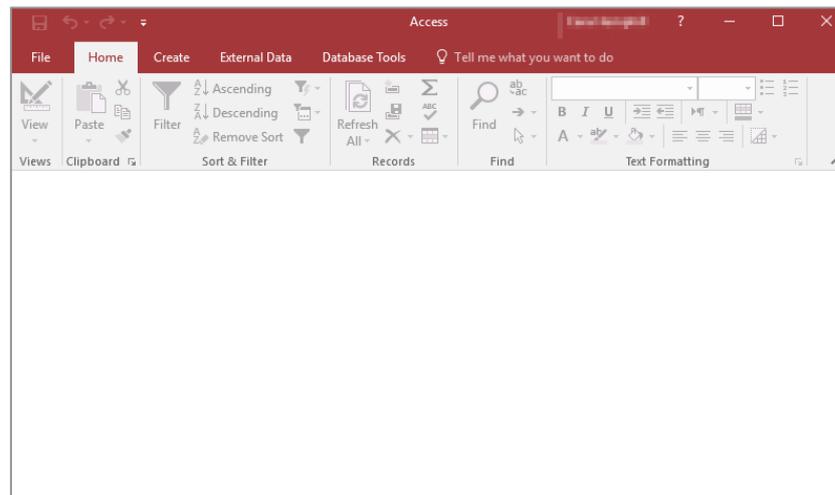
Continue using the previous file with this exercise, or open the file *A Sample Database.accdb...*

- 1 Click on the **File** tab to open the **Backstage**
- 2 Click on **Close** to close the database and return to the **Home** tab

The **Home** tab has been selected because you closed the database. Only one database can be open at a time in Access and Access will always display the **Home** tab and a blank screen when a database is not currently open



1



2

For Your Reference...

To **close** a **database**:

1. Click on the **File** tab
2. Click on **Close**

Handy to Know...

- When closing a database in Access, the only time you will be asked to save anything is if there is a **Design** view window open and unsaved changes have been made to the design prior to closing.

EXITING FROM ACCESS 2016

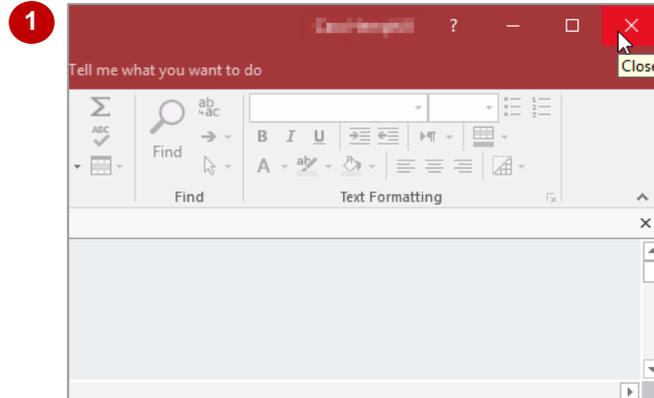
You can exit from Access 2016 without the need to worry about losing unsaved data. All of the data in a database is saved as the data is entered, while changes to the design of any

database objects are saved when the object is closed.

Try This Yourself:

Before starting this exercise, ensure that Access is open...

- 1 Click on **Close** in the top right corner of the application window to close Access 2016



For Your Reference...

To **exit** from **Access 2016**:

- Click on **Close** in the top right corner of the application window

Handy to Know...

- You can use the keyboard shortcut **Alt + F4** to exit from Access.
- You cannot exit from Access via the **Backstage**.

CHAPTER 2 CREATING A LOOKUP DATABASE

InFocus

Once a database design has been prepared, you are ready to create the database structure using database application software. The creation stage involves creating the tables and the fields within the tables, and then specifying how the fields in one table relate to the other.

In this session you will:

- ✓ learn how to create a new database file
- ✓ learn how to create a lookup table in a database
- ✓ learn how to define a primary key for a table
- ✓ learn how to save and close a new table design
- ✓ learn how to create a transaction table
- ✓ gain an understanding of the relationship between the tables in a lookup database
- ✓ learn how to connect a transaction table to a lookup table
- ✓ learn how to view table relationships.

CREATING A NEW DATABASE FILE

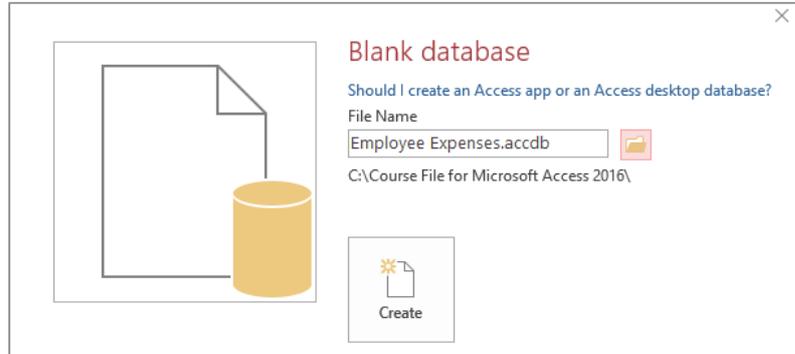
In Access all elements of your database: tables, reports, forms and the like, are stored in one file with the file extension **ACCDB**. This is what is commonly referred to as the database file – not

to be confused with the tables where your data is stored. Before you can create tables, reports, forms, or any other object, you need to create a new database file.

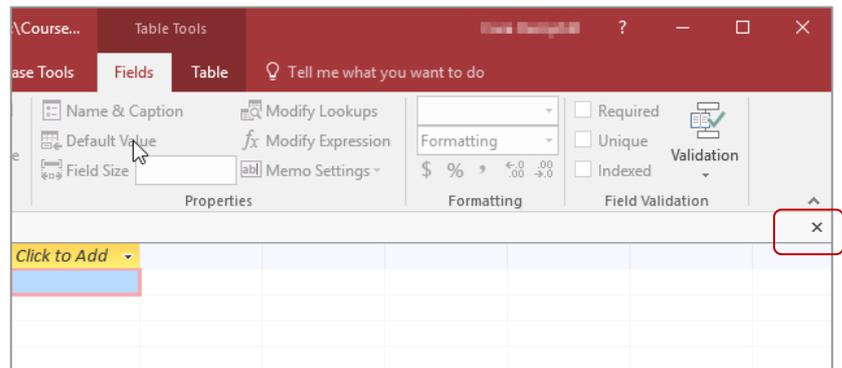
Try This Yourself:

Before you begin, ensure that Access 2016 has started...

- 1 If the **start** screen is currently displayed, go to step 2, otherwise, click on the **File** tab to display the **New** area in the **Backstage**
- 2 Click on the **Blank desktop database** template and type **Employee Expenses**
We'll save it where the other course files are located...
- 3 Click on the **Browse** icon to display the **File New Database** dialog box, then locate and double-click on the **Course Files for Microsoft Access 2016** folder and click on **[OK]**
The course files folder is now where the database will be saved...
- 4 Click on **[Create]** to create the new database
- 5 Click on **Close** to close the automatic table (**Table1**) that has appeared



3



5

Note: Be sure to click on the Close button for the database object when closing tables, queries, forms etc. – if you click on the Close button in the very top, right corner of the application window, you will close Access

For Your Reference...

To **create** a **new database file**:

1. Click on the **File** tab and click on **New**
2. Type the **File Name**, click on **[Browse]** and choose a save location
3. Click on **[Create]**

Handy to Know...

- All new Access 2016 database files will be saved in the same format as Access 2007 and 2010 files (**.accdb**). If you need to provide the file to other users who may be using earlier versions, you can save it as an Access 2003 or earlier file (**.mdb**), but the file may lose some functionality.

CREATING THE LOOKUP TABLE

The lookup table holds the records that will be *looked up* by the transaction table. In this example, the lookup table holds **Employee** records. Creating a lookup table involves creating

the fields in the table and specifying their size and type. The fields will hold the employee details that are needed for our database but that are not relevant to specific expense transactions.

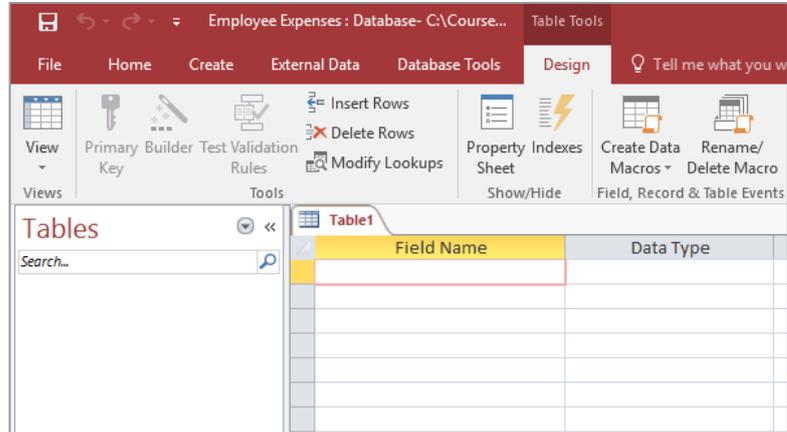
Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Create Database_1.accdb...*

- 1 Click on the **Create** tab, then click on **Table Design** in the **Tables** group to display a new table
- 2 Type **EmpNo** in **Field Name**, then press **Tab** to move to **Data Type**
- 3 Click on the drop arrow for **Data Type** and click on **Short Text**, if necessary, then press **Tab** to move to **Description**
- 4 Type **Records the employee number**
- 5 In the **Field Properties** at the bottom of the **Table1** window, select the value in **Field Size** and type **6**
- 6 Click in the row under **EmpNo** to start a new field, then repeat steps 2 to 5 to create the additional fields as shown

Leave the table design on the screen for the next exercise



1

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number

4

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Record's the employee's department
Started	Date/Time	Record's the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary
Comments	Long Text	Records comments about the employee

6

For Your Reference...

To **create** a **new table**:

1. Click on the **Create** tab, then click on **Table Design** in the **Tables** group
2. Type the **Field Name**, select a **Data Type** and type the **Description** for each field

Handy to Know...

- When you click on a field in the table **Design** window, the **Properties** for that field are displayed in the lower half of the window. The number and type of properties that you see will vary depending on the data type of the field.

DEFINING THE PRIMARY KEY

For a lookup database to be useful, it must be able to retrieve data quickly and easily. In addition, it must be able to pull data from different tables together rapidly to provide information. To

make this possible, each table should include a field or set of fields that makes each record in the table unique. This field or set of fields is known as the **primary key**.

Try This Yourself:

Before starting this exercise, ensure that the table design from the previous exercise is displayed.

A primary key is indicated by a key symbol. Currently, this table does not have a primary key assigned...

1 Click on **EmpNo** in **Field Name** to select the field

2 On the **Table Tools: Design** tab, click on **Primary Key** in the **Tools** group

A small key icon will be displayed to the left of the field to indicate that this is the primary key field.

Leave the table design on the screen for the next exercise

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Record's the employee's department
Started	Date/Time	Record's the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary
Comments	Long Text	Records comments about the employee

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Record's the employee's department
Started	Date/Time	Record's the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary
Comments	Long Text	Records comments about the employee

For Your Reference...

To **define** a **primary key**:

1. In table **Design** view, click on the field that will be used as the primary key
2. On the **Table Tools: Design** tab, click on **Primary Key** in the **Tools** group

Handy to Know...

- Once you have nominated a field as the primary key, Access will only allow you to enter unique values in that field. Duplicate values or empty fields (known as nulls) will not be accepted. **AutoNumber** field types are ideal for primary keys because they are automatically created and are unique.

SAVING AND CLOSING A TABLE

Unlike data that is saved as you move away from a field, tables are objects that must be saved if you want to retain any changes that you make to the design. You can either save the table as you

work or save it as you close it. One advantage of this process is that if you want to return to the previous settings, you can simply close the table without saving it.

Try This Yourself:

Before starting this exercise, ensure that the table design from the previous exercise is displayed...

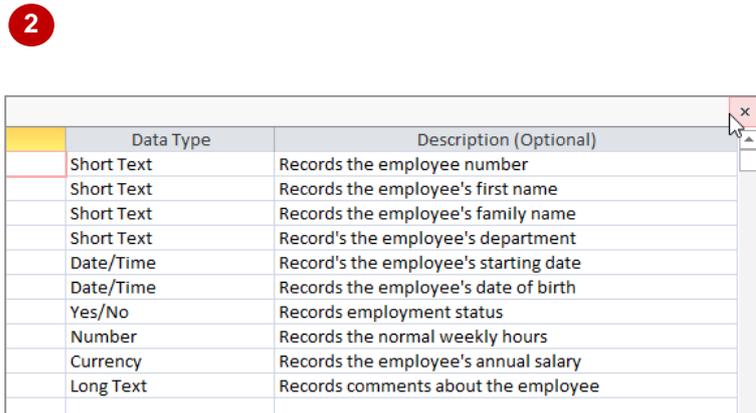
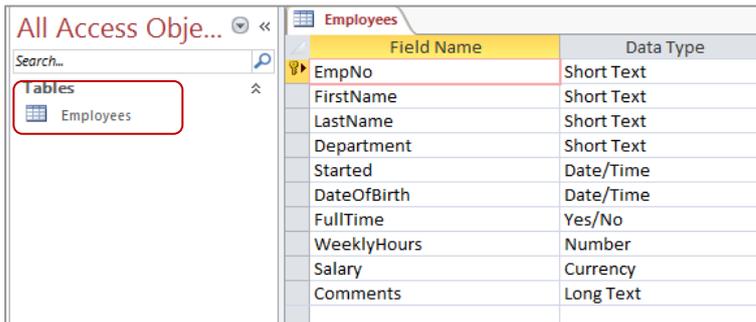
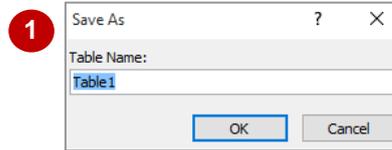
- 1 Click on the **File** tab and select **Save** to display the **Save As** dialog box

We selected Save, not Save As, because the Save As options relate to the database as a whole and we are only saving an object within the database here. Unlike larger Save As dialog boxes found in other applications, this dialog box is relatively small. This is because the table structure is saved as part of the database file so there is no need to specify a file location for database objects...

- 2 Type **Employees** in **Table Name** and click on **[OK]**

The table's name will now appear in the Navigation pane, and on the table design tab...

- 3 Click on **Close** to close the table



3

For Your Reference...

To **save a table design**:

1. Click on the **File** tab to display the **Backstage** and click on **Save**
2. Type a **Table Name** and click on **[OK]**

Handy to Know...

- If you try to close a table that has been modified but not saved, Access will prompt you to save the changes and provide a dialog box so that you can choose **[Yes]** or **[No]**.

CREATING THE TRANSACTION TABLE

Lookup databases consist of a **transaction table** that holds the individual transactions and a **lookup table** that the transactions are related to. The transaction table may hold many records for

each of the records in the lookup table. To ensure that the relationship can be created, you must ensure that the primary key of the lookup table appears as a field in the transaction table.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Create Database_2.accdb...*

- 1 Click on the **Create** tab, then click on **Table Design** in the **Tables** group to open a new table
- 2 Type the fields as shown (set the **Field Size** (in **Field Properties**) for the **Description** field to **30**)
- 3 Click on **ExpTransNo** in **Field Name** to select the field, then click on **Primary Key** in the **Tools** group to make this field the primary key
- 4 Click on **Save** in the **Quick Access Toolbar** to display the **Save As** dialog box
- 5 Type **Expense Transactions** in **Table Name**, then click on [OK]
- 6 Click on **Close** to close the table

The new table is now listed in the Navigation pane and the object name appears in the tab at the top of the design window

Field Name	Data Type	Description (Optional)
ExpTransNo	AutoNumber	Provides a number for the expense transaction
ExpDate	Date/Time	Records the date of the expense transaction
Description	Short Text	Records a description of the expense
Amount	Currency	Records the amount of the expense

2

Field Name	Data Type	Description (Optional)
ExpTransNo	AutoNumber	Provides a number for the expense transaction
ExpDate	Date/Time	Records the date of the expense transaction
Description	Short Text	Records a description of the expense
Amount	Currency	Records the amount of the expense

3

Field Name	Data Type	Description (Optional)
ExpTransNo	AutoNumber	Provides a number for the expense transaction
ExpDate	Date/Time	Records the date of the expense transaction
Description	Short Text	Records a description of the expense
Amount	Currency	Records the amount of the expense

5

For Your Reference...

To **create** the **transaction table**:

1. On the **Create** tab, click on **Table Design** in the **Tables** group
2. Specify the fields and the primary key, then click on **Save**

Handy to Know...

- The **AutoNumber** field type provides an automatic and unique number for each transaction. It is ideal for tasks where we need to have a new and unique number for each transaction record that is entered into the table.

UNDERSTANDING LOOKUP TABLE RELATIONSHIPS

A **lookup database** requires at least two tables: the **lookup table** and the **transaction table**. For these tables to work together they must be linked in some way, or as it is referred to in database

jargon, they must be **related**. This is done using a field that is common between the two tables. In the lookup table this is normally the field that is unique and is the **primary key**.

One-To-Many Relationships

Lookup databases have a relationship known as a **one-to-many** relationship.

In this type of relationship the lookup table contains unique records and forms the **one** side in the **one-to-many** relationship. The transaction table forms the **many** side in the **one-to-many** relationship because there may be many transactions for each record or entity from the lookup table.

Taking our case study as an example, the **Employees** table is the lookup table – there is only one record here for each employee. The **Expense Transactions** table is the transaction table – there may be many records for each of the employees in the **Employees** table.

Table relationships are made possible by the use of the primary key in the lookup table. In our example, the primary key of the **Employees** table **EmpNo** is used in the table to uniquely identify employees. For the relationship to work it will also need to be in the **Expense Transactions** table against each expense so that we can identify who incurred the expense.

Once the relationships between the tables are established, we can use them in either table to ask questions (or query) the data.

For example, in the **Expense Transactions** table we can ask “*who was the employee that incurred this expense?*”...

ExpTransNo	ExpDate	Description	Amount	Employee
1	2/01/2013	Accommodatic	\$132.00	Dawson
2	2/01/2013	Accommodatic	\$145.00	Kerr
3	2/01/2013	Gifts	\$27.06	Kerr
4	2/01/2013	Postage	\$3.59	Kristenson
5	2/01/2013	Postage	\$16.99	Lyons
6	2/01/2013	Accommodatic	\$154.50	Martinson
7	2/01/2013	Accommodatic	\$125.50	McCaige
8	2/01/2013	Other Expense	\$48.39	McDonald
9	2/01/2013	Coffee and Tea	\$18.26	Miller
10	2/01/2013	Coffee and Tea	\$7.72	Millson
11	2/01/2013	Accommodatic	\$123.44	Moore
12	2/01/2013	Accommodatic	\$237.86	Morris
13	2/01/2013	Meals	\$52.86	Munro
14	16/01/2013	Accommodatic	\$155.60	Nicolopolous
*	(New)		\$0.00	O'Beckett

In the **Employees** table we can ask “*what are the transactions incurred by this employee?*”...

EmpNo	FirstName	LastName	Department	PhoneNo	Started
101	Julianne	Kerr	Executive	60001	28-Jun-07
102	Harry	Jones	Executive	60002	19-Jul-07
103	Angel	Harrington	Executive	60003	19-Jul-07
104	Peter	Dawson	Executive	60004	19-Jul-07
105	Mark	Jones	Executive	60005	19-Jul-07
106	Maureen	Grayson	Administrator	61021	06-Sep-07
107	Augustine	Millson	Administrator	61022	06-Sep-07
108	Amanda	Bennet	Administrator	61023	06-Sep-07
109	George	Samuelson	Administrator	61024	06-Sep-07
110	Neville	Smith	Administrator	61025	06-Sep-07

ExpTransNo	ExpDate	Description	Amount
7	2/01/2013	Accommodatic	\$125.50
13	2/01/2013	Meals	\$52.86
14	16/01/2013	Accommodatic	\$155.60
*	(New)		\$0.00

CONNECTING TO A LOOKUP TABLE

Once you have created a transaction table and a lookup table, you can connect the two tables in a number of ways. One of the easiest methods for connecting the two tables is to use the **Lookup**

Wizard to create a **Lookup Column** in the transaction table. The wizard enables you to nominate the fields from the lookup table that you want displayed with your transaction data.

Try This Yourself:

Open File

Before starting this exercise you **MUST** open the file *Create Database_3.accdb...*

- 1 Ensure **Design View** is active
If Design View is not active, right-click on the Expense Transactions table in the Navigation pane, then select Design View
This provides a quick method for displaying a database object in a specific view...
- 2 Click in the row beneath the **Amount** field then, on the **Table Tools: Design** tab, click on **Modify Lookups** in the **Tools** group to start the **Lookup Wizard**
- 3 Work through the wizard, making the selections as shown
- 4 Click on **[Finish]** to complete the wizard, then click on **[Yes]** to save the changes
- 5 Click on the **Employee** field, then click on the **Lookup** tab in the **Field Properties** pane to see the settings that have been created
- 6 Click on **Close** to close the table

Screen	Task	Then
1	Select I want the lookup field to get the values from another table or query	[Next]
2	Select Table:Employees	[Next]
3	In Available fields double-click on LastName then on FirstName	[Next]
4	Select LastName for the first sort column, then FirstName for the second sort column, ensuring that both are set to ascending order	[Next]
5	Ensure that Hide key column appears with a tick	[Next]
6	Type Employee as the label for the lookup field	

3

Field Name	Data Type	Description (Optional)
ExpTransNo	AutoNumber	Provides a number for the expense transaction
ExpDate	Date/Time	Records the date of the expense transaction
Description	Short Text	Records a description of the expense
Amount	Currency	Records the amount of the expense
Employee	Short Text	

4

5

Field Properties	
Lookup	
Display Control	Combo Box
Row Source Type	Table/Query
Row Source	SELECT [Employees].[EmpNo], [Employees].[LastName], [Employee
Bound Column	1
Column Count	3
Column Heads	No
Column Widths	0cm;2.54cm;2.54cm
List Rows	16
List Width	5.079cm
Limit To List	Yes
Allow Multiple Values	No
Allow Value List Edits	Yes
List Items Edit Form	
Show Only Row Source	No

For Your Reference...

To **connect to a lookup table:**

1. Open the transaction table in **Design View**, then click in the first blank row
2. On the **Table Tools: Design** tab, click on **Modify Lookups** in the **Tools** group
3. Follow the steps of the wizard and specify the relevant field details

Handy to Know...

- The connection between tables is only possible through the primary field of the lookup table and must be the field specified in the wizard when creating the connection from the transaction table.

VIEWING TABLE RELATIONSHIPS

Table relationships can be viewed and edited using the **Relationships** window. This window gives you a better understanding of how tables are related or joined together. It also lists all of

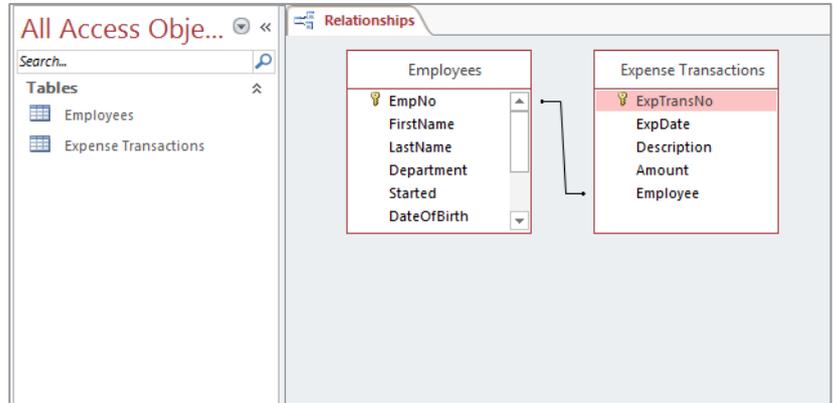
the fields in each table so that you can locate content easily. The **Relationships** window can be used to document part of your database design by printing it as a report.

Try This Yourself:

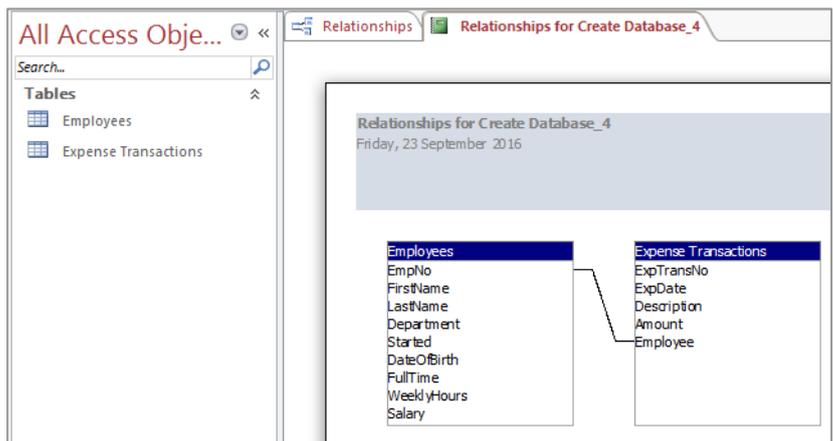
Same File

Continue using the previous file with this exercise, or open the file *Create Database_4.accdb...*

- 1 Click on the **Database Tools** tab, then click on **Relationships** in the **Relationships** group
- The relationship between all tables in the database will now be shown...
- 2 On the **Relationship Tools: Design** tab, click on **Relationship Report** in the **Tools** group to see a preview of a printable report
- 3 Click on the **File** tab and click on **Print** to see the **Print** area, then click on **Quick Print** to send the report directly to the printer
- 4 Click on **Close** for the **Relationships for Create Database_4...** tab, then click on **[No]** when prompted to save the report
- 5 Close the **Relationships** window



1



2

For Your Reference...

To view table relationships:

- Click on the **Database Tools** tab and click on **Relationships** in the **Relationships** group

Handy to Know...

- The **Relationship Report** is a database object just the same as a table. You could save it if required, however relationships often change so it is better to generate a new report each time rather than saving them.

NOTES:



CHAPTER 3 CREATING A RELATIONAL DATABASE

InFocus

A database application requires the creation of a database file and appropriate table structures. In Microsoft Access your complete relational database application is stored in one database file.

After you have planned your system, the first task is to create a new database file which becomes the repository for all of the tables, reports, forms, and other objects of your system.

When the database has been created, you can populate it with the necessary tables and data.

In this session you will:

- ✓ learn how to create a new database file
- ✓ learn how to create the lookup tables
- ✓ learn how to define a primary key for a table
- ✓ learn how to save and close a new table design
- ✓ learn how to create a second lookup table in a database
- ✓ learn how to create the transactions table
- ✓ learn how to create the details table.

CREATING A NEW DATABASE FILE

In Microsoft Access 2016 all elements of your database; tables, reports, forms, and the like, are stored in one file with the file extension **.accdb**. This is what is commonly referred to as the

database file – not to be confused with the tables where your data is stored. Before you can create tables, or reports, or forms, or any other object, you need to create a new database file.

Try This Yourself:

Before you begin, ensure that Access has started...

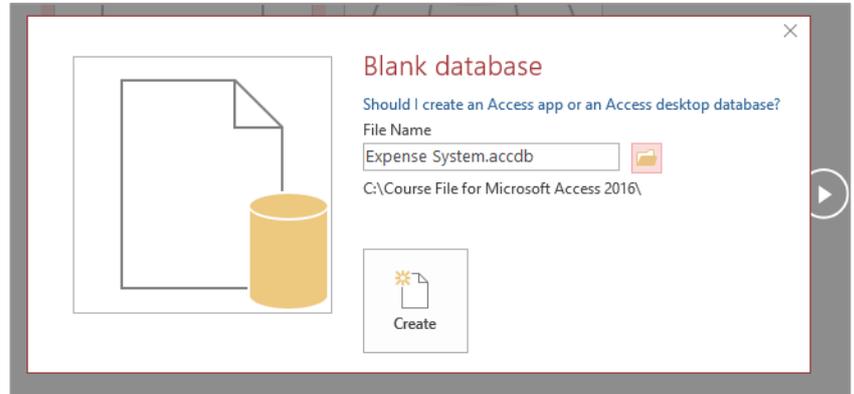
- 1 Click on the **File** tab to display the **New** area in the **Backstage**
- 2 Click on the **Blank desktop database** template and type **Expense System** in **File Name**

We'll save it where the other course files are located...

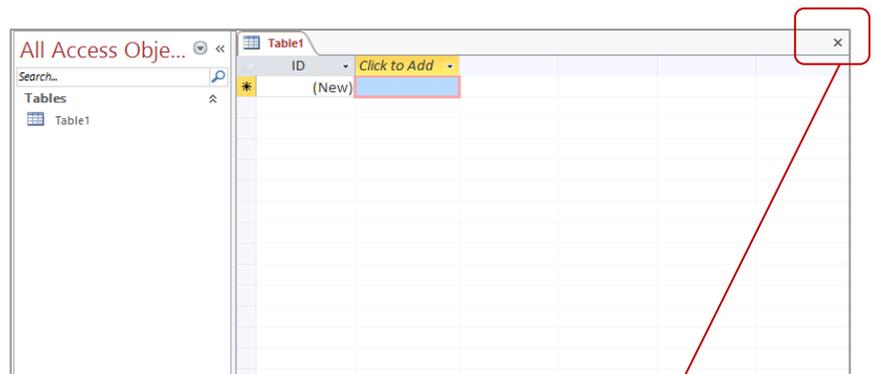
- 3 Click on **[Browse]** to display the **New Database** dialog box, then locate and click on the **Course Files for Microsoft Access 2016** folder and click on **[OK]**

The course files folder is now where the database will be saved...

- 4 Click on **[Create]** to create the new database
- 5 Click on **Close** to close the automatic table (**Table1**) that has appeared



3



4

Note: Be sure to click on the Close button for the database object when closing tables, queries, forms etc – if you click on the Close button in the very top right corner, you will close Access

For Your Reference...

To **create** a **new database file**:

1. Click on the **File** tab and click on **New**
2. Click on **Blank database**, type the **File Name**, click on **[Browse]** and choose a save location
3. Click on **[OK]** then click on **[Create]**

Handy to Know...

- All new Access 2016 database files will be saved in the same format as Access 2007 and 2010 files (**.accdb**). If you need to provide the file to other users who may be using earlier versions, you can save it as an Access 2003 or earlier file (**.mdb**), but the file may lose some functionality.

CREATING LOOKUP TABLES

The **lookup table** holds the records that will be *looked up* by the transaction table. In this example, the lookup table holds *Employee* records. Creating a lookup table involves creating

the fields in the table and specifying their size and type. The fields will hold the employee details that are needed for our database but are not relevant to specific expense transactions.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Relational Databases_1.accdb...*

- 1 Click on the **Create** tab, then click on **Table Design** in the **Tables** group to display a new table
- 2 Type **EmpNo** in **Field Name**, then press **Tab** to move to **Data Type**
- 3 Click on the drop arrow for **Data Type** and select **Short Text**, if necessary, then press **Tab** to move to **Description**
- 4 Type **Records the employee number**
- 5 In the **Field Properties** at the bottom of the **Table1** window, select the value in **Field Size** and type **6**
- 6 Click in the row under **EmpNo** to start a new field, then repeat steps 2 to 5 to create the additional fields with **Field Sizes**, as shown

Leave the table design on the screen for the next exercise

Field Name	Data Type	Description (Optional)

1

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number

4

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's last name
Department	Short Text	Records the employee's department
Started	Date/Time	Records the employee's start date
DateOfBirth	Date/Time	Records the employee's birthdate
Fulltime	Yes/No	Records whether the employee is fulltime
WeeklyHours	Number	Records the weekly hours of employment
Comments	Long Text	Records comments about the employee

6

Field Sizes to change:
FirstName 15
LastName 25
Department 25

For Your Reference...

To **create** a **new table**:

1. Click on the **Create** tab, then click on **Table Design** in the **Tables** group
2. Type the **Field Name**, select a **Data Type** and type the **Description** for each field

Handy to Know...

- When you click on a field in the table **Design** window, the **Properties** for that field are displayed in the lower half of the window. The number and type of properties that you see will vary depending on the data type of the field.

DEFINING A PRIMARY KEY

For a lookup database to be useful, it must be able to retrieve data quickly and easily. In addition, it must be able to pull data from different tables together quickly to provide information. To

make this possible, each table should include a field or set of fields that makes each record in the table unique. This field or set of fields is known as the **primary key**.

Try This Yourself:

Before starting this exercise, ensure that the table design from the previous exercise is displayed...

A primary key is indicated by a key symbol. Currently, this table does not have a primary key assigned...

1 In table **Design View**, click on **EmpNo** in **Field Name** to select the field

2 On the **Table Tools: Design** tab, click on **Primary Key** in the **Tools** group

A small key icon will appear to the left of the selected field to indicate that it is the primary key field.

Leave the table design on the screen for the next exercise

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's last name
Department	Short Text	Records the employee's department
Started	Date/Time	Records the employee's start date
DateOfBirth	Date/Time	Records the employee's birthdate
Fulltime	Yes/No	Records whether the employee is fulltime
WeeklyHours	Number	Records the weekly hours of employment
Comments	Long Text	Records comments about the employee

1

Field Name	Data Type	Description (Optional)
 EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's last name
Department	Short Text	Records the employee's department
Started	Date/Time	Records the employee's start date
DateOfBirth	Date/Time	Records the employee's birthdate
Fulltime	Yes/No	Records whether the employee is fulltime
WeeklyHours	Number	Records the weekly hours of employment
Comments	Long Text	Records comments about the employee

2

For Your Reference...

To **define** a **primary key** for a **table**:

1. In table **Design View**, click on the field that will be used as the primary key
2. On the **Table Tools: Design** tab, click on **Primary Key** in the **Tools** group

Handy to Know...

- Once you have nominated a field as the primary key, Access will only allow you to enter unique values in that field. Duplicate values or empty fields (known as nulls) will not be accepted. **AutoNumber** field types are ideal for primary keys because they are automatically created and are always unique.

SAVING AND CLOSING A TABLE

Unlike data that is saved as you move away from a field, tables are objects that must be saved if you want to retain any changes that you make to the design. You can either save the table as you

work or save it as you close it. One advantage of this process is that if you want to return to the previous settings, you can simply close the table without saving it.

Try This Yourself:

Before starting this exercise, ensure that the table design from the previous exercise is displayed...

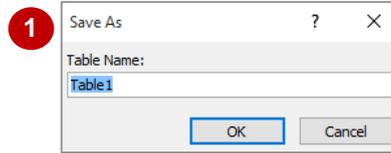
- 1 Click on the **File** tab, then click on **Save** to display the **Save As** dialog box

We selected Save, not Save As, because the Save As options relate to the database as a whole and we are only saving an object within the database at this point. Unlike larger Save As dialog boxes found in other applications, this box is relatively small. This is because the table structure is saved as part of the database file so there is no need to specify a file location for database objects...

- 2 Type **Employees** in **Table Name**, then click on **[OK]**

The table's name will now appear in the Navigation pane...

- 3 Click on **Close** to close the table



Field Name	Data Type
EmpNo	Short Text
FirstName	Short Text
LastName	Short Text
Department	Short Text
Started	Date/Time
DateOfBirth	Date/Time
Fulltime	Yes/No
WeeklyHours	Number
Comments	Long Text

For Your Reference...

To **save** a **table design**:

1. Click on the **File** tab to display the **Backstage**, then click on **Save**
2. Type a **Table Name** and click on **[OK]**

Handy to Know...

- If you try to close a table that has been modified but not saved, Access will prompt you to save the changes and provide a dialog box so that you can choose **[Yes]** or **[No]**.

CREATING THE EXPENSE TYPE TABLE

The relational database in our case study actually requires two lookup tables. The first is used for the *Employees* entity, while the second is used for the *Expense Type* entity. In the

Expense Type lookup table, information is entered about types of transactions which can be then later looked up from the transactions table.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Relational Databases_2.accdb...*

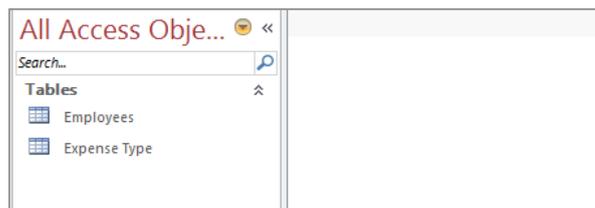
- 1 Click on the **Create** tab, then click on **Table Design** in the **Tables** group to open a new table
- 2 Type the fields as shown (set the **Field Size** for the **Description** field to **30**)
- 3 Click on **ExpTypeNo** in **Field Name** to select the field, then on the **Table Tools: Design** tab, click on **Primary Key** in the **Tools** group to make this field the primary key
- 4 Click on **Save** in the **Quick Access Toolbar (QAT)** to display the **Save As** dialog box
- 5 Type **Expense Type** in **Table Name**, then click on **[OK]**
The new table is listed in the Navigation pane and the object name appears in the tab at the top of the design window...
- 6 Click on **Close** to close the table

Field Name	Data Type	Description (Optional)
ExpTypeNo	AutoNumber	Records the number of the expense type
Description	Short Text	Records the description of the expense
MaximumAllowed	Currency	Records the maximum amount allowed

2

Field Name	Data Type	Description (Optional)
ExpTypeNo	AutoNumber	Records the number of the expense type
Description	Short Text	Records the description of the expense
MaximumAllowed	Currency	Records the maximum amount allowed

3



5

For Your Reference...

To **create** an **expense type table**:

1. On the **Create** tab, click on **Table Design** in the **Tables** group
2. Specify the fields and the primary key, then click on **Save** in the **QAT**

Handy to Know...

- The **AutoNumber** field type provides an automatic and unique number for each transaction. It is ideal for tasks where you need to have a new and unique number for each transaction record that is entered into the table.

CREATING THE TRANSACTIONS TABLE

Once you have created the lookup tables for your relational database, you can turn your attention to creating the transaction table or tables. There is nothing different or special about creating a

transaction table from creating a lookup table – you still need to enter and define the fields, identify a primary key and name the table.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Relational Databases_3.accdb...*

- 1 Click on the **Create** tab, then click on **Table Design** in the **Tables** group to open a new table
 - 2 Type the fields as shown (set the **Field Size** for the **EmpNo** field to 6)
 - 3 Click on **ExpTransNo** in **Field Name** to select the field, then on the **Table Tools: Design** tab, click on **Primary Key** in the **Tools** group to make this field the primary key
 - 4 Click on **Save** in the **QAT** to display the **Save As** dialog box
 - 5 Type **Expense Transactions** in **Table Name**, then click on **[OK]**
- The new table is listed in the Navigation pane and the object name appears in the tab at the top of the design window...
- 6 Close the table

Field Name	Data Type	Description (Optional)
ExpTransNo	AutoNumber	Provides a transaction number
ExpDate	Date/Time	Records the date of the transaction
ExpTypeNo	Number	Records the transaction type number
Amount	Currency	Records the transaction amount
EmpNo	Short Text	Records the employee number

2

Field Name	Data Type	Description (Optional)
ExpTransNo	AutoNumber	Provides a transaction number
ExpDate	Date/Time	Records the date of the transaction
ExpTypeNo	Number	Records the transaction type number
Amount	Currency	Records the transaction amount
EmpNo	Short Text	Records the employee number

3

Field Name	Data Type
ExpTransNo	AutoNumber
ExpDate	Date/Time
ExpTypeNo	Number
Amount	Currency
EmpNo	Short Text

5

For Your Reference...

To **create** a **transaction table**:

1. On the **Create** tab, click on **Table Design** in the **Tables** group
2. Specify the fields and the primary key, then click on **Save**

Handy to Know...

- When one table (e.g. *TableA*) links to an **Autonumber** field in a lookup table (e.g. *TableB*), that field should be defined as **numeric** in *TableA* as this allows you to enter the correct number for the item in the lookup table.

CREATING THE DETAILS TABLE

In our case study database specification we required a table that will hold personal details of the employees in our system. This table is like an addendum to the main **Employees** table – it is

neither a lookup table nor a transaction table. It is generally best to create these details tables last.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Relational Databases_4.accdb...*

- 1 Click on the **Create** tab, then click on **Table Design** in the **Tables** group to create a new table
- 2 Create the fields with **Field Sizes**, as shown
- 3 Click on **EmpNo** in **Field Name** to select the field, then on the **Table Tools: Design** tab, click on **Primary Key** in the **Tools** group to make this field the primary key
- 4 Click on **Save** in the **QAT** to display the **Save As** dialog box
- 5 Type **Personal Details** in **Table Name**, then click on **[OK]**
- 6 Close the table

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
HomePhone	Short Text	Records the employee's home contact number
NextofKin	Short Text	Records the employee's immediate next of kin
Relationship	Short Text	Records the employees relationship to next of kin
Salary	Currency	Records the employee's salary
Comments	Long Text	Records comments regarding details

- 2 **Field Sizes to change:**
- | | |
|---------------------|----|
| <i>EmpNo</i> | 6 |
| <i>HomePhone</i> | 12 |
| <i>NextOfKin</i> | 20 |
| <i>Relationship</i> | 20 |

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
HomePhone	Short Text	Records the employee's home contact number
NextofKin	Short Text	Records the employee's immediate next of kin
Relationship	Short Text	Records the employees relationship to next of kin
Salary	Currency	Records the employee's salary
Comments	Long Text	Records comments regarding details

- 3 *Note: In reality, NextOfKin should probably be two fields (for first and last name), but we have kept it short for the purposes of this case study.*

- 5

For Your Reference...

To **create** a **details table**:

1. Click on the **Create** tab, then click on **Table Design** in the **Tables** group
2. Type the field names, field types and field descriptions, then set a primary key
3. Save and close the table

Handy to Know...

- A phone number field should be defined as a *text* field even though it consists of numbers because telephone numbers are not used in calculations.

CHAPTER 4 MODIFYING TABLE STRUCTURES

InFocus

In theory, good design practices should negate the need to modify existing table structures. However, the real world doesn't always work this way and sometimes it is necessary to make adjustments to a table after it has been created. This occurs often because the end user changes their mind or you think of additional functionality for your database after the design and creation phase.

In this session you will:

- ✓ learn how to open an existing table
- ✓ learn how to add more fields to an existing table
- ✓ gain an understanding of the various field properties
- ✓ learn how to change the size of an existing field
- ✓ learn how to change the name of a field
- ✓ learn how to change the number of decimal places in a field
- ✓ learn how to change the format of dates
- ✓ learn how to index fields in a table
- ✓ learn how to delete fields from a table
- ✓ learn how to make a copy of a table within a database file
- ✓ learn how to delete a table from a database file.

OPENING AN EXISTING TABLE

Tables exist within a database file as database **objects**. When you work with a table you usually work with its data – this is done in a special table view known as **Datasheet** view. If you want to

modify the structure of a table or one of its fields you must work with the table in **Design** view.

Try This Yourself:

Open File

Before starting this exercise you **MUST** open the file *Modifying Tables_1.accdb...*

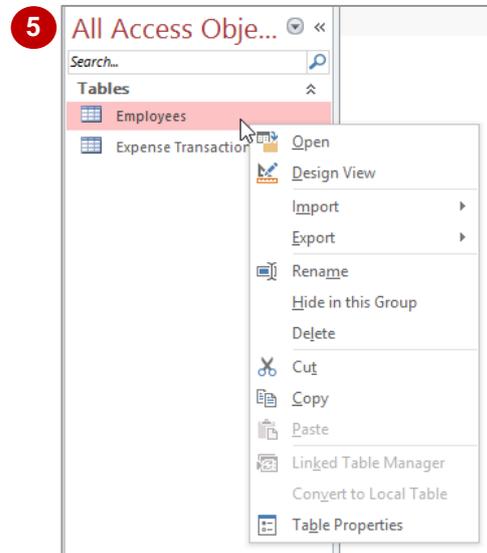
- 1 In the **Navigation** pane, double-click on the **Employees** table to open the table in **Datasheet** view
- 2 On the **Home** tab, click on the top half of **View** in the **Views** group to switch to **Design** mode
Note that the picture on the View tool changes to indicate the view you will be toggled to...
- 3 Click on **View** again to toggle back to **Datasheet** view
- 4 Click on **Close** to the right of the table to close it
- 5 In the **Navigation** pane, right-click on the **Employees** table to display the shortcut menu
- 6 Select **Design View** to display the table in **Design** view
- 7 Close the table

EmpNo	FirstName	LastName	Department	Started	DateOfBirth	FullTime
*						<input type="checkbox"/>

2

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Records the employee's department
Started	Date/Time	Records the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary

3



For Your Reference...

To **open** an **existing table**:

- Double-click on the table in the **Navigation** pane, or
Right-click on the table to see a shortcut menu and select the appropriate command

Handy to Know...

- There is no right or wrong way to open a table. Choose either the **Navigation** pane double-click method or the right-click method as suits.

ADDING FIELDS TO AN EXISTING TABLE

Your database design may have been perfect when you first created it, but after reviews with end-users and managers, and even after some additional reflection or brain waves, it may

become necessary to tweak the field structure. Fortunately, modern database applications like Access allow you to add fields to an existing table with minimal effort.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Tables_1.accdb...*

- 1 In the **Navigation** pane, right-click on the **Employees** table and select **Design View** to display the table in **Design** view
- 2 Click on the **Started** field then, on the **Table Tools: Design** tab, click on **Insert Rows** in the **Tools** group to add a new field row
- 3 Enter the details as shown and change the **Field Size** property to **30**
- 4 Repeat steps 2 and 3 to add a **PhoneNo** field as shown, with a **Field Size** of **15**
- 5 Click on **Save** in the **Quick Access Toolbar** to save the design changes
- 6 Click on **Close** to close the table

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Records the employee's department
Started	Date/Time	Records the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary
Comments	Long Text	Records comments about the employee

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Records the employee's department
Location	Short Text	Records the employees location
Started	Date/Time	Records the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary
Comments	Long Text	Records comments about the employee

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Records the employee's department
PhoneNo	Short Text	Records the employee's phone number
Location	Short Text	Records the employees location
Started	Date/Time	Records the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary
Comments	Long Text	Records comments about the employee

For Your Reference...

To **add another field** to a **table**:

1. Click on the field above which you wish to insert the new field
2. On the **Table Tools: Design** tab, click on **Insert Rows** in the **Tools** group

Handy to Know...

- Some words are reserved for key operations in Access and can't be used for field names. One such word is **Date** – Access will warn you if you attempt to use a reserved word as a field name.

UNDERSTANDING FIELD PROPERTIES

Fields in a table structure have specific characteristics that can be modified to adjust how the field is displayed on the screen, what it is named, and even what can be entered into it.

These characteristics are known as **properties** and appear at the bottom of the **Design** view screen when a field is selected. They can become very powerful tools when used correctly.

Field Properties

The **properties** of fields vary depending upon the data type of the field. For example, you can't change the width of a numeric field, but you can for a text field. The list of properties, therefore, should be watched carefully to see just what is available to you.

The following list shows the more common field properties that appear when you click on a field in **Design** view. If one of the properties below fails to appear when a field is clicked, then that property is not available to the data type of the selected field.

Field Size	Limits the size of Short Text fields. It can be set from 1 to 255. Be careful changing the size of fields if records have already been entered into the table.
New Values	Appears only for AutoNumber fields and allows you to specify the increment value between new numbers.
Format	Allows you to change how numbers and dates are displayed. If you have formatted numbers in Microsoft Excel, then the formats used here will be familiar to you.
Input Mask	Allows you to force data entry into predefined formats, such as phone numbers (e.g. (03) 9851 4000) where brackets, spaces, dashes etc are used for the data.
Caption	Captions are used in forms and reports in lieu of the normal field name. Captions are handy when you have used truncated or abbreviated field names (e.g. <i>EmpNo</i> can be made to appear as <i>Employee Number</i>).
Decimal Places	Allows you to specify the number of decimal places for numeric fields.
Default Value	Allows you to specify a default value that will appear in the field whenever a new record is created. This can be standard text or, in the case of dates, can be an <i>expression</i> (i.e. a formula) that displays the current date.
Validation Rule	Allows you to specify a rule for the data to ensure that data is entered correctly. For example, you can specify a rule that a number has to be greater than 1,000 or that the date must be today or later etc.
Validation Text	Displays a message to the user when data entered into a field with a validation rule doesn't match what the validation rule requires.
Required	Ensures that data is entered into the field. Access will not move off the record until data has been entered into the field.
Allow Zero Length	If nothing is entered into a text field it is deemed to be of <i>null</i> length. If you wish to enter an empty string (" ") you must select this property. Note that this is an advanced concept.
Indexed	Indexes are used to list data in a specific order, speed up searching, and/or restrict the entry of duplicate values. They will be explained in greater detail later.
Smart Tags	<i>Smart Tags</i> are used to obtain specific data for the field. They can be used to obtain stock quotes, exchange rates, etc. Again, they are an advanced concept.
Text Align	Allows you to determine where in a column (left, centre or right) data will appear.

CHANGING FIELD SIZE

By rights you should have determined the appropriate size of a field during the design phase. However, you can alter the size of a field at any time in **Design** view. To change the field

size all you need to do is to specify a new value in the **Field Size** property of the relevant field.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Tables_2.accdb...*

- 1 In the **Navigation** pane, right-click on the **Employees** table and select **Design View** to display the table
- 2 Click on the **Location** field, then double-click on **30** in **Field Size** in the **Field Properties** pane at the bottom of the window
- 3 Type **40** and press to increase the size
- 4 Click on the **PhoneNo** field, then double-click on **15** in **Field Size**
- 5 Type **6** and press
- 6 Save and close the table

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Records the employee's department
PhoneNo	Short Text	Records the employee's phone number
Location	Short Text	Records the employees location
Started	Date/Time	Records the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary
Comments	Long Text	Records comments about the employee

1

2

Field Properties

General Lookup

Field Size

Format

Input Mask

Caption

Default Value

Validation Rule

Validation Text

Required No

Allow Zero Length Yes

Indexed No

Unicode Compression Yes

IME Mode No Control

IME Sentence Mode None

Text Align General

3

Field Properties

General Lookup

Field Size

Format

Input Mask

Caption

Default Value

Validation Rule

Validation Text

Required No

Allow Zero Length Yes

Indexed No

Unicode Compression Yes

IME Mode No Control

IME Sentence Mode None

Text Align General

For Your Reference...

To **change** the **size** of a **field**:

1. In **Design** view, click on the field to select it
2. Double-click on the value for **Field Size** in **Field Properties**
3. Type a new value and press

Handy to Know...

- Generally you won't have too many problems if you increase field size. However, if you decrease field size and there are records in the table you may find you will lose some data.

CHANGING FIELD NAMES

There is much debate regarding the naming of fields. Again, field names are something that should really be sorted out before the structure is created and then they should be rigidly adhered

to. However, if you have to you can easily change the name of a field in **Design** mode.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Tables_3.accdb...*

- 1 In the **Navigation** pane, right-click on the **Employees** table and select **Design View** to display the table
 - 2 Double-click on the **Location** field to place its name in edit mode
 - 3 Type **EmployeeLocation** and press
- This name reflects a traditional approach to field naming, where spaces are excluded and multi-word names have each word beginning with a capital letter...*
- 4 Save and close the table

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Records the employee's department
PhoneNo	Short Text	Records the employee's phone number
Location	Short Text	Records the employees location
Started	Date/Time	Records the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary
Comments	Long Text	Records comments about the employee

2

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Records the employee's department
PhoneNo	Short Text	Records the employee's phone number
EmployeeLocation	Short Text	Records the employees location
Started	Date/Time	Records the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary
Comments	Long Text	Records comments about the employee

3

For Your Reference...

To **change** the **name** of a **field**:

1. In **Design** view, double-click on the field to place it into edit mode
2. Type the new name and press

Handy to Know...

- Rather than changing the column heading, and therefore the field name, you can use the **Caption** property in **Table Design** view. This provides an alternative name for a field when it is displayed in a table.

CHANGING DECIMAL PLACES

Numbers can be used in databases for a variety of reasons. They can record values, sizes, areas, volumes, temperatures and so on. Each field containing a number may require specialised

formatting. While some formats are taken from the data type, such as **Currency**, other numbers may require adjustment of decimal places to correctly represent their value.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Tables_4.accdb...*

- 1 In the **Navigation** pane, right-click on the **Employees** table and select **Design View** to display the table
- 2 Click on the **WeeklyHours** field to display its properties in the **Field Properties** pane
- 3 Click on the value in **Decimal Places**, then click on the drop arrow and select **1**
The drop arrow appears at the very right end of the field in the Field Properties pane...
- 4 Save and close the table

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Records the employee's department
PhoneNo	Short Text	Records the employee's phone number
EmployeeLocation	Short Text	Records the employees location
Started	Date/Time	Records the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary
Comments	Long Text	Records comments about the employee

2

3

General		Lookup	
Field Size	Long Integer		
Format			
Decimal Places	1		
Input Mask			
Caption			
Default Value	0		
Validation Rule			
Validation Text			
Required	No		
Indexed	No		
Text Align	General		

For Your Reference...

To **change decimal places**:

1. In **Design** view, click on the field to format
2. In the **Field Properties** pane, click on the value in **Decimal Places**, click on the drop arrow and select the number of decimal places you require

Handy to Know...

- Some data types, such as **Currency**, have a predefined number of decimal places.

CHANGING DATE FORMATS

Dates may be stored in tables for a variety of reasons. They may include dates of birth, starting dates, expiry dates, or the dates of milestones. Access allows you to display dates in a variety of

formats – depending on the needs of your application. You can choose between **Long Date**, **Medium Date**, **General Date**, **Short Date**, and various time-only formats.

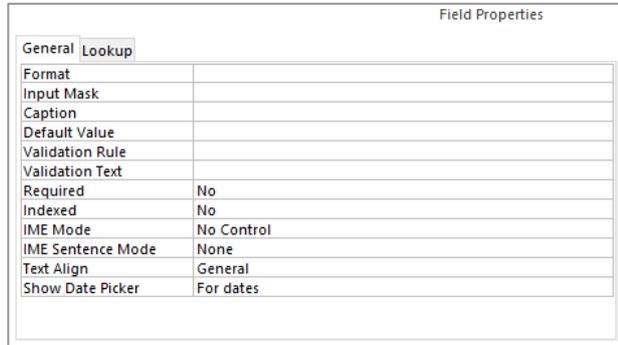
Try This Yourself:

Same File

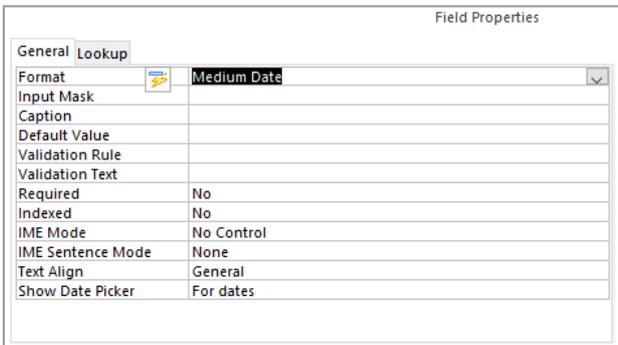
Continue using the previous file with this exercise, or open the file *Modifying Tables_5.accdb...*

- 1 In the **Navigation** pane, right-click on the **Employees** table and select **Design View** to display the table
- 2 Click on the **Started** field to display the **Field Properties**
- 3 In the **Field Properties** pane, click in **Format**, then click on the drop arrow and click on **Medium Date**
- 4 Repeat steps 2 and 3 for the **DateOfBirth** field
- 5 Save and close the table

2



3



For Your Reference...

To **change** the **date format** of a **field**:

1. In **Design** view, click on the field to format
2. Click on **Format** in the **Field Properties** pane, then click on the drop arrow
3. Select the date format

Handy to Know...

- Terms such as **long date** and **medium date** can be rather meaningless to most people. In the **Field Properties** pane, the sample to the right of the list of date formats can be used as a guide to see how date formats will appear.

INDEXING FIELDS

Because indexes help to speed up data retrieval, you can create **indexes** on fields that you expect to sort or search on frequently. Indexes can also be used to prevent duplicate data from being

typed into the table. When you specify that a field should be indexed, you can specify it as **Duplicates OK** or **No Duplicates** depending upon the requirements of the field being indexed.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Tables_6.accdb...*

- 1 Ensure the **Employees** table is displayed in **Design View**
- 2 Click on the **LastName** field to display the **Field Properties** pane
- 3 Click on **Indexed**, then click on the drop arrow
- 4 Select **Yes (Duplicates OK)** if it isn't already selected
- 5 Click on the **PhoneNo** field to display its properties
- 6 Click on **Indexed**, click on the drop arrow and select **Yes (No Duplicates)**
- 7 Save and close the table

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Records the employee's department
PhoneNo	Short Text	Records the employee's phone number
EmployeeLocation	Short Text	Records the employees location
Started	Date/Time	Records the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary
Comments	Long Text	Records comments about the employee

2

3

Field Properties

General Lookup

Field Size	25
Format	
Input Mask	
Caption	
Default Value	
Validation Rule	
Validation Text	
Required	No
Allow Zero Length	Yes
Indexed	No ▼
Unicode Compression	No
IME Mode	Yes (Duplicates OK)
IME Sentence Mode	Yes (No Duplicates)
Text Align	General

For Your Reference...

To **create** an **index** on a **field**:

1. In **Design** view, click on the field to index
2. Click on **Indexed** in the **Field Properties** pane, then click on the drop arrow
3. Select the required indexing option

Handy to Know...

- You can specify an index for a **LastName** field as **Duplicates OK** because there might be more than one employee with the same last name. A **PhoneNo** field, however, should be indexed as **No Duplicates** because every employee should have a different phone number.

DELETING FIELDS FROM A TABLE

Like adding fields to a table, deleting fields really shouldn't be necessary if the designing has gone to plan. However, if you need to delete a field from a table it can be done with relative ease.

You do need to be aware that deleting a field from a table that has records in it will result in data loss. Therefore before deleting fields in an existing table you should make adequate backups.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Tables_7.accdb...*

- 1 In the **Navigation** pane, right-click on the **Employees** table and select **Design View**
- 2 Click on the **EmployeeLocation** field to select it
- 3 On the **Table Tools: Design** tab, click on **Delete Rows** in the **Tools** group
The field is deleted from the table structure...
- 4 Save and close the table

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Records the employee's department
PhoneNo	Short Text	Records the employee's phone number
EmployeeLocation	Short Text	Records the employees location
Started	Date/Time	Records the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary
Comments	Long Text	Records comments about the employee

2

Field Name	Data Type	Description (Optional)
EmpNo	Short Text	Records the employee number
FirstName	Short Text	Records the employee's first name
LastName	Short Text	Records the employee's family name
Department	Short Text	Records the employee's department
PhoneNo	Short Text	Records the employee's phone number
Started	Date/Time	Records the employee's starting date
DateOfBirth	Date/Time	Records the employee's date of birth
FullTime	Yes/No	Records employment status
WeeklyHours	Number	Records the normal weekly hours
Salary	Currency	Records the employee's annual salary
Comments	Long Text	Records comments about the employee

3

For Your Reference...

To **delete** a **field** from a **table**:

1. In **Design** view, click on the field to delete
2. On the **Table Tools: Design** tab, click on **Delete Rows** in the **Tools** group

Handy to Know...

- If you accidentally delete a field that you need, close the table without saving the changes. Deletions only come into effect when the table is saved.

COPYING A TABLE WITHIN A DATABASE

When you make structural changes to a table which can involve data loss, it is a good idea to make a back-up of the table first. You could back up the entire database file using conventional file

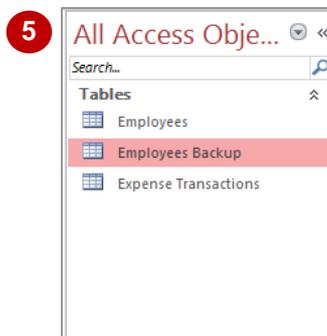
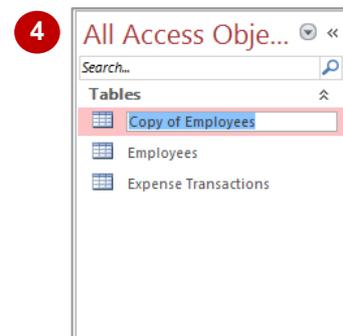
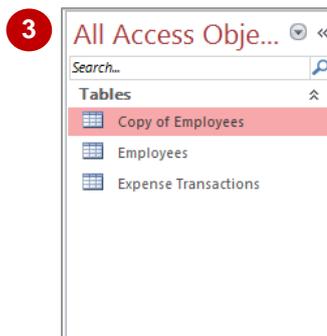
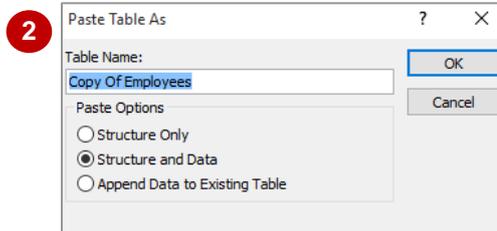
copy operations in File Explorer, however, a quicker and easier way is simply to make a duplicate copy of the table within the database file itself.

Try This Yourself:

Same
File

Continue using the previous file with this exercise, or open the file *Modifying Tables_8.accdb...*

- 1 In the **Navigation** pane, right-click on the **Employees** table and select **Copy** to copy the table to the clipboard
- 2 On the **Home** tab, click on the top half of **Paste** in the **Clipboard** group to display the **Paste Table As** dialog box
This dialog box allows you to determine what to copy and how to name it...
- 3 Ensure **Structure and Data** is selected, then click on **[OK]** to paste a copy of the table
Let's give it a more descriptive name...
- 4 Right-click on the **Copy of Employees** table and select **Rename** to place the name in edit mode
- 5 Type **Employees Backup**, then press **Enter**



For Your Reference...

To **copy** a **table within** a **database file**:

1. In the **Navigation** pane, right-click on the table and select **Copy**
2. On the **Home** tab, click on the top half of **Paste**
3. Complete the dialog box options and click on **[OK]**

Handy to Know...

- Your database file will grow in size if you add copies of your tables. If you have a number of tables in the database file it may be more effective to make a backup copy of the **database file** rather than the tables.

DELETING A TABLE FROM A DATABASE FILE

Tables are simply objects stored within a database file. As such you can create them, modify them, and even delete them if so required. In general terms the only time you should really

need to delete a table is when you no longer require copies of tables made for back-up and data protection purposes.

Try This Yourself:

Same File

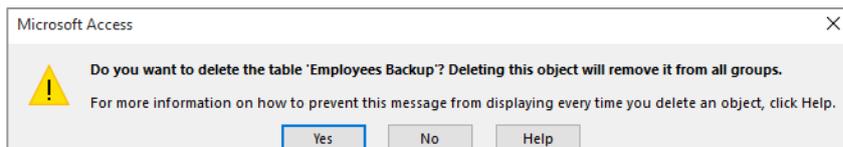
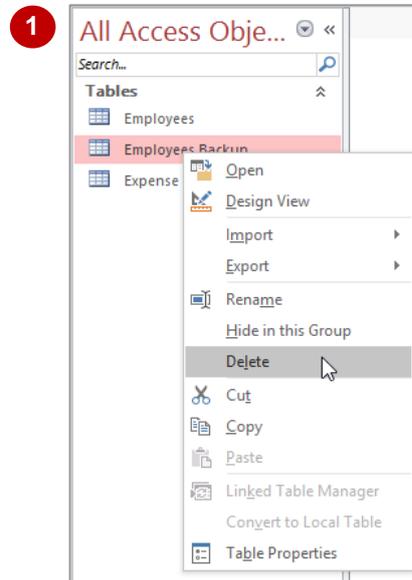
Continue using the previous file with this exercise, or open the file *Modifying Tables_9.accdb...*

- 1 In the **Navigation** pane, right-click on the **Employees Backup** table and select **Delete**

A deletion warning message will display...

- 2 Click on **[Yes]** to delete the table

The deleted table will no longer appear in the **Navigation** pane



2

For Your Reference...

To **delete** a **table** from a **database file**:

1. In the **Navigation** pane, right-click on the table and select **Delete**
2. Click on **[Yes]** to delete the table

Handy to Know...

- Deletion of a table is final – there's no way back. It is a good idea therefore to make a back-up copy of the database file before deleting tables (or indeed, other objects) from the database.

Once tables have been designed and created in Microsoft Access you can commence the process of **relating**, or joining, the tables together.

There are several advantages in relating tables.

- When tables are related, Access allows you to create **multi-table queries** where the data is joined together into one recordset – this recordset can then be used to make the process of creating complex reports and forms much easier.
- When a relationship has been set between two tables, Access provides special **subforms** and **subdatasheets** that make it easy to see related data.
- With related tables you have the ability to enforce **referential integrity** – a set of rules that helps prevent erroneous data from entering the tables.

In this session you will:

- ✓ gain an understanding of setting table relationships
- ✓ gain an understanding of how lookup tables are used for one-to-many relationships
- ✓ learn how to create a lookup that will look up employee details
- ✓ learn how to look up the expense types
- ✓ learn how to view the relationship between the tables in a special relationships diagram
- ✓ gain an understanding of table joins
- ✓ learn how to edit joins between tables to enforce referential integrity
- ✓ learn how to edit the **Expense Type** table join
- ✓ learn how to manually create a join between tables
- ✓ learn how to create a relationship report.

UNDERSTANDING TABLE RELATIONSHIPS

In a relational system the database is normally made up of several tables that store your data. Where multiple tables exist they are linked or joined together, thereby forming a **relationship**

which allows the system to add, update or report on the data contained in the tables as though they were one entity.

Types of Relationships

There are three types of relationships that can exist between tables:

- **one-to-one**, where each record in a table is related to only one other record in another table – this is a rare form of relationship.
- **one-to-many**, where one record in a table is related to many others in another table – this is the most common form of relationship and usually exists where one table is used to look up key values. In this type of relationship, the table with many records is often referred to as the **transaction table**, while the other table is known as the **lookup table** as it is used by the transaction table to lookup some data, usually a name, or a title, or something similar.
- **many-to-many**, where many records in one table can be related to many records in another table – this is extremely rare and very problematic.

Referential Integrity

Referential integrity is probably the most significant benefit of relating tables.

Let's consider two of the tables in our system, **Expense Transactions** and **Employees**. These tables can be related using a **one-to-many** relationship – there can be many expense transaction records for each employee.

Since we need to know which employee raised a claim, it would be imprudent of our database if it let us create a new expense transaction without information about the employee.

If we enforce **referential integrity** in the one-to-many relationship between the **Expense Transactions** and **Employees** table it will not be possible to enter a new expense record without assigning it to an employee record that exists in the **Employees** table.

Referential integrity has some further options. For example if the **EmpNo** number for an employee changed it would be handy if Access would automatically update the number in all of the related tables – this can be done by activating **Cascade Update**.

Similarly, if we delete an employee from the **Employees** table, we may wish to delete all of the expense transaction records for that employee from the system. This can be done by activating the **Cascade Delete** option – however, you should treat this with care and really examine the needs of your business before activating **Cascade Delete**. It is possible that you need to retain the expense records for a certain period of time, even if the employee has left.

Relationships as Data Protection

All of this theory is a lot of information to process. Look carefully at your data and you'll notice that these are only rules to protect your data and ensure that it remains updated and consistent. They also ensure that you don't accidentally delete records that you need to keep.

UNDERSTANDING LOOKUP RELATIONSHIPS

The most common reason for relating tables in a database file is for **lookup** purposes. **Lookups** are used when the details from single entity tables are required to be displayed in transaction

tables, usually to assist in data entry or reporting. In our case study the expenses table uses the employee number, but to assist in data entry we need to display (i.e. **lookup**) the employee name.

One-To-Many Relationships

Lookup databases have a **one-to-many** relationship.

In this type of relationship the lookup table contains unique records and forms the *one* side in the **one-to-many** relationship. The transaction table forms the *many* side in the **one-to-many** relationship because there may be many transactions for each record or entity from the lookup table.

Lookups are done from the transaction table into the lookup table.

In our case study we have two lookup requirements from the **Expense Transactions** table: one for employees and the other for expense types.

With employees, the **Employees** table is the lookup table – there is only one record here for each employee. The **Expense Transactions** table is the transaction table – there may be many records for each of the employees in the **Expense Transactions** table.

With expense types, the **Expense Types** table is the lookup table – there is only one record here for each type of expense that can be incurred. The **Expense Transactions** table is again the transaction table – there may be many records for each of the types in the **Expense Type** table.

Table relationships are made possible by the use of the **primary key** in the lookup table. The role of the primary key is to keep records in order and to facilitate a fast search mechanism so that lookups appear almost instantaneously. The primary key is referenced from the transaction table using a **lookup field**, often with a similar name to that of the primary key in the lookup table. The value in the lookup field is used to search the primary key field in the lookup table and once found, data from other fields of the found record can be used.

ExpTransNo	ExpDate	Expense Type	Amount	Employee	Click to Add
1	21/01/2008	Accommodatic	\$132.00	Dawson	
2	2/01/2008	Accommodatic	\$145.00	Kerr	
3	2/01/2008	Gifts	\$27.06	Ali	
4	2/01/2008	Postage	\$3.59	Ali	Syed
5	2/01/2008	Postage	\$16.99	Amin	Sadequal
6	2/01/2008	Accommodatic	\$154.50	Amirudin	Nazreen
7	2/01/2008	Accommodatic	\$125.50	Andric	Goja
8	2/01/2008	Other Expense	\$48.39	Andronikos	Pavlos
9	2/01/2008	Coffee and Tea	\$18.26	Ariff	Mohamed
10	2/01/2008	Coffee and Tea	\$7.72	Avram	Katherine
11	2/01/2008	Accommodatic	\$123.44	Awad	Milena
12	2/01/2008	Accommodatic	\$237.66	Azzola	Lisa
13	2/01/2008	Meals	\$52.86	Badea	Leticia
14	16/01/2008	Accommodatic	\$155.60	Baker-Smith	Susan
15	2/02/2008	Accommodatic	\$254.42	Bakir	Cain
16	2/02/2008	Accommodatic	\$281.36	Beaman	Ian
17	2/02/2008	Gifts	\$49.23	Bennet	Amanda
18	2/02/2008	Postage	\$5.73	Berninghauser	Frederick
19	4/02/2008	Postage	\$23.27	Brown	Victor
				Morris	

For example, with employees in our case study, the primary key of the **Employees** table is **EmpNo** and is used in that table to uniquely identify employees. For the relationships to work with **Expense Transactions**, there is a field called **Employee**. The value in the **Employee** field in the **Expense Transactions** table is used to look up the primary key field **EmpNo** in **Employees** for the correct employee. Once a match is made other details such as first name, last name etc. from **Employees** can be used for reports and displays such as drop-lists as shown above.

LOOKING UP THE EMPLOYEES TABLE

Once you have created a transaction and a lookup table, you can connect the two tables to form a relationship between them. One of the easiest ways to do this is to use the **Lookup**

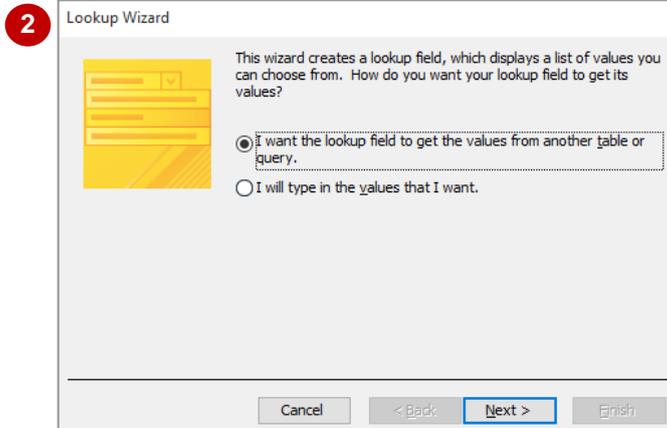
Wizard to create a **Lookup Column** in the transaction table. The wizard enables you to nominate the fields from the lookup table that you want displayed with your transaction data.

Try This Yourself:

Open File

Before starting this exercise you **MUST** open the file *Creating Relationships_1.accdb...*

- 1 Open the table **Expense Transactions** in **Design View**
- 2 Click on **Short Text** in **Data Type** for **EmpNo**, then click on the drop arrow and select **Lookup Wizard** to start the **Lookup Wizard**
- 3 Work through the wizard, making the selections as shown
- 4 Click on **[Finish]** to complete the wizard, then click on **[Yes]** to save the changes
Notice the EmpNo field is now called Employee...
- 5 Click on the **Employee** field, then click on the **Lookup** tab in the **Field Properties** pane to see the settings that have been created
- 6 Close the table



3	Screen	Task	Then
	1	Select I want the lookup field to get the values from another table or query	[Next]
	2	Select Table:Employees	[Next]
	3	Double-click on LastName then on FirstName in Available fields	[Next]
	4	Select LastName for the first sort column, then FirstName for the second sort column, ensuring that both are set to Ascending order	[Next]
	5	Ensure that Hide key column appears with a tick	[Next]
	6	Type Employee as the label for the lookup field	

4	Field Name	Data Type	Description (Optional)
	ExpTransNo	AutoNumber	Provides a transaction number
	ExpDate	Date/Time	Records the date of the transaction
	ExpTypeNo	Number	Records the transaction type number
	Amount	Currency	Records the transaction amount
	Employee	Short Text	Records the employee number

For Your Reference...

To **connect** to a **lookup table**:

1. Open the transaction table in **Design View** and click in the first blank row
2. Click on **Modify Lookups** in the **Tools** group
3. Follow the steps of the wizard and specify the relevant field details

Handy to Know...

- Relationships between tables can be done through the **Lookup Wizard** or you can create them manually in the **Relationships** pane.

LOOKING UP THE EXPENSE TYPES TABLE

The second example of a lookup required in our case study database is one that looks up expense type details. The looking up is done from the transactions table and uses the expense

type number as a lookup key. The wizard provides the quickest and easiest way of creating the lookup.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Relationships_2.accdb...*

- 1 Open the table **Expense Transactions** in **Design View**
- 2 Click on **Number** in **Data Type** for **ExpTypeNo**, then click on the drop arrow and select **Lookup Wizard** to start the **Lookup Wizard**
- 3 Work through the wizard, making the selections as shown
- 4 Click on **[Finish]** to complete the wizard, then click on **[Yes]** to save the changes

Notice the ExpTypeNo field has been changed to Expense Type...
- 5 Click on the **Expense Type** field, then click on the **Lookup** tab in the **Field Properties** pane to see the settings that have been created
- 6 Close the table

3	Screen	Task	Then
	1	Select <i>I want the lookup field to get the values from another table or query</i>	[Next]
	2	Select Table: Expense Type	[Next]
	3	Double-click on Description in Available fields	[Next]
	4	Ignore the sort order settings	[Next]
	5	Ensure that Hide key column appears ticked	[Next]
	6	Type Expense Type as the label for the lookup field	

Field Name	Data Type	Description (Optional)
ExpTransNo	AutoNumber	Provides a transaction number
ExpDate	Date/Time	Records the date of the transaction
Expense Type	Number	Records the transaction type number
Amount	Currency	Records the transaction amount
Employee	Short Text	Records the employee number

Field Properties	
General	Lookup
Display Control	Combo Box
Row Source Type	Table/Query
Row Source	SELECT [Expense Type].[ExpTypeNo], [Expense Type].[Description]
Bound Column	1
Column Count	2
Column Heads	No
Column Widths	0cm;2.54cm
List Rows	16
List Width	2.54cm
Limit To List	Yes
Allow Multiple Values	No
Allow Value List Edits	No
List Items: Edit Form	
Show Only Row Source	No

A field name can be up to 64 characters long, including spaces. Press F1 for help on field names.

For Your Reference...

To **connect** to a **lookup table**:

1. Open the transaction table in **Design View**, then click in a blank row
2. Change the relevant field to a **Lookup** field
3. Follow the steps of the wizard and specify the relevant field details

Handy to Know...

- The lookup operation is performed in Access using **SQL** programming code. The code that does this is in the **Row Source** field of the **Lookup** tab in **Field Properties**. It's worth having a look at this code to see how it is written.

VIEWING TABLE RELATIONSHIPS

Table relationships can be viewed and edited using the **Relationships** window. This window gives you a better understanding of how tables are related or joined together. It also lists all of

the fields in each table so that you can locate content easily. The **Relationships** window can be used to document part of your database design by printing it as a report.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Relationships_3.accdb...*

- 1 Click on the **Database Tools** tab, then click on **Relationships** in the **Relationships** group

The existing relationships between tables will be shown.

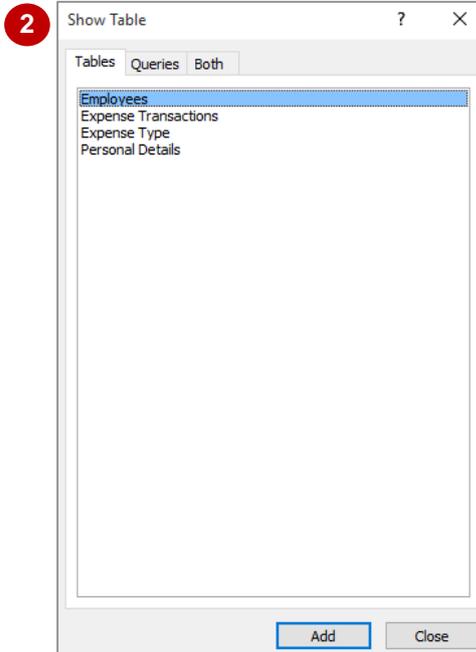
- 2 On the **Relationship Tools: Design** tab, click on **Show Table** in the **Relationships** group to display the **Show Table** dialog box

- 3 Double-click on **Personal Details** to add the table, then click on **[Close]**

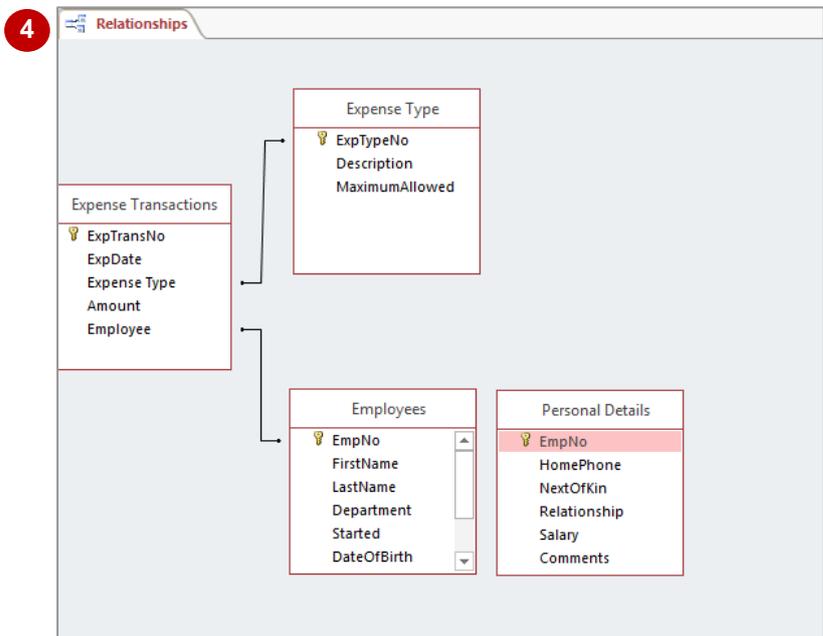
The lines that appear are join lines showing the table relationships...

- 4 Use the mouse to drag the tables into position as shown

- 5 Save and close the **Relationships** window



IMPORTANT: Additional tables may display such as the *MSysNavPaneGroups* table. These are hidden system objects that keep track of the way database objects are grouped. To continue with the exercise, hide them by right-clicking on the *Navigation pane*, selecting *Navigation Options*, then clicking on *Show Hidden Objects* and *Show System Objects* so they both appear unticked. If this doesn't work, right-click on the table and select *Hide*.



For Your Reference...

To **view table relationships**:

1. Click on the **Database Tools** tab
2. Click on **Relationships** in the **Relationships** group

Handy to Know...

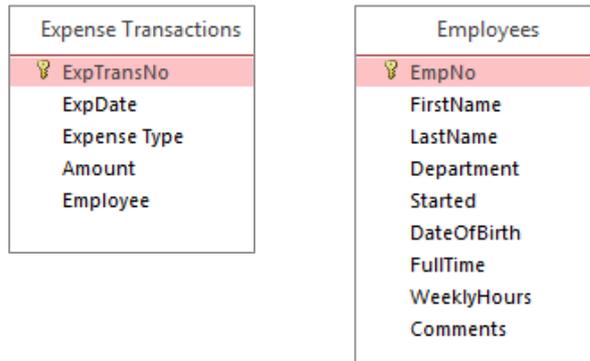
- If you need a hard copy of the table relationships, click on the **Relationship Tools: Design** tab and click on **Relationship Report** in the **Tools** group. Click on the **File** tab to display the **Backstage**, select **Print** and click on **Quick Print** to print the report.

UNDERSTANDING TABLE JOINS

While the actual process of joining tables in a relational database in Microsoft Access is easy, a reasonable degree of thought should be devoted before making the joins. In our case study we

have four tables which will need to be joined. A little understanding of what **types of joins** we need and why we are using them is useful before proceeding much further.

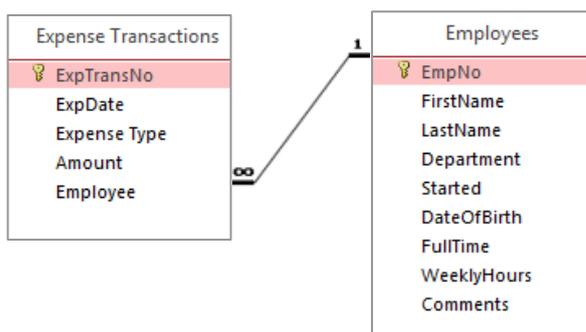
While the **Relationships** window is open, the quickest way to create a relationship is to drag the mouse from one field in a table to another field in a different table. The process is very simple and easy to do. For example, in the design of our *Expenses System* we have a transaction table that contains expense transactions (**Expense Transactions**) and another that contains details about our employees (**Employees**).



This structure ensures that we don't re-enter employee details every time an employee has an expense to claim for – instead, we use the **EmpNo** number as a code to look up the employee details in the **Employees** table.

Let's stop and consider what we are doing. With this relationship we are telling Microsoft Access that there will be **one** employee record in **Employees** and **many** in **Expense Transactions**. The two tables are related by the common field of **EmpNo**. In the **Employees** table the **EmpNo** field is the **primary key** – it is unique, there can only be one **EmpNo** number for each employee (remember, it appears with a key icon because it is the primary key).

From a design perspective we are creating a one-to-many relationship. To do this, the link field in the **one** table must be the **primary key**. The link field in the **many** table becomes known as the **foreign key**.



*When a join is created in Microsoft Access, a line appears between the related fields in the two tables. The symbols on the line tell you what type of join it is. The infinity symbol indicates that the Expense Transactions table is a **many** table, while the one symbol indicates that the Employees table is a **one** table.*

We have several other issues to consider here.

Should we enforce **referential integrity**? If we want to stop an expense record being created that is not linked to an existing employee, then the answer is yes.

If we opt for referential integrity, do we want all of the **EmpNo** numbers in expenses to update when we change the **EmpNo** in **Employees**? If the answer is yes we must activate **Cascade Update**.

Again, if we want all of the expenses for an employee to be deleted when we delete the employee from the **Employees** table, we must activate **Cascade Delete**.

Naturally, these questions will need to be asked for all of the joins that we create between all of the tables in the system.

EDITING THE EMPLOYEE TABLE JOIN

Joins created using the Lookup Wizard use the common join settings. They do not however have any referential integrity settings in place. If you want to establish integrity between the tables you

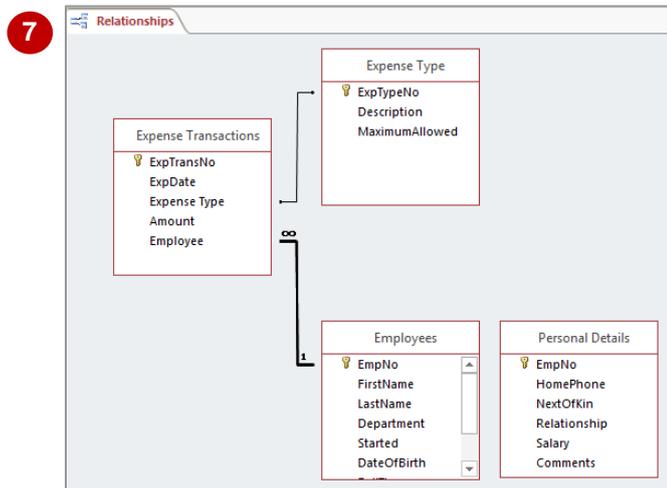
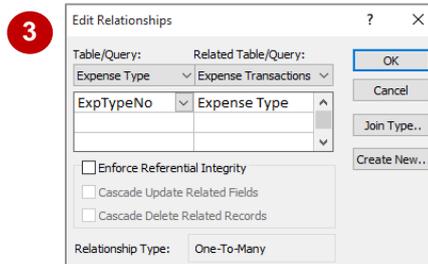
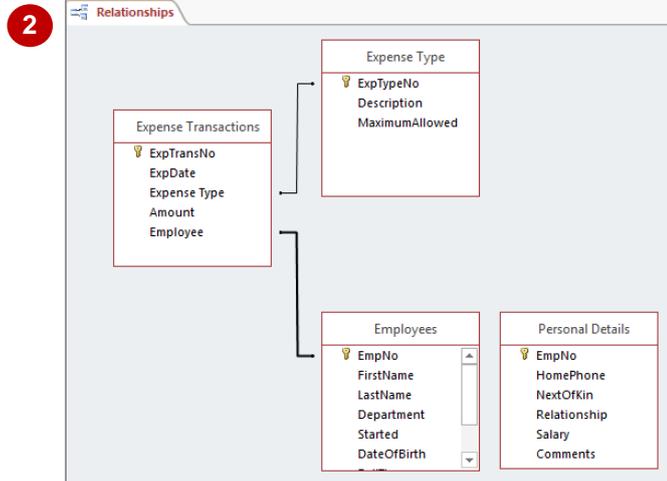
will need to edit the join in the **Relationships** window. In our case study we want to ensure that updates are reflected from the **Employees** table.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Relationships_4.accdb...*

- 1 On the **Database Tools** tab, click on **Relationships** in the **Relationships** group
- 2 Click on the join line between the **Expense Transactions** and **Employees** tables to select it – it should appear slightly thicker
- 3 On the **Relationship Tools: Design** tab, click on **Edit Relationships** in the **Tools** group to display the **Edit Relationships** dialog box
- 4 Click on **Enforce Referential Integrity** until it appears with a tick
- 5 Click on **Cascade Update Related Fields** until it appears with a tick
- 6 Ensure **Cascade Delete Related Fields** appears without a tick
- 7 Click on **[OK]** to apply the changes
The symbols on the join indicate a one-to-many relationship...
- 8 Close the **Relationships** window



For Your Reference...

To **edit relationship joins**:

1. Click on the join line to select it
2. On the **Relationship Tools: Design** tab, click on **Edit Relationships** in the **Tools** group
3. Make the changes as appropriate

Handy to Know...

- In a one-to-many relationship where referential integrity is enforced, you cannot enter a record into the *many* (transaction) table unless the related (linked) field has been entered into the *one* (lookup) table as a record. The integrity of the relationship is thereby enforced (watched).

EDITING THE EXPENSE TYPE TABLE JOIN

We should also set the referential integrity options for the join between the **Expense Transactions** and **Expense Type** tables. Since these tables form a one-to-many type of

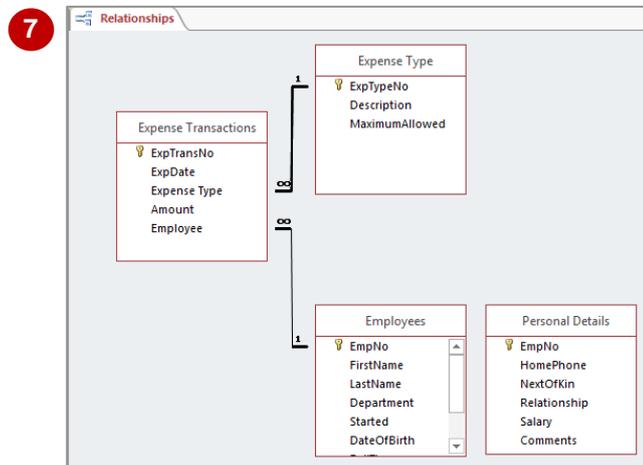
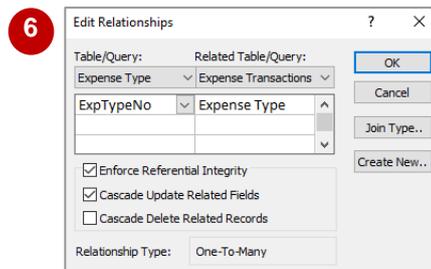
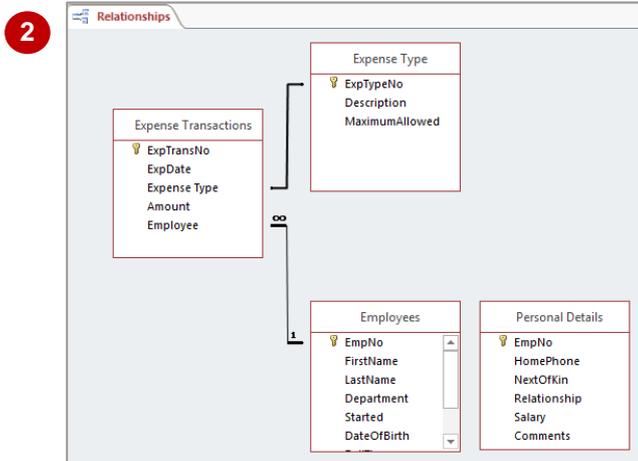
relationship, referential integrity will ensure that we can't enter a record in the transactions table without a relevant entity in the lookup table.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Relationships_5.accdb...*

- 1 On the **Database Tools** tab, click on **All Relationships** in the **Relationships** group
- 2 Click on the join line between the **Expense Transactions** and **Expense Type** tables to select it – it should appear slightly thicker
- 3 On the **Relationship Tools: Design** tab, click on **Edit Relationships** in the **Tools** group to display the **Edit Relationships** dialog box
- 4 Click on **Enforce Referential Integrity** until it appears with a tick
- 5 Click on **Cascade Update Related Fields** until it appears with a tick
- 6 Ensure **Cascade Delete Related fields** appears without a tick
- 7 Click on **[OK]** to apply the changes
- 8 Close the **Relationships** window



For Your Reference...

To **edit relationship joins**:

1. Click on the join line to select it
2. On the **Relationship Tools: Design** tab, click on **Edit Relationships** in the **Tools** group
3. Make the changes as appropriate

Handy to Know...

- If you want linked transactions to be deleted when a record is deleted in a lookup table, tick **Cascade Delete** in the **Edit Relationships** dialog box – but do not tick it if you want to keep the transactions (e.g. for accounting purposes).

CREATING A NEW JOIN

Not all tables are joined using the Lookup Wizard. Indeed, once you are proficient with the way joins work, you'll probably find yourself manually creating your own joins. In our case

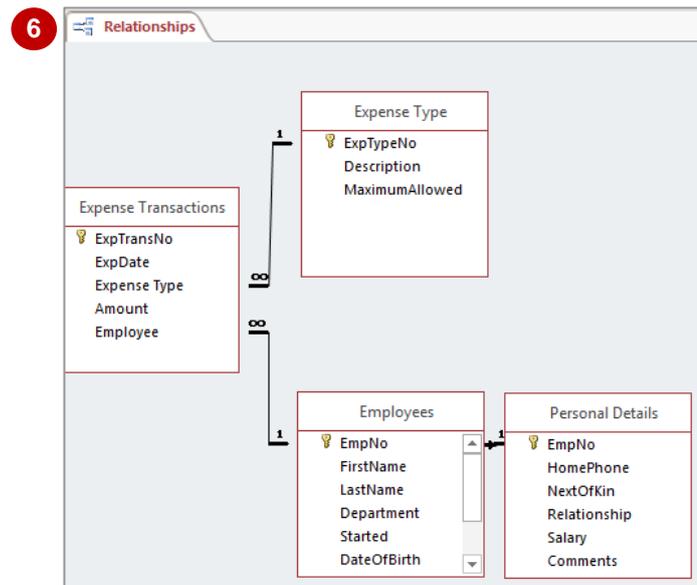
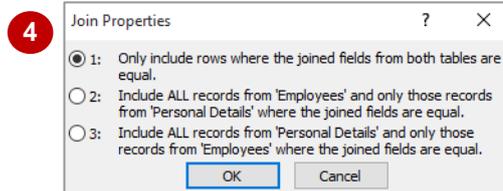
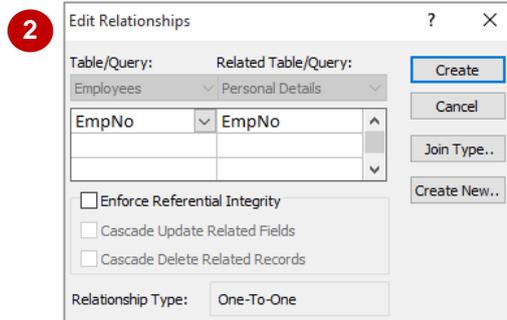
study we need to establish a join between the **Employees** table and the **Employee Details** table – this will be a one-to-one join type.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Relationships_6.accdb...*

- 1 On the **Database Tools** tab, click on **Relationships** in the **Relationships** group
- 2 Click on **EmpNo** in the **Employees** table, then drag and drop the field on **EmpNo** in the **Personal Details** table
This will open the Edit Relationships dialog box...
- 3 Ensure that the three referential integrity boxes appear with a tick
- 4 Click on **[Join Type]** to see the **Join Properties** dialog box
- 5 Click on option **2**: to create a **left outer** join where **ALL** employee records will be displayed
Employees is the dominant table and we always want to see the records here...
- 6 Click on **[OK]** to return to the **Edit Relationships** dialog box, then click on **[Create]** to create the join
You might need to move the tables slightly to see the join...
- 7 Save and close the **Relationships** window



For Your Reference...

To **create** a **new join between tables**:

1. Drag one joining field onto the other
2. Choose the appropriate degree of referential integrity required
3. Click on **[Join Type]** and specify the desired type of join

Handy to Know...

- When creating a new join manually, the default join type, where only rows that appear in both tables are included, is known as an **inner** join. If you want to see all records in the main table, irrespective of whether there is a related record in the linked table, create a **left outer** join.

CREATING A RELATIONSHIP REPORT

Once all of your table relationships are created and have been refined the way you want, it is a good idea to document these relationships. The **Relationships** window allows you to produce a

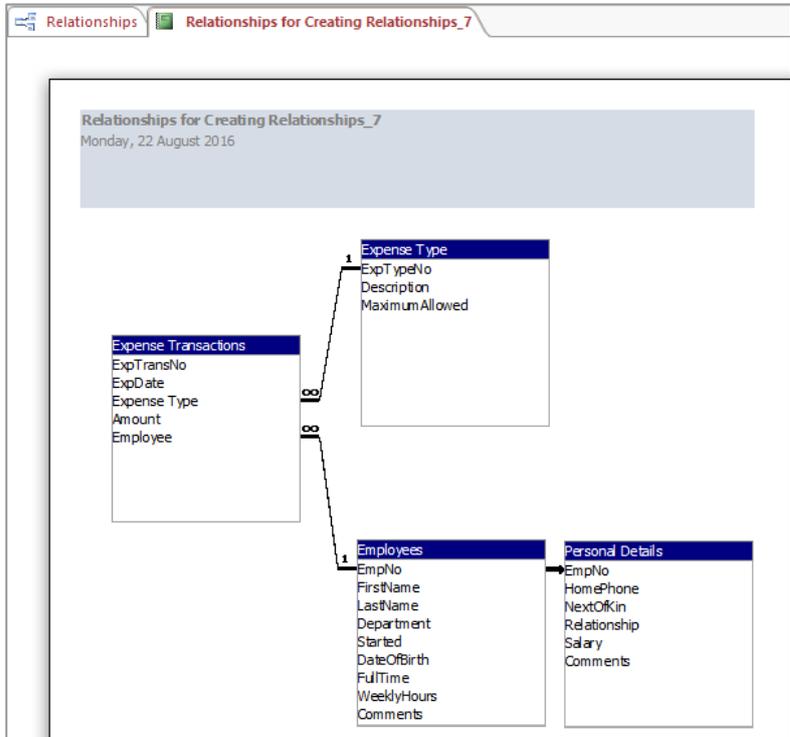
Relationship Report which is, in reality, a print preview version of the relationships window. For documentation purposes, you can then print this to either paper or a file.

Try This Yourself:

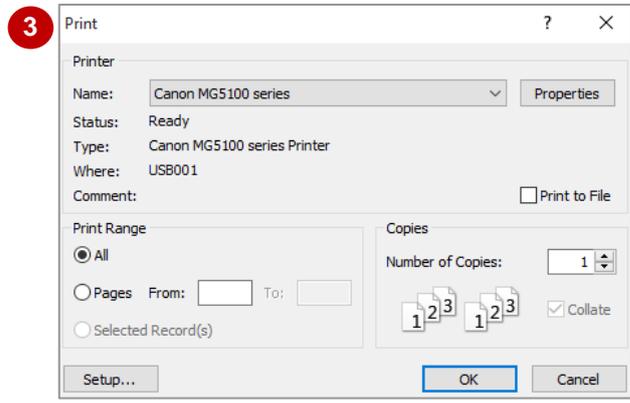
Same File

Continue using the previous file with this exercise, or open the file *Creating Relationships_7.accdb...*

- 1 On the **Database Tools** tab, click on **Relationships** in the **Relationships** group
- 2 On the **Relationship Tools: Design** tab, click on **Relationship Report** in the **Tools** group to create a report of the relationships
The report appears as another tab in the database window...
- 3 On the **Print Preview** tab, click on **Print** in the **Print** group to display the **Print** dialog box
- 4 Ensure that your printer is online and ready to print, then click on **[OK]**
- 5 Close the **Relationships for...** window without saving it
- 6 Close the **Relationships** window



2



3

For Your Reference...

To **produce** a **relationship report**:

1. Click on the **Database Tools** tab and click on **Relationships** in the **Relationships** group
2. On the **Relationship Tools: Design** tab, click on **Relationship Report** in the **Tools** group

Handy to Know...

- A relationship report is actually created as an Access form. Even though you can save the report, there is little point in doing so unless you want to keep the current version of the relationships for your records. It takes so little time to create a new report, it's just not worth the bother.

NOTES:



CHAPTER 6

ADDING RECORDS TO A TABLE

InFocus

Once tables have been created in a database file, the next step is to add the data to the tables. Each line that is added to a table is known as a **record**. Each record is a single instance of a particular entity, such as a person, an event or an object.

In this session you will:

- ✓ learn how to type records directly into a table
- ✓ learn how to add records to a table using a default form
- ✓ learn how to save a default form layout for reuse
- ✓ learn how to enter records into a table using an existing form
- ✓ gain an understanding of adding additional records
- ✓ learn how to import records into a table from an **Excel** workbook.

TYPING RECORDS IN A TABLE

The easiest way to enter data is directly into an open table. When you open a table you are shown the **Datasheet** view by default. Access always displays the records in the table plus one

additional row at the bottom of the table. This is the **new record** row where a new record can be entered. The total number of records, shown in the status bar, will increase as you add data.

Try This Yourself:

Open File

Before starting this exercise you **MUST** open the file Adding Records_1.accdb...

- 1 In the **Navigation** pane, double-click on the **Employees** table to open it

The table will appear empty because no records have yet been entered. To enter a record, you type the data into each field and press **Enter** to move between the fields...

- 2 Type the data as shown – use the mouse to click the check box for **FullTime** and press **Enter** to move through the fields

- 3 Check that your data matches that shown

- 4 Close the table

EmpNo	FirstName	LastName	Department	PhoneNo	Started	DateOfBirth
*						

1

2

	Record 1	Record 2	Record 3
EmpNo:	101	102	103
FirstName:	Julianne	Harry	Angel
LastName:	Kerr	Jones	Harrington
Department:	Executive	Executive	Executive
PhoneNo:	60001	60002	60003
Started:	28/6/2010	19/7/2010	19/7/2010
DateOfBirth:	5/2/1960	13/4/1965	19/8/1958
FullTime:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
WeeklyHours	40	40	40
Salary:	\$250,000	\$140,000	\$145,000
Comments:			

EmpNo	FirstName	LastName	Department	PhoneNo	Started	DateOfBirth
101	Julianne	Kerr	Executive	60001	28-Jun-10	05-Feb-60
102	Harry	Jones	Executive	60002	19-Jul-10	13-Apr-65
103	Angel	Harrington	Executive	60003	19-Jul-10	19-Aug-58
*						

3

For Your Reference...

To **add** a **record** to a **table**:

1. Double-click on the table in the **Navigation** pane to open it in **Datasheet** view
2. Type the data into each field, pressing **Enter** to move across fields

Handy to Know...

- When entering data, long entries will appear truncated on the screen, but the complete data is stored in the field.
- Records are saved automatically when you move to the next field or record.
- To correct an error when adding a record, simply type over it.

ADDING RECORDS USING A FORM

Records can also be added to a table using a form. A form normally displays the details for one record on the screen at a time. It is like a card in a manual card file system. In Access you can

create quite sophisticated forms for data entry and data display. You can also create a simple form for immediate data entry purposes using the **Form** command.

Try This Yourself:

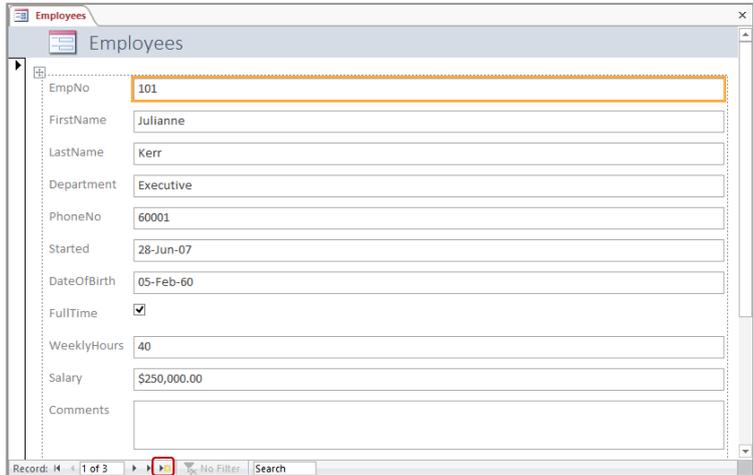
Same File

Continue using the previous file with this exercise, or open the file *Adding Records_2.accdb...*

- 1 In the **Navigation** pane, click on the **Employees** table to ensure it is selected
- 2 Click on the **Create** tab, then click on **Form** in the **Forms** group to display the first record of data in a form layout

The form layout is like a structure. We need to be in **Form** view to work with the data...

- 3 On the **Form Layout Tools: Design** tab, click on the top half of **View** in the **Views** group to display the form in **Form** view
- 4 Click on **New (blank) record** in the bar at the very bottom of the form to display a new record – a yellow dotted square appears on this tool
- 5 Type the three records, as shown, pressing **Tab** to move down the fields
- 6 Close the form – since the form is a new object you will be asked if you wish to save it
- 7 Click on **[No]**



3 The **New (blank) record** tool

	Record 4	Record 5	Record 6
EmpNo:	104	105	106
FirstName:	Peter	Mark	Maureen
LastName:	Dawson	Jones	Grayson
Department:	Executive	Executive	Administration
PhoneNo:	60004	60005	61021
Started:	19/7/2010	19/7/2010	6/9/2010
DateOfBirth:	12/7/1954	6/8/1963	23/10/1974
FullTime:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
WeeklyHours	40	40	40
Salary:	\$140,000	\$132,000	\$85,000
Comments:			

5

For Your Reference...

To **add records** using a **default form**:

1. Click on the table in the **Navigation** pane
2. Click on the **Create** tab, then click on **Form** in the **Forms** group
3. Click on the **Home** tab and click on **View** in the **Views** group

Handy to Know...

- When you click on **Form** on the **Create** tab, a default form is built from the table **design** and appears in **Layout** view, which allows you to change the layout of the form. You switch to **Form** view to work with the data, much the same as you switch to **Datasheet** view to work with data in a table.

SAVING A FORM LAYOUT FOR REUSE

Default Forms are quick and easy forms created by Access to facilitate either data viewing or data entry. You can, if you wish, save default forms for future use. When you save a default form, a new

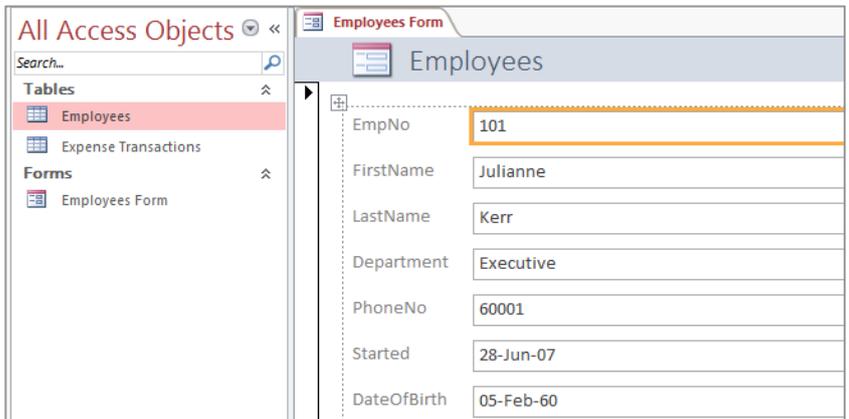
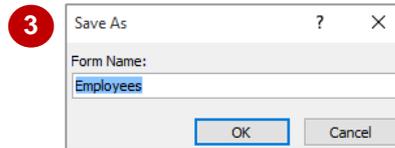
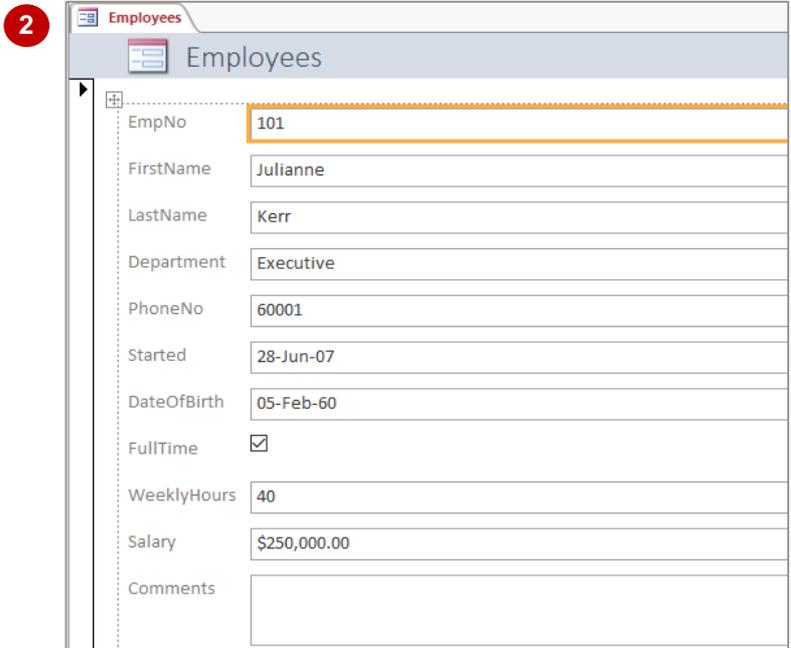
form object is created which will appear in the **Navigation** pane. It can then be opened any time it is required.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Adding Records_3.accdb...*

- 1 In the **Navigation** pane, click on the **Employees** table to select it
- 2 Click on the **Create** tab, then click on **Form** in the **Forms** group to display the first record of data in a form layout
We won't make any changes here (even though we could)...
- 3 Click on the **File** tab to display the **Backstage**, then click on **Save** to display the **Save As** dialog box
- 4 Type **Employees Form** in **Form Name**, then click on **[OK]**
The form will now appear in the Navigation pane, under the Forms header...
- 5 Close the form



4

For Your Reference...

To **save** a **default form** for **reuse**:

1. Click on the table to select it, then click on the **Create** tab and click on **Form** in the **Forms** group
2. Click on the **File** tab and click on **Save**
3. Type a **Form Name** and click on **[OK]**

Handy to Know...

- Access uses headers (e.g. *Tables, Forms, Reports* etc.) in the **Navigation** pane to group the different objects, making it easier to differentiate and locate items quickly. This is particularly useful if two or more objects share the same name (e.g. **Employees**).

ADDING RECORDS USING AN EXISTING FORM

Forms appear in the **Navigation pane** and are used to display data and make changes to data, including adding new records. It doesn't matter whether your form was created from a default

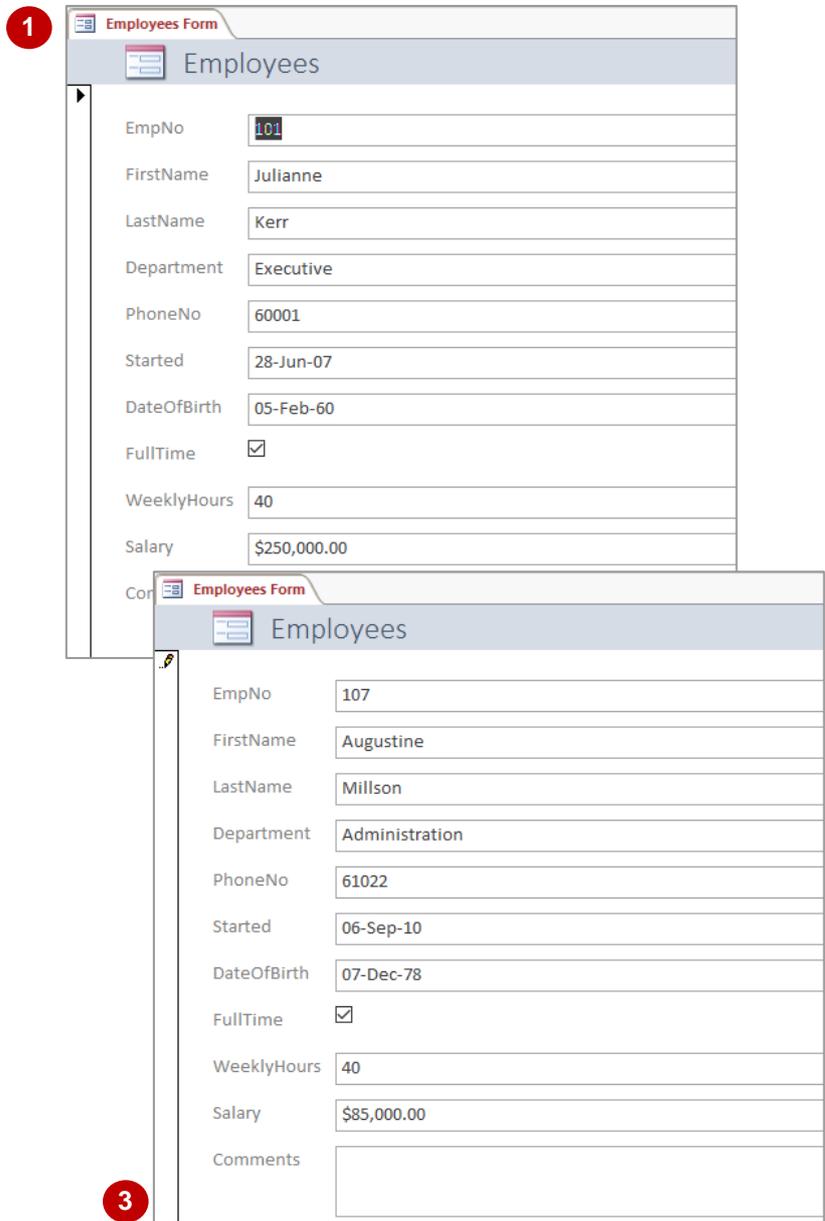
form or from scratch, you use it in exactly the same way. To add a record using an existing form you open it, click on the new record button and start typing.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Adding Records_4.accdb...*

- 1 In the **Navigation pane**, double-click on **Employees Form** to open the form in **Form view**
- 2 Click on **New (blank) record** in the bar at the very bottom of the form to display a new record
- 3 Complete the new record as shown
- 4 Click on **Close** to close the form



For Your Reference...

To **add records using an existing form**:

1. Double-click on the form in the **Navigation pane**
2. Click on **New (blank) record** and enter the desired data

Handy to Know...

- The navigation buttons at the bottom of the form can be used to display different records in the table.

ADDING ADDITIONAL RECORDS

Records can be added to a table directly by typing in the new record line of the opened table, or by using a form. The choice is entirely yours. In this section you'll have the opportunity to add

more records using whichever technique you prefer, and to practise moving between the fields and records in a ***datasheet*** or ***form***.

Sub Heading

Ensure you have completed the previous exercises and continue using the previous file, then open either the ***Employees*** table or the ***Employees Form*** and enter the data as shown below. It doesn't matter in which order you type records. When a table is opened the records are always sorted according to the primary key. You can select or tick a checkbox using the keyboard rather than the mouse. Simply press to move to the checkbox then press to toggle on and off

	Record 8	Record 9	Record 10	Record 11	Record 12	Record 13
EmpNo:	108	109	110	111	112	113
FirstName:	Amanda	George	Neville	Petra	Vivienne	Jerry
LastName:	Bennet	Samuelson	Smith	Henricks	Clark	Hancock
Department:	Administration	Administration	Administration	Administration	Administration	Administration
PhoneNo:	61023	61024	61025	61026	61027	61028
Started:	6/9/2010	6/9/2010	6/9/2010	6/9/2010	6/9/2010	6/9/2010
DateOfBirth:	4/5/1959	1/12/1987	7/8/1954	3/4/1981	22/11/1961	9/10/1975
FullTime:	<input checked="" type="checkbox"/>					
WeeklyHours	40	40	40	40	40	40
Salary:	\$87,000	\$98,000	\$78,000	\$82,000	\$80,000	\$79,000
Comments:			Studying MBA			

IMPORTING FROM MICROSOFT EXCEL

Access can import data from a wide variety of applications, including Microsoft Excel. The key to importing successfully, is ensuring that the structure that you import from has the same field

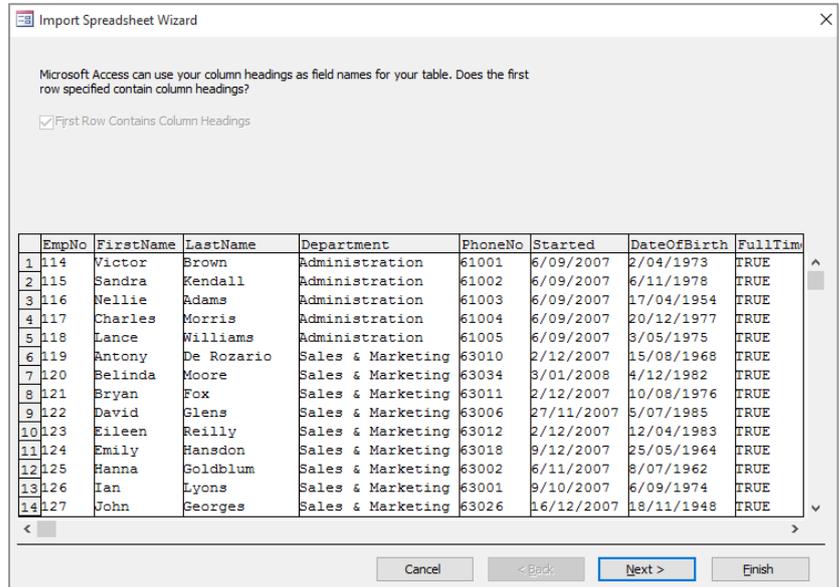
names as the table into which the data is to be placed. In our case study we are assuming that *Alpheius Global Enterprises* already has an employee data list in an Excel spreadsheet format.

Try This Yourself:

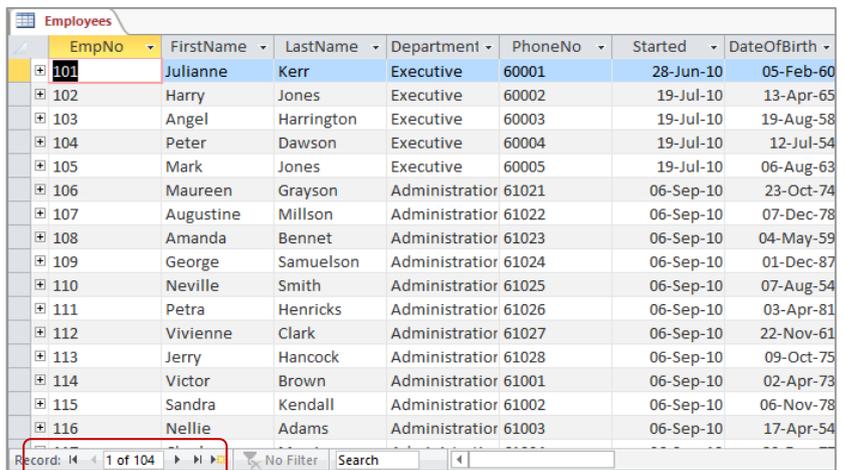
Same File

Continue using the previous file with this exercise, or open the file *Adding Records_5.accdb...*

- 1 Click on the **Employees** table to select it
- 2 Click on the **External Data** tab, then click on **Excel** in the **Import & Link** group to display the **Get External Data** dialog box
- 3 Click on **[Browse]**, locate the file **Employee List.xlsx** in **C:\Course Files for Microsoft Access 2016**, then click on **[Open]**
- 4 Click on **Append a copy of the records to the table Employees**, then click on **[OK]** to start the **Import Spreadsheet Wizard**
- 5 Click on **[Next]** until you arrive at the last screen
- 6 Click on **[Finish]**, then click on **[Yes]** and **[Close]** to complete the operation
- 7 Double-click on the **Employees** table to open it and see the data
- 8 Click on **Close** to close the table



4



7

The Record count indicates that the table now contains 104 records

For Your Reference...

To **import records** from **Microsoft Excel**:

1. Click on the **External Data** tab, then click on **Excel** in the **Import & Link** group
2. Browse for the file to import, click on **[OK]**, then follow the wizard to complete the import

Handy to Know...

- The **Import Wizard** is by far the easiest way to import data and provides useful prompts along the way. Study each step carefully to see what options are available to you.
- Importing can mess up data in a table – it is a good idea to make a backup of a table before importing into it.

NOTES:



CHAPTER 7 **ADDING TRANSACTIONAL RECORDS**

InFocus

Transactional records are instances of a particular transaction, such as an expense, trip, visit, plane flight, appointment, purchase, and so on.

Transactional records require not only the details of the transaction itself, but they require you to include a link to the lookup table. In terms of our case study, when you add an expense, you need to nominate the employee who the expense relates to.

In this session you will:

- ✓ learn how to type transactional records
- ✓ learn how to add transactional records using a form
- ✓ gain an understanding of adding additional transactional records
- ✓ learn how to add transactional records using a subdatasheet
- ✓ learn how to remove a subdatasheet
- ✓ learn how to insert a subdatasheet.

TYPING TRANSACTIONAL RECORDS

When you enter data into the datasheet of a **transaction table**, the values in the lookup table become available as a drop-down list in the linked field of the transaction table. In terms of

our example, rather than having to remember and type the employee number for a particular expense, you can select from any of the employees in the *Employees* table.

Try This Yourself:

Open File

Before starting this exercise you **MUST** open the file *Transactional Records_1.accdb...*

- 1 Double-click on the **Expense Transactions** table to open it

The first field, an *Autonumber*, will be entered automatically for you when you start typing...

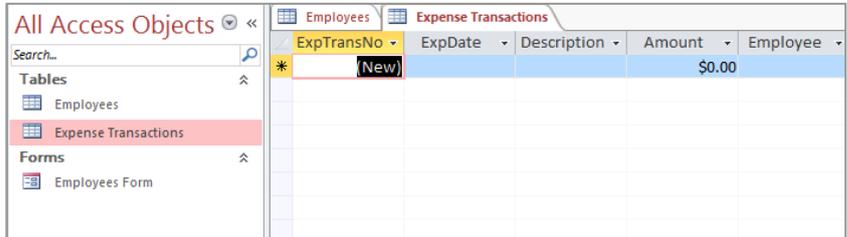
- 2 Press **Tab** to move to **ExpDate**, type **2/1/2017** then press **Tab** to move to **Description**

- 3 Type **Accommodation A** then press **Tab** to move to **Amount** and type **132**

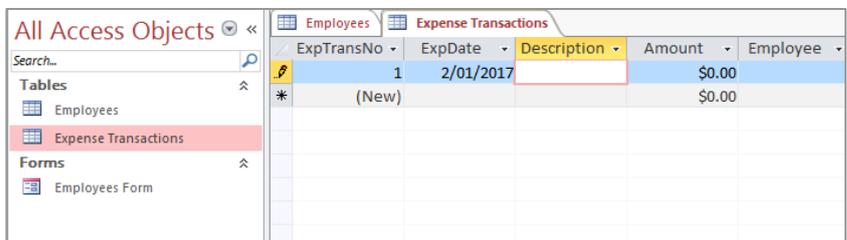
- 4 Press **Tab**, then click on the drop arrow for **Employee** to see a list of employees from the **Employees** table

- 5 Type **d** to move to the first employee starting with this letter, then click on **Dawson Peter**

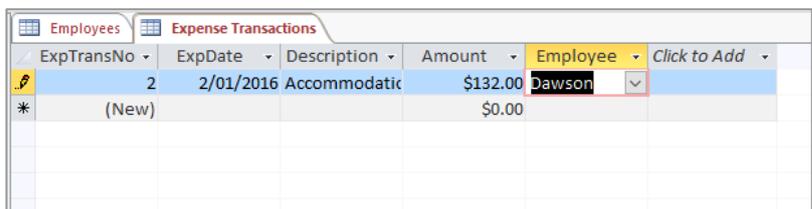
- 6 Close the table



1



2



5

For Your Reference...

To **add transactional records** to a **table**:

1. Double-click on the table
2. Type the data and press **Tab** to move between fields
3. Click on the drop arrow in the lookup field and click on the relevant link record

Handy to Know...

- When you use a form to add a record to a transaction table, the lookup table appears as a subform.

ADDING TRANSACTIONAL RECORDS USING A FORM

Records can also be added to a transaction table using a form. When a transaction table is linked to a lookup table, you can enter transactions via the lookup table. Access will automatically create

a sub-form for the transactions so that transactions can be entered directly against a particular employee. The right employee must be selected before the transaction details are entered.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Transactional Records_2.accdb...*

- 1 Click on the **Employees** table to ensure it is selected
- 2 Click on the **Create** tab, then click on **Form** in the **Forms** group to display the first record of data in a form layout
- 3 On the **Form Layout Tools: Design** tab, click on the top half of **View** in the **Views** group to see the form in **Form** view
- 4 Click in **ExpDate** in the sub-form (located beneath the main form), type **2/1/17**, then press **Tab**
- 5 Type **Accommodation A** in **Description**, press **Tab**, then type **145** in **Amount** and press **Tab**
- 6 Close the form – since the form is a new object you will be asked if you wish to save it
- 7 Click on **[No]**

3

ExpTransNo	ExpDate	Description	Amount
*	(New)		\$0.00

The sub-form displays an individual employee and their transactions in a single window beneath the main form.

5

ExpTransNo	ExpDate	Description	Amount
2	2/01/2017	Accommodatic	\$145.00
*	(New)		\$0.00

For Your Reference...

To **add a transactional record using a form:**

1. Click on the **Create** tab, then click on **Form** in the **Forms** group
2. Click on **View** in the **Views** group, then enter the data into the sub-form

Handy to Know...

- You can use the normal controls on a form to navigate to the desired record before entering data into the sub-form – you do not need to necessarily enter data into the first record.

ADDING ADDITIONAL TRANSACTIONAL RECORDS

Records can be added to a table directly by typing into the new record line of the open table or by using a **form**. The choice is entirely yours. In this section you'll have the opportunity to add

more records using whichever of these techniques you prefer.

Adding Records

Either open the **Expense Transactions** table or use a default form to type the records as shown

- Close the table or the form when you have finished. If you decide to use a **form** based on the transaction table, the form will appear with the first record in the table on display. You then need to click on either the **Next Record** button or the **New Record** button at the bottom of the **form** window until a blank form appears for data entry.
- It doesn't really matter in which order you type these transactions into the table. When the table is reopened later, the records will be sorted into **Primary Key** (*ExpTransNo*) order by Access.

		Record 3	Record 4
	Date:	2/01/2017	2/01/2017
	Description:	Gifts	Postage
	Amount:	\$27.06	\$3.59
	Employee: (EmpNo)	Ali, Syed	Moore, Belinda
		Record 5	Record 6
	Date:	2/01/2017	2/01/2017
	Description:	Postage	Accommodation A
	Amount:	\$16.99	\$154.50
	Employee: (EmpNo)	Morris, Charles	Clark, Vivienne
		Record 7	Record 8
Date:	2/01/2017	2/01/2017	2/01/2017
Description:	Accommodation A	Other Expenses	Coffee and Tea Expenses
Amount:	\$125.50	\$48.39	\$18.26
Employee: (EmpNo)	Millson, Augustine	Dangaard, Elizabeth	Brown, Victor
	Record 10	Record 11	Record 12
Date:	2/01/2017	2/01/2017	2/01/2017
Description:	Coffee and Tea Expenses	Accommodation A	Accommodation B
Amount:	\$7.72	\$123.44	\$237.86
Employee: (EmpNo)	Samuelson, George	McDonald, Victoria	Williams, Lance

ADDING RECORDS USING A SUBDATASHEET

In Access when you view a lookup table you can also see the transaction table records related to the record currently selected in the lookup table. For example, when we view an employee in the

Employees table, we can also see the related expenses for that employee in the **Expense Transactions** table. The related records appear in a **subdatasheet** – a datasheet within a datasheet.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Transactional Records_3.accdb...*

- 1 In the **Navigation** pane, double-click on the **Employees** table to open it
- 2 Click on **expand**  for **EmpNo 107** to see the expense details for that employee
- 3 The related records from the **Expense Transactions** table will appear and the button will change to a minus sign...
- 3 Click in **ExpDate** on the **(New)** line and type the new records, as shown
- 4 Click on **collapse**  to close the subdatasheet
- 5 Click on  and  for several other employees and examine their records (try **101** and **109**)
- 6 Close the table

2

EmpNo	FirstName	LastName	Department	PhoneNo	Started
101	Julianne	Kerr	Executive	60001	28-Jun-10
102	Harry	Jones	Executive	60002	19-Jul-10
103	Angel	Harrington	Executive	60003	19-Jul-10
104	Peter	Dawson	Executive	60004	19-Jul-10
105	Mark	Jones	Executive	60005	19-Jul-10
106	Maureen	Grayson	Administrator	61021	06-Sep-10
107	Augustine	Millson	Administrator	61022	06-Sep-10
ExpTransNo ExpDate Description Amount Click to Add					
7	2/01/2017	Accommodatic	\$125.50		
*	(New)		\$0.00		
108	Amanda	Bennet	Administrator	61023	06-Sep-10
109	George	Samuelson	Administrator	61024	06-Sep-10
110	Neville	Smith	Administrator	61025	06-Sep-10
111	Petra	Henricks	Administrator	61026	06-Sep-10
112	Vivienne	Clark	Administrator	61027	06-Sep-10

3

EmpNo	FirstName	LastName	Department	PhoneNo	Started
101	Julianne	Kerr	Executive	60001	28-Jun-10
102	Harry	Jones	Executive	60002	19-Jul-10
103	Angel	Harrington	Executive	60003	19-Jul-10
104	Peter	Dawson	Executive	60004	19-Jul-10
105	Mark	Jones	Executive	60005	19-Jul-10
106	Maureen	Grayson	Administrator	61021	06-Sep-10
107	Augustine	Millson	Administrator	61022	06-Sep-10
ExpTransNo ExpDate Description Amount Click to Add					
7	2/01/2017	Accommodatic	\$125.50		
13	2/01/2017	Meals	\$52.86		
14	16/01/2017	Accommodatic	\$155.60		
*	(New)		\$0.00		
108	Amanda	Bennet	Administrator	61023	06-Sep-10
109	George	Samuelson	Administrator	61024	06-Sep-10
110	Neville	Smith	Administrator	61025	06-Sep-10

13	2/01/2017	Meals	52.86
14	16/01/2017	Accommodation A	155.60

For Your Reference...

To **add records using** a **subdatasheet**:

1. Double-click on the lookup table
2. Click on **expand**  for a record to see the subdatasheet
3. Enter data into a **(New)** record of the subdatasheet as normal

Handy to Know...

- You need to have a good understanding of the relationships between your tables to effectively use the subdatasheet features. Just remember that the subdatasheet is usually the *transaction* table (i.e. with the *many* records).

REMOVING A SUBDATASHEET

Subdatasheets are created automatically when you link a lookup table and transactional table. If you prefer not to have the transaction details visible via the lookup table, you can remove the

subdatasheet. This procedure does not interfere with the relationship between the tables and does not affect the data in any way.

Try This Yourself:

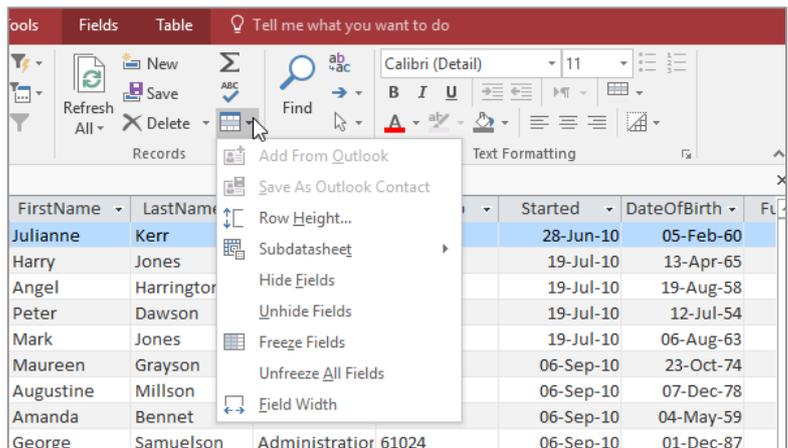
Same File

Continue using the previous file with this exercise, or open the file *Transactional Records_4.accdb...*

- 1 In the **Navigation** pane, double-click on the **Employees** table to open it
- 2 On the **Home** tab, click on **More** in the **Records** group to display a menu
- 3 Point to **Subdatasheet**, then select **Remove** to remove the current subdatasheet from the layout
Notice that the expand icons  are no longer displayed...
- 4 Close the table
Removing a subdatasheet alters the layout of a table, so you will be asked if you want to save these changes...
- 5 Click on **[Yes]** to save the changed layout and close the table

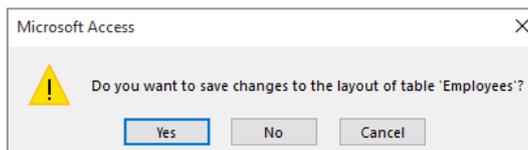
EmpNo	FirstName	LastName	Department	PhoneNo	Started
101	Julianne	Kerr	Executive	60001	28-Jun-10
102	Harry	Jones	Executive	60002	19-Jul-10
103	Angel	Harrington	Executive	60003	19-Jul-10
104	Peter	Dawson	Executive	60004	19-Jul-10
105	Mark	Jones	Executive	60005	19-Jul-10
106	Maureen	Grayson	Administrator	61021	06-Sep-10
107	Augustine	Millson	Administrator	61022	06-Sep-10
108	Amanda	Bennet	Administrator	61023	06-Sep-10
109	George	Samuelson	Administrator	61024	06-Sep-10
110	Neville	Smith	Administrator	61025	06-Sep-10
111	Petra	Henricks	Administrator	61026	06-Sep-10
112	Vivienne	Clark	Administrator	61027	06-Sep-10
113	Jerry	Hancock	Administrator	61028	06-Sep-10
114	Victor	Brown	Administrator	61001	06-Sep-10
115	Sandra	Kendall	Administrator	61002	06-Sep-10

1



3

4



For Your Reference...

To **remove** a **subdatasheet**:

1. On the **Home** tab, click on **More** in the **Records** group
2. Point to **Subdatasheet** then select **Remove**

Handy to Know...

- Removing a subdatasheet is effectively the same as hiding it. The data previously shown in the subdatasheet is not deleted. All you have done is removed the option to view it from the datasheet, which is one way of protecting the data.

INSERTING A SUBDATASHEET

If a subdatasheet has been removed either deliberately or accidentally, or if a lookup table is linked to more than one other table, you may need to use the **Insert Subdatasheet** dialog box

to assign a transaction table to the lookup table. Access knows which field to link the tables on because of the table relationships that you established earlier.

Try This Yourself:

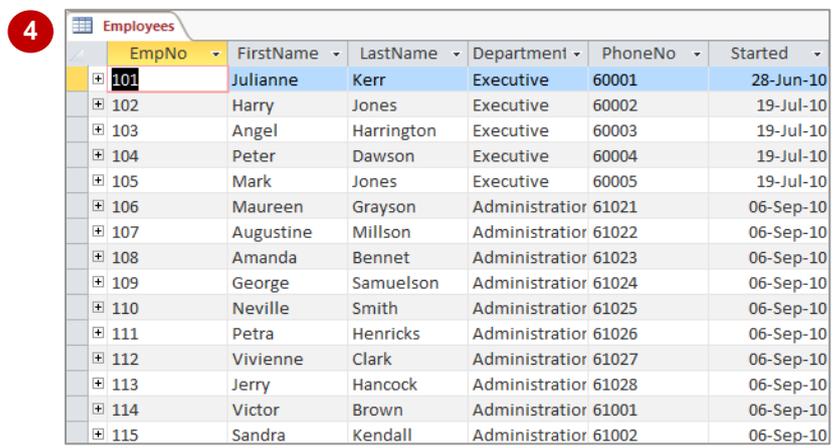
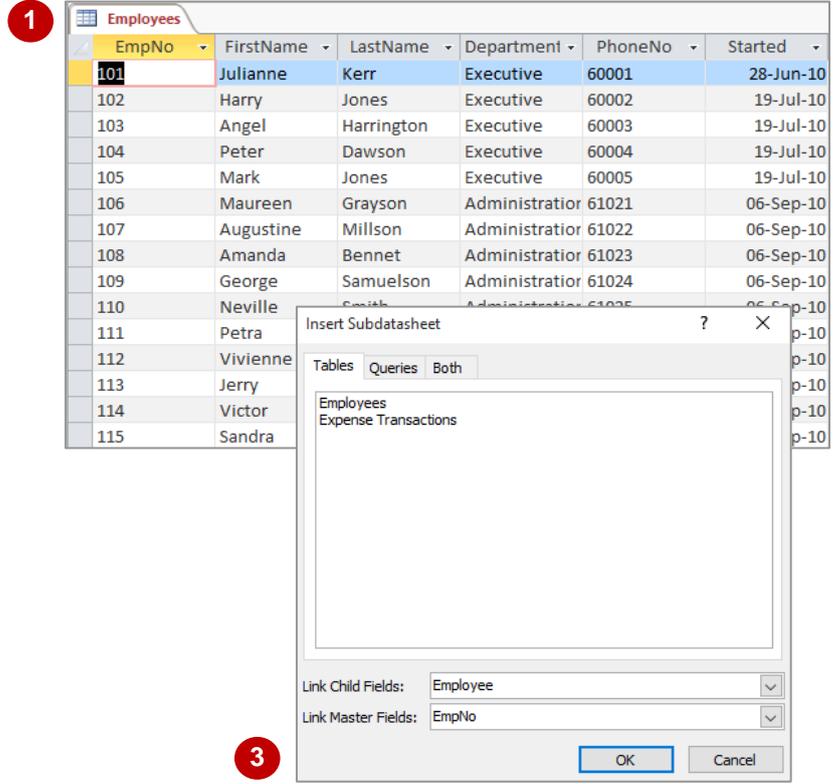
Same File

Continue using the previous file with this exercise, or open the file *Transactional Records_5.accdb...*

- 1 In the **Navigation** pane, double-click on the **Employees** table to open it
- 2 On the **Home** tab, click on **More** in the **Records** group to display the menu
- 3 Point to **Subdatasheet** then select **Subdatasheet** to display the **Insert Subdatasheet** dialog box

Since we are currently in the *Employees* lookup table, it is the *Expense Transactions* table that we wish to insert as a subdatasheet...
- 4 Click on **Expense Transactions**, then click on **[OK]** to insert this table as a subdatasheet

Expand icons are displayed in the leftmost column...
- 5 Close the table and click on **[Yes]** to save the changed layout



For Your Reference...

To **insert** a **subdatasheet**:

1. On the **Home** tab, click on **More** in the **Records** group
2. Point to **Subdatasheet** and select **Subdatasheet**

Handy to Know...

- If a lookup table is linked to more than one transaction table, the **Insert Subdatasheet** dialog box can be used to switch between transaction tables.

NOTES:



CHAPTER 8

WORKING WITH RECORDS

InFocus

Databases constantly need updating. Customers change address, prices rise or fall, and incorrect data sometimes gets typed into a database.

Microsoft Access makes it relatively easy to make changes to existing data. In computer jargon when you make a change to data it is referred to as **editing**.

As a fully-functional database management system, Access allows you to both **edit** and **delete** data. This can be done either in a form or through **Datasheet** view where your data is presented in rows and columns on the screen.

In this session you will:

- ✓ learn how to navigate through records in a table
- ✓ learn how to navigate to a specific record
- ✓ learn how to edit records in a table
- ✓ learn how to delete data in a record
- ✓ learn how to undo changes made to records in a table
- ✓ learn how to delete a record from a table
- ✓ learn how to delete several records
- ✓ learn how to search for text in a table
- ✓ learn how to search within a field
- ✓ learn how to find and replace data in a table
- ✓ learn how to print records from a table
- ✓ learn how to compact a database.

TABLE NAVIGATION

To be able to edit, delete and even add data to a table, you need to be able to locate the data that you want. To locate specific data, you need to know how to **navigate** through a table of data.

When a table is open, one record of the table is deemed to be the **active record**. An active record is highlighted blue and the active field is outlined in orange.

Try This Yourself:

Open File

Before starting this exercise you **MUST** open the file *Working With Records_1.accdb...*

- 1 Double-click on the **Employees** table to open it
The first record is the "active" or "current" record...
- 2 Press **↓** and **↑** several times to change the active record
The navigation bar at the bottom of the screen indicates the current record...
- 3 Press **Pg Dn** and **Pg Up** several times to move down and up a screen at a time
- 4 In the navigation bar, click on the **Last record** button to move to the last record
- 5 Click on the **Previous record** button several times to move up through the records
- 6 Click on the **First record** button to move back to the first record
- 7 Close the table

1

EmpNo	FirstName	LastName	Department	PhoneNo	Started
101	Julianne	Kerr	Executive	60001	28-Jun-10
102	Harry	Jones	Executive	60002	19-Jul-10
103	Angel	Harrington	Executive	60003	19-Jul-10
104	Peter	Dawson	Executive	60004	19-Jul-10
105	Mark	Jones	Executive	60005	19-Jul-10
106	Maureen	Grayson	Administrator	61021	06-Sep-10
107	Augustine	Millson	Administrator	61022	06-Sep-10
108	Amanda	Bennet	Administrator	61023	06-Sep-10
109	George	Samuelson	Administrator	61024	06-Sep-10
110	Neville	Smith	Administrator	61025	06-Sep-10
111	Petra	Henricks	Administrator	61026	06-Sep-10
112	Vivienne	Clark	Administrator	61027	06-Sep-10
113	Jerry	Hancock	Administrator	61028	06-Sep-10
114	Victor	Brown	Administrator	61001	06-Sep-10
115	Sandra	Kendall	Administrator	61002	06-Sep-10

2

190	Aris	Alexopoulos	Administrator	61009	27-Nov-10
191	Brett	Thurst	Administrator	61019	16-Dec-10
192	Christof	Ahlund	Administrator	61017	09-Dec-10
193	David	Zylinski	Administrator	61008	20-Nov-10
194	Ellinor	Hurst	Administrator	61010	27-Nov-10
195	Goja	Andric	Sales & Market	63036	03-Jan-08
196	Ian	Beaman	Research & Development	62014	27-Nov-10
197	Frederick	Berninghauser	Research & Development	62035	03-Jan-08
198	Kathryn	Munro	Sales & Market	63017	02-Dec-10
199	Leticia	Badea	Research & Development	62015	27-Nov-10
200	Mark	O'Connor	Sales & Market	63033	16-Dec-10
201	Michael	Rockland	Research & Development	62026	09-Dec-10
203	Philip	Hutchins	Administrator	61011	27-Nov-10
204	Susan	Baker-Smith	Administrator	61020	16-Dec-10
205	Trond	Abelseth	Administrator	61014	02-Dec-10

Record: 104 of 104

The navigation bar contains the First record, Previous record, Current Record, Next record, Last record and New (blank) record tools.

4

190	Aris	Alexopoulos	Administrator	61009	27-Nov-10
191	Brett	Thurst	Administrator	61019	16-Dec-10
192	Christof	Ahlund	Administrator	61017	09-Dec-10
193	David	Zylinski	Administrator	61008	20-Nov-10
194	Ellinor	Hurst	Administrator	61010	27-Nov-10
195	Goja	Andric	Sales & Market	63036	03-Jan-08
196	Ian	Beaman	Research & Development	62014	27-Nov-10
197	Frederick	Berninghauser	Research & Development	62035	03-Jan-08
198	Kathryn	Munro	Sales & Market	63017	02-Dec-10
199	Leticia	Badea	Research & Development	62015	27-Nov-10
200	Mark	O'Connor	Sales & Market	63033	16-Dec-10
201	Michael	Rockland	Research & Development	62026	09-Dec-10
203	Philip	Hutchins	Administrator	61011	27-Nov-10
204	Susan	Baker-Smith	Administrator	61020	16-Dec-10
205	Trond	Abelseth	Administrator	61014	02-Dec-10

Record: 98 of 104

For Your Reference...

To **navigate records** in a **table** you can:

- Click on the buttons in the navigation bar at the bottom of the window
- Press **↓**, **↑**, **Pg Dn**, or **Pg Up**

Handy to Know...

- There will always be one record in a table that is deemed to be the **active record**. The **active record** is the one that is referred to in the **Current Record** field in the navigation bar at the bottom of the database window.

NAVIGATING TO A SPECIFIC RECORD

Techniques such as using the record buttons to navigate through a table are fine if you have a small number of records, but can be very tedious if you have a medium to large number of records

to step through. You can use the record number in the **Current Record** field to navigate directly to a specific record as long as you know the number of the record you require.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file Working With Records_1.accdb...

- 1 Double-click on the **Employees** table to open it
Notice that there are 104 records in the table...
- 2 In the navigation bar, double-click on the record number (in our case it is **1**) in the **Current Record** box to select it
- 3 Type **50** and press to move to record **50**, which is **EmpNo 150** in the table
- 4 Click on the **First record** button to return to the first record
- 5 Close the table

1 Employees

EmpNo	FirstName	LastName	Department	PhoneNo	Started
166	Mohamed	Rahman	Research & De	62034	03-Jan-08
167	Pamela	Heard	Research & De	62012	27-Nov-10
168	Shahram	Akbarzadeh	Research & De	62006	20-Nov-10
169	Timothy	Chambers	Research & De	62013	27-Nov-10
170	Warren	Hardsley	Research & De	62003	06-Nov-10
171	Adlina	Ahmad	Research & De	62021	02-Dec-10
172	Annette	Claire	Research & De	62025	09-Dec-10
173	Brett	David	Sales & Marke	63015	02-Dec-10
174	Chantal	Alcide	Sales & Marke	63022	09-Dec-10
175	David	Roberts	Sales & Marke	63004	06-Nov-10
176	Ellia	Dempsey	Sales & Marke	63023	09-Dec-10
177	Glenda	Kristenson	Sales & Marke	63031	16-Dec-10
178	Herbert	Aaronson	Sales & Marke	63016	02-Dec-10
179	Jo	Martinson	Sales & Marke	63009	27-Nov-10
180	Katherine	Avram	Sales & Marke	63032	16-Dec-10

2

125	Hanna	Goldblum	Sales & Marke	63002	06-Nov-10
126	Ian	Lyons	Sales & Marke	63001	09-Oct-10
127	John	Georges	Sales & Marke	63026	16-Dec-10
128	Keith	Hanbery	Sales & Marke	63019	09-Dec-10
129	Lisa	Afonczenko	Sales & Marke	63027	16-Dec-10
130	Melissa	Scauche	Sales & Marke	63025	10-Dec-10
131	Milena	Awad	Sales & Marke	63007	27-Nov-10
132	Norman	McCaiige	Sales & Marke	63013	02-Dec-10
133	Ron	Tayley	Sales & Marke	63028	16-Dec-10
134	Syed	Ali	Sales & Marke	63014	02-Dec-10
135	Todd	Dannam	Sales & Marke	63020	09-Dec-10
136	Stephano	Nicolopolous	Sales & Marke	63035	03-Jan-08
137	Andrea	Devent	Sales & Marke	63008	27-Nov-10
138	Ben	Adler	Sales & Marke	63003	06-Nov-10
139	Cain	Bakir	Sales & Marke	63021	09-Dec-10
140	David	Miller	Sales & Marke	63029	16-Dec-10

Record: 1 | 50 of 104

3

136	Stephano	Nicolopolous	Sales & Marke	63035	03-Jan-08
137	Andrea	Devent	Sales & Marke	63008	27-Nov-10
138	Ben	Adler	Sales & Marke	63003	06-Nov-10
139	Cain	Bakir	Sales & Marke	63021	09-Dec-10
140	David	Miller	Sales & Marke	63029	16-Dec-10
141	Elizabeth	Sanderson	Sales & Marke	63030	16-Dec-10
142	Gary	Haynes	Research & De	62016	02-Dec-10
143	Helen	Giannikis	Research & De	62017	02-Dec-10
144	Jane	Casse	Research & De	62023	09-Dec-10
145	Judaline	Fonceca	Research & De	62001	06-Nov-10
146	Keith	Oliver	Research & De	62008	27-Nov-10
147	Lisa	Azzola	Research & De	62031	03-Jan-08
148	Merle	Sully	Research & De	62009	27-Nov-10
149	Mohamed	Ariff	Research & De	62028	16-Dec-10
150	Pamela	Queen	Research & De	62027	10-Dec-10
151	Sadequal	Amin	Research & De	62032	03-Jan-08

Record: 1 | 50 of 104

For Your Reference...

To **navigate** to a **specific record**:

1. Double-click on the **Current Record** box in the navigation bar
2. Type the record number you wish to move to and press

Handy to Know...

- Record numbers are assigned by the table to the record – do not use the record number as a means of identifying a record other than for immediate navigation purposes. When records are deleted the record numbers are reassigned to remaining records in the table.

EDITING A RECORD

Records in a table can be edited simply by clicking on the data to be changed. When you click on data in a table, the record pointer jumps immediately to that record. If you double-click on

a word in a record, the text will be selected ready for editing. Whatever you type will replace the existing text. The changes are saved when you move to another record.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file Working With Records_1.accdb...

- 1 Double-click on the **Employees** table to open it
 - 2 Double-click on the word Administration in Department for **Maureen Grayson** (record 106) to select it
 - 3 Type **Occupational Safety**, then press Tab
- The department name is replaced and the edit highlight moves to the next field. Notice also that the record pointer appears as a pencil to indicate that a change has been made in the record and that you are in edit mode...
- 4 Press ↓ to save the changes and move to the next record
 - 5 Click after **06** in the Started date field for Lance Williams (118)
 - 6 Press Back Space twice to delete **06**, type **23**, then press ↓
 - 7 Close the table

2

EmpNo	FirstName	LastName	Department	PhoneNo	Started
101	Julianne	Kerr	Executive	60001	28-Jun-10
102	Harry	Jones	Executive	60002	19-Jul-10
103	Angel	Harrington	Executive	60003	19-Jul-10
104	Peter	Dawson	Executive	60004	19-Jul-10
105	Mark	Jones	Executive	60005	19-Jul-10
106	Maureen	Grayson	Administration	61021	06-Sep-10
107	Augustine	Millson	Administrator	61022	06-Sep-10
108	Amanda	Bennet	Administrator	61023	06-Sep-10
109	George	Samuelson	Administrator	61024	06-Sep-10
110	Neville	Smith	Administrator	61025	06-Sep-10

3

EmpNo	FirstName	LastName	Department	PhoneNo	Started
101	Julianne	Kerr	Executive	60001	28-Jun-10
102	Harry	Jones	Executive	60002	19-Jul-10
103	Angel	Harrington	Executive	60003	19-Jul-10
104	Peter	Dawson	Executive	60004	19-Jul-10
105	Mark	Jones	Executive	60005	19-Jul-10
106	Maureen	Grayson	Occupational Safety	61021	06-Sep-10
107	Augustine	Millson	Administrator	61022	06-Sep-10
108	Amanda	Bennet	Administrator	61023	06-Sep-10
109	George	Samuelson	Administrator	61024	06-Sep-10
110	Neville	Smith	Administrator	61025	06-Sep-10

5

114	Victor	Brown	Administrator	61001	06-Sep-10
115	Sandra	Kendall	Administrator	61002	06-Sep-10
116	Nellie	Adams	Administrator	61003	06-Sep-10
117	Charles	Morris	Administrator	61004	06-Sep-10
118	Lance	Williams	Administrator	61005	06-Sep-10
119	Antony	De Rozario	Sales & Marke	63010	02-Dec-10
120	Belinda	Moore	Sales & Marke	63034	03-Jan-10
121	Bryan	Fox	Sales & Marke	63011	02-Dec-10
122	David	Glens	Sales & Marke	63006	27-Nov-10
123	Eileen	Reilly	Sales & Marke	63012	02-Dec-10
124	Emily	Hansdon	Sales & Marke	63018	09-Dec-10
125	Hanna	Goldblum	Sales & Marke	63002	06-Nov-10

6

114	Victor	Brown	Administrator	61001	06-Sep-10
115	Sandra	Kendall	Administrator	61002	06-Sep-10
116	Nellie	Adams	Administrator	61003	06-Sep-10
117	Charles	Morris	Administrator	61004	06-Sep-10
118	Lance	Williams	Administrator	61005	23-Sep-10
119	Antony	De Rozario	Sales & Marke	63010	02-Dec-10
120	Belinda	Moore	Sales & Marke	63034	03-Jan-10
121	Bryan	Fox	Sales & Marke	63011	02-Dec-10
122	David	Glens	Sales & Marke	63006	27-Nov-10
123	Eileen	Reilly	Sales & Marke	63012	02-Dec-10
124	Emily	Hansdon	Sales & Marke	63018	09-Dec-10
125	Hanna	Goldblum	Sales & Marke	63002	06-Nov-10

For Your Reference...

To **edit data** in a **table**:

1. Click on, double-click on or click and drag over the text to select it
2. Type the new text
3. Press ↓, Tab or Enter to save the changes

Handy to Know...

- A record, and any changes made to it, is automatically saved when the record pointer leaves the record or field – you can use any of the navigation techniques to move to another record.

DELETING RECORD DATA

You can delete data in a record if you find it is no longer accurate or appropriate. For example, you may import data from another table and find that some clean-up of the data is required, or there

may be organisational changes that result in the change of position or department names. Deleting data in a record is a similar process to deleting text in a word processing document.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file Working With Records_2.accdb...

- 1 Double-click on the **Employees** table to open it
- 2 Double-click on the border between the column headings for **Department** and **PhoneNo** to widen the **Department** column
- 3 Scroll down to the record for **Antony De Rozario** (119), then use the mouse to select the words **Sales &**
- 4 Press **[Del]** to delete the text
Ensure that you also delete the space after the ampersand (&)...
- 5 Press **[↓]** to save the changes
- 6 Click at the end of the word **Marketing** in **Department** for **Eileen Reilly** (123)
- 7 Press **[Back Space]** to delete the words **& Marketing** then press **[Tab]**
- 8 Close the table, then click on **[No]** so that the changes to the column widths are not saved

2

EmpNo	FirstName	LastName	Department	PhoneNo	Start
101	Julianne	Kerr	Executive	60001	28-
102	Harry	Jones	Executive	60002	19-
103	Angel	Harrington	Executive	60003	19-
104	Peter	Dawson	Executive	60004	19-
105	Mark	Jones	Executive	60005	19-
106	Maureen	Gravson	Occupational Safetv	61021	06-

3

118	Lance	Williams	Administration	61005	23-
119	Antony	De Rozario	Sales & Marketing	63010	02-
120	Belinda	Moore	Sales & Marketing	63034	03-
121	Bryan	Fox	Sales & Marketing	63011	02-
122	David	Glens	Sales & Marketing	63006	27-
123	Eileen	Reilly	Sales & Marketing	63012	02-
124	Emily	Hansdon	Sales & Marketing	63018	09-
125	Hanna	Goldblum	Sales & Marketing	63002	06-

4

118	Lance	Williams	Administration	61005	23-
119	Antony	De Rozario	Marketing	63010	02-
120	Belinda	Moore	Sales & Marketing	63034	03-
121	Bryan	Fox	Sales & Marketing	63011	02-
122	David	Glens	Sales & Marketing	63006	27-
123	Eileen	Reilly	Sales & Marketing	63012	02-
124	Emily	Hansdon	Sales & Marketing	63018	09-
125	Hanna	Goldblum	Sales & Marketing	63002	06-

5

118	Lance	Williams	Administration	61005	23-
119	Antony	De Rozario	Marketing	63010	02-
120	Belinda	Moore	Sales & Marketing	63034	03-
121	Bryan	Fox	Sales & Marketing	63011	02-
122	David	Glens	Sales & Marketing	63006	27-
123	Eileen	Reilly	Sales & Marketing	63012	02-
124	Emily	Hansdon	Sales & Marketing	63018	09-
125	Hanna	Goldblum	Sales & Marketing	63002	06-

7

118	Lance	Williams	Administration	61005	23-
119	Antony	De Rozario	Marketing	63010	02-
120	Belinda	Moore	Sales & Marketing	63034	03-
121	Bryan	Fox	Sales & Marketing	63011	02-
122	David	Glens	Sales & Marketing	63006	27-
123	Eileen	Reilly	Sales	63012	02-
124	Emily	Hansdon	Sales & Marketing	63018	09-
125	Hanna	Goldblum	Sales & Marketing	63002	06-

For Your Reference...

To **delete record data**:

- Position the cursor after the text in the record and press **[Back Space]**, or
- Select the text and press **[Del]**

Handy to Know...

- You can select data in a record by dragging the mouse across the text or by double-clicking on a word.
- If you click in a record and press **[Del]**, the character to the right of the cursor will be deleted.

UNDOING A CHANGE

Access, like most other applications, has an **Undo** facility which allows you to recover from the last operation. Unlike other applications, however, it is rather limited and will undo

changes to formats and only minor changes to data. It does not undo record deletions or global find and replace operations – two operations that cause the greatest misery.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Working With Records_3.accdb...*

- 1 Double-click on the **Employees** table to open it
- 2 Double-click on the name **Millson** for **EmpNo 107**
- 3 Type **Milford**, then press Tab to save the change
To change it back you could simply retype it, but what if you can't remember how to spell the name?
- 4 In the **Quick Access Toolbar**, click on **Undo** to undo the change
- 5 Double-click on **Bennet** (108) under **LastName**, type **Bennett**, then press ↓ to save the record
This time the changes apply to a record other than the current one...
- 6 In the **Quick Access Toolbar**, click on **Undo** to undo the change
- 7 Close the table

2

EmpNo	FirstName	LastName	Department	PhoneNo
101	Julianne	Kerr	Executive	60001
102	Harry	Jones	Executive	60002
103	Angel	Harrington	Executive	60003
104	Peter	Dawson	Executive	60004
105	Mark	Jones	Executive	60005
106	Maureen	Grayson	Occupational S	61021
107	Augustine	Millson	Administratior	61022
108	Amanda	Bennet	Administratior	61023
109	George	Samuelson	Administratior	61024
110	Neville	Smith	Administratior	61025

3

EmpNo	FirstName	LastName	Department	PhoneNo
101	Julianne	Kerr	Executive	60001
102	Harry	Jones	Executive	60002
103	Angel	Harrington	Executive	60003
104	Peter	Dawson	Executive	60004
105	Mark	Jones	Executive	60005
106	Maureen	Grayson	Occupational S	61021
107	Augustine	Milford	Administratior	61022
108	Amanda	Bennet	Administratior	61023
109	George	Samuelson	Administratior	61024
110	Neville	Smith	Administratior	61025

4

EmpNo	FirstName	LastName	Department	PhoneNo
101	Julianne	Kerr	Executive	60001
102	Harry	Jones	Executive	60002
103	Angel	Harrington	Executive	60003
104	Peter	Dawson	Executive	60004
105	Mark	Jones	Executive	60005
106	Maureen	Grayson	Occupational S	61021
107	Augustine	Millson	Administratior	61022
108	Amanda	Bennet	Administratior	61023
109	George	Samuelson	Administratior	61024
110	Neville	Smith	Administratior	61025

For Your Reference...

To **undo** a **change**:

- Click on **Undo** in the **Quick Access Toolbar**

Handy to Know...

- The **Undo** operation has more chance of success if you perform it as soon as you realise an error has occurred. Once you have closed a table, changes that were performed on it in the previous session can no longer be undone.

DELETING A RECORD

Imagine a database as a long list of entries. To delete a record the database must pull the record out of the list, move all of the records below it up one line in the table, and then renumber the list.

Fortunately, all of this happens behind the scenes. However, once a record is deleted, the only way for that record to be brought back again is for it to be entered as a new record.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file Working With Records_4.accdb...

1

Double-click on the **Employees** table to open it

The grey box to the left of a record is known as the record box and it enables you to select the entire record...

2

Click on the record box for **EmpNo 116** to select the record – this should be **Nellie Adams**

3

On the **Home** tab, click on **Delete** in the **Records** group

The record will disappear from the table and a warning will be displayed, offering you a last chance to back out of the deletion...

4

Click on **[Yes]** to delete the record

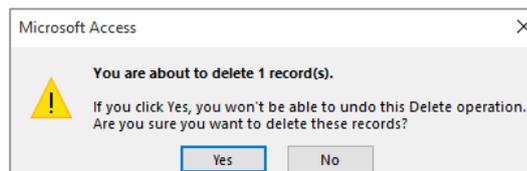
5

Close the table

2

115	Sandra	Kendall	Administrati	61002
116	Nellie	Adams	Administrati	61003
117	Charles	Morris	Administrati	61004
118	Lance	Williams	Administrati	61005
119	Antony	De Rozario	Marketing	63010
120	Belinda	Moore	Sales & Marke	63034
121	Bryan	Fox	Sales & Marke	63011
122	David	Glens	Sales & Marke	63006
123	Eileen	Reilly	Sales	63012
124	Emily	Hansdon	Sales & Marke	63018
125	Hanna	Goldblum	Sales & Marke	63002
126	Ian	Lyons	Sales & Marke	63001
127	John	Georges	Sales & Marke	63026
128	Keith	Hanbery	Sales & Marke	63019
129	Lisa	Afonczenko	Sales & Marke	63027
130	Melissa	Scauche	Sales & Marke	63025
131	Milena	Awad	Sales & Marke	63007

3



4

EmpNo	FirstName	LastName	Department	PhoneNo
101	Julianne	Kerr	Executive	60001
102	Harry	Jones	Executive	60002
103	Angel	Harrington	Executive	60003
104	Peter	Dawson	Executive	60004
105	Mark	Jones	Executive	60005
106	Maureen	Grayson	Occupational S	61021
107	Augustine	Millson	Administrati	61022
108	Amanda	Bennet	Administrati	61023
109	George	Samuelson	Administrati	61024
110	Neville	Smith	Administrati	61025
111	Petra	Henricks	Administrati	61026
112	Vivienne	Clark	Administrati	61027
113	Jerry	Hancock	Administrati	61028
114	Victor	Brown	Administrati	61001
115	Sandra	Kendall	Administrati	61002
117	Charles	Morris	Administrati	61004
118	Lance	Williams	Administrati	61005

For Your Reference...

To **delete** a **record** from a **table**:

1. Click on the record to delete
2. On the **Home** tab, click on **Delete** in the **Records** group
3. Click on **[Yes]** to confirm the deletion

Handy to Know...

- Deletion is permanent – the only way to recover a deleted record is to re-enter it.

DELETING SEVERAL RECORDS

Providing records are listed together (sometimes this is referred to as *contiguous* listing) you can **delete several records** at a time. This will require you to select several records at once

which can be done using the **Shift** key. Once the records are selected, they can be deleted using the **Delete** command.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Working With Records_5.accdb...*

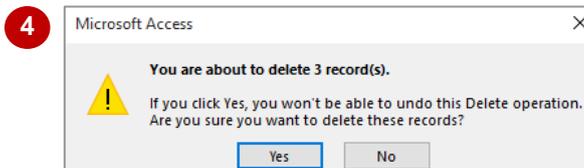
- 1 Double-click on the **Employees** table to open it
- 2 Click on the record box for **EmpNo 121** to select the record
- 3 Hold down **Shift** and click on the record box for **EmpNo 123** to select the three employees
- 4 On the **Home** tab, click on **Delete** in the **Records** group
The selected records will disappear from the table and a warning will be displayed, offering you a last chance to back out of the deletion...
- 5 Click on **[Yes]** to delete the records
- 6 Close the table

2

118	Lance	Williams	Administratior	61005
119	Antony	De Rozario	Marketing	63010
120	Belinda	Moore	Sales & Marke	63034
121	Bryan	Fox	Sales & Marke	63011
122	David	Glens	Sales & Marke	63006
123	Eileen	Reilly	Sales	63012
124	Emily	Hansdon	Sales & Marke	63018
125	Hanna	Goldblum	Sales & Marke	63002
126	Ian	Lyons	Sales & Marke	63001
127	John	Georges	Sales & Marke	63026
128	Keith	Hanbery	Sales & Marke	63019

3

118	Lance	Williams	Administratior	61005
119	Antony	De Rozario	Marketing	63010
120	Belinda	Moore	Sales & Marke	63034
121	Bryan	Fox	Sales & Marke	63011
122	David	Glens	Sales & Marke	63006
123	Eileen	Reilly	Sales	63012
124	Emily	Hansdon	Sales & Marke	63018
125	Hanna	Goldblum	Sales & Marke	63002
126	Ian	Lyons	Sales & Marke	63001
127	John	Georges	Sales & Marke	63026
128	Keith	Hanbery	Sales & Marke	63019



5

117	Charles	Morris	Administratior	61004
118	Lance	Williams	Administratior	61005
119	Antony	De Rozario	Marketing	63010
120	Belinda	Moore	Sales & Marke	63034
124	Emily	Hansdon	Sales & Marke	63018
125	Hanna	Goldblum	Sales & Marke	63002
126	Ian	Lyons	Sales & Marke	63001
127	John	Georges	Sales & Marke	63026
128	Keith	Hanbery	Sales & Marke	63019

For Your Reference...

To **delete several records**:

1. Click in the record box for the first record, hold down **Shift** and click in the record box for the last record in a contiguous range
2. On the **Home** tab, click on **Delete** in the **Records** group and click on **[Yes]**

Handy to Know...

- Unlike other **Windows** applications you can't use the **Ctrl** key to select multiple, non-contiguous records. Only records that are grouped together (i.e. contiguous) can be selected.

SEARCHING IN A TABLE

Access provides a search box at the bottom of a datasheet which allows you to search an entire table for specific text. As you begin typing in the **Search** box, the first record with data matching

the search criteria will be highlighted. For example, if you type **a** the first entry beginning with the letter **a** is highlighted. If you then type **ab** the first entry beginning with **ab** is highlighted, and so on.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Working With Records_6.accdb...*

- 1 Double-click on the **Employees** table to open it
- 2 Click in the **Search** box in the navigation bar at the bottom of the window
- 3 Type **a**, then **f**, then **o** and notice how the search finally arrives at **Lisa Afonczenko**
This is because her last name begins with the letters afo...
- 4 Double-click on **afo** in the **Search** box and type **02-D** to find the first date for 02-Dec
- 5 Close the table

2

133	Ron	Tayley	Sales & Marke	63028
134	Syed	Ali	Sales & Marke	63014
135	Todd	Dannam	Sales & Marke	63020
136	Stephano	Nicolopolous	Sales & Marke	63035
137	Andrea	Devent	Sales & Marke	63008
138	Ben	Adler	Sales & Marke	63003
139	Cain	Bakir	Sales & Marke	63021
140	David	Miller	Sales & Marke	63029
141	Elizabeth	Sanderson	Sales & Marke	63030
142	Gary	Haynes	Research & De	62016
143	Helen	Giannikis	Research & De	62017
144	Jane	Casse	Research & De	62023

Record: 1 of 100 No Filter

The Search field appears at the bottom of the window

3

128	Keith	Hanbery	Sales & Marke	63019
129	Lisa	Afonczenko	Sales & Marke	63027
130	Melissa	Scauche	Sales & Marke	63025
131	Milena	Awad	Sales & Marke	63007
132	Norman	McCaige	Sales & Marke	63013
133	Ron	Tayley	Sales & Marke	63028
134	Syed	Ali	Sales & Marke	63014
135	Todd	Dannam	Sales & Marke	63020
136	Stephano	Nicolopolous	Sales & Marke	63035
137	Andrea	Devent	Sales & Marke	63008
138	Ben	Adler	Sales & Marke	63003
139	Cain	Bakir	Sales & Marke	63021
140	David	Miller	Sales & Marke	63029
141	Elizabeth	Sanderson	Sales & Marke	63030
142	Gary	Haynes	Research & De	62016
143	Helen	Giannikis	Research & De	62017
144	Jane	Casse	Research & De	62023

Record: 25 of 100 No Filter afo

For Your Reference...

To **search** in a **table**:

1. Click in the **Search** box in navigation bar
2. Type the text you wish to search for until the record is found

Handy to Know...

- The **Search** box is fine for general searching across the table. It is not good for specific searches in a field.

SEARCHING IN A FIELD

The **Search** box at the bottom of a Datasheet window is useful for a general search of the entire table. There are other, more specific, search tools available in Access for searching

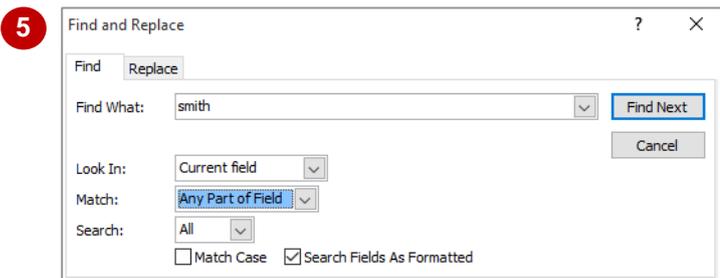
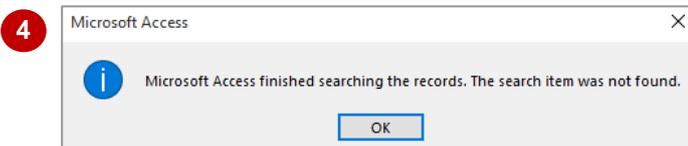
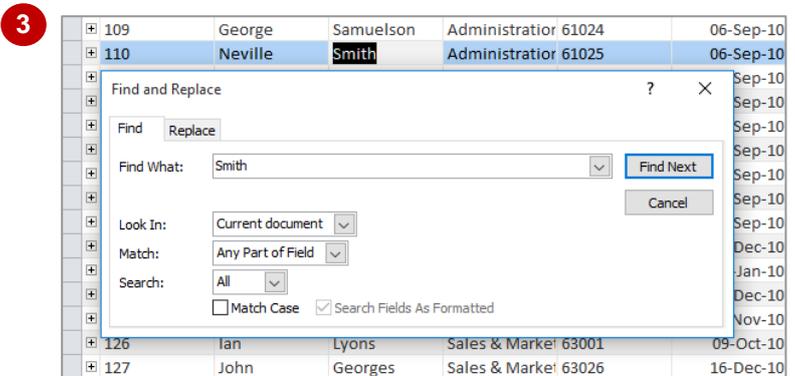
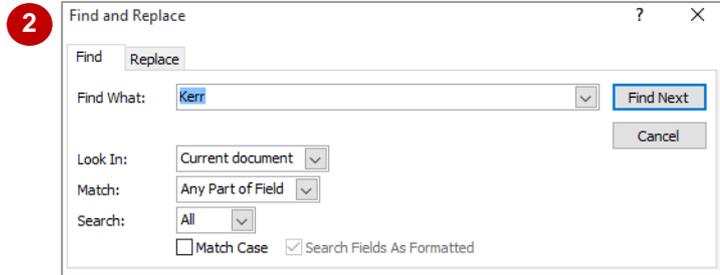
within a field. These tools are made available by right-clicking on a field heading to display the shortcut menu and then selecting the **Find** option to display the **Find What** dialog box.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Working With Records_6.accdb...*

- 1 Double-click on the **Employees** table to open it
- 2 Right-click on the **LastName** field header and select **Find** to display the **Find and Replace** dialog box
- 3 Type **Smith** in **Find What**, then click on **[Find Next]** to display the first occurrence
- 4 Click on **[Find Next]** to display the next occurrence, then click on **[Find Next]** and notice how a message appears advising that there are no more matching records
- 5 Click on **[OK]**, then in the **Find and Replace** dialog box click on the drop arrow for **Match** and select **Any Part of the Field**
- 5 Click on **[Find Next]** to and notice that **Baker-Smith** is now found
- 6 Click on **[Cancel]** to close the **Find and Replace** dialog box
- 7 Close the table



For Your Reference...

To **search within a field**:

1. Right-click on the desired field header and select **Find**
2. Type the **Find What** value you are looking for and click on **[Find Next]** to search within the field

Handy to Know...

- If you want to search for text that occupies an entire field, click on the drop arrow for **Match** and click on **Whole Field** in the **Find and Replace** dialog box. Then, for instance, typing **Smith** would not locate **Baker-Smith** as **Smith** is only part of the content in the field.

FINDING AND REPLACING

Sometimes you will have a need to make the same change to several records. Rather than making these changes manually and possibly making typing mistakes, you can use the

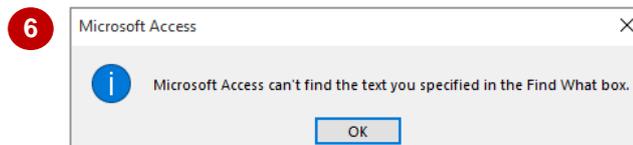
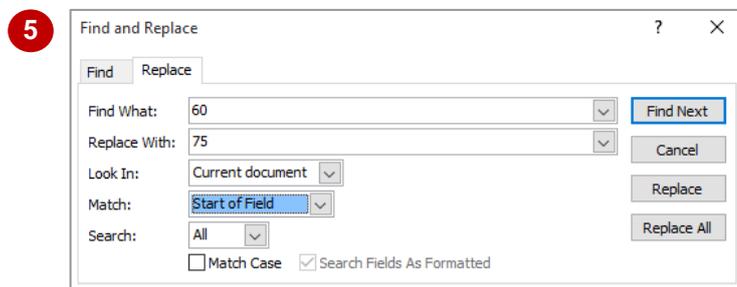
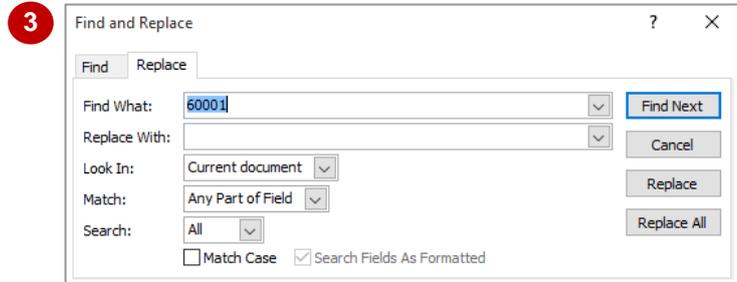
computer to search for the text and replace it automatically. This can be done in Access using the **Find and Replace** feature. However be careful with this – find and replace cannot be undone.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Working With Records_6.accdb...*

- 1 Double-click on the **Employees** table to open it
- 2 Right-click on the **PhoneNo** field header and select **Find** to display the **Find and Replace** dialog box
- 3 Click on the **Replace** tab
- 4 Type **60** in **Find What**, then click in **Replace With** and type **75**
- 5 Click on the drop arrow for **Match** and click on **Start of Field** so that only phone numbers beginning with **60** will be updated
- 6 Click on **[Replace]** until all of the **Executive** phone numbers are updated
A message appears informing you that Access can't find the text you specified...
- 7 Click on **[OK]**
- 7 Click on **[Cancel]** to close the **Find and Replace** dialog box, then close the table



For Your Reference...

To **find** and **replace data** in a **table**:

1. Right-click on a field header, select **Find** and click on the **Replace** tab
2. Type the find value in **Find What** and the replace value in **Replace With**
3. Click on **[Replace]**

Handy to Know...

- The **Find and Replace** dialog box has a **[Replace All]** button which will replace all matching values. This can sometimes lead to unforeseen replacements occurring and it is not generally advisable to use this feature unless there are many replacements to be done and you're positive you've got it right.

PRINTING RECORDS FROM A TABLE

There are several ways to extract data from your database and to get it onto paper. However, the two main ways are to create a report object in the database or to simply print the list of records from

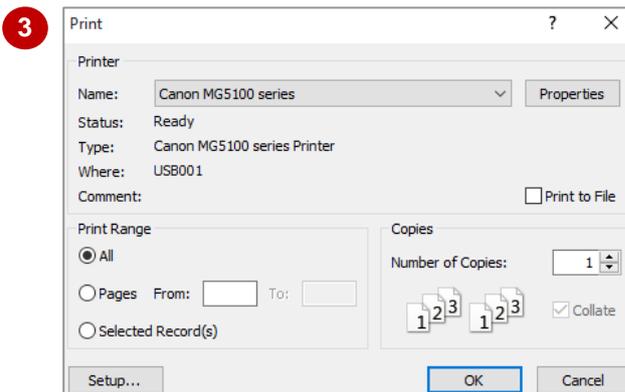
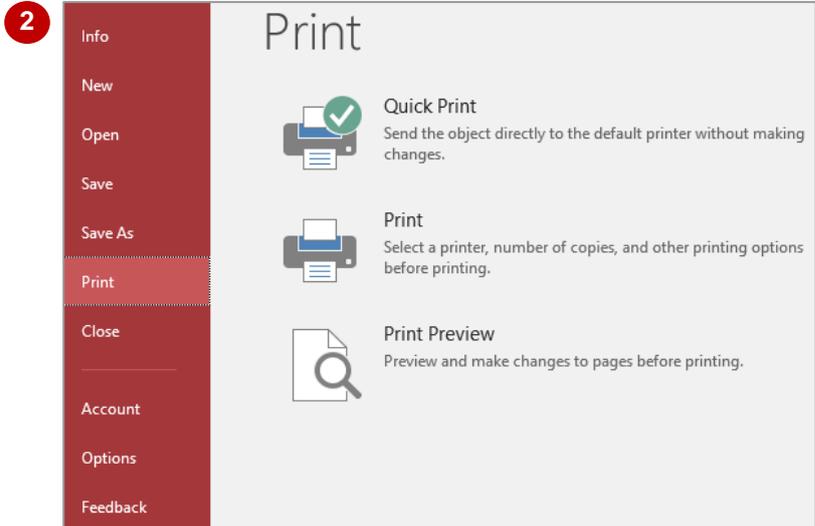
an open table. In this section we'll deal with the easier of the processes – printing records directly from a table.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Working With Records_7.accdb...*

- 1 Double-click on the **Employees** table to open it
- 2 Click on the **File** tab to display the **Backstage**, then click on **Print** to display the **Print** area
- 3 Click on **Print** to display the **Print** dialog box
- 4 Ensure that your printer is online and ready to print, then click on **[OK]**
- 5 Close the table



For Your Reference...

To **print records** from a **table**:

1. Open the table
2. Click on the **File** tab, then click on **Print**
3. Click on **Print**
4. Click on **[OK]**

Handy to Know...

- The default **Print** operation will print all records. You can, however, set a filter on a table so that only records that meet specific criteria will appear and will therefore be printed.

COMPACTING A DATABASE

When you make changes to a table, the changes and deletions appear immediately on the screen for you but unseen data and information is left hanging around within the recesses of the table.

Access has a **compacting** and **repairing** utility that both repairs and resizes the table data and generally cleans things up so that they perform at an optimal level.

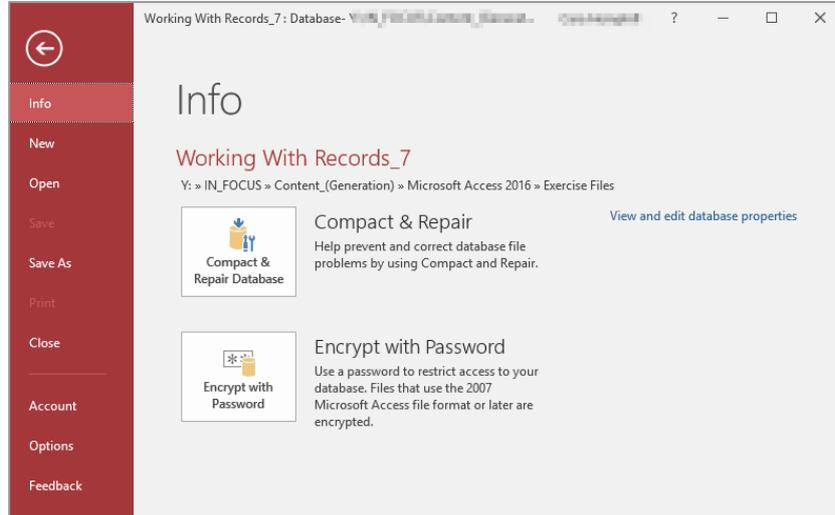
Try This Yourself:

Same File

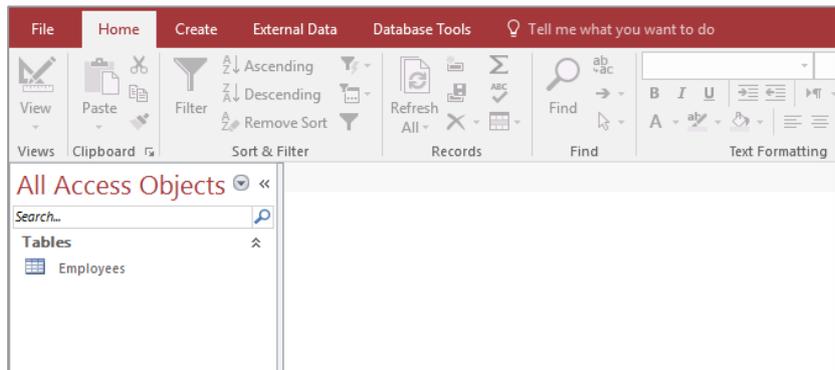
Continue using the previous file with this exercise, or open the file Working With Records_7.accdb...

- 1 Click on the **File** tab to display the **Backstage**, then ensure **Info** is selected
- 2 Click on **[Compact & Repair Database]**

It will look as though nothing has happened as the compaction routine operates quickly and occurs in the background



1



2

For Your Reference...

To **compact** a **database file**:

1. Click on the **File** tab, then click on **Info**
2. Click on **[Compact & Repair Database]**

Handy to Know...

- Using the **Access Options** dialog box (click on the **File** tab and select **Options**), you can set compaction to occur automatically every time you close a database file. In the **Current Database** options, click on **Compact on Close** until it appears with a tick.

NOTES:



CHAPTER 9 **FORMATTING TABLES**

InFocus

Formatting refers to the process of changing the appearance of something, usually so that it is more visually pleasing or easier to read.

The default formatting for tables in Access is rather bland. Fortunately, Access provides a number of tools for formatting tables including changing the gridlines between columns and rows, shading the background of cells, and changing fonts and font colours.

Since tables can be easily printed, formatting a table provides a quick and efficient way of creating and printing simple reports of the data.

In this session you will:

- ✓ learn how to change the width of table columns
- ✓ learn how to format cells in a table
- ✓ learn how to change the fonts used in a table
- ✓ learn how to move fields in a table
- ✓ learn how to freeze and unfreeze columns in a table
- ✓ learn how to hide columns in a table
- ✓ learn how to unhide columns in a table that have been hidden.

CHANGING COLUMN WIDTHS

Often you will find that the width of a column in **Datasheet** view is not appropriate for the data in the field. Either the column is too small and you can't see the data, or the column is unnecessarily

wide. Access allows you to change the width of a column. You can use commands in the ribbon for precise sizing or you can drag the column heading using the mouse.

Try This Yourself:

Open File

Before starting this exercise you **MUST** open the file *Formatting Tables_1.accdb...*

- 1 In the **Navigation** pane, double-click on the **Employees** table to open it
- 2 Click on any **LastName** field
- 3 On the **Home** tab, click on **More** in the **Records** group and select **Field Width** to display the **Column Width** dialog box
- 4 Type **20**, then click on [OK] to widen the **LastName** column
- 5 Point to the border between the **FirstName** and **LastName** headers until it changes to a double-headed arrow, then click and drag right until the **FirstName** field is about half as wide again, as shown
- 6 Point to the border between **Department** and **PhoneNo**, then double-click to perform a best fit on the **Department** column
- 7 Click on **Save** in the **QAT** to save the design changes
- 8 Close the table

2

EmpNo	FirstName	LastName	Department	PhoneNo
101	Julianne	Kerr	Executive	75001
102	Harry	Jones	Executive	75002
103	Angel	Harrington	Executive	75003
104	Peter	Dawson	Executive	75004
105	Mark	Jones	Executive	75005
106	Maureen	Grayson	Executive	61021
107	Augustine	Millson	Administrator	61022
108	Amanda	Bennet	Administrator	61023
110	Neville	Smith	Administrator	61025

3

Column Width

Column Width: 11.5583 OK

Standard Width Cancel

Best Fit

4

EmpNo	FirstName	LastName	Department	PhoneNo
101	Julianne	Kerr	Executive	75001
102	Harry	Jones	Executive	75002
103	Angel	Harrington	Executive	75003
104	Peter	Dawson	Executive	75004
105	Mark	Jones	Executive	75005
106	Maureen	Grayson	Executive	61021
107	Augustine	Millson	Administrator	61022
108	Amanda	Bennet	Administrator	61023
110	Neville	Smith	Administrator	61025

5

EmpNo	FirstName	LastName	Department	PhoneNo
101	Julianne	Kerr	Executive	75001
102	Harry	Jones	Executive	75002
103	Angel	Harrington	Executive	75003
104	Peter	Dawson	Executive	75004
105	Mark	Jones	Executive	75005
106	Maureen	Grayson	Executive	61021
107	Augustine	Millson	Administrator	61022
108	Amanda	Bennet	Administrator	61023
110	Neville	Smith	Administrator	61025

For Your Reference...

To **adjust table column widths**:

- Click in the column, then on the **Home** tab, click on **More** in the **Records** group and select **Field Width**, or
- Drag the field name border to change width

Handy to Know...

- To retain the changes to layouts you must save them by clicking on **Save** in the **Quick Access Toolbar**.
- Changing the width of a column on screen doesn't change the field size property – the field size determines how much data can be placed in a field.

FORMATTING CELLS IN A TABLE

Access provides a number of options for changing things such as the grid lines displayed in the table, the background colours of cells, the alternate background colours of cells and much

more. Formatting cells in the table is achieved using the various commands on the ribbon or through the options in the **Datasheet Formatting** dialog box.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Formatting Tables_2.accdb...*

- 1 Double-click on the **Employees** table to open it
- 2 On the **Home** tab, click on the dialog box launcher in the **Text Formatting** group to open the **Datasheet Formatting** dialog box
- 3 Click on the options in **Cell Effect** and observe the changes in **Sample** – when done, click on **Flat**
- 4 Click on the drop arrow for **Alternate Background Colour** and click on **Maroon 2** in **Standard Colours** (column 6, row 3)
- 5 Ensure that both **Horizontal** and **Vertical** appear ticked in **Gridlines Shown**
- 6 Click on the drop arrow for **Gridline Colour** and click on **Green** in **Standard Colours** (column 7, row 1)
- 7 Click on **[OK]** to apply the changes
- 8 Save and close the table

EmpNo	FirstName	LastName	Department
101	Julianne	Kerr	Executive
102	Harry	Jones	Executive
103	Angel	Harrington	Executive
104	Peter	Dawson	Executive
105	Mark	Jones	Executive
106	Maureen	Grayson	Executive
107	Augustine	Millson	Administration
108	Amanda	Bennet	Administration
110	Neville	Smith	Administration

1

2

EmpNo	FirstName	LastName	Department
101	Julianne	Kerr	Executive
102	Harry	Jones	Executive
103	Angel	Harrington	Executive
104	Peter	Dawson	Executive
105	Mark	Jones	Executive
106	Maureen	Grayson	Executive
107	Augustine	Millson	Administration
108	Amanda	Bennet	Administration
110	Neville	Smith	Administration

7

For Your Reference...

To **change cell formatting**:

1. On the **Home** tab, click on the dialog box launcher in the **Text Formatting** group
2. Change the effects as desired
3. Click on **[OK]**

Handy to Know...

- Unlike a spreadsheet application, such as Microsoft Excel, in Access you can't change individual cells. You can either format the entire table or not at all.

CHANGING FONTS

Access uses a set of standard fonts to display your data in a Datasheet, but you can change the font and apply virtually any font installed on your computer. You can increase or decrease the font

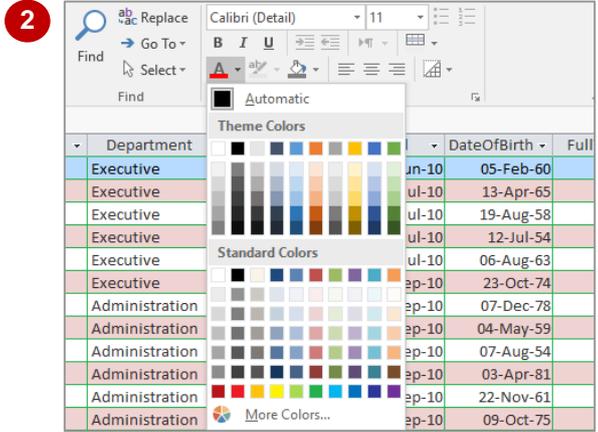
sizes, apply coloured fonts and much more. It is important to make sure you use a font that is easy to read for the sake of accuracy.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Formatting Tables_3.accdb...*

- 1 Double-click on the **Employees** table to open it
- 2 On the **Home** tab, click on the drop arrow for **Font Colour** in the **Text Formatting** group to display a palette of colours
- 3 Click on **Dark Blue** in **Standard Colours** (column 4, row 1) to change the colour of the font
- 4 Click on the drop arrow for **Font Size** and click on **14** to increase the font size
A little overwhelming...
- 5 Click on the drop arrow for **Font Size** and click on **8** to decrease the font size
Now it's a bit small...
- 6 Repeat step 5 and increase the font size to **11**
- 7 Click on the drop arrow for **Font** and click on **Book Antiqua** to change the font
Let's change this back...
- 8 Repeat step 7 and set the font back to **Calibri (Detail)**
- 9 Save and close the table



3

EmpNo	FirstName	LastName	Department
101	Julianne	Kerr	Executive
102	Harry	Jones	Executive
103	Angel	Harrington	Executive
104	Peter	Dawson	Executive
105	Mark	Jones	Executive
106	Maureen	Grayson	Executive
107	Augustine	Millson	Administration
108	Amanda	Bennet	Administration
110	Neville	Smith	Administration

7

EmpNo	FirstName	LastName	Department
101	Julianne	Kerr	Executive
102	Harry	Jones	Executive
103	Angel	Harrington	Executive
104	Peter	Dawson	Executive
105	Mark	Jones	Executive
106	Maureen	Grayson	Executive
107	Augustine	Millson	Administration
108	Amanda	Bennet	Administration

For Your Reference...

To **change** the **fonts** in a **table**:

1. On the **Home** tab, click on the respective drop arrows in the ribbon for **Font**, **Font Size** and **Font Colour** in the **Text Formatting** group
2. Click on the appropriate option

Handy to Know...

- There are a myriad of font formatting options available. However, sometimes keeping the default settings is the most pleasing to the eye. Don't go overboard with "busy" fonts and colours unless you are really trying to make a statement.

MOVING COLUMNS IN A TABLE

The order in which columns are presented in a table is determined by the order in which fields were defined in the design of the table. While these positions may have made sense when the

table was designed, they may be inappropriate for viewing the data in a table. You can alter the column positions in a table and move columns around by dragging.

Try This Yourself:

Same
File

Continue using the previous file with this exercise, or open the file *Formatting Tables_4.accdb...*

- 1 Double-click on the **Employees** table to open it
- 2 Click on the **LastName** field header to select the entire column
- 3 Point to the bottom of the field name until the pointer changes to a four-headed arrow, as shown
The four-headed arrow is the move pointer...
- 4 Hold down the left mouse button and drag left until a thick line appears to the left of the **FirstName** column, as shown
- 5 Release the mouse button to reposition the **LastName** column
- 6 Save and close the table

3

EmpNo	FirstName	LastName	Department
101	Julianne	Kerr	Executive
102	Harry	Jones	Executive
103	Angel	Harrington	Executive
104	Peter	Dawson	Executive
105	Mark	Jones	Executive
106	Maureen	Grayson	Executive
107	Augustine	Millson	Administration
108	Amanda	Bennet	Administration
110	Neville	Smith	Administration

4

EmpNo	FirstName	LastName	Department
101	Julianne	Kerr	Executive
102	Harry	Jones	Executive
103	Angel	Harrington	Executive
104	Peter	Dawson	Executive
105	Mark	Jones	Executive
106	Maureen	Grayson	Executive
107	Augustine	Millson	Administration
108	Amanda	Bennet	Administration
110	Neville	Smith	Administration

5

EmpNo	LastName	FirstName	Department
101	Kerr	Julianne	Executive
102	Jones	Harry	Executive
103	Harrington	Angel	Executive
104	Dawson	Peter	Executive
105	Jones	Mark	Executive
106	Grayson	Maureen	Executive
107	Millson	Augustine	Administration
108	Bennet	Amanda	Administration
110	Smith	Neville	Administration

For Your Reference...

To **move a field** in a **table**:

1. Click on the column header of the field to select it
2. Drag the column to the desired location

Handy to Know...

- Dragging field headers in a table does not alter the position of fields in the table structure when viewed in **Design View**.

FREEZING COLUMNS IN A TABLE

When you have a table that contains many fields, chances are that as you scroll right through the table, the information in the fields at the left will disappear because the screen is not wide

enough to display all of the data. This can be annoying, particularly if there is *reference point data* in the left fields. You can freeze columns in a table, thereby keeping fields locked on the screen.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Formatting Tables_5.accdb...*

1 Double-click on the **Employees** table to open it

2 Click on the **EmpNo** header, hold down **Shift**, then click on the **LastName** header to select both columns

3 On the **Home** tab, click on **More** in the **Records** group, then select **Freeze Fields**

The selected fields will now be locked on the screen...

4 If necessary use the horizontal scroll bar to scroll right until **WeeklyHours** appears next to **LastName**

Let's unfreeze the fields again...

5 On the **Home** tab, click on **More** in the **Records** group and select **Unfreeze All Fields**

6 Save and close the table

2

EmpNo	LastName	FirstName	Department
101	Kerr	Julianne	Executive
102	Jones	Harry	Executive
103	Harrington	Angel	Executive
104	Dawson	Peter	Executive
105	Jones	Mark	Executive
106	Grayson	Maureen	Executive
107	Millson	Augustine	Administration
108	Bennet	Amanda	Administration
110	Smith	Neville	Administration

4

EmpNo	LastName	WeeklyHou	Salary	Comm
101	Kerr	40	\$250,000.00	
102	Jones	40	\$140,000.00	
103	Harrington	40	\$145,000.00	
104	Dawson	40	\$140,000.00	
105	Jones	40	\$132,000.00	
106	Grayson	40	\$85,000.00	Promo
107	Millson	40	\$85,000.00	
108	Bennet	40	\$87,000.00	
110	Smith	40	\$78,000.00	Studyi

For Your Reference...

To **freeze** or **unfreeze columns** in a **table**:

1. Select the column(s) to freeze or unfreeze
2. On the **Home** tab, click on **More** in the **Records** group
3. Select **Freeze Fields** or **Unfreeze All Fields**

Handy to Know...

- You can only freeze multiple columns that are next to one another. If you wish to freeze a column further to the right you will need to reposition it to be alongside the other column(s) first.

HIDING COLUMNS IN A TABLE

In Access it is possible to hide columns in a table from view. When a column is hidden, it is still part of the table but doesn't appear on the screen. This can be useful to prevent sensitive

information, such as salary details, from appearing on the screen and also for making a large table appear smaller, containing more relevant data.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Formatting Tables_6.accdb...*

- 1 Double-click on the **Employees** table to open it
- 2 Click anywhere in the **Department** column to select it
- 3 On the **Home** tab, click on **More** in the **Records** group and select **Hide Fields** to hide the **Department** field
- 4 Repeat the above steps for the following columns: **FirstName**, **Started**, **Fulltime**, **Salary**, and **Comments**
You should now have quite a compact table...
- 5 Save and close the table

EmpNo	LastName	FirstName	Department
101	Kerr	Julianne	Executive
102	Jones	Harry	Executive
103	Harrington	Angel	Executive
104	Dawson	Peter	Executive
105	Jones	Mark	Executive
106	Grayson	Maureen	Executive
107	Millson	Augustine	Administration
108	Bennet	Amanda	Administration

2

EmpNo	LastName	FirstName	PhoneNo
101	Kerr	Julianne	75001
102	Jones	Harry	75002
103	Harrington	Angel	75003
104	Dawson	Peter	75004
105	Jones	Mark	75005
106	Grayson	Maureen	61021
107	Millson	Augustine	61022
108	Bennet	Amanda	61023
110	Smith	Neville	61025

3 The **Department** field (column) is now hidden and the other columns move left one position, so that the **PhoneNo** column is now next to **FirstName**.

EmpNo	LastName	PhoneNo	DateOfBirth	FullT
101	Kerr	75001	05-Feb-60	
102	Jones	75002	13-Apr-65	
103	Harrington	75003	19-Aug-58	
104	Dawson	75004	12-Jul-54	
105	Jones	75005	06-Aug-63	
106	Grayson	61021	23-Oct-74	
107	Millson	61022	07-Dec-78	
108	Bennet	61023	04-May-59	
110	Smith	61025	07-Aug-54	

4

For Your Reference...

To **hide columns** in a **table**:

1. Select the column(s) to hide
2. On the **Home** tab, click on **More** in the **Records** group
3. Select **Hide Fields**

Handy to Know...

- Hidden columns do not print when you print the table. However, any data in them is still utilised in any expressions (formulas) and the like that you have created.

UNHIDING COLUMNS

A hidden column is not deleted, but it will not be displayed on the screen unless you choose to unhide it. The display of columns is recorded in the **Unhide Columns** dialog box. This dialog box

lists all of the columns in the table. Each column has a tick box which indicates whether the column is hidden (unticked) or visible (ticked). This box therefore can be used to unhide hidden columns.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Formatting Tables_7.accdb...*

1 Double-click on the **Employees** table to open it

2 On the **Home** tab, click on **More** in the **Records** group and select **Unhide Fields** to display the **Unhide Columns** dialog box

This dialog box lists all of the fields in the table. Fields that appear with a tick are currently on display, while fields that appear without a tick are currently hidden...

3 Click on each empty tick box until it appears with a tick – notice how the columns reappear in the background as you click

4 Click on **[Close]** to close the **Unhide Columns** dialog box

All of the columns should be visible when you scroll to the right...

5 Save and close the table

EmpNo	LastName	PhoneNo	DateOfBirth	FullT
101	Kerr	75001	05-Feb-60	
102	Jones	75002	13-Apr-65	
103	Harrington	75003	19-Aug-58	
104	Dawson	75004	12-Jul-54	
105	Jones	75005	06-Aug-63	
106	Grayson	61021	23-Oct-74	
107	Millson	61022	07-Dec-78	
108	Bennet	61023	04-May-59	
110	Smith	61025	07-Aug-54	

1

Unhide Columns ? X

Column:

- EmpNo
- LastName
- FirstName
- Department
- PhoneNo
- Started
- DateOfBirth
- FullTime
- WeeklyHours
- Salary
- Comments
- Click to Add

Close

2

Unhide Columns ? X

Column:

- EmpNo
- LastName
- FirstName
- Department
- PhoneNo
- Started
- DateOfBirth
- FullTime
- WeeklyHours
- Salary
- Comments
- Click to Add

Close

3

For Your Reference...

To **unhide columns** in a **table**:

1. Open the table
2. On the **Home** tab, click on **More** in the **Records** group and select **Unhide Fields**
3. Tick columns to unhide, then click on **[Close]**

Handy to Know...

- You can use the **Unhide Columns** dialog box to unhide and hide columns from the display. Just click in the tick box for the relevant field to remove the tick (hide) or display the tick (unhide).

CHAPTER 10 SORTING AND FILTERING

InFocus

In Access, data in a table is sorted in its default mode by the **primary key**. However, you can **sort** the data virtually in any order that you wish.

In addition, you can apply a **filter** so that only specific records appear in the table. When you first open a table you will see all records in the table. A filter can be set so that only records that match the specific conditions of the filter are displayed.

Sorting and filtering are two useful tools for working with the records within a table.

In this session you will:

- ✓ learn how to perform simple sorting operations in a table
- ✓ learn how to sort on more than one field in a table
- ✓ learn how to apply a simple filter to a table
- ✓ learn how to work with filters
- ✓ learn how to apply a filter between two dates.

SIMPLE SORTING

Sorting in databases involves arranging records in alphabetical or numerical order. For example, you may wish to see all of your employees in last name order, or in order of the department in

which they are employed. Simple sorting in Access is performed using the two sorting commands found on the ribbon: **Ascending** and **Descending**.

Try This Yourself:

Open File

Before starting this exercise you **MUST** open the file *Sort And Filter_1.accdb...*

- 1 Double-click on the **Employees** table to open it
The records are currently in primary key (EmpNo) order...
- 2 Click in any **LastName** field then, on the **Home** tab, click on **Ascending** in the **Sort & Filter** group to sort the records by **LastName**
- 3 Click on **Descending** to reverse the sort order
- 4 Click in any **Department** field, then click on **Ascending**
- 5 Click on **Close** to close the table
Since sorting is deemed to be a layout feature you will be asked if you wish to save changes to the layout...
- 6 Click on **[No]** to discard the changes and retain the original order

1

EmpNo	FirstName	LastName	Department	PhoneNo
101	Julianne	Kerr	Executive	75001
102	Harry	Jones	Executive	75002
103	Angel	Harrington	Executive	75003
104	Peter	Dawson	Executive	75004
105	Mark	Jones	Executive	75005
106	Maureen	Grayson	Occupational S	61021
107	Augustine	Millson	Administrator	61022
108	Amanda	Bennet	Administrator	61023
109	George	Samuelson	Administrator	61024
110	Neville	Smith	Administrator	61025
111	Petra	Henricks	Administrator	61026
112	Vivienne	Clark	Administrator	61027

2

4

EmpNo	FirstName	LastName	Department	PhoneNo
110	Neville	Smith	Administration	61025
205	Trond	Abelseth	Administrator	61014
118	Lance	Williams	Administrator	61005
117	Charles	Morris	Administrator	61004
115	Sandra	Kendall	Administrator	61002
114	Victor	Brown	Administrator	61001
113	Jerry	Hancock	Administrator	61028
112	Vivienne	Clark	Administrator	61027
181	Leigh	Rellote	Administrator	61015
183	Michael	Chapman	Administrator	61012
184	Natalie	Ivanson	Administrator	61006
185	Pavlos	Andronikos	Administrator	61016

For Your Reference...

To **sort data** in a **table**:

1. Click in the field to sort
2. On the **Home** tab, click on **Ascending** or **Descending** in the **Sort & Filter** group

Handy to Know...

- By default, tables are sorted according to the **primary key**. If you choose to save the layout of a table after it has been sorted, the records will appear in this order when you next open the table.

SORTING ON SEVERAL FIELDS

Simple sorting is easy. However, how do you sort by department so that you can see the employees in alphabetical order? To do this you must select several fields at the same time and

then use the relevant sort tool. You can select more than one field, and thereby sort on several fields, by using the **[Shift]** key when making your selection.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Sort And Filter_1.accdb...*

- 1 Double-click on the **Employees** table to open it
- 2 Click on the **LastName** field header, then hold down **[Shift]** and click on the **Department** field header to select both fields
- 3 On the **Home** tab, click on **Ascending** in the **Sort & Filter** group
The records will now be sorted first by LastName and then by Department...
- 4 Click on the **Started** field header, then hold down **[Shift]** and click on the **DateOfBirth** field header
- 5 Click on **Ascending** to sort the records first by **DateStarted** and then by **DateOfBirth**
- 6 Close the table, then click on **[No]** to discard the changes

2

EmpNo	FirstName	LastName	Department	PhoneNo
101	Julianne	Kerr	Executive	75001
102	Harry	Jones	Executive	75002
103	Angel	Harrington	Executive	75003
104	Peter	Dawson	Executive	75004
105	Mark	Jones	Executive	75005
106	Maureen	Grayson	Occupational S	61021
107	Augustine	Millson	Administration	61022
108	Amanda	Bennet	Administration	61023
109	George	Samuelson	Administration	61024
110	Neville	Smith	Administration	61025

3

EmpNo	FirstName	LastName	Department	PhoneNo
178	Herbert	Aaronson	Sales & Market	63016
205	Trond	Abelseth	Administration	61014
138	Ben	Adler	Sales & Market	63003
129	Lisa	Afonczenko	Sales & Market	63027
192	Christof	Ahlund	Administration	61017
171	Adlina	Ahmad	Research & De	62021
168	Shahram	Akbarzadeh	Research & De	62006
174	Chantal	Alcide	Sales & Market	63022
190	Aris	Alexopoulos	Administration	61009
134	Syed	Ali	Sales & Market	63014

5

LastName	Department	PhoneNo	Started	DateOfBirth
Peterson	Research & De	62033	03-Jan-08	03-Nov-66
Amin	Research & De	62032	03-Jan-08	09-Feb-67
Berninghauser	Research & De	62035	03-Jan-08	27-Jul-67
Azzola	Research & De	62031	03-Jan-08	06-Sep-73
Nicolopolous	Sales & Marke	63035	03-Jan-08	04-Jul-74
Rahman	Research & De	62034	03-Jan-08	05-Aug-84
Andric	Sales & Marke	63036	03-Jan-08	13-May-87
Smith	Research & De	62036	21-Mar-08	05-Jul-54
Moore	Sales & Marke	63034	03-Jan-10	04-Dec-82
Kerr	Executive	75001	28-Jun-10	05-Feb-60
Dawson	Executive	75004	19-Jul-10	12-Jul-54

For Your Reference...

To **sort** on **several fields**:

1. Click on the first field, hold down **[Shift]** and click on the last field
2. On the **Home** tab, click on either **Ascending** or **Descending** in the **Sort & Filter** group

Handy to Know...

- Fields must be next to one another to sort on multiple fields. You can drag fields around a table by clicking on the field heading to select it, then click and drag the field to another location.

SIMPLE FILTERING

Access allows you to hide records in a table. This is achieved by setting a **filter**. When you set a filter you must provide Access with **criteria** that it can use to work out which records to display. The

simplest form of criteria allows you to choose an existing value from a field in the table. This value is then compared to the values in the other records, and records that don't match it are hidden.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Sort And Filter_1.accdb...*

- 1 Double-click on the **Employees** table to open it
- 2 Click on any **Administration** record in the **Department** field
- 3 On the **Home** tab, click on **Selection** in the **Sort & Filter** group and select **Equals "Administration"**

Only records with the word **Administration** in the **Department** field are displayed – there are 26...

- 4 Click on **09-Dec-07** for **EmpNo 181**
- 5 Click on **Selection** in the **Sort & Filter** group and select **On or After 09-Dec-07**

Only those records where **Department** is "Administration", for people who started after **09-Dec-07**, are displayed...

- 6 Close the table, then click on **[No]** to discard the changes

2

EmpNo	FirstName	LastName	Department	PhoneNo
101	Julianne	Kerr	Executive	75001
102	Harry	Jones	Executive	75002
103	Angel	Harrington	Executive	75003
104	Peter	Dawson	Executive	75004
105	Mark	Jones	Executive	75005
106	Maureen	Grayson	Occupational S	61021
107	Augustine	Millson	Administrator	61022
108	Amanda	Bennet	Administrator	61023
109	George	Samuelson	Administrator	61024
110	Neville	Smith	Administrator	61025

3

FirstName	LastName	Department	PhoneNo	Started	Da
Julianne	Kerr	Executive	75001	28-Jun-10	
Harry	Jones	Executive	75002	19-Jul-10	
Angel	Harrington	Executive	75003	19-Jul-10	
Peter	Dawson	Executive	75004	19-Jul-10	

4

EmpNo	FirstName	LastName	Department	PhoneNo
107	Augustine	Millson	Administrator	61022
108	Amanda	Bennet	Administrator	61023
109	George	Samuelson	Administrator	61024
110	Neville	Smith	Administrator	61025
111	Petra	Henricks	Administrator	61026
112	Vivienne	Clark	Administrator	61027
113	Jerry	Hancock	Administrator	61028
114	Victor	Brown	Administrator	61001
115	Sandra	Kendall	Administrator	61002
117	Charles	Morris	Administrator	61004
118	Lance	Williams	Administrator	61005

5

Millson	Administrator	61022	06-Sep-10	07-Dec-78
Bennet	Administrator	61023	06-Sep-10	04-May-59
Samuelson	Administrator	61024	06-Sep-10	01-Dec-87
Smith	Administrator	61025	06-Sep-10	07-Aug-54
Henricks	Administrator	61026	06-Sep-10	03-Apr-81
Clark	Administrator	61027	06-Sep-10	22-Nov-61
Hancock	Administrator	61028	06-Sep-10	09-Oct-75
Brown	Administrator	61001	06-Sep-10	02-Apr-73
Kendall	Administrator	61002	06-Sep-10	06-Nov-78
Morris	Administrator	61004	06-Sep-10	20-Dec-77
Williams	Administrator	61005	23-Sep-10	03-May-75
Rellote	Administrator	61015	09-Dec-10	03-Sep-68
Chapman	Administrator	61012	02-Dec-10	17-May-75

For Your Reference...

To **create a simple filter**:

1. Click on a field entry to use as criteria
2. On the **Home** tab, click on **Selection** in the **Sort & Filter** group and select **Equals** <example>

Handy to Know...

- When a filter is applied to a table, the word **Filtered** appears in the **Status bar**, alongside the record count.

WORKING WITH FILTERS

Filters provide a powerful way of working with records in a table. There are a number of useful tools and commands for working with filters that you should become acquainted with. For

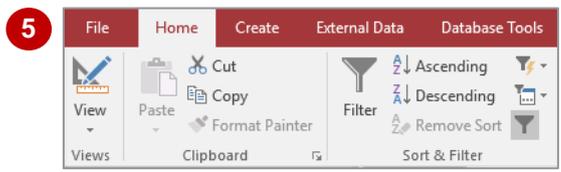
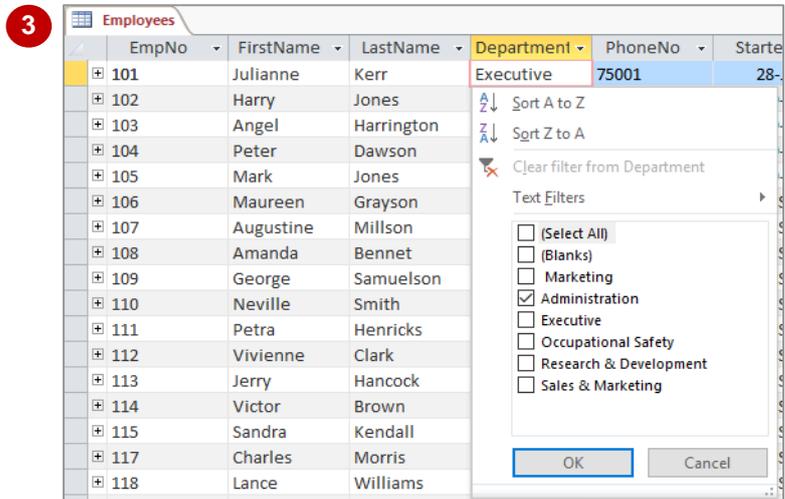
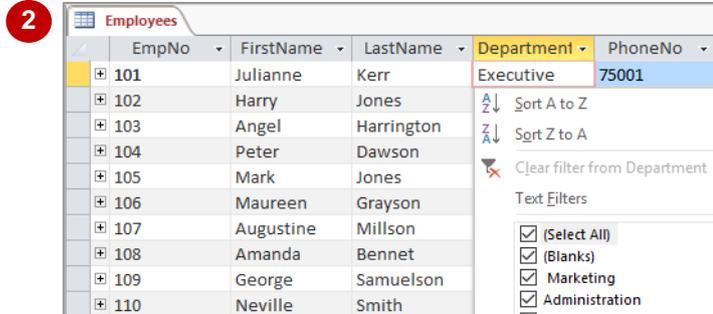
example, Access allows you to toggle a filter off and on so that you can switch between the unfiltered and filtered records. You can also clear a filter to display all of the data.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Sort And Filter_1.accdb...*

- 1 Double-click on the **Employees** table, then click on any **Department** field
- 2 On the **Home** tab, click on **Filter** in the **Sort & Filter** group to see each field value in a menu list
- 3 Click on the tick for **Select All** to remove all of the ticks, then click on the tick box for **Administration**
- 4 Click on **[OK]** to see only the **Administration** records
- 5 On the **Home** tab, click on **Toggle Filter** in the **Sort & Filter** group several times to switch the filter off and on
- 6 Click on any **Department** field, then click on **Filter** to see the **Filter** menu
- 7 Select **Clear filter from Department** to remove the filter
- 8 Close the table, then click on **[No]** to discard the changes



For Your Reference...

To **clear** a **filter**:

1. Click in the field with the filter
2. On the **Home** tab, click on **Filter** in the **Sort & Filter** group
3. Select **Clear Filter from <fieldname>** and click on **[OK]** to remove the filter

Handy to Know...

- When a filter is applied to data, a funnel icon appears at the top of the table next to the names of the field(s) that have a filter applied. When the filter is switched off, the words **No Filter** appears in the status bar, but the words are greyed out.

FILTERING BETWEEN DATES

Applying filters to dates can be a bit tricky. Generally you don't want to filter on a specific date, but rather a range of dates. For example, in our case study you may want to see all of the

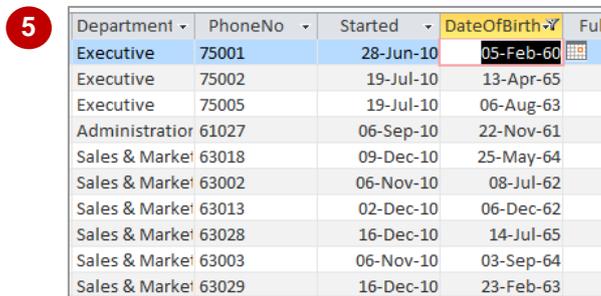
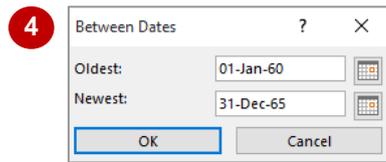
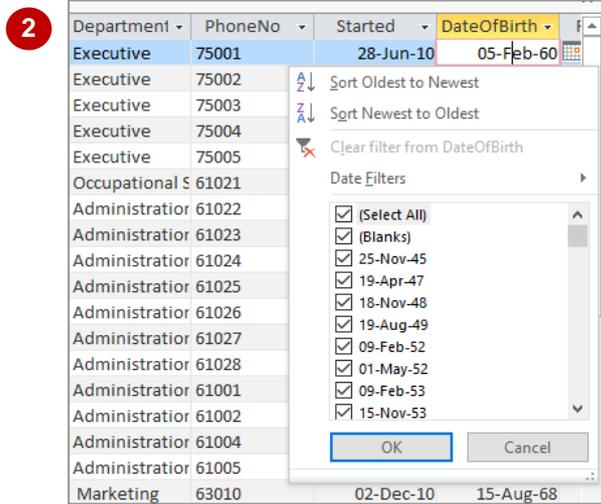
people who started in December 2007. This would require you to filter between the dates of Dec 1 and Dec 31. This can be done using the **Between Dates** filter option.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file A1608 Sort And Filter_1.accdb...

- 1 Double-click on the **Employees** table to open it, then click in any **DateOfBirth** field
- 2 On the **Home** tab, click on **Filter** in the **Sort & Filter** group to display the filter menu
- 3 Point to **Date Filters** then select **Between** to display the **Between Dates** dialog box
- 4 Type **01-Jan-60** in **Oldest**, press **Tab** twice and type **31-Dec-65** in **Newest**
- 5 Click on **[OK]** to see all of the employees born between 1960 and 1965
- 6 Close the table – click on **[No]** to discard the changes



For Your Reference...

To **filter between dates**:

1. Click in the date field then, on the **Home** tab, click on **Filter** in the **Sort & Filter** group
2. Select **Date Filters** > **Between**
3. Type the start date in **Oldest** and the end date in **Newest**, then click on **[OK]**

Handy to Know...

- The dates specified in the **Between Dates** dialog box are inclusive. For instance, if **Oldest** is set to **01-01-60** and **Newest** is set to **31-12-65**, then anyone born on January 1, 1960 or December 31, 1965 would also be included in the results.

CHAPTER 11 IMPORTING & EXPORTING RECORDS

InFocus

Not everyone uses Microsoft Access and, as a consequence, you may find the need in Access to work with data from other applications and sources.

Microsoft Access 2016 allows you to export records to and import records from a number of different applications including other databases, spreadsheets, and text files.

In this session you'll explore exporting data from an existing table to a variety of sources and importing data from a number of different applications.

In this session you will:

- ✓ learn how to export records to **Microsoft Excel**
- ✓ learn how to export records to a delimited text file
- ✓ learn how to import data from **Microsoft Excel**
- ✓ learn how to import data from a text file
- ✓ learn how to link to an external data source.

EXPORTING RECORDS TO MICROSOFT EXCEL

Microsoft Excel comes from the same suite of products as Microsoft Access, so exporting records is easy and relatively effortless. The built-in **Export Wizard** automatically converts

fields from an Access database into columns and converts Access records into rows. This enables easy export of the data to an Excel workbook.

Try This Yourself:

Open File

Before starting this exercise you **MUST** open the file *Exporting Records_1.accdb...*

1 In the **Navigation** pane, double-click on the table **Employees – Administration** to open it

2 Click on the **External Data** tab, then click on **Excel** in the **Export** group to display the **Export Wizard**

Here you can specify a destination File name and location...

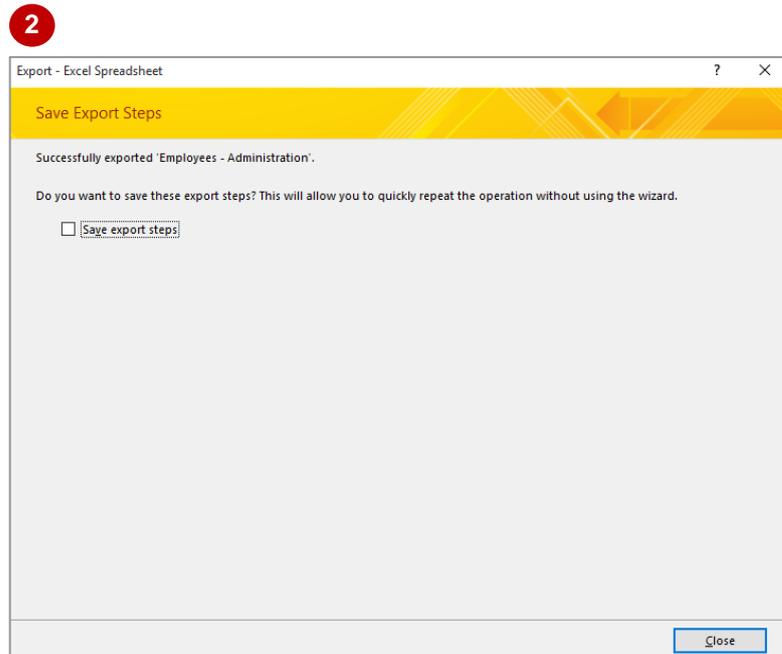
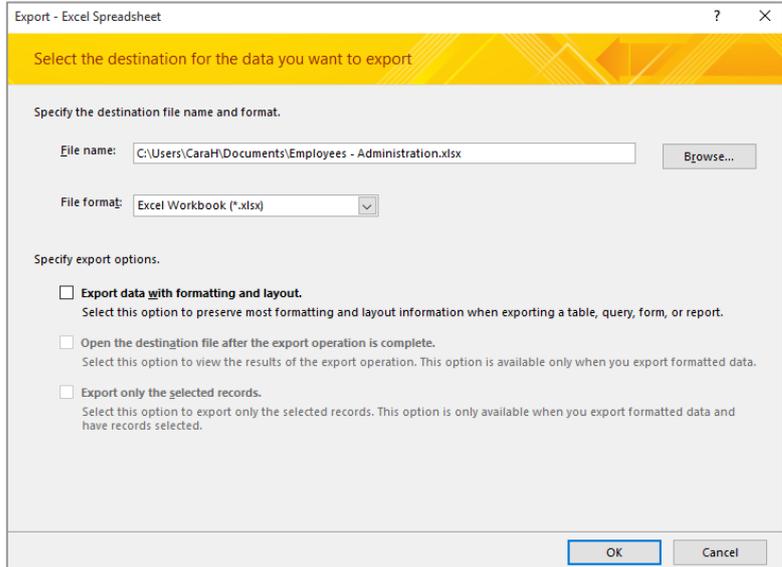
3 Click on **[Browse]**, then locate and double-click on the course files folder

We will apply the file name that appears by default...

4 Click on **[Save]**, then click on **[OK]** to perform the export and display the **Save Export Steps** option in the wizard

5 Ensure that **Save export steps** appears without a tick, then click on **[Close]** to return to the table

6 Close the table



4

For Your Reference...

To **export records** to **Microsoft Excel**:

1. Open the table to export
2. On the **External Data** tab, click on **Excel** in the **Export** group
3. Complete the steps in the wizard

Handy to Know...

- The **Save Export Steps** options of the **Export Wizard** allows you to save any export settings you may have used. This is handy if you need to perform the same operation on a routine basis. If you only do the export as a one-off operation, there is probably no need to retain the steps.

EXPORTING RECORDS TO A TEXT FILE

Text files are the mainstay of data exporting and importing. Virtually every application that has data will have a way of importing and exporting text file formats. So, if you intend to export

Access records to an application that doesn't appear in the export options, you can simply export it as text and then import it into the destination application.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Exporting Records_1.accdb...*

1 Open the **Employees – Sales** table

2 Click on the **External Data** tab, then click on **Text File** in the **Export** group to display the **Export Wizard**

Exporting to text requires a few extra steps...

3 Click on **[Browse]**, locate and select the course files folder, then click on **[Save]** to set the destination and click on **[OK]**

4 Ensure that **Delimited** is selected, then click on **[Next]** to specify the delimiter character

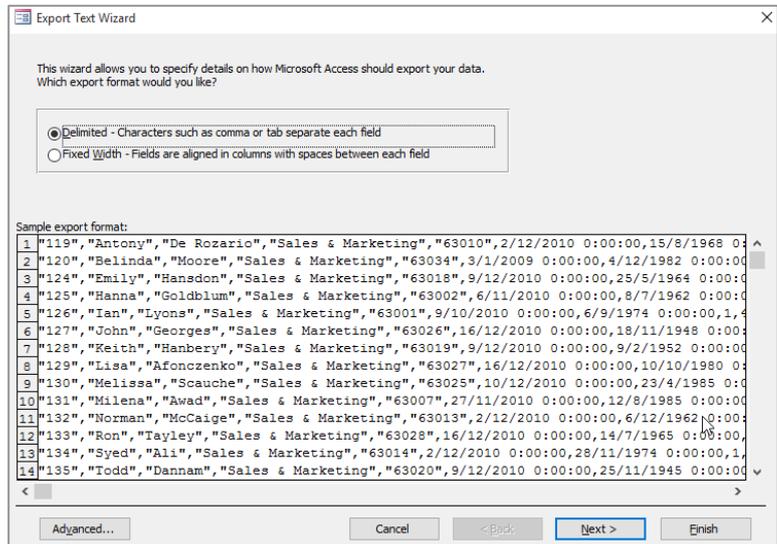
5 Ensure that **Comma** is selected as the delimiter, then click on **[Next]**

We'll use the suggested filename...

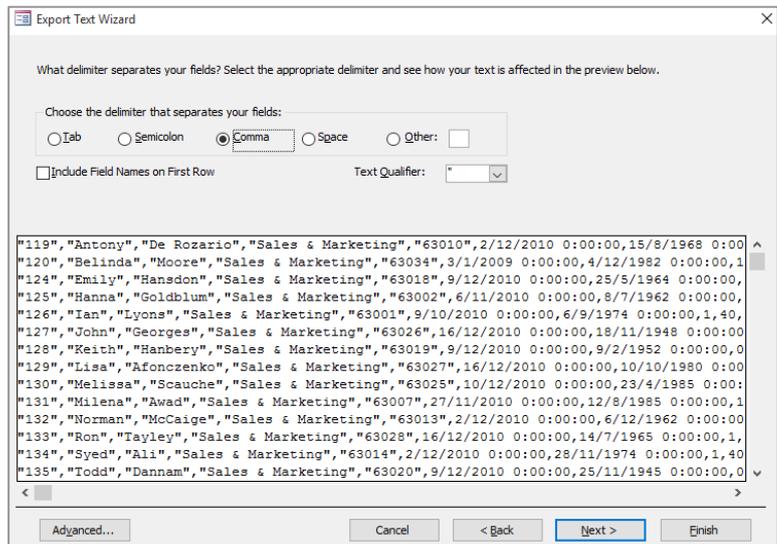
6 Click on **[Finish]** to display the **Save Export Steps** option in the wizard

7 Ensure that **Save export steps** appears without a tick, then click on **[Close]**

8 Close the table



3



4

For Your Reference...

To **export records** to a **text file format**:

1. Open the table to export
2. On the **External Data** tab, click on **Text File** in the **Export** group
3. Complete the steps in the wizard

Handy to Know...

- There are two types of text files. One type has the data **delimited** (enclosed) with quotation marks and separated by commas. The other type is where the data is **fixed length**. The delimited type, while it sounds more complex, is the one most supported by other applications.

IMPORTING FROM MICROSOFT EXCEL

Importing data from Microsoft Excel is a straightforward process, but there are several more steps than you might expect. This is because Access has to take into account so

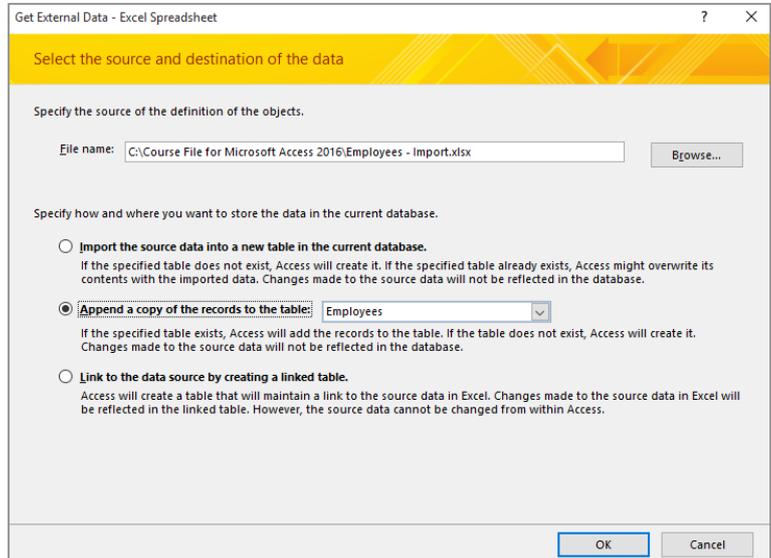
many of the different nuances in Excel data. The **Import Wizard** guides you through the steps, prompting for responses about the Excel data being imported.

Try This Yourself:

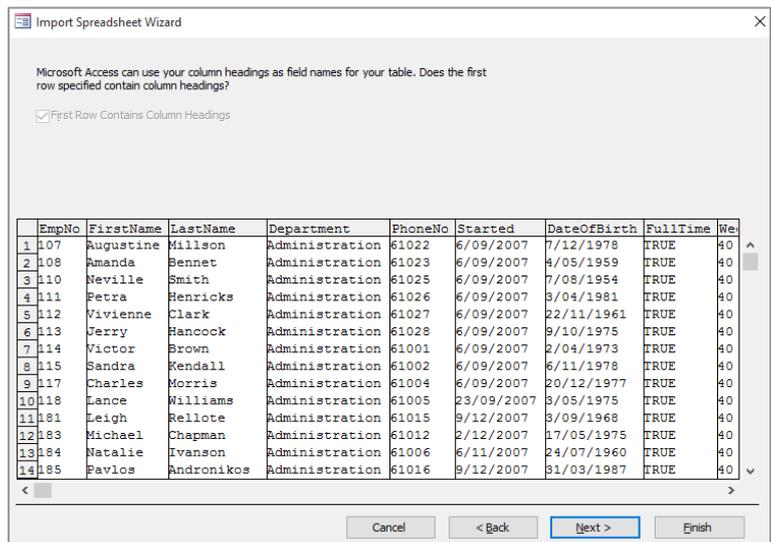
Open File

Before starting this exercise you **MUST** open the file *Importing Records_2.accdb...*

- 1 Click on the **External Data** tab, then click on **Excel** in the **Import & Link** group to start the **Get External Data** wizard
- 2 Click on **[Browse]** to display the **File Open** dialog box, then locate and open the course files folder
- 3 Click on **Employees – Import.xlsx**, then click on **[Open]**
- 4 Click on **Append a copy of the records to the table** and ensure that **Employees** is the selected table
- 5 Click on **[OK]** to display the **Import Spreadsheet Wizard** screen
- 6 Click on **[Next]** to display the column headings
- 7 Click on **[Next]** to display the final screen
- 8 Click on **[Finish]** to display the **Save Import Steps** screen, ensure that **Save import steps** appears without a tick, then click on **[Close]**
- 9 Open the **Employees** table to view the imported data, then close the table



4



6

For Your Reference...

To **import data** from **Microsoft Excel**:

1. On the **External Data** tab, click on **Excel** in the **Import & Link** group
2. Choose the file to import, then click on **[OK]**
3. Complete the steps of the **Get External Data** wizard

Handy to Know...

- When importing data from Excel, Access has to manipulate the data from a 3-dimensional spreadsheet format into a 2-dimensional database format – that is why there are quite a few steps in the import wizard.

IMPORTING FROM A TEXT FILE

Since text file formats are common in the computer world it is only logical to expect that Access would have routines that allow you to import from text files. When importing data from a

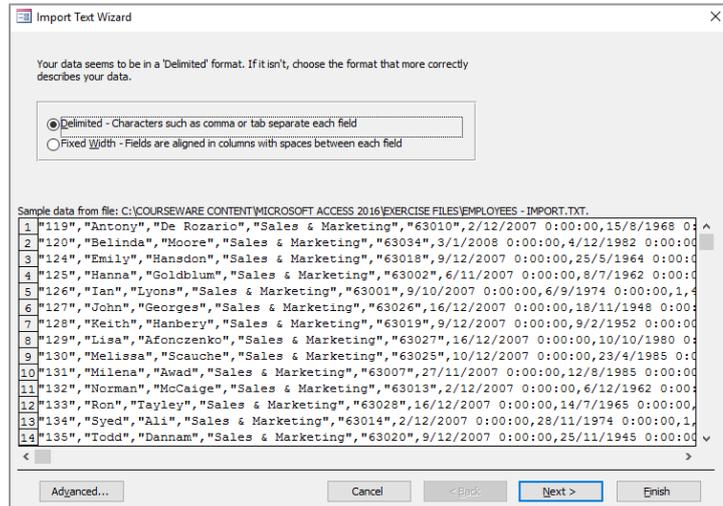
text file, Access needs to have specific information about the format of the data and it will prompt you for this information through a series of steps in the **Get External Data Wizard**.

Try This Yourself:

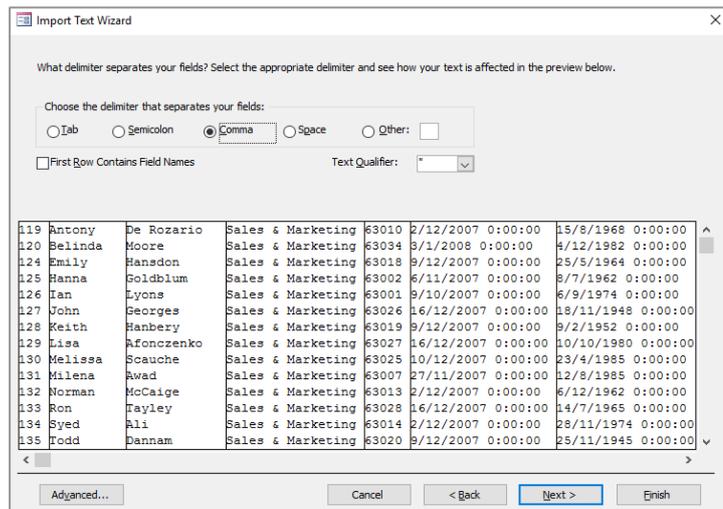
Same File

Continue using the previous file with this exercise, or open the file *Importing Records_3.accdb...*

- 1 Click on the **External Data** tab, then click on **Text File** in the **Import & Link** group to start the **Get External Data** wizard
- 2 Click on **[Browse]** to display the **File Open** dialog box, ensure the course files folder is open, then click on **Employees – Import.txt** and click on **[Open]**
- 3 Click on **Append a copy of the records to the table** and ensure the **Employees** table is selected
- 4 Click on **[OK]** to display the **Import Text Wizard** screen
- 5 Ensure that **Delimited** is selected, then click on **[Next]** to display the delimiters options
- 6 Ensure that **Comma** is selected, then click on **[Next]** to see the final screen
- 7 Click on **[Finish]** to display the **Save import steps** screen, ensure that **Save import steps** appears without a tick, then click on **[Close]**
- 8 Open the table **Employees** to see the additional imported records, then close the table



4



5

For Your Reference...

To **import data** from a **text file**:

1. On the **External Data** tab, click on **Text File** in the **Import & Link** group
2. Choose the file to import and click on **[OK]**
3. Complete the steps of the **Get External Data Wizard**

Handy to Know...

- When importing data, you should always open the table into which the data was imported to ensure that it has been imported correctly.

LINKING TO AN EXTERNAL SOURCE

In Access you can elect to **link to an external data source**. When you do this, the external source appears like a table in the Navigation pane. The linked table can be opened and

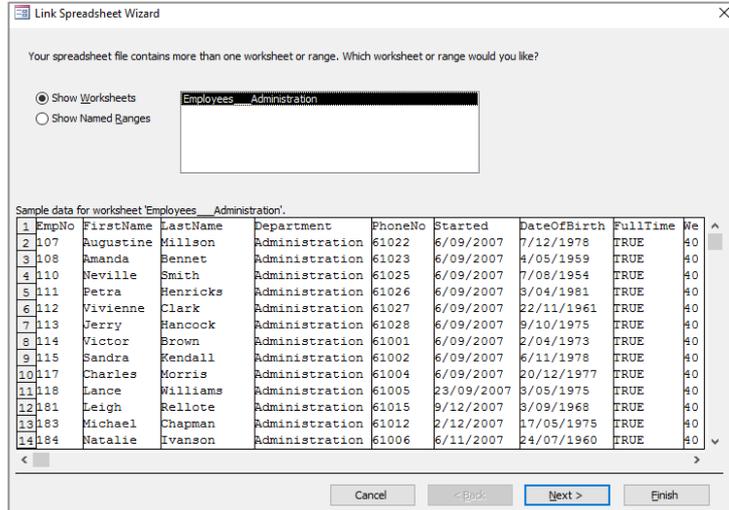
viewed like any other table, but the data cannot be changed. The advantage of this approach is that the linked table always contains the most recent changes to the external data source.

Try This Yourself:

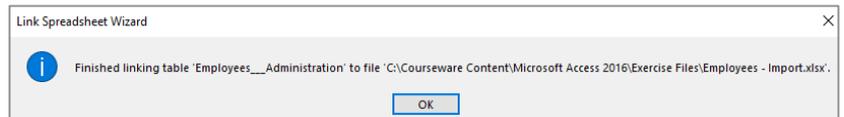
Same File

Continue using the previous file with this exercise, or open the file *Importing Records_4.accdb...*

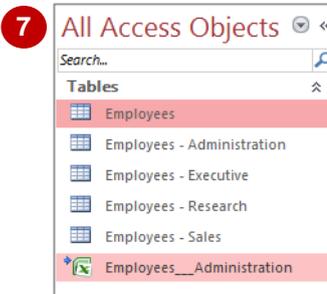
- 1 Click on the **External Data** tab, then click on **Excel** in the **Import & Link** group, to start the **Get External Data** wizard
- 2 Click on **[Browse]** to display the **File Open** dialog box, ensure the course files folder is open, then click on **Employees – Import.xlsx** and click on **[Open]**
- 3 Click on **Link to the data source by creating a linked table**, then click on **[OK]** to display the **Link Spreadsheet Wizard** screen
- 4 Click on **[Next]** to display the column headings screen
- 5 Ensure that **First Row Contains Column Headings** is selected, then click on **[Next]** to display the final screen
- 6 Click on **[Finish]**
A message will display when linking is complete...
- 7 Click on **[OK]** to see the linked table in the **Navigation** pane



3



6



7

For Your Reference...

To **create** a **link** to an **external source**:

- Perform the import in the normal way except choose the **Link to the data source by creating a linked table** option on the first screen

Handy to Know...

- There are pros and cons associated with linking to an external data source. Although you always get the latest data, you are restricted in what can be done with it. If you need to import data on a regular basis, use this option, otherwise stick with the straight import routines.

CHAPTER 12 CREATING AND USING FORMS

InFocus

Forms are used to provide a friendly interface so that data in tables, queries and reports can be accessed more easily.

They can be used to provide a navigation system, to automate processes and to generally make life easier for those users whose knowledge of Access is limited.

In this session you will:

- ✓ gain an understanding of how forms work in **Access**
- ✓ learn how to create a basic form
- ✓ learn how to create a split form
- ✓ learn how to create a form based on a query
- ✓ learn how to create a form using the **Form Wizard**
- ✓ learn how to work with existing forms
- ✓ learn how to edit records in a form
- ✓ learn how to delete records through a form
- ✓ learn how to delete a form from a database file.

UNDERSTANDING FORMS

Forms are like special templates that you can use to make data, which would normally appear in rows and columns in a table, more presentable on screen. Forms can be used for viewing data

on the screen, for editing data, and for adding new data. Forms can be created quickly from scratch, based on an existing table, or by using a special **Wizard** that steps you through the process.

Creating Forms

Working with records in tables is not difficult to do. However, opening a table and allowing people to work directly in it can be fraught with problems. They may inadvertently delete records, or corrupt data in fields, and even see some fields of data (such as salary information) that you would prefer they rather did not.

So, instead of providing users with direct access to the data in a table, you can control what they see and what they work with, by giving them access to the data through forms.

Forms themselves do not contain data, but are created as structural **templates** into which the data is placed when the form is viewed. The template basically defines *what to display* (e.g. which fields to use), *where to display it* (e.g. where the fields should appear on the page), and *how it should look* (e.g. font size, colour, etc).

When a form is first created it is based on either an existing table or an existing query. You base the form on a table if you wish to report on all of the data, or a query if you wish to view a subset of the data.

The Many Ways of Creating a Form

In Access you can create simple forms or very complex and intricate forms. So, as you'd expect, Access offers several ways for you to create forms. In Access, forms are created using the tools on the **Create** tab of the ribbon. Here you can create:

- A basic form using the **Form** tool, the **Split Form** tool or the **Multiple Items** tool – these tools create a form that appears almost instantly and requires very little work on your part, as all of the work is done for you.
- More intricate forms using the **Form Wizard** tool – the **Form Wizard** metaphorically holds your hand and asks you a series of questions which ultimately, when answered, result in the form being created for you, as specified.
- A complex, elaborate form using either the **Blank Form** tool or the **Form Design** tool – these options present you with a blank form canvas and you are required to do all of the work to lay out what you want, where you want it, and how it should look. This is the most difficult of the options to use as you have to do everything yourself.

Achieving a Balance

There is no right or wrong way to create forms – choose the method that achieves the results using the least amount of time and effort.

The beauty of the form creation tools in Access is that even after you create a form using any of the techniques above, that form can still be modified and customised to suit specifically what you are after. So even if the basic form doesn't quite provide you with what you want or the **Form Wizard** hasn't quite done all it should, you can still change the form design yourself.

Many Access users create their forms initially using the **Form** tool, the **Split Form** tool or the **Form Wizard** tool, and then fine tune the layout or the design to suit their needs.

CREATING A BASIC FORM

One of the easiest and simplest ways to create a form in Access is to use the **Form** tool which is found on the **Create** tab of the ribbon. All you need to do is select the table or query upon

which to base the form and then click on the tool. This is a good way to get an instant form on the screen for data entry or editing.

Try This Yourself:

Open File

Before starting this exercise you **MUST** open the file *Creating Forms_1.accdb...*

- 1 In the **Navigation** pane, click on the **Employees** table to specify the table to use
 - 2 Click on the **Create** tab, then click on **Form** in the **Forms** group
- A form layout will instantly appear. The layout view of the form allows you to make adjustments to the form template...
- 3 Click on the top half of **View** in the **Views** group to see the form in **Form View** where the data is presented
 - 4 Click on the various **Record** buttons in the **Navigation** bar at the bottom of the screen to move through the records
 - 5 Click on **Save** in the **QAT** to display the **Save As** dialog box
 - 6 Type **frmEmployees** in **Form Name** and click on **[OK]** to save the form
 - 7 Close the form

2

4

6

For Your Reference...

To **create** a **basic form**:

1. Select the table or query in the **Navigation** pane
2. Click on the **Create** tab, and click on **Form** in the **Forms** group

Handy to Know...

- When creating a basic form for a table, linked tables will also appear as subdatasheets on the form. Access assumes you want to see the records from lookup tables in a form.

CREATING A SPLIT FORM

Another quick and basic form that you can create in Access is a **split form**. A split form shows a standard form at the top of the screen, where only one record appears at a time, and a

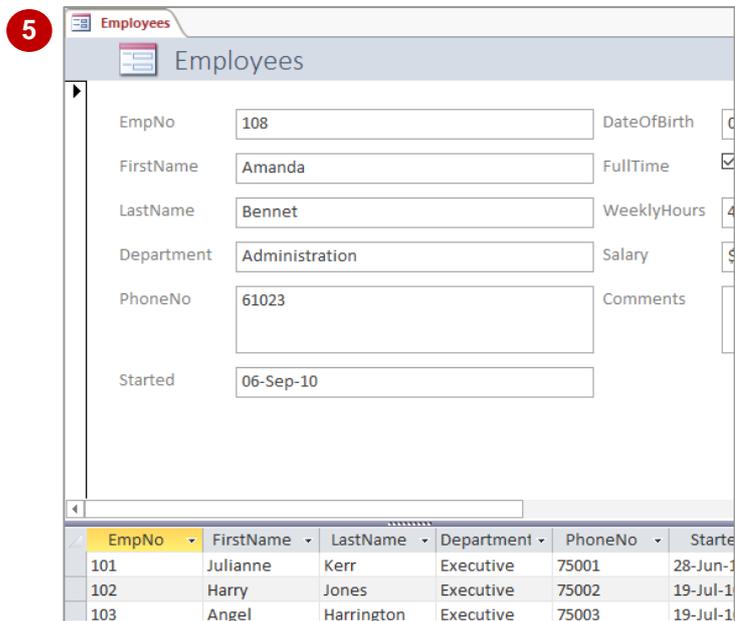
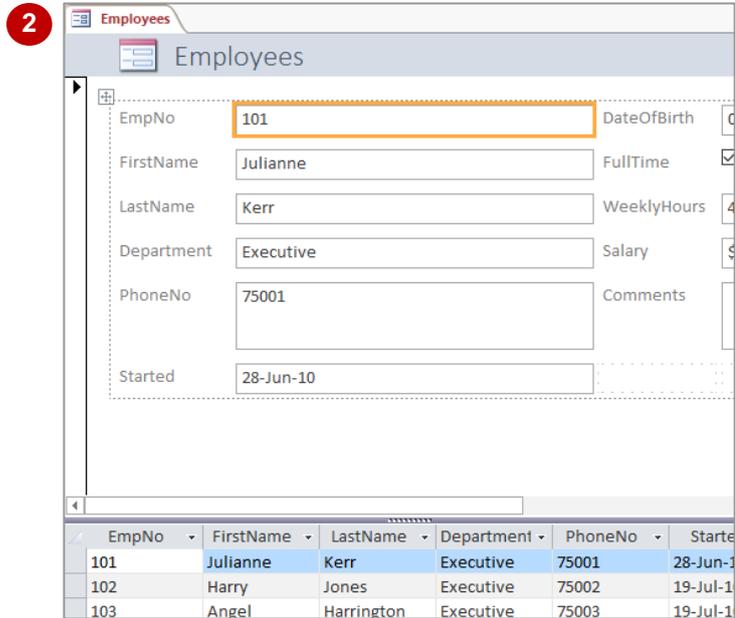
datasheet view at the bottom of the screen. The datasheet shows the records in a table format. Each time you click on a record in the datasheet, the fields for that record appear in the top form.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Forms_2.accdb...*

- 1 In the **Navigation** pane, click on the **Employees** table
- 2 Click on the **Create** tab, then click on **More Forms** in the **Forms** group and select **Split Form**
A split form layout will instantly appear...
- 3 On the **Form Layout Tools: Design** tab, click on **View** in the **Views** group to see the form in **Form View**
- 4 Click on the record buttons in the **Navigation** bar
- 5 Click on the record for **EmpNo 108** (Amanda Bennet) to display the details in the top form
- 6 Click on **Save** in the **QAT** to display the **Save As** dialog box
- 7 Type **frmEmployeesSplitForm** in **Form Name** and click on **[OK]**
- 8 Close the form



For Your Reference...

To **create** a **split form**:

1. In the **Navigation** pane, select the table or query
2. Click on the **Create** tab, then click on **More Forms** in the **Forms** group and select **Split Form**

Handy to Know...

- Linked tables do not appear in a split form. This is because there is already a datasheet in the bottom part of the window.

BINDING A FORM TO A QUERY

The attachment of a table or query to a form is known as **data binding**. One of the strengths of Access is that both forms and reports can be based on either a full table of data or a subset of

the table known as a **query**. When a form is bound to a query, the query is run first to extract matching fields and records, and then presented in the form much the same as a full table would be.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Forms_3.accdb...*

- 1 In the **Navigation** pane, click on **qryEmployees** to specify the query to use
- 2 Click on the **Create** tab, then click on **Form** in the **Forms** group
Only the fields specified in the query will appear in the form layout...
- 3 On the **Form Layout Tools: Design** tab, click on **View** in the **Views** group to see the form in **Form View** where the data is presented
- 4 Click on **Save** in the **QAT** to display the **Save As** dialog box
- 5 Type **frmEmployeeSalary** in **Form Name** and click on **[OK]** to save the form
- 6 Close the form
The new form will appear in the Navigation pane

EmpNo	101
LastName	Kerr
FirstName	Julianne
Department	Executive
Started	28-Jun-10
WeeklyHours	40
Salary	\$250,000.00

3

4

5

For Your Reference...

To **create a form from a query**:

1. In the **Navigation** pane, click on the query
2. Click on the **Create** tab, then click on **Form** in the **Forms** group

Handy to Know...

- You can create a form from a query using **Split Form** and **Multiple Item**.
- Unlike a form based on a table, a form based on a query does not show the transactional records in the form.

USING THE FORM WIZARD

To have more say in what to include in your form and how it should look, you can create a form using the **Form Wizard**. The **Form Wizard** will walk you through the steps to create a new form.

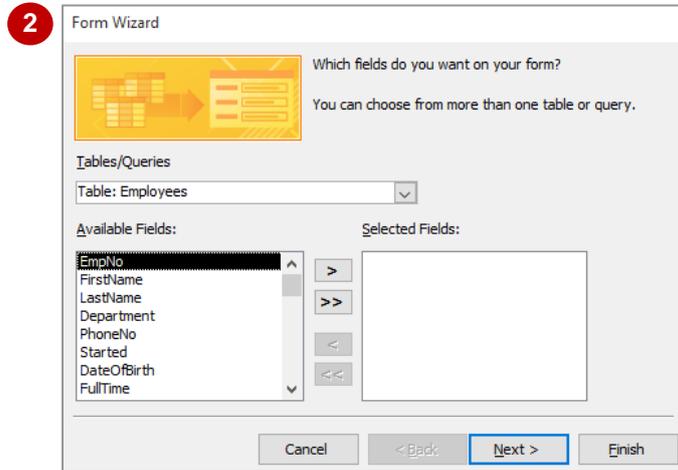
The **Form Wizard** is made up of several screens, each of which requires you to specify what fields to include, how it should look, and what the new form should be called.

Try This Yourself:

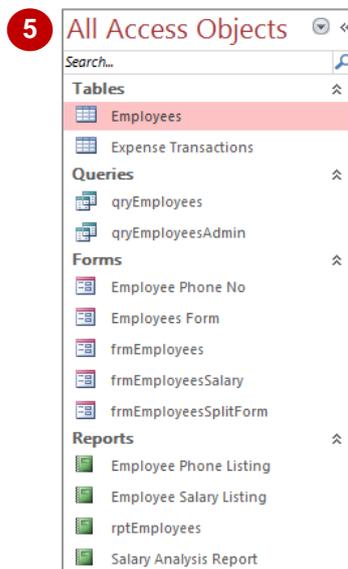
Same File

Continue using the previous file with this exercise, or open the file *Creating Forms_4.accdb...*

- 1 In the **Navigation** pane, click on the **Employees** table
- 2 Click on the **Create** tab, then click on **Form Wizard** in the **Forms** group to start the wizard
- 3 Double-click on **EmpNo**, **FirstName**, **LastName**, **Department** and **PhoneNo** to add them to the **Selected Fields** list
- 4 Click on **[Next]** to proceed to the next screen, then continue working through the screens using the settings as shown
- 5 Once you have specified the title in the last screen of the wizard, click on **[Finish]** to build the form
- 6 Close the form



- | | | | |
|---|---------------|-------------------|---------------|
| 4 | Screen | Settings | Click on... |
| | Layout | Columnar | [Next] |
| | Title | Employee Phone No | |



For Your Reference...

To **create** a **form** using the **Form Wizard**:

1. Click on the table or query
2. Click on the **Create** tab, then click on **Form Wizard** in the **Forms** group
3. Complete the steps of the **Wizard**

Handy to Know...

- When using the **Form Wizard**, if you have made a mistake in any of the **Wizard** screens or would simply like to review your work, click on **[Back]** to move back through previous screens.

WORKING WITH EXISTING FORMS

Once forms have been created they are ready for use. Forms are generally used either to provide access to the records and data for editing or just simply to search and view data. When you open

a form from the **Navigation** pane, it is opened in **Form View** where it is ready for action. There are also several other views that you need to be aware of when working with forms.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Forms_5.accdb...*

- 1 In the **Navigation** pane, double-click on **frmEmployees** to open the form in **Form View**

This is the view where you can edit the data...

- 2 On the **Home** tab, click on **View** in the **Views** group to see the form in **Layout View**

In this view you can make changes to the layout of the form, including changing column widths, colours, etc...

- 3 Click on **View** to return to **Form View**

- 4 Click on the bottom half of **View** and select **Design View** to see the form design

This is a more sophisticated design area of the form...

- 5 Click on the **Home** tab, then click on **View** to switch back to **Form View**

- 6 Close the form

EmpNo	101
FirstName	Julianne
LastName	Kerr
Department	Executive
PhoneNo	75001
Started	28-Jun-10
DateOfBirth	05-Feb-60

Form Header	
Employees	
Detail	
EmpNo	EmpNo
FirstName	FirstName
LastName	LastName
Department	Department
PhoneNo	PhoneNo
Started	Started

For Your Reference...

To **change** the **views** of a **form**:

1. Open the form in any view
2. Click on the bottom half of **View** and click on the desired view

Handy to Know...

- Changes to a form's structure are done in either **Layout** or **Design** views. **Layout** view provides a view of the form with data in place. **Design** view provides access to more of the detailed areas of the form such as the header and footer.

EDITING RECORDS IN A FORM

Forms are really intended to make working with the data in a table easier by providing better and hopefully more intuitive access to the data in the records. Forms therefore provide an alternative to

working in a table and virtually any editing changes you can make to the data in the table can also be made to the data when it appears in a form.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Forms_5.accdb...*

- 1 In the **Navigation** pane, double-click on **frmEmployees** to open the form in **Form View**
- 2 Click and drag over the current record number in the **Navigation** bar at the bottom of the screen to select it
- 3 Type **6** and press **Enter** to move to **EmpNo 106** (Maureen Grayson)
- 4 Click and drag over **Occupational Safety** in the **Department** field and type **Executive**
- 5 Click in **Comments** and type **Promoted to Executive status in March**.
- 6 Click on **Next record** to save the changes, then click on **Previous record** to return to Maureen's record to see the change
- 7 Close the form

2 WeeklyHours 40
Salary \$250,000.00
Comments

ExpTransNo	ExpDate	Description	Amount
2	2/01/2017	Accommodatic	\$145.00
*	(New)		\$0.00

Record: 14

3 frmEmployees Employees

EmpNo 106
FirstName Maureen
LastName Grayson
Department Occupational Safety
PhoneNo 61021
Started 06-Sep-10
DateOfBirth 23-Oct-74

5 Department Executive
PhoneNo 61021
Started 06-Sep-10
DateOfBirth 23-Oct-74
FullTime
WeeklyHours 40
Salary \$85,000.00
Comments Promoted to Executive status in March

For Your Reference...

To **edit** a **record through** a **form**:

1. Open the form, then locate the record to edit
2. Make the changes as required and move to another record to save the changes

Handy to Know...

- You can move back through the fields on a form by pressing **Shift** + **Tab**.
- When you edit a record in a form, the **edit** icon will appear in the top left corner of the record in the form window.

DELETING RECORDS THROUGH A FORM

Forms can be used to delete records from a table. The first step is to locate the record that you want to delete. The deletion process is permanent – once a record has been removed it

cannot be restored. If you are at all unsure about removing records, you should make a backup copy of the database before you start deleting.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Forms_6.accdb...*

1 Double-click on *frmEmployeesSplitForm* to open the form in **Form View**

2 In the datasheet, at the bottom of the form, locate and click to the left of the record for **George Samuelson** (EmpNo 109)

Clicking to the left selects the record and activates the Delete tool in the ribbon...

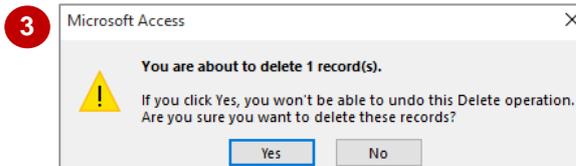
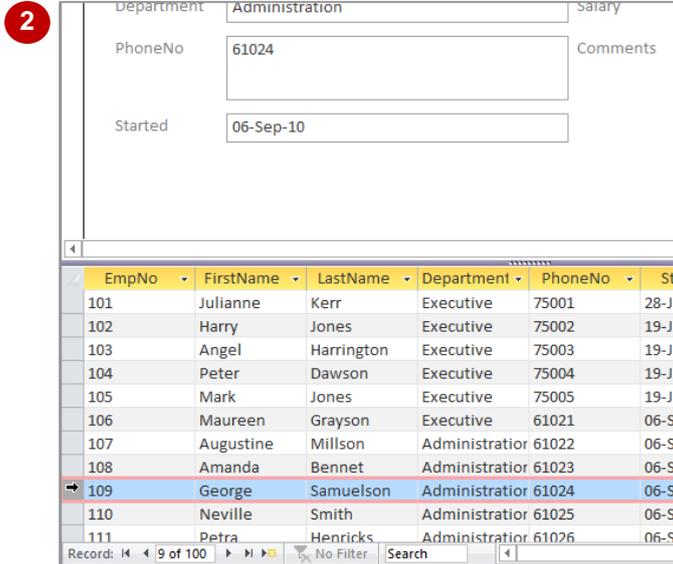
3 On the **Home** tab, click on **Delete** in the **Records** group

You will be asked to confirm the deletion...

4 Click on **[Yes]** to delete the record

The record is gone...

5 Close the form



For Your Reference...

To **delete** a **record using** a **form**:

1. Open the form in **Form View**
2. Locate and select the record
3. On the **Home** tab, click on **Delete** in the **Records** group
4. Click on **[Yes]**

Handy to Know...

- When deleting records through a form, the records are deleted from the table, not the form. No matter which form is opened, the record will no longer be there because it no longer exists in the table.

DELETING AN UNWANTED FORM

Forms, like reports, are database objects that exist as templates for displaying and working with records in a table or query. They can be created with relative ease and therefore you will find that

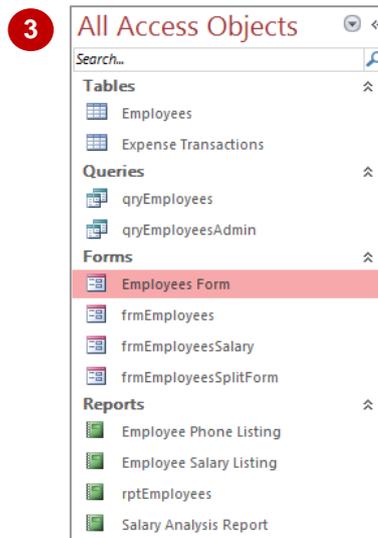
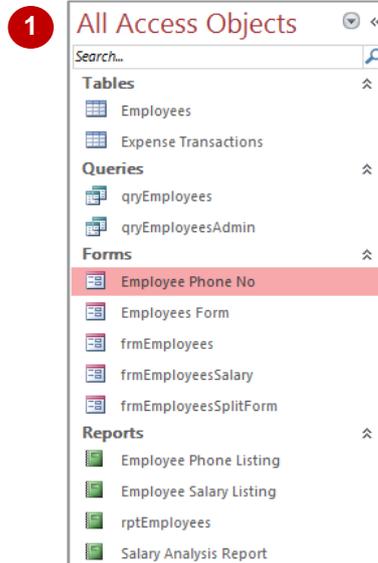
you create quick, minimal usage forms for convenience. Fortunately, you can delete unwanted forms even faster than creating them.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Forms_7.accdb...*

- 1 In the **Navigation** pane, click on the **Employee Phone No** form to select it
- 2 On the **Home** tab, click on **Delete** in the **Records** group
A warning about permanently deleting a form will appear, and you will be asked to confirm your intentions...
- 3 Click on **[Yes]** to permanently delete the form



For Your Reference...

To **delete** a **form**:

1. In the **Navigation** pane, click on the form to select it
2. Click on the **Home** tab, then click on **Delete** in the **Records** group
3. Click on **[Yes]**

Handy to Know...

- It is always a good idea to make a backup copy of the database file (e.g. using **File Explorer**) before deleting objects such as reports, queries and forms from the file.

CHAPTER 13 MODIFYING FORMS

InFocus

Forms are predominantly used in Access to display data from tables or queries on the screen. Forms are usually created using the Access form creation tools and then modified to suit specific requirements.

This modification can involve many aspects, from changing the colour scheme to completely revamping the layout and operation of the form. In this session you'll change quite a few aspects of a standard form that was previously created using the form generator.

Special Note: There is a lot of similarity between the way *forms* and *reports* are created and modified. Both use a template approach where the design and layout is specified using special placeholders, known as *controls*, to specify where data should appear. Much of the skills and knowledge you acquire in this session will apply to both forms and reports.

In this session you will:

- ✓ gain an understanding of how the modification of forms works
- ✓ learn how to switch between **Layout** and **Design Views**
- ✓ learn how to select objects on a form
- ✓ learn how to work with a control stack
- ✓ learn how to change the width of a control
- ✓ learn how to move controls on a form
- ✓ learn how to align controls on a form
- ✓ gain an understanding of object properties
- ✓ learn how to change the caption shown in labels on a form
- ✓ learn how to add an unbound control to a form
- ✓ learn how to enter an expression into a control source property
- ✓ learn how to format a control on a form
- ✓ learn how to check the tab order in a form
- ✓ learn how to change the tab order on a form
- ✓ learn how to insert the date and time into a form header.

UNDERSTANDING FORM DESIGN AND LAYOUT

Although you can create your own forms completely from scratch, it would be a very laborious process. Even seasoned Access programmers rely on the form creation tools to

create a starting form and then adapt and modify that to suit their specific requirements. While modifying a form is not difficult, there are several conceptual aspects you should understand first.

Forms are Templates

While the word **template** has many different and sometimes specific connotations in computing, it does provide a good way to describe what a form really is. A **form** is simply a **template** with **objects** on it that determine what should appear on the screen, where it should appear, and how it should look.

Everything on a form is an object, including the heading, logos, data placeholders, even the background.

Objects on the Form

Every object on the form, including the form itself (which is an object), has **properties** that determine how the object should look (*format*), what it should contain (*data*), and how it should behave (*event*).

A special type of object known as a **control** is used to display data from a table, query or *expression* (formula) in a form. Controls can be **bound** to a data source (such as a *field* from a table), or can be **unbound** and appear with static information (such as a heading) or dynamic, changeable information (such as the current date).

So, when you modify a form, you do so by playing around with the objects on the form – resizing them, adding more of them, deleting unwanted ones, changing their colours or fonts, etc.

The Three Form Views

There are three ways to view a form. When you double-click on a form in the **Navigation** pane you will **run** the form. When the form is running, data from the data source (e.g. table or query) is merged into the controls on the form template and displayed on the screen. This is the view that the users of your database will employ to see their data.

There are also two views that allow you to modify the form – **Layout View** and **Design View**. With both of these views you can move objects around and change properties so that objects look and behave the way you want.

Layout View is more like a layout *preview*. In **Layout View** your controls appear with data in them just as they would if the form was running. You can modify the controls, move them around, resize them, recolour them, and see exactly how they will appear when the form is run because they already contain data – from the first record.

In **Design View** you can do most of the changes to layout and appearance that you can in **Layout View**, plus you can add controls and finely adjust all of the control settings. In **Design View** you see the names of the controls, not the actual data, and you also see the structure of the form such as its header area, body area, and footer area.

SWITCHING BETWEEN FORM VIEWS

Access provides two views in which modifications to a form can be made: **Layout** view and **Design** view. Both of these are available from a shortcut menu when you right-click on a form in the

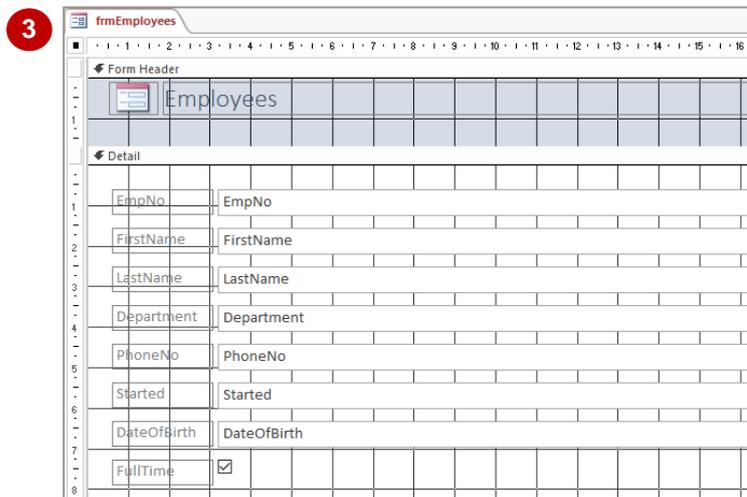
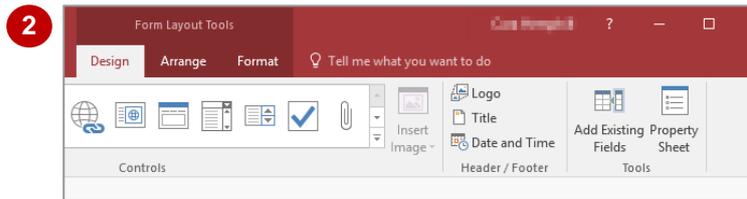
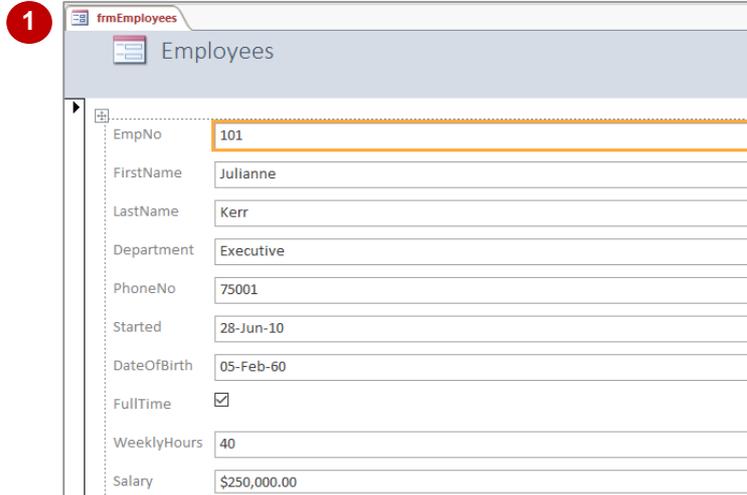
Navigation pane, or they can be switched while the form is open using the **View** tool on the ribbon. While both views allow you to make changes to a form, there are subtle differences.

Try This Yourself:

Open File

Before starting this exercise you **MUST** open the file *Modifying Forms_1.accdb...*

- 1 In the **Navigation** pane, right-click on **frmEmployees** and select **Layout View** to open the form in **Layout View**
 - 2 Spend a few moments studying the options on the three **Form Layout Tools** tabs
 - 3 On the **Form Layout Tools: Design** tab, click on the bottom half of **View** in the **Views** group and select **Design View** to see the form in **Design View**
 - 4 Spend a few moments studying the options now available on the three **Form Design Tools** tabs
- Many of the options will only be available when an object or a control on the form is selected ...*
- 5 Close the form



For Your Reference...

To **switch between form views**:

1. Click on the bottom half of **View** in the **Views** group
2. Select either **Design View** or **Layout View**

Handy to Know...

- It is recommended that you use **Layout View** to make changes to the formatting and layout of controls on a form, and **Design View** when making changes to the structure of a form such as inserting more controls or adding a form footer.

SELECTING FORM OBJECTS

Everything you see on a form, including the form itself, is an **object**. In both **Design View** and **Layout View** you need to select the object that you intend to work with before you can do

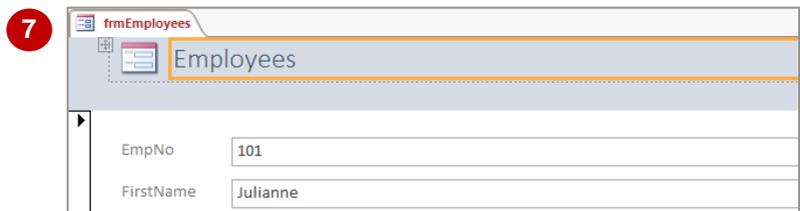
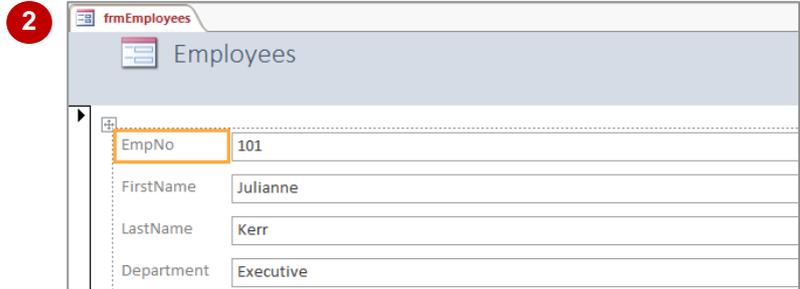
anything with it. Selecting an object is usually as simple as clicking on it with the mouse. Once selected, an object will appear with a coloured border to indicate it is the **current** object.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Forms_1.accdb...*

- 1 Open **frmEmployees** in **Layout View**
- 2 Click on **EmpNo** to select the label control
An orange border indicates that the object is selected...
- 3 Click on **101** to select the text box control
- 4 Click on **EmpNo**, then hold down **Ctrl** and click on **FirstName** and **Executive** to select the three controls
- 5 Click on the four-headed arrow icon at the top left of **EmpNo** to select all of the controls in this control stack
A control stack is an object that is made up of a group of objects...
- 6 Click in the white area of the form to select the form background
- 7 Click on **Employees** in the heading to select it
- 8 Close the form



For Your Reference...

To **select** an **object** on a **form**:

1. Click on the desired object until it appears with a selection border
2. Hold down **Ctrl** and click on subsequent objects to select multiple (non-contiguous) objects

Handy to Know...

- Each object on a form has its own set of **properties** that control how it looks and behaves. An object needs to be selected before it is possible to access its properties.

WORKING WITH A CONTROL STACK

When a form is created in Access, bound controls used for fields from a table or query are often placed into a **stack**. A stack is simply a way of grouping controls together so that they can be

easily moved, resized and consistently spaced. A control is part of a stack when a dotted line appears around it and a four-headed arrow appears at the top left of the lead control.

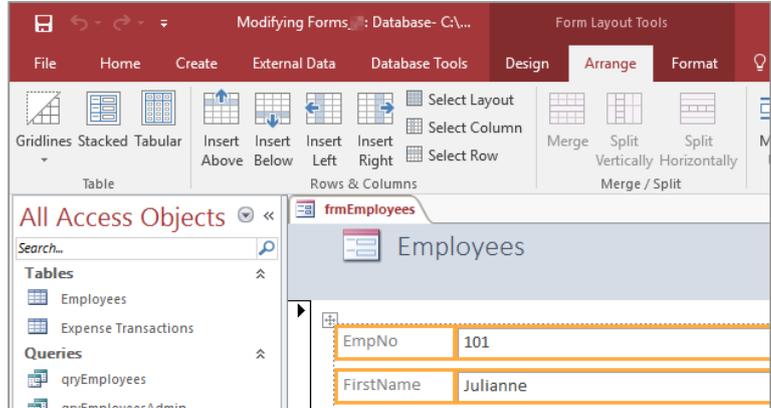
Try This Yourself:

Same File

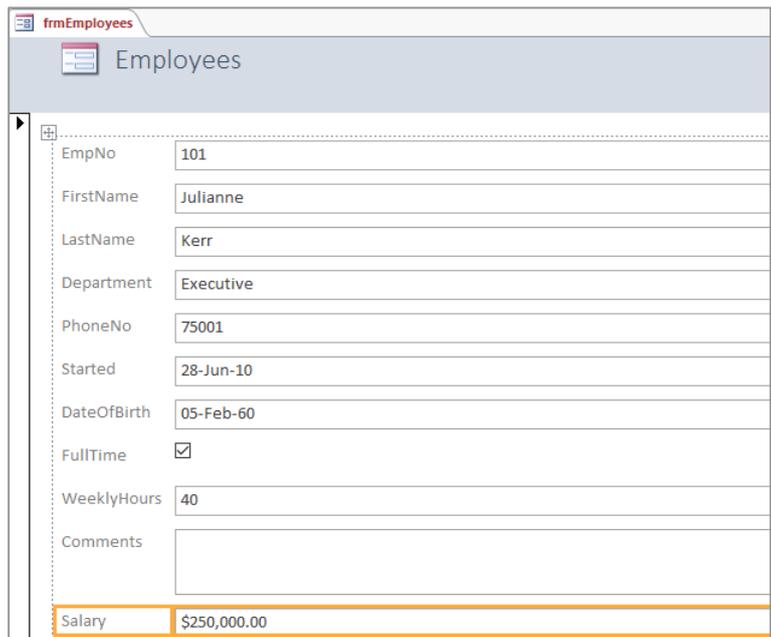
Continue using the previous file with this exercise, or open the file *Modifying Forms_1.accdb...*

- 1 Open *frmEmployees* in **Layout View**
- 2 Click on *EmpNo*, click on the **Form Layout Tools: Arrange** tab, then click on **Select Layout** in the **Rows & Columns** group to select all controls in this control stack

You can also click on the four-headed arrow at the top left of the stack...
- 3 Press **→** three times to move the stack right three positions
- 4 Press **←** three times to move the stack left three positions
- 5 Click on **Salary** to select this control
- 6 On the **Form Layout Tools: Arrange** tab, click on **Select Row** in the **Rows & Columns** group
- 7 Click on **Move Down** in the **Move** group to move the row down below **Comments**
- 8 Press **Del** to delete the row
- 9 Save and close the form



2



7

For Your Reference...

To **work** with a **stack**:

1. Click on a control to select it
2. On the **Form Layout Tools: Arrange** tab, click on **Move Down** in the **Move** group to move the field in the stack, or Press **Del** to delete the control

Handy to Know...

- On a form, when you delete a control from a stack, the other controls below will be moved up to ensure the stack stays together.
- When working with a control stack on a form, you can click on **Move Up** (on the **Form Layout Tools: Arrange** tab) to move controls up in the stack.

CHANGING CONTROL WIDTHS

When a form is created using the various generation tools, the width of the controls is often made the same. One of the first tasks when modifying a form is to alter the control widths to

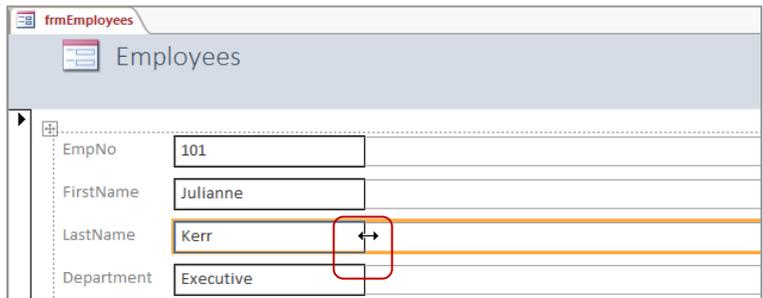
more accurately reflect the data that will appear in the control. Control widths are changed by dragging their borders, although a degree of complexity is added if the control is part of a stack.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Forms_2.accdb...*

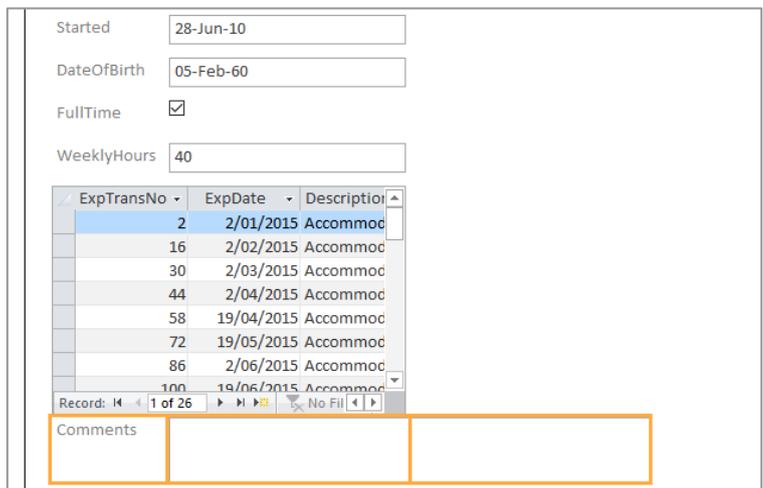
- 1 Open **frmEmployees** in **Layout View**
- 2 Click on **Kerr** to select the **LastName** control
- 3 Point to the right border until it changes to a double-headed arrow, hold down the left mouse button, then drag to the left until the field (and the stack) is about one third of its original size
- 4 Release the mouse button to complete the resize
The subform is also resized, but we'll fix that in the next exercise...
- 5 Right-click on the **Comments** label and select **Select Entire Row**
- 6 Right-click on the **Comments** label again, then point to **Layout** and select **Remove Layout** to remove the field from the stack
- 7 Click on the blank **Comment** box, then drag the right border to the right until the box is about twice its size
- 8 Save and close the form



3



4



7

For Your Reference...

To **change control widths**:

1. Point to the appropriate border
2. Click and drag the border to the left or the right to resize the control

Handy to Know...

- In a form, when you remove selected controls from a control stack, they may appear obscured by the controls still in the stack. While the removed controls are still selected, it is best to move them to another position – it may be easier to use the arrow keys on the keyboard.

MOVING CONTROLS ON A FORM

A control stack manages not only the size of a control but also where it is placed relative to the other controls. As the name suggests, controls in a stack are placed on top of one another. If this

positioning is not desirable you will need to break the stack by removing the controls from it and then move those controls to another position on the form.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Forms_3.accdb...*

- 1 Open **frmEmployees** in **Layout View**
- 2 Click on the four-headed arrow icon at the top left of **EmpNo** to select the control stack
- 3 Right-click on any of the selected controls, then point to **Layout** and select **Remove Layout** to remove all of the controls from the stack
The four-headed arrow icon now disappears...
- 4 Click in a blank area to deselect all controls, click on **LastName**, then hold down **Ctrl** and click on **Kerr** to select both objects
- 5 Point to the selection until the pointer becomes a four-headed arrow, then click and drag the control into position as shown
- 6 Repeat steps 4 and 5 to move the other controls as shown
- 7 Click on the subform to select it, then click and drag the right border to align it with the right edge of the **Comments** box
- 8 Save and close the form

ExpTransNo	ExpDate	Description	Amount
2	2/01/2015	Accommodatic	\$145.00
16	2/02/2015	Accommodatic	\$244.12
30	2/03/2015	Accommodatic	\$452.46
44	2/04/2015	Accommodatic	\$453.83
58	19/04/2015	Accommodatic	\$455.50
72	19/05/2015	Accommodatic	\$460.05
86	2/06/2015	Accommodatic	\$462.25
100	19/06/2015	Accommodatic	\$465.37

For Your Reference...

To **move a control**:

1. Click on the control to select it
2. Point to the control
3. Hold down the left mouse button and drag the control to the desired location

Handy to Know...

- To move a control stack on a form, drag the four-headed arrow icon to the desired location.
- On a form, selected controls might be easier to move using the arrow keys on the keyboard.

ALIGNING CONTROLS

Once you start moving controls around a form you will realise just how difficult it can be to align them again. If you attempt to **align controls** using the mouse and just your eye, you need

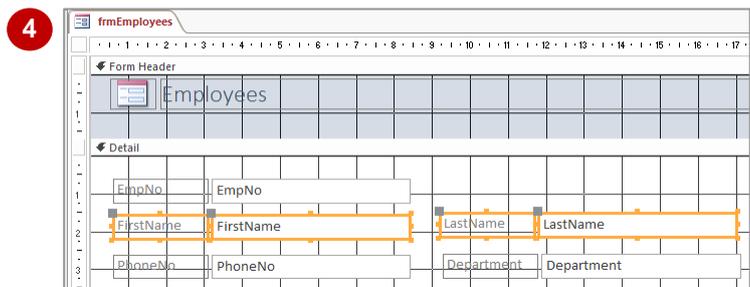
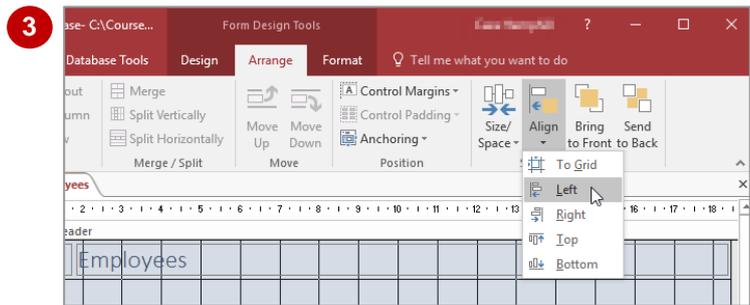
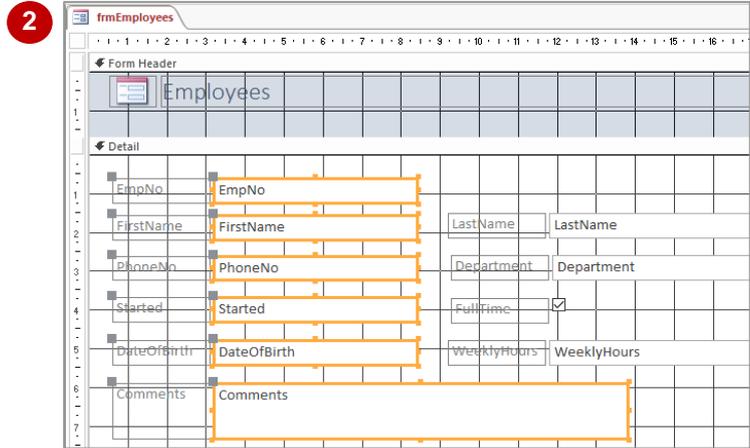
good co-ordination and patience. Fortunately, there are a series of **Alignment** tools on the **Arrange** tab on the ribbon that make aligning controls easy.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Forms_4.accdb...*

- 1 Open **frmEmployees** in **Design View**
- 2 Hold down **Ctrl** and click on the controls as shown to select them
- 3 Click on the **Form Design Tools: Arrange** tab, then click on **Align** in the **Sizing & Ordering** group and select **Left** to align the controls along their left edges
- 4 Click on **FirstName**, then hold down **Ctrl** and click on the other controls in the row, as shown
- 5 On the **Form Design Tools: Arrange** tab, click on **Align** in the **Sizing & Ordering** group, then select **Bottom** to align the controls horizontally
- 6 Using the above steps, align the **EmpNo** column of labels to the left, the **LastName** column of labels to the left, and each horizontal row to the bottom
Use the arrow keys to space controls horizontally, if needed...
- 7 Save and close the form



For Your Reference...

To **align controls**:

1. Select two or more controls that need to be aligned to one another
2. On the **Form Design Tools: Arrange** tab, click on **Align** in the **Sizing & Ordering** group then select the appropriate alignment option

Handy to Know...

- When aligning controls on a form, if you want to align the text within the control use the **Align Text** tools in the **Font** group on the **Format** tab.

UNDERSTANDING PROPERTIES

Everything on a form, including the form itself, is an **object** and all objects have specific **properties** that can be modified. Some objects have only a handful of properties while others

may have hundreds. Properties of an object control the way it looks, the way it behaves, and what it actually does.

Accessing Object Properties

In Access there are usually multiple ways to achieve the same end result, especially when it comes to properties and the way they are accessed. For example, when you change the font in a control the most obvious way to do this is to use the commands on the ribbon. However, when you use these commands to change the way an object looks or behaves, you are really changing specific properties of that object. Rather than searching for the right command, it is often easier to display the **Property Sheet** pane and adjust the settings using the relevant property.

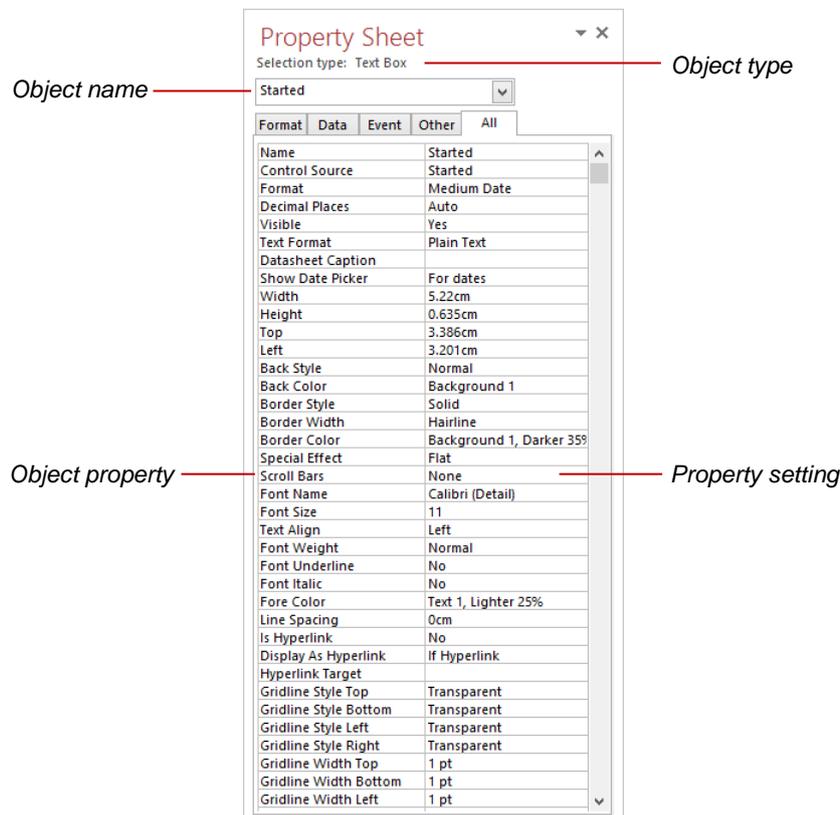
Understanding the Property Sheet Pane

The **Property Sheet** pane displays the properties of the object that is currently selected in the form. If no object is selected then the properties of the form itself are displayed.

The **Property Sheet** pane consists of five tabs that each display different settings. There are four separate tabs (**Format**, **Data**, **Event**, and **Other**) and a fifth tab which displays the settings from **All** of the tabs:

- the **Format** tab displays settings pertaining to the way the control appears (colour, height, font, etc.)
- the **Data** tab contains settings linking the object to a data source, where relevant (e.g. the field in a table)
- the **Event** tab contains settings which determine how that object will behave (e.g. when it is clicked or changed)
- the **Other** tab includes settings that don't fit into the other 3 tabs.

The **Property Sheet** pane contains a wealth of information about the object currently selected.



CHANGING LABEL CAPTIONS

Fields from a data source such as a table or query are represented by a pair of controls in the form – one is a **label** control which shows the caption of the field, and the other is usually a **text**

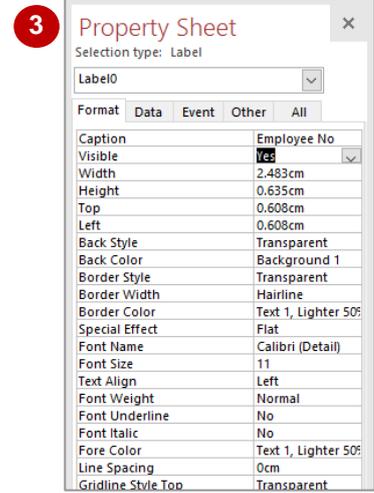
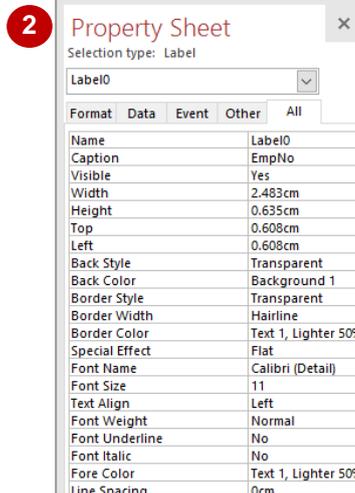
box control which shows the data from the field when the report is run or in **Layout View**. The caption in the label is often written in a way that may be cryptic or confusing to a user.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Forms_5.accdb...*

- 1 Open *frmEmployees* in **Layout View**
- 2 Click on *EmpNo*, then on the **Form Layout Tools: Design** tab, click on **Property Sheet** in the **Tools** group to display the **Property Sheet** pane
- 3 In the **Property Sheet** pane, click on the **Format** tab, double-click on *EmpNo* in the **Caption** property to select it, then type **Employee No** and press **Enter**
- 4 Click on **Close** in the top right corner of the **Property Sheet** pane to close the pane
You can also edit a caption directly...
- 5 Click on **FirstName**, then double-click to select the text
- 6 Type **First Name**, then press **Enter**
- 7 Change the other captions as shown
- 8 Save and close the form



6

7

For Your Reference...

To **change label captions**:

1. Click on the object to select it
2. On the **Form Layout Tools: Design** tab, click on **Property Sheet** in the **Tools** group, then click on the **Format** tab
3. Change the text in the **Caption** property

Handy to Know...

- Changing a caption directly on a form is probably easier than using the **Property Sheet** pane, if you are renaming several captions. The **Property Sheet** pane might be more useful when you want to change several properties for a single control.

ADDING AN UNBOUND CONTROL

The fields used for data from a table or query are referred to as **bound** controls – they are bound (linked) to a data source. Controls that have no links to data are known as **unbound controls**

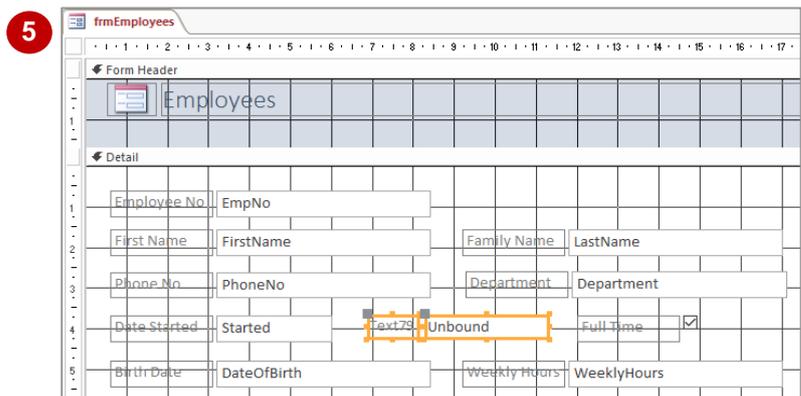
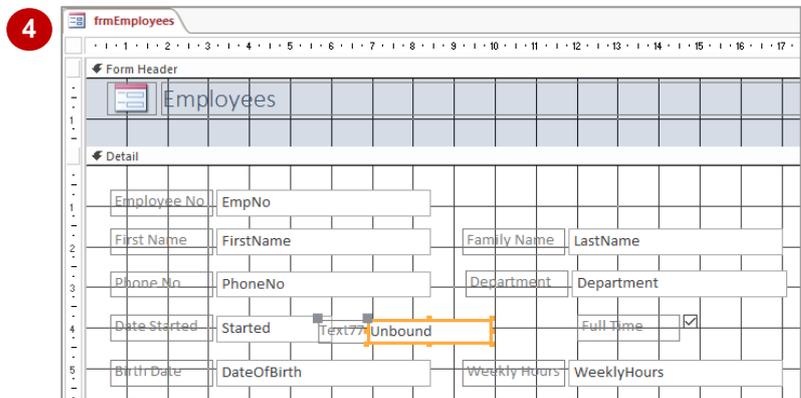
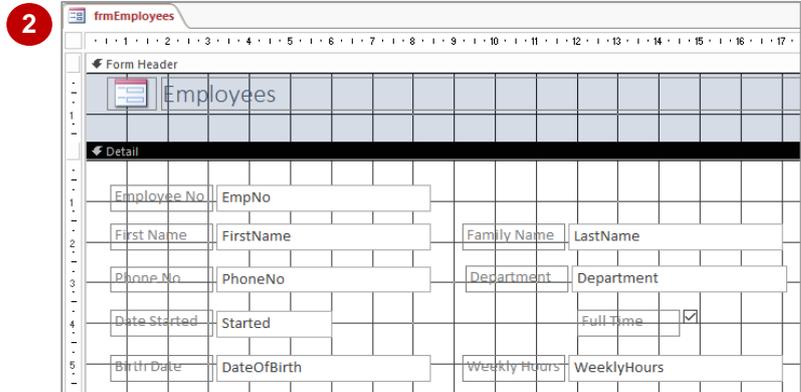
and fall into two categories: **dynamic** and **static**. A static unbound control is one that doesn't change, while a dynamic unbound control is one that is usually based on an expression (formula).

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Forms_6.accdb...*

- 1 Open **frmEmployees** in **Design View**
- 2 Resize the **Started** control, then move the **Full Time** controls to make room for a new control, as shown
- 3 On the **Form Design Tools: Design** tab, click on **Text Box** in the **Controls** group and click in the blank area you made in step 2
- 4 Point to the small dark square above the **Text** label until it changes to a four-headed arrow, then click and drag it to the right to move the label closer to the **Unbound** control
- 5 Align the row of controls so that they are neatly arranged
- 6 Save and close the form



For Your Reference...

To **add** an **unbound control** to a **form**:

1. Open the form in **Design View**
2. On the **Form Design Tools: Design** tab, choose the desired control from the gallery in the **Controls** group
3. Click in the form to position the new control

Handy to Know...

- Bound controls appear differently in **Design View** compared to the other views – in **Design View** they show the field name (which is usually the same as the caption) in lieu of a field value.

ADDING A CONTROL SOURCE

Unbound controls can be used to display **static** text, as in the form of a label control which shows the caption for a field, or they can be used to display **dynamic**, changing information. In our

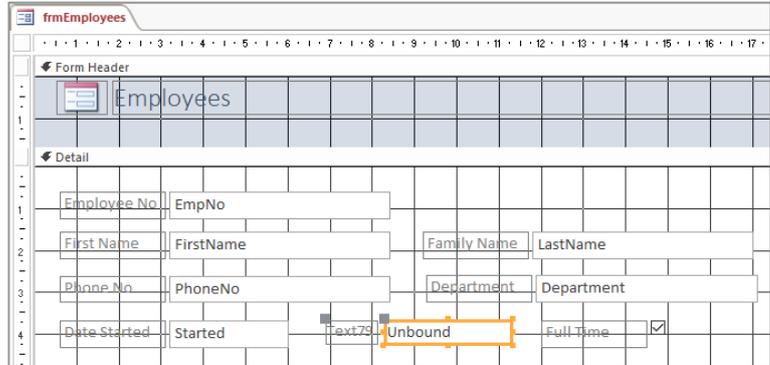
example, we'll use an unbound form to show the length of service of the employee. This will require us to enter a formula, known in Access as an **expression**, into the **control source property**.

Try This Yourself:

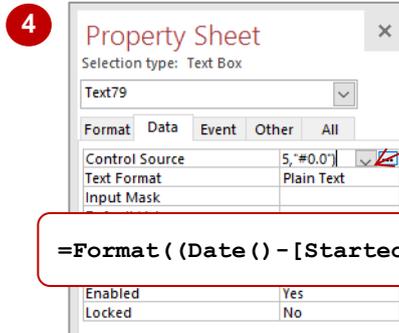
Same File

Continue using the previous file with this exercise, or open the file *Modifying Forms_7.accdb...*

- 1 Open **frmEmployees** in **Design View**
- 2 Click on the **Unbound** control to select it
- 3 On the **Form Design Tools: Design** tab, click on **Property Sheet** in the **Tools** group to display the **Property Sheet** pane
- 4 Click on the **Data** tab, then click in **Control Source** and type the formula as shown – press **Enter** when finished
- 5 Click on the **Other** tab in the **Property Sheet** pane, then double-click on the text in the **Name** property to select it
- 6 Type **YearsOfService** and press **Enter**
- 7 Close the **Property Sheet** pane
- 8 Save and close the form

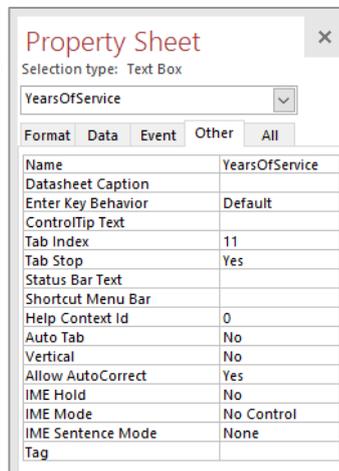


2



=Format([Date]-[Started]/365,\"#0.0\")

6



For Your Reference...

To **add** a **control source**:

1. Click on the unbound control
2. In the **Property Sheet** pane, click in the **Control Source** property and type an appropriate expression (formula)

Handy to Know...

- A control source expression can use both round and square brackets, where the square brackets are used to indicate the name of an existing field.

FORMATTING A CONTROL

One of the tasks frequently performed when modifying a form is to change the **formatting** properties of specific objects. In our case study, a new unbound control has been added to the form

but it has taken on the default formatting rather than that of the existing controls. To make the new control resemble the existing controls we will need to change some of the properties.

Try This Yourself:

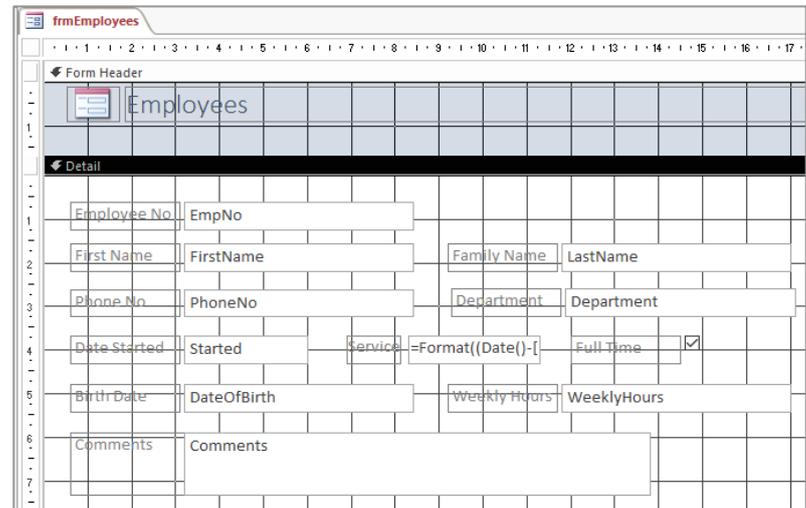
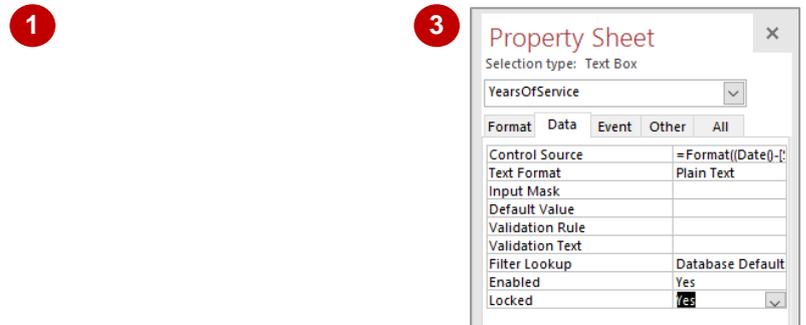
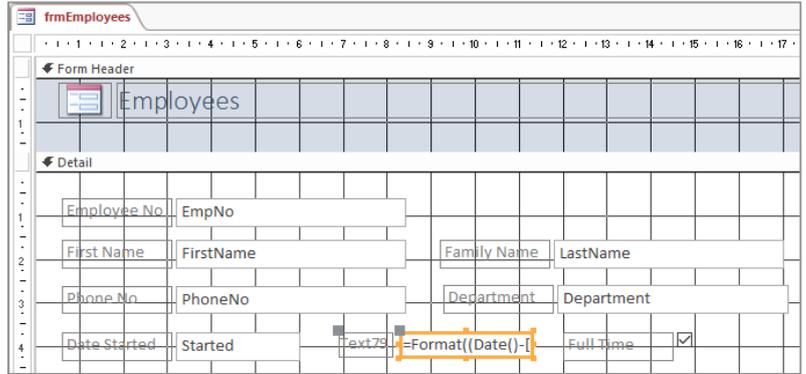
Same File

Continue using the previous file with this exercise, or open the file *Modifying Forms_8.accdb...*

- 1 Open *frmEmployees* in **Design View**, then click on the unbound control (*YearsOfService*)
- 2 On the **Form Design Tools: Design** tab, click on **Property Sheet** in the **Tools** group to display the **Property Sheet** pane
- 3 Change the properties to:

Tab	Property	Setting
Format	Height	0.635cm
Data	Locked	Yes
- 4 Click on the label control to select it
- 5 Change the properties to:

Tab	Property	Setting
Format	Caption	Service
Format	Height	0.635cm
- 6 Close the **Property Sheet** pane, then use the alignment tools on the **Form Design Tools: Arrange** tab to align the controls as shown
- 7 Save and close the form



For Your Reference...

To **format** a **control**:

1. Click on the control to select it
2. Change the appropriate properties in the **Property Sheet** pane

Handy to Know...

- On a form, the **Locked** property for a text box control locks the control from editing and ensures that the user can't change the value that appears.

CHECKING THE CURRENT TAB ORDER

For faster data entry, many users prefer to press the **Tab** key to move through the fields on a running form. When you use the form generation tools in Access, the fields are placed into a

sequential **tab order**. If you have modified the form by moving field controls around there is a good chance that the tab order will be out of sequence.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Forms_9.accdb...*

- 1 Double-click on **frmEmployees** to run the form
- 2 Press **Tab** three times and notice how the selected field is now **Department** – if the controls were ordered sequentially it should be **Phone No**
- 3 Press **Tab** slowly until you eventually get back to **Employee No** and note the non-sequential order in which Access moves through the fields
- 4 Close the form

The screenshot shows the 'Employees' form with the following fields and values:

- Employee No: 101
- First Name: Julianne
- Family Name: Kerr
- Phone No: 75001
- Department: Executive
- Date Started: 28-Jun-10
- Service: 6.1
- Full Time:
- Birth Date: 05-Feb-60
- Weekly Hours: 40
- Comments: (empty)

At the bottom, there is a table with the following data:

ExpTransNo	ExpDate	Description	Amount
2	2/01/2015	Accommodatic	\$145.00
16	2/02/2015	Accommodatic	\$244.12

1

The screenshot shows the 'Employees' form with the following fields and values:

- Employee No: 101
- First Name: Julianne
- Family Name: Kerr
- Phone No: 75001
- Department: Executive
- Date Started: 28-Jun-10
- Service: 6.1
- Full Time:
- Birth Date: 05-Feb-60
- Weekly Hours: 40
- Comments: (empty)

At the bottom, there is a table with the following data:

ExpTransNo	ExpDate	Description	Amount
2	2/01/2015	Accommodatic	\$145.00
16	2/02/2015	Accommodatic	\$244.12

2

For Your Reference...

To **check the tab order** of the **form**:

1. Run the form
2. Press **Tab** to move through the fields

Handy to Know...

- You can press **Shift** + **Tab** to move backwards through the fields on a form.
- You can use the arrow keys on the keyboard to move between fields on a form.

CHANGING THE TAB ORDER

If the tab order of a form is out of sequence, you can change it using the **Tab Order** dialog box. This dialog box allows you to specify the order for each tab control by dragging them up or down in

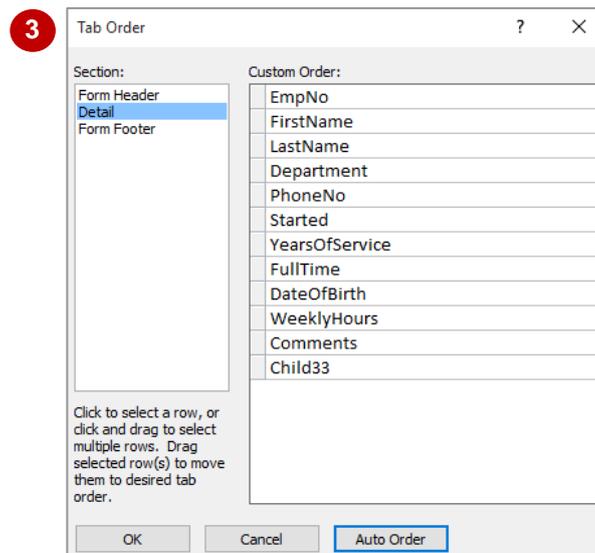
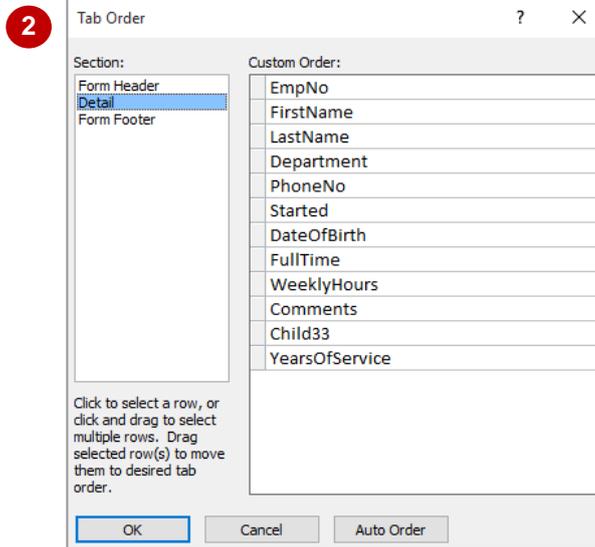
a list. Alternatively, the dialog box has an **[Auto Order]** button which automatically sets the order to the sequence in which the controls appear on the form.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Forms_9.accdb...*

- 1 Open *frmEmployees* in **Design View**
- 2 On the **Form Design Tools: Design** tab click on **Tab Order** in the **Tools** group, to display the **Tab Order** dialog box
- 3 Click on **[Auto Order]** to change the order of the controls in sequence with the layout on the form
- 4 Click on **[OK]**
- 5 Save and close the form
- 6 Run the form, then press **Tab** to move through the fields to ensure that the tab order is correct
- 7 Close the form



For Your Reference...

To **change the tab order** of a **form**:

1. Open the form in **Design View**
2. On the **Form Design Tools: Design** tab, click on **Tab Order** in the **Tools** group
3. Click on **[Auto Order]**

Handy to Know...

- If you want to specify your own order for the controls on a form, in the **Tab Order** dialog box, click on the control in the list and drag it to the desired location in the list.

INSERTING THE DATE INTO THE FORM HEADER

The top part of the form is known as the **form header**. It is usually reserved for information such as the name and purpose of the form – for instance, our case study form shows the title

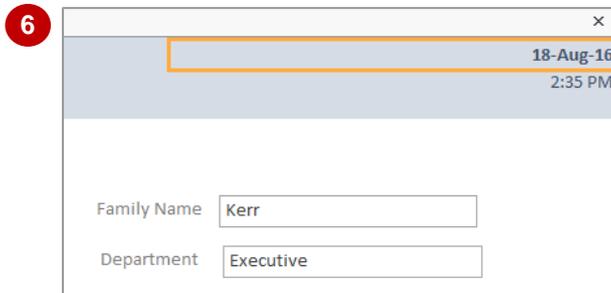
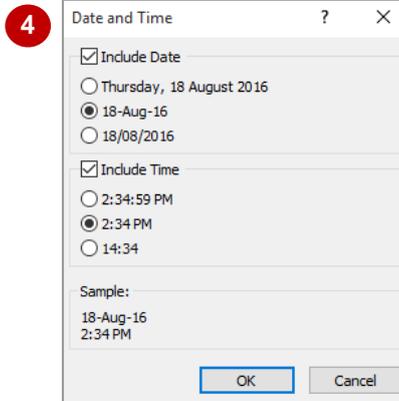
Employees. But you can also use this area to insert other controls that display information such as the date and the time.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Modifying Forms_10.accdb...*

- 1 Open *frmEmployees* in **Layout View**
- 2 On the **Form Layout Tools: Design** tab, click on **Date and Time** in the **Header/Footer** group to display the **Date and Time** dialog box
- 3 Ensure that both **Include Date** and **Include Time** are ticked
- 4 Click on the middle date format and the middle time format to select them
- 5 Click on **[OK]** to insert the current date and time into the top right of the form header area
- 6 Click on the date to select the unbound control, then on the **Form Layout Tools: Format** tab, click on **Bold** in the **Font** group
- 7 Save and close the form



For Your Reference...

To **insert the date and time** into the **header**.

1. Open the form in **Layout View**
2. On the **Form Layout Tools: Design** tab, click on **Date and Time** in the **Header/Footer** group
3. Change the settings and click on **[OK]**

Handy to Know...

- The same procedure for adding the date and time to a form header can also be used for adding a date and time to a **report** header.

CHAPTER 14 CREATING QUERIES

InFocus

You can easily sort and locate data using table sorting and filtering options. However, these are relatively lightweight when compared to using queries.

Queries are sometimes known as **Query By Example**, or **QBE**. A query is like a report based on the data in a table. With a query you are required to specify which fields to see in the query, and which records to display.

This is done by giving Access **criteria** to search for, much the same as what is done for a simple filter. For example, listing all of the records that have **Sales** in the **Department** field, or all of the records that occurred on **12/3/2016**, are examples of queries.

Once the **criteria** and **output fields** are nominated, Access will search through the data and produce a table of matching records.

In this session you will:

- ✓ gain an understanding of how queries work
- ✓ learn how to create a new query design
- ✓ learn how to work with a query
- ✓ learn how to modify a query design
- ✓ learn how to apply record criteria for a query
- ✓ learn how to clear selection criteria
- ✓ learn how to save a query
- ✓ learn how to run queries from the **Navigation** pane
- ✓ learn how to delete a query from a database file
- ✓ gain an understanding of creating additional queries.

UNDERSTANDING QUERIES

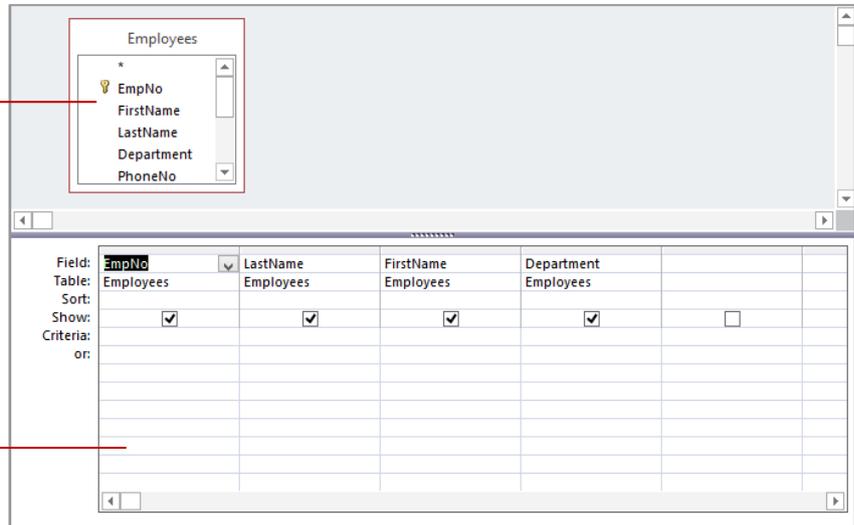
A **select query** is like a filter that you place on your data so that you see only the information that is relevant to you. Select queries can be used, for example, to produce a list of customers

from Tasmania, or all of the items that you've purchased in the last six months valued at \$300 or more. Select queries are so named because they *select* records according to your query design.

Select queries are created using the **Create** tab of the ribbon, and are run and modified as a **Query** object in the **Navigation** pane.

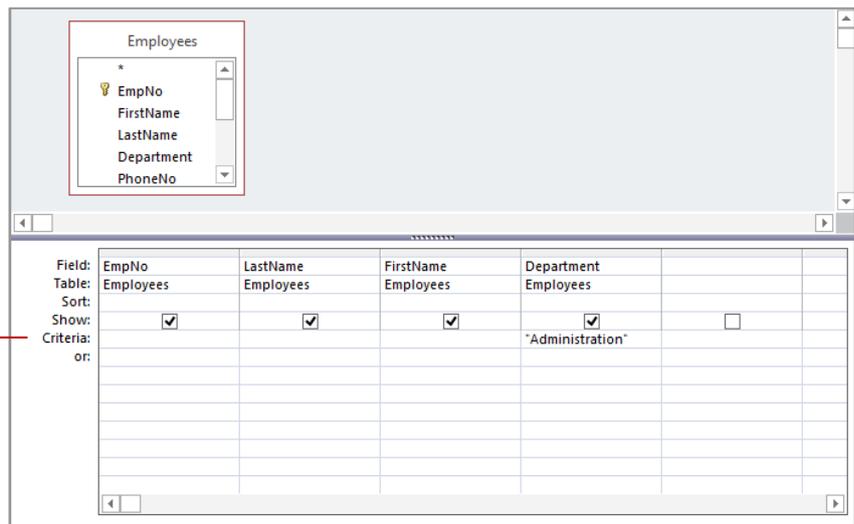
Select queries are based on a **Query Design**. The upper part of the design is known as the **Field List**, while the lower portion is known as the **Query Grid**.

Field list
Query grid

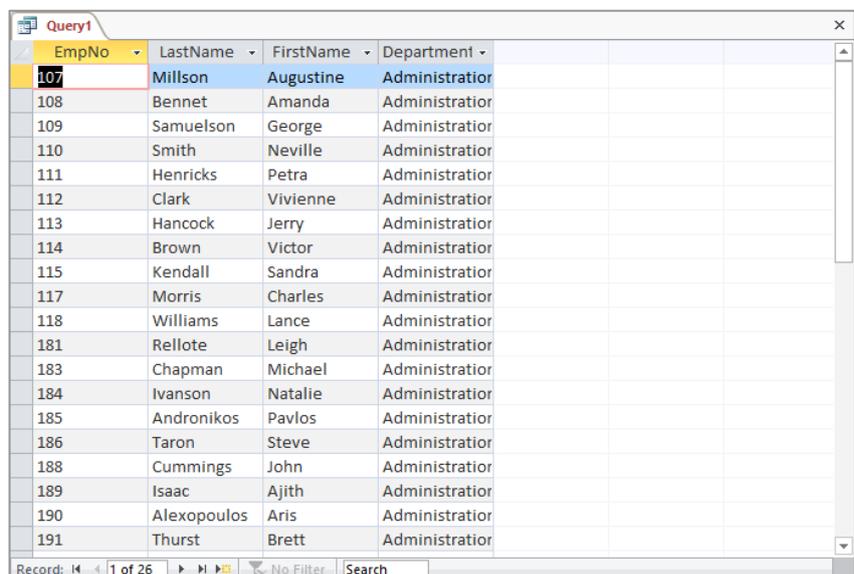


The records displayed in the query are determined by the sample data that you enter into the **Criteria row** in the **Query Grid** – this is why the process is sometimes referred to as *query by example*.

Criteria row



The easiest way to see the data is to switch to **Datasheet** view. In **Datasheet** view the data that matches the query criteria is displayed in a special **dynaset** table. A **dynaset** is a subset of the full table of data – however, it is still a live set of data and any changes made to data here will be reflected back in the full table later on.



CREATING A QUERY DESIGN

Queries are created from the **Create** tab on the ribbon. Like table structures, there is a **design** view where the layout, criteria, and the like, required for the query are specified, and a **run**

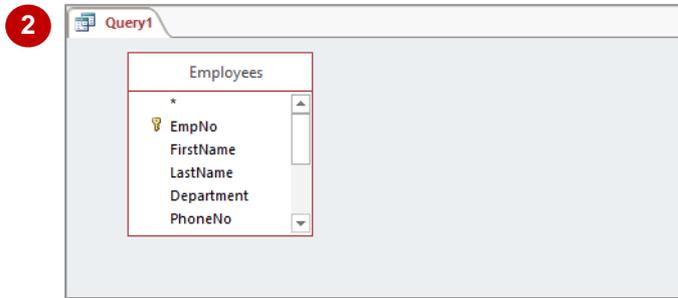
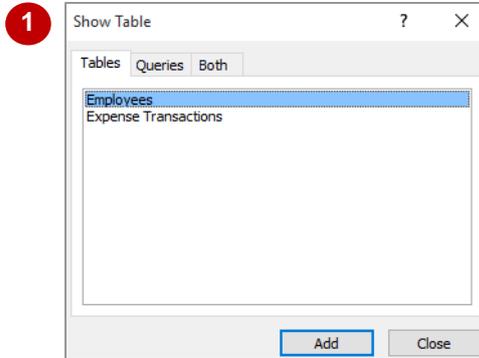
view where the data is brought into the design layout structure from the relevant table. The first step in creating a query, therefore, is to create a query design structure.

Try This Yourself:

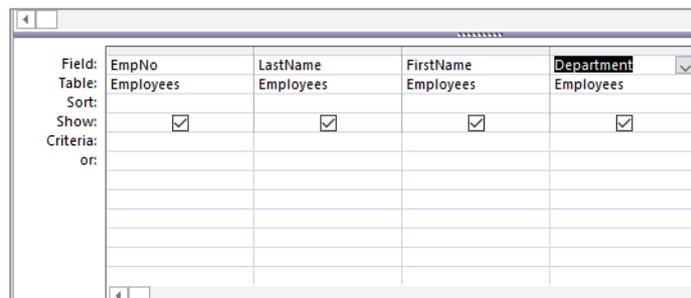
Open File

Before starting this exercise you **MUST** open the file *Creating Queries_1.accdb...*

- 1 Click on the **Create** tab, then click on **Query Design** in the **Queries** group to display a new query design and the **Show Table** dialog box
- 2 Click on **[Add]** to add the **Employees** table fields to the design, then click on **[Close]** to close the dialog box
- 3 In the field listing double-click on **EmpNo**, **LastName**, **FirstName** and **Department** to add these fields to the grid in this order
- 4 Click on **Save** in the **QAT** to display the **Save As** dialog box
- 5 Type **qryEmployees** in **Query Name**, then click on **[OK]**
The name of the query will now appear in the Navigation pane under the Queries header...
- 6 Close the query



Double-click on the entries here to add them to the table below



For Your Reference...

To **create** a **query design**:

1. Click on the **Create** tab
2. Click on **Query Design** in the **Queries** group
3. Add the table and select the fields
4. Save the query

Handy to Know...

- The **Show Table** dialog box, displayed when creating a new query design, lists all of the tables and queries in the current database file.

WORKING WITH A QUERY

Queries offer you the ability to see snapshots of your data – a particular view or representation of your data at a point in time. There are three main views within a query: the **design** view where you

specify what data you wish to see in the snapshot; the **datasheet** view where the data based on the design is displayed; and **SQL** view which shows the programming behind the query.

Try This Yourself:

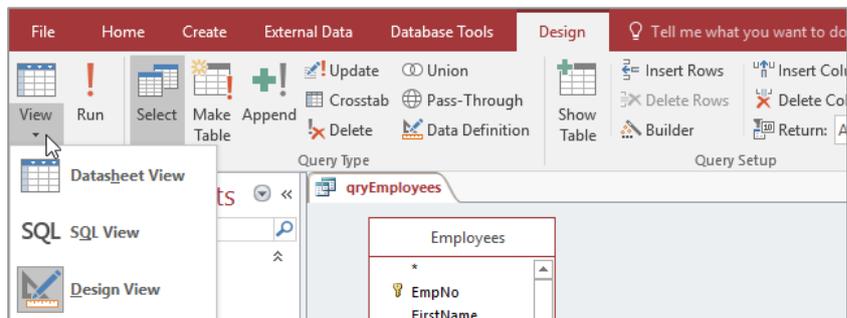
Same File

Continue using the previous file with this exercise, or open the file *Queries_2.accdb...*

- 1 Double-click on **qryEmployees** to see the query in **Datasheet** view, displaying the data
- 2 On the **Home** tab, click on the top half of **View** in the **Views** group to toggle between **Design** and **Datasheet** views
- 3 Click on the bottom half of **View** to display a menu of options
- 4 Select **SQL View** to see the **SQL** code required to create the query
- 5 Close the query

EmpNo	LastName	FirstName	Department
101	Kerr	Julianne	Executive
102	Jones	Harry	Executive
103	Harrington	Angel	Executive
104	Dawson	Peter	Executive
105	Jones	Mark	Executive
106	Grayson	Maureen	Occupational S
107	Millson	Augustine	Administration
108	Bennet	Amanda	Administration
109	Samuelson	George	Administration
110	Smith	Neville	Administration

1



3

```
SELECT Employees.EmpNo, Employees.LastName, Employees.FirstName, Employees.Department
FROM Employees;
```

4

For Your Reference...

To see **different aspects** of a **query**:

1. Double-click on the query to see it in **Datasheet** view
2. On the **Home** tab, click on the top half of **View** in the **Views** group to toggle between **Design** and **Datasheet** views

Handy to Know...

- Until you seriously get into programming, you won't use the **SQL View** option for queries all that often. SQL is pronounced "sequel" or simply S.Q.L.

CHANGING A QUERY DESIGN

Most **query designs** are not as critical as table designs and can therefore be changed randomly and when the need arises. **Select queries**, where you are trying to extract matching data,

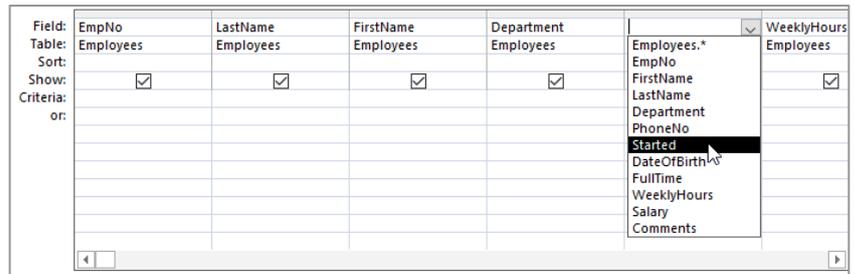
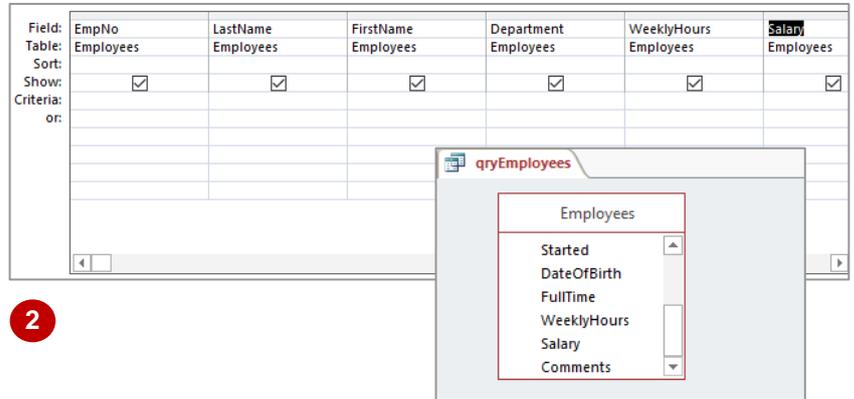
are often run using a trial and error approach where the query design is experimented with and modified until the perfect solution is found.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Queries_3.accdb...*

- 1 In the **Navigation** pane, right-click on **qryEmployees** to display a menu of options, then select **Design View** to see the query in **Design** view
- 2 Scroll down the list of fields in the **Employee** field listing and double-click on **WeeklyHours** and then **Salary** to place both fields at the end of the grid
- 3 Click on **WeeklyHours** in the grid then, on the **Query Tools: Design** tab, click on **Insert Columns** in the **Query Setup** group
A new, blank column will appear...
- 4 Click on the drop arrow in the new column and select **Started**
- 5 Click on the **Home** tab, then click on the top half of **View** in the **Views** group to run the query and see the data presented in the modified design
- 6 Click on **Save** in the **QAT**, then close the query



EmpNo	LastName	FirstName	Department	Started	WeeklyHours	Salary
101	Kerr	Julianne	Executive	28-Jun-10	40	\$250,000.00
102	Jones	Harry	Executive	19-Jul-10	40	\$140,000.00
103	Harrington	Angel	Executive	19-Jul-10	40	\$145,000.00
104	Dawson	Peter	Executive	19-Jul-10	40	\$140,000.00
105	Jones	Mark	Executive	19-Jul-10	40	\$132,000.00
106	Grayson	Maureen	Occupational S	06-Sep-10	40	\$85,000.00
107	Millson	Augustine	Administrati	06-Sep-10	40	\$85,000.00
108	Bennet	Amanda	Administrati	06-Sep-10	40	\$87,000.00
109	Samuelson	George	Administrati	06-Sep-10	40	\$98,000.00

For Your Reference...

To **insert more fields** into a **Design grid**:

- Double-click on the field name in the field listing, or
- Click in the grid, then click on **Insert Columns** in the **Query Setup** group

Handy to Know...

- You can delete a field from a query grid by clicking on it and then clicking on **Delete Columns** in the **Query Setup** group on the **Home** tab.

APPLYING RECORD CRITERIA

The real power of a query lies in its ability to display a filtered list of records in a **dynaset**. To filter the records and see only the ones that you want, you will need to enter search criteria in the

criteria row in the query grid. You simply type an example of the data that you want to see in the criteria cell and run the query to display all records from the original table that match the criteria.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Queries_4.accdb...*

- 1 Right-click on **qryEmployees** to display a menu of options and select **Design View**
- 2 Click in the **Criteria** cell for **Department** and type **Administration**
- 3 On the **Query Tools: Design** tab, click on the top half of **View** in the **Views** group to see only those records with **Administration** in the **Department** field
- 4 Repeat step 3 to switch back to **Design** view
- 5 Type **40** in the **Criteria** cell for **WeeklyHours**, then click on **View** to display only those people who work **40** hours in the **Administration** department
- 6 Switch to **Design** view and type **>=80000** in the **Criteria** cell for **Salary**, then click on **View** to see all **Administration** people who work **40** hours and earn **\$80,000** or more
- 7 Save and close the query

Field:	EmpNo	LastName	FirstName	Department	Started
Table:	Employees	Employees	Employees	Employees	Employees
Sort:					
Show:	<input checked="" type="checkbox"/>				
Criteria:				Administration	
or:					

2

EmpNo	LastName	FirstName	Department	Started	WeeklyHou
107	Millson	Augustine	Administrator	06-Sep-10	40
108	Bennet	Amanda	Administrator	06-Sep-10	40
109	Samuelson	George	Administrator	06-Sep-10	40
110	Smith	Neville	Administrator	06-Sep-10	40
111	Henricks	Petra	Administrator	06-Sep-10	40
112	Clark	Vivienne	Administrator	06-Sep-10	40
113	Hancock	Jerry	Administrator	06-Sep-10	40
114	Brown	Victor	Administrator	06-Sep-10	40
115	Kendall	Sandra	Administrator	06-Sep-10	40

3

LastName	FirstName	Department	Started	WeeklyHou	Salary
Millson	Augustine	Administrator	06-Sep-10	40	\$85,000.00
Bennet	Amanda	Administrator	06-Sep-10	40	\$87,000.00
Samuelson	George	Administrator	06-Sep-10	40	\$98,000.00
Henricks	Petra	Administrator	06-Sep-10	40	\$82,000.00
Clark	Vivienne	Administrator	06-Sep-10	40	\$80,000.00
Brown	Victor	Administrator	06-Sep-10	40	\$81,000.00
Kendall	Sandra	Administrator	06-Sep-10	40	\$88,000.00
Morris	Charles	Administrator	06-Sep-10	40	\$84,000.00
Williams	Lance	Administrator	23-Sep-10	40	\$83,000.00
				0	\$0.00

6

For Your Reference...

To **select records** in a **query**:

1. Click in the **Criteria** cell for a field and type the desired search criteria
2. On the **Query Tools:Design** tab, click on **View** in the **Views** group to run the query

Handy to Know...

- When creating queries, if you add more criteria across fields, you are creating what is known as an **AND** query – you want records that have this AND this AND this...
- When constructing queries, use **>** for greater than and **<** for less than situations.

CLEARING SELECTION CRITERIA

You do need to exercise a little care when running queries. If you leave residual criteria from an earlier query in the query grid (which is easy to do if you have more fields than can be seen on

the screen), you may end up with incorrect results. It is a good idea therefore to clear the selection criteria after you have performed a query and found the data that you want.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Queries_5.accdb...*

- 1 In the **Navigation** pane, right-click on **qryEmployees** to display a menu of options and select **Design View**
- 2 Point to the left of the first criteria cell until the mouse pointer changes to a black horizontal arrow →
- 3 Click once to select the entire criteria row
- 4 Press **Del** to delete all of the criteria in the row
- 5 Save and close the query

Field:	EmpNo	LastName	FirstName	Department	Started
Table:	Employees	Employees	Employees	Employees	Employees
Sort:					
Show:	<input checked="" type="checkbox"/>				
Criteria:				"Administration"	
or:					

2

Field:	EmpNo	LastName	FirstName	Department	Started
Table:	Employees	Employees	Employees	Employees	Employees
Sort:					
Show:	<input checked="" type="checkbox"/>				
Criteria:				"Administration"	
or:					

3

Field:	EmpNo	LastName	FirstName	Department	Started
Table:	Employees	Employees	Employees	Employees	Employees
Sort:					
Show:	<input checked="" type="checkbox"/>				
Criteria:					
or:					

4

For Your Reference...

To **clear selection criteria**:

1. Point to the left of the row and click once to select it
2. Press **Del** to delete the criteria in the row

Handy to Know...

- When working with a query design, you can delete the contents of a single cell in the **Criteria** row by double-clicking on the value in the cell and pressing **Del**.

SAVING A QUERY

There are two main types of select queries: those that you create as a one-off search of the data; and those that you create for repeated and on-going use. If you are going to use a query on

a regular basis it should be saved. You can then also use it as a template to create other queries with variations perhaps to the criteria or the field grid.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Queries_6.accdb...*

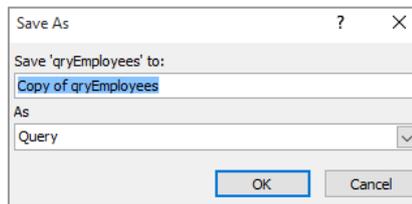
- 1 Right-click on **qryEmployees** to display a menu of options and select **Design View**
- 2 Type **Administration** in the **Criteria** cell for **Department**
- 3 On the **Query Tools: Design** tab, click on **View** in the **Views** group to see the results – there should be 26 records
- 4 Click on the **File** tab, then click on **Save As** to display the **Save As** area
- 5 Click on **Save Object As** in **File Types**, then click on **[Save As]** to display the **Save As** dialog box
- 6 Type **qryEmployeesAdmin** and click on **[OK]**
The new query appears in the Navigation bar...
- 7 Switch to **Design** view then repeat steps 2 to 6 to create another query that only displays employees from the **Executive** department – save this query as **qryEmployeesExec**
- 8 Close the query

189	Isaac	Ajith	Administrator	16-Dec-10	40
190	Alexopoulos	Aris	Administrator	27-Nov-10	40
191	Thurst	Brett	Administrator	16-Dec-10	40
192	Ahlund	Christof	Administrator	09-Dec-10	40
193	Zylinski	David	Administrator	20-Nov-10	32
194	Hurst	Ellinor	Administrator	27-Nov-10	40
203	Hutchins	Philip	Administrator	27-Nov-10	40
204	Baker-Smith	Susan	Administrator	16-Dec-10	40
205	Abelseth	Trond	Administrator	02-Dec-10	25
*					0

Record: 1 of 26 No Filter Search

3

5



7

EmpNo	LastName	FirstName	Department	Started	Week
101	Kerr	Julianne	Executive	28-Jun-10	
102	Jones	Harry	Executive	19-Jul-10	
103	Harrington	Angel	Executive	19-Jul-10	
104	Dawson	Peter	Executive	19-Jul-10	
105	Jones	Mark	Executive	19-Jul-10	
*					

For Your Reference...

To **save** a **query**:

1. Create the query
2. On the **File** tab, click on **Save As**, then click on **Save Object As** and click on **[Save As]**
3. Type a name and click on **[OK]**

Handy to Know...

- It is important to give your queries meaningful names so that you remember what they are for. Using a prefix, such as **qry**, will tell you at a glance that you are looking at a list of queries and make the queries easier to distinguish from tables, forms and reports.

RUNNING QUERIES FROM THE NAVIGATION PANE

Queries store the layout, fields, criteria and other information required to produce the list of data that you want. Given that they can be time consuming to create, especially in the case of

complex queries, it makes sense to save them and then run them as often as you require. Queries can be run directly from the object listing in the **Navigation** pane, as often as you like.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Queries_7.accdb...*

- 1 In the **Navigation** pane under **Queries**, double-click on **qryEmployees**, then double-click on **qryEmployeesAdmin**, then double-click on **qryEmployeesExec**

Notice how the names of the three queries appear in three separate tabs at the top of the window. The last query opened is the one that is currently seen and is known as the "active" query...

- 2 Click on the tab for **qryEmployeesAdmin** to see the employees in the **Administration** department
- 3 Click on the tab for **qryEmployees** to see all of the employees
- 4 Close each query

EmpNo	LastName	FirstName	Department	Started	WeeklyHou	Salary
101	Kerr	Julianne	Executive	28-Jun-10	40	\$250,000.00
102	Jones	Harry	Executive	19-Jul-10	40	\$140,000.00
103	Harrington	Angel	Executive	19-Jul-10	40	\$145,000.00
104	Dawson	Peter	Executive	19-Jul-10	40	\$140,000.00
105	Jones	Mark	Executive	19-Jul-10	40	\$132,000.00
*					0	\$0.00

1

EmpNo	LastName	FirstName	Department	Started	WeeklyHou	Salary
107	Millson	Augustine	Administratior	06-Sep-10	40	\$85,000.00
108	Bennet	Amanda	Administratior	06-Sep-10	40	\$87,000.00
109	Samuelson	George	Administratior	06-Sep-10	40	\$98,000.00
110	Smith	Neville	Administratior	06-Sep-10	40	\$78,000.00
111	Henricks	Petra	Administratior	06-Sep-10	40	\$82,000.00
112	Clark	Vivienne	Administratior	06-Sep-10	40	\$80,000.00
113	Hancock	Jerry	Administratior	06-Sep-10	40	\$79,000.00

2

EmpNo	LastName	FirstName	Department	Started	WeeklyHou	Salary
101	Kerr	Julianne	Executive	28-Jun-10	40	\$250,000.00
102	Jones	Harry	Executive	19-Jul-10	40	\$140,000.00
103	Harrington	Angel	Executive	19-Jul-10	40	\$145,000.00
104	Dawson	Peter	Executive	19-Jul-10	40	\$140,000.00
105	Jones	Mark	Executive	19-Jul-10	40	\$132,000.00
106	Grayson	Maureen	Occupational S	06-Sep-10	40	\$85,000.00
107	Millson	Augustine	Administratior	06-Sep-10	40	\$85,000.00

3

For Your Reference...

To **run** a query from the **Navigation** pane:

- In the **Navigation** pane, double-click on the name of the query from the **Query** object list

Handy to Know...

- Queries do not contain data. Each time a query is opened in **Datasheet** view, Access retrieves the latest data from the table upon which the query is based and uses the query design to display the relevant records and information.

DELETING A QUERY

Queries often work with data that is stored in tables or that results from other queries. They can be used to create data by performing calculations and can be used as a source of data

for other queries, forms and reports. Therefore, you should be especially careful when deleting queries – make sure that the query is not used by any other objects in the database first.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Creating Queries_7.accdb...*

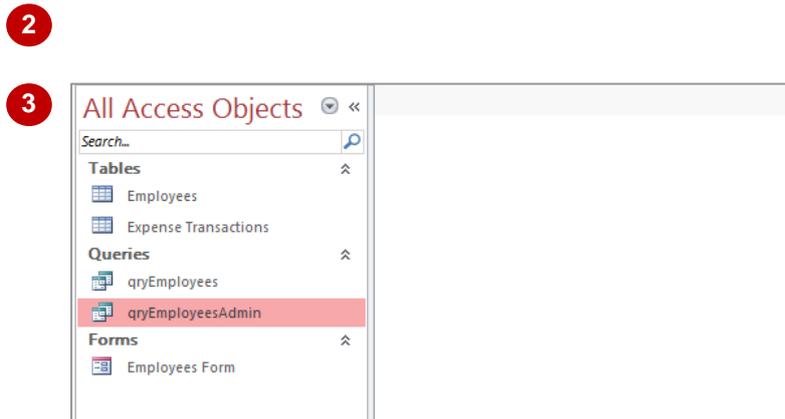
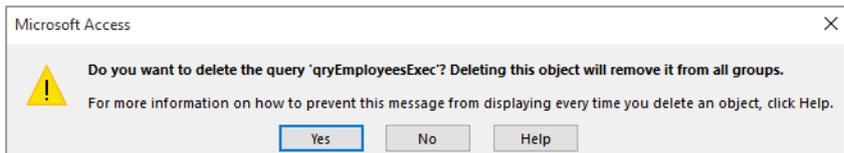
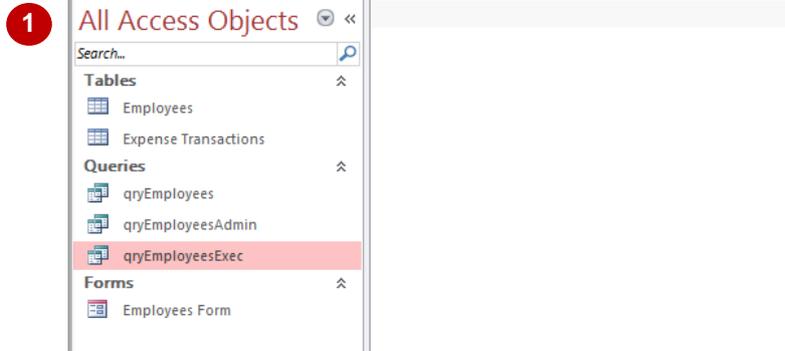
1 Click on **qryEmployeesExec** in the **Navigation** pane to select it

2 On the **Home** tab, click on **Delete** in the **Records** group

A warning message will appear, seeking your confirmation to delete the query...

3 Click on **[Yes]** to confirm the deletion

The query no longer appears listed under **Queries** in the **Navigation** pane



For Your Reference...

To **delete** a **query** from a **database file**:

1. Click on the name of the query in the **Navigation** pane
2. On the **Home** tab, click on **Delete** in the **Records** group

Handy to Know...

- You can delete a query by clicking on it in the **Navigation** pane and pressing **[Del]**.

CREATING ADDITIONAL QUERIES

Select queries are by far the most common type of query that you will create and use. In this assignment you will have the opportunity to put your understanding of queries to use by creating

a wide range of different queries, including those that show records that match specific criteria, and those that fit within specific ranges of dates.

Sub Heading

Use the qryEmployees query to run the various queries as shown. Note that you will have to clear the criteria from time to time. Also, we won't need these queries so there is no need to save them.

Save the final query design as **qryEmployeesNew** then close it.

The datasheet that shows the results is exactly like a table and you can therefore use the Print commands on the **File** tab to print the result once the datasheet is displayed.

Access automatically places quotation marks around criteria based on text. The quotation marks are programming symbols that tell the computer to treat the data as character strings rather than numbers.

Field:	EmpNo	LastName	FirstName	Department	Started	WeeklyHours	Salary	
Table:	Employees							
Sort:								
Show:	<input checked="" type="checkbox"/>							
Criteria:		"Smith"		"Administration"				
or:								

Field:	EmpNo	LastName	FirstName	Department	Started	WeeklyHours	Salary	
Table:	Employees							
Sort:								
Show:	<input checked="" type="checkbox"/>							
Criteria:				"Administration"			<50000	
or:								

Field:	EmpNo	LastName	FirstName	Department	Started	WeeklyHours	Salary	
Table:	Employees							
Sort:								
Show:	<input checked="" type="checkbox"/>							
Criteria:	>"200"							
or:								

NOTES:



CHAPTER 15 CREATING AND USING REPORTS

InFocus

Reports in Access provide a way of formally presenting data from either tables or queries. In essence, reports are used to present raw data in a format that is more readable, understandable and better to look at.

In this session you will:

- ✓ gain an understanding of the reporting process in **Access**
- ✓ learn how to create a basic report
- ✓ learn how to work with reports and switch between the various views
- ✓ learn how to preview and print a report
- ✓ learn how to change the layout of a report
- ✓ learn how to use the **Report Wizard** to create a report
- ✓ learn how to use the **Report Wizard** to create a grouped report
- ✓ learn how to use the **Report Wizard** to create a statistical report
- ✓ learn how to work with grouped reports.

UNDERSTANDING REPORTING IN ACCESS

Reports provide you with a means of more formally presenting, and even analysing, data from your tables and queries. Reports have traditionally been produced as printed documents

but they can also be viewed on the screen or published to the web. Before creating a report, it is advisable to understand how they work and what they can actually do for you.

Creating Reports

All database systems, including Access, provide you with a **report generator** facility to design your reports. Reports themselves do not contain data, but are created as structural **templates** into which the data is placed when the report is run. The template basically defines *what to display* (e.g. which fields to use), *where to display it* (e.g. where the fields should appear on the page), and *how it should look* (e.g. font size, colour, etc).

When a report is first created it is based on either an existing table or an existing query. You base the report on a table if you wish to report on all of the data, or a query if you wish to report on just a subset of the data.

The Many Ways of Creating a Report

In Access you can create simple reports or very complex and intricate reports. So, as you'd expect, Access offers several ways for you to create reports. In Access, reports are created from the tools on the **Create** tab on the ribbon. Here you can create:

- A basic, no frills report using the **Report** tool – these reports appear almost instantly and require very little work on your part. All of the work is done for you.
- More intricate reports using the **Report Wizard** tool – the **Report Wizard** metaphorically holds your hand and asks you a series of questions which ultimately, when answered, result in a report.
- A complex, elaborate report using either the **Blank Report** tool or the **Report Design** tool – these options present you with a blank report canvas and you are required to do all of the work to lay out what you want, where you want it, and how it should look. This is the most difficult of the options to use as you have to do everything yourself.

Achieving a Balance

There is no right or wrong way to create reports – choose the method that achieves the results using the least amount of time and effort.

The beauty of the reporting tools in Access is that even after you have created a report using any of the techniques, the report can still be edited, modified and customised to suit specifically what you are after. So even if the basic report doesn't quite provide you with what you want or the **Report Wizard** hasn't quite done all it should, you can still change the report design yourself.

Many Access users create their reports using the **Report** tool or the **Report Wizard** tool, and then fine-tune the layout or the design to suit their needs.

CREATING A BASIC REPORT

The easiest and simplest way to create a basic report in Access is to use the **Report** tool which is located on the **Create** tab on the ribbon. All you need to do here is to select the table or the

query in the **Navigation** pane as the basis for the report and then run the command.

Try This Yourself:

Open File

Before starting this exercise you **MUST** open the file *Reports_1.accdb...*

- 1 In the **Navigation** pane, click on the **Employees** table to select it

This indicates the table to base the report on...

- 2 Click on the **Create** tab, then click on **Report** in the **Reports** group

A report layout will instantly appear. The Layout View of the report allows you to make adjustments to the report template...

- 3 On the **Report Layout Tools: Design** tab, click on **View** in the **Views** group to see the report in **Report View** where the data is presented

Data is presented in Layout View as well, but Report View is the finished view of the report...

- 4 Click on **Save** in the **QAT** to display the **Save As** dialog box

- 5 Type **rptEmployees** in **Report Name**, then click on **[OK]** to save the design and layout

- 6 Close the report

EmpNo	FirstName	LastName	Department
101	Julianne	Kerr	Executive
102	Harry	Jones	Executive
103	Angel	Harrington	Executive
104	Peter	Dawson	Executive
105	Mark	Jones	Executive
106	Maureen	Grayson	Occupational Safety
107	Augustine	Millson	Administration

2

EmpNo	FirstName	LastName	Department
101	Julianne	Kerr	Executive
102	Harry	Jones	Executive
103	Angel	Harrington	Executive
104	Peter	Dawson	Executive
105	Mark	Jones	Executive
106	Maureen	Grayson	Occupational Safety
107	Augustine	Millson	Administration

3

Save As dialog box showing Report Name: rptEmployees

EmpNo	FirstName	LastName
101	Julianne	Kerr
102	Harry	Jones
103	Angel	Harrington
104	Peter	Dawson
105	Mark	Jones
106	Maureen	Grayson

5

For Your Reference...

To **create** a **basic report**:

1. Click on the table or query in the **Navigation** pane
2. Click on the **Create** tab, then click on **Report** in the **Reports** group

Handy to Know...

- When creating reports, **Layout** view allows you to make changes to the layout of a report, such as column widths, row heights, field placement etc. **Report** view is the polished view of the report.

WORKING WITH EXISTING REPORTS

Reports do not contain data – they are simply **templates** with field placeholders which determine where data will be placed. As a consequence there are several different views of

a report – you can see its structure in both the **Design** and **Layout** views, and you can see data in **Report**, **Print Preview** and **Layout** views.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Reports_2.accdb...*

- 1 Double-click on the report **rptEmployees** to open it

Report view shows you the report with data. No changes can be made to either the data or the report layout here...

- 2 On the **Home** tab, click on **View** in the **Views** group to see the report in **Layout** view where changes can be made

The View tool toggles between Layout and Report views...

- 3 Click on the bottom half of **View** and select **Design View**

Design view is the ultimate design and layout view where you can edit the fields, placements and even formats, and also make changes to report headers and footers...

- 4 Close the report

EmpNo	FirstName	LastName	Department
101	Julianne	Kerr	Executive
102	Harry	Jones	Executive
103	Angel	Harrington	Executive
104	Peter	Dawson	Executive
105	Mark	Jones	Executive
106	Maureen	Grayson	Occupational
107	Augustine	Millson	Administrative
108	Amanda	Bennet	Administrative
109	George	Samuelson	Administrative
110	Neville	Smith	Administrative

1

3

For Your Reference...

To **change** the **report view**:

1. Open the report in any view
2. On the **Home** tab, click on the bottom half of **View** in the **Views** group and select the desired view

Handy to Know...

- Changes to report structure are made in either **Layout** or **Design** view. **Layout** view provides a view of the report with data in place. **Design** view provides access to more of the detailed areas of the report such as the header and footer.

PREVIEWING AND PRINTING A REPORT

Reports are commonly designed for and printed on paper using a printer. While you can print a report without directly running it, it is a good idea to use **Print Preview** to see how it will look

before it is sent to the printer. Often you will find that the report is too wide or needs to be changed in some other way prior to a formal print run.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Reports_2.accdb*...

1 Right-click on **rptEmployees** and select **Print Preview** to see the report in preview mode

2 Click on **Next Page** and **Previous Page** at the bottom of the window several times to view the pages

The report is too wide to fit on one piece of paper...

3 On the **Print Preview** tab, click on **Landscape** in the **Page Layout** group to turn the report sideways

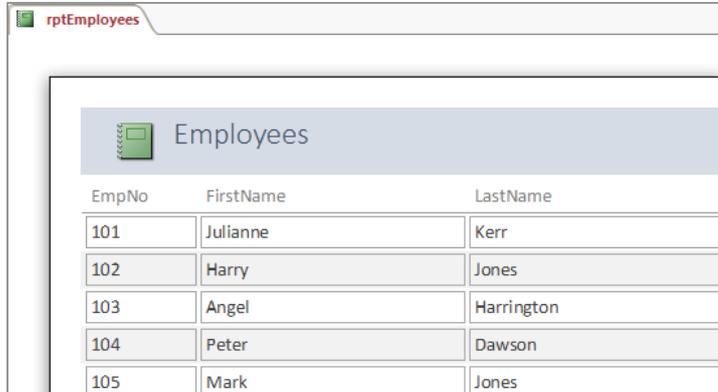
We still haven't got all columns on one page, but let's print just the first page to see how it looks...

4 Click on **Print** in the **Print** group to display the **Print** dialog box

5 Click on **Pages** in **Print Range** and type **1** in both **From** and **To**

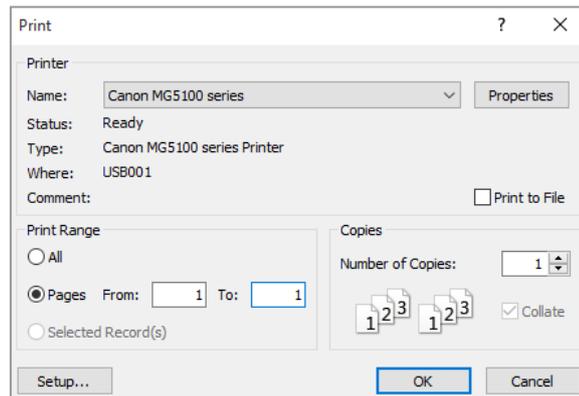
6 Click on **[OK]** to print the first page of the report

7 Close the report



1

5



For Your Reference...

To **preview** and **print** a **report**:

1. Right-click on the report in the **Navigation** pane and select **Print Preview** to see the report in preview mode
2. On the **Print Preview** tab, click on **Print** in the **Print** group to print the report

Handy to Know...

- Basic reports seldom print well without a bit of editing. Typically there may be too many columns or rows to fit neatly on a page.

CHANGING THE REPORT LAYOUT

The **Layout** view provided for reports in Access allows you to make adjustments to the layout of the report. These adjustments may be required for aesthetic purposes, to make the report more

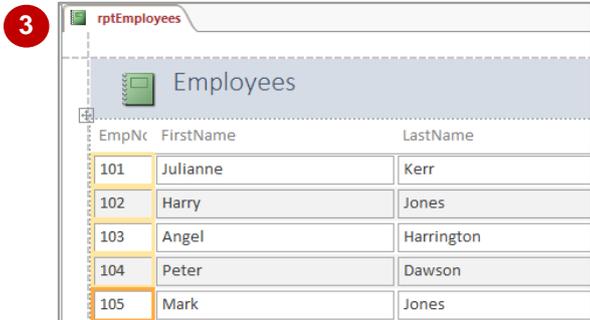
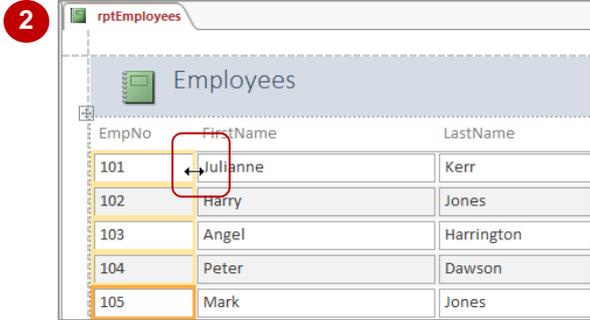
visually appealing, or for practical purposes such as trying to squeeze the report onto one page. In **Layout** view you can adjust column widths and instantly see whether they will work or not.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Reports_3.accdb*...

- 1 Right-click on **rptEmployees** and select **Layout View**
- 2 Point to the right border of the orange square surrounding **Emp No 101**
The pointer should change to a double-headed arrow...
- 3 Hold down the left mouse button and drag the border left to make the column narrower
- 4 Click in the **FirstName** column, then repeat steps 2 and 3 to make this column narrower
- 5 On the **Report Layout Tools: Design** tab, click on the bottom half of **View** in the **Views** group, select **Print Preview**, then click on **One Page** in the **Zoom** group to see if the **Comments** fit on the page
- 6 Click on **Close Print Preview** in the **Close Preview** group, then repeat steps 2 and 3 with the other columns, until the **Comments** column is on the page
- 7 Save and close the report



EmpNo	FirstName	LastName	Department	PhoneNo	Started	DateOfBirth	FullTime	lHours	Salary	Comments
101	Julianne	Kerr	Executive	75001	28-Jun-10	05-Feb-60	☑	40	#####	
102	Harry	Jones	Executive	75002	19-Jul-10	13-Apr-65	☑	40	#####	
103	Angel	Harrington	Executive	75003	19-Jul-10	19-Aug-58	☑	40	#####	
104	Peter	Dawson	Executive	75004	19-Jul-10	12-Jul-54	☑	40	#####	
105	Mark	Jones	Executive	75005	19-Jul-10	06-Aug-63	☑	40	#####	
106	Maureen	Grayson	Occupational Safety	61021	06-Sep-10	23-Oct-74	☑	40	\$85,000.00	
107	Augustine	Milson	Administration	61022	06-Sep-10	07-Dec-78	☑	40	\$85,000.00	
108	Amanda	Bennet	Administration	61023	06-Sep-10	04-May-59	☑	40	\$87,000.00	
109	George	Sambeson	Administration	61024	06-Sep-10	01-Dec-87	☑	40	\$98,000.00	
110	Neville	Smith	Administration	61025	06-Sep-10	07-Aug-54	☑	40	\$78,000.00	Studying MBA
111	Petra	Henricks	Administration	61026	06-Sep-10	03-Apr-81	☑	40	\$82,000.00	
112	Vivienne	Clerk	Administration	61027	06-Sep-10	22-Nov-61	☑	40	\$80,000.00	
113	Jerry	Hancock	Administration	61028	06-Sep-10	09-Oct-77	☑	40	\$79,000.00	
114	Victor	Brown	Administration	61001	06-Sep-10	02-Apr-73	☑	40	\$81,000.00	
115	Sandra	Kendall	Administration	61002	06-Sep-10	06-Nov-70	☑	40	\$88,000.00	
117	Charles	Morris	Administration	61004	06-Sep-10	20-Dec-75	☑	40	\$84,000.00	
118	Lance	Williams	Administration	61005	23-Sep-10	03-May-78	☑	40	\$83,000.00	
119	Anthony	DeRozario	Marketing	63010	02-Dec-10	15-Aug-68	☑	40	\$65,000.00	
120	Belinda	Moore	Sales & Marketing	63034	03-Jan-10	04-Dec-82	☑	40	\$51,000.00	
124	Emily	Hanson	Sales & Marketing	63018	09-Dec-10	25-May-64	☑	40	\$48,000.00	
125	Hanna	Goldblum	Sales & Marketing	63002	06-Nov-10	08-Jul-62	☑	40	\$54,000.00	
126	Ian	Lyons	Sales & Marketing	63001	09-Oct-10	06-Sep-74	☑	40	\$78,000.00	

For Your Reference...

- To **adjust column width** in a report:
1. Open the report in **Layout** view
 2. Click in the column to change
 3. Point to the right border of the orange square, hold down the left mouse button and drag left to narrow the column

Handy to Know...

- The grey dotted lines that appear in **Layout** view of a report indicate whether the page will break when printed. These dotted lines are based on the current printer settings on your computer and are very useful when trying to resize a page of the report.

USING THE REPORT WIZARD

The **Report Wizard** will guide you through the process of creating more formal reports from the data in your data table. The **Report Wizard** consists of a number of screens that prompt you

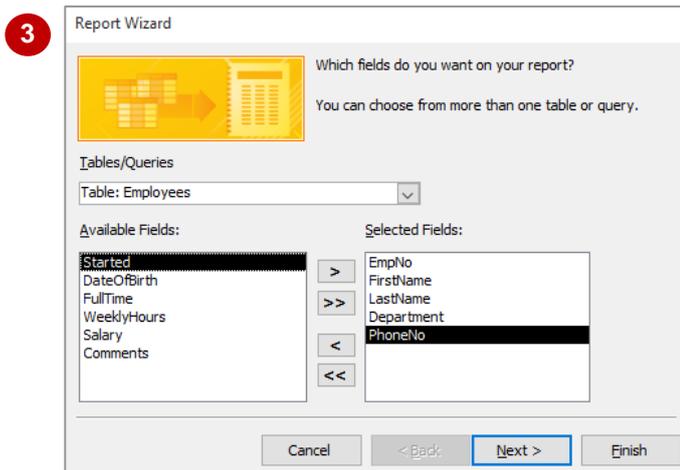
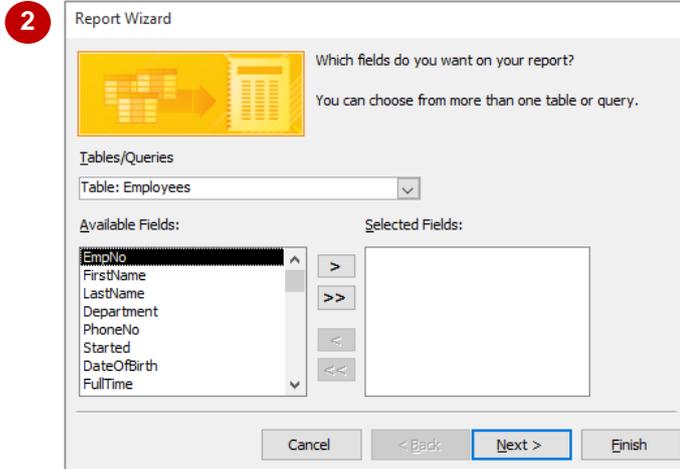
for the information required to generate a report. Some of the screens may seem cryptic to begin with, but you will soon learn what is required and be able to generate reports quickly and efficiently.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Reports_4.accdb...*

- 1 In the **Navigation** pane, click on the **Employees** table to specify the table to report on
- 2 Click on the **Create** tab, then click on **Report Wizard** in the **Reports** group to start the **Report Wizard**
- 3 Double-click on **EmpNo**, **FirstName**, **LastName**, **Department** and **PhoneNo** in **Available Fields** to add them to the **Selected Fields** list
- 4 Click on **[Next]** to proceed to the next screen. Continue working through the screens using the settings as shown
- 5 Once you have specified the title in the last screen of the wizard, click on **Preview the report**, then click on **[Finish]** to build the report
Spend a moment previewing the report...
- 6 Close the report
The new report is now listed in the Navigation pane



3	Screen	Settings	Click on...
	Grouping	No change	[Next]
	Sort Order	1. LastName, Ascending	[Next]
	Layout	Tabular & Portrait	[Next]
	Title	Employee Phone Listing	

For Your Reference...

To **create** a **report** using the **Report Wizard**:

1. Click on the table or query
2. Click on the **Create** tab, then click on **Report Wizard** in the **Reports** group
3. Complete the steps of the **Wizard**

Handy to Know...

- When creating a report using the **Report Wizard**, if you have made a mistake in any of the screens or would simply like to review your work, click on **[Back]** to move back through previous screens.

CREATING A GROUPED REPORT

By creating a **grouped report** you can present data so that it is grouped according to one or more fields. For example, if you create a grouped report listing all employees by department, the

departments will be listed in alphabetical order and the employees will be listed in alphabetical order within each department.

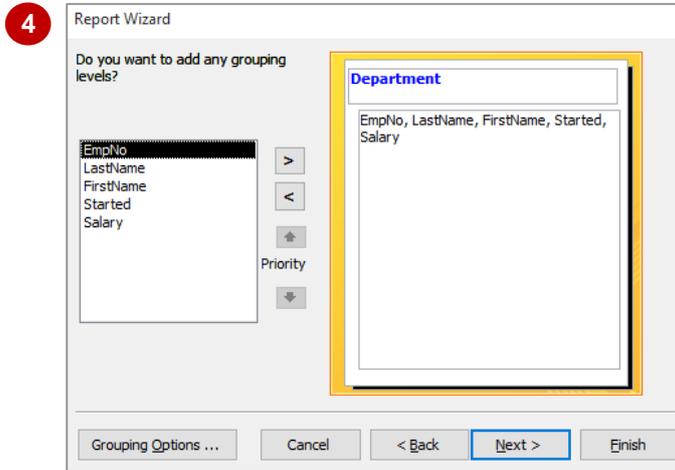
Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Reports_5.accdb...*

- 1 In the **Navigation** pane, click on the **Employees** table
- 2 Click on the **Create** tab, then click on **Report Wizard** in the **Reports** group to start the **Wizard**
- 3 Double-click on **Department**, **EmpNo**, **LastName**, **FirstName**, **Started** and **Salary**, then click on **[Next]**
- 4 Double-click on **Department** as the grouping level
- 5 Click on **[Next]** and complete the remaining wizard screens as shown
- 6 Click on **[Finish]** to build the report
- 7 Close the report

In this screen you are required to specify how to group the records...



- | | | | |
|---|-------------------|-------------------------|--------------------|
| 5 | Screen | Settings | Click on... |
| | Sort Order | 1. LastName, Ascending | [Next] |
| | Layout | Stepped & Portrait | [Next] |
| | Title | Employee Salary Listing | |



For Your Reference...

To **create** a **grouped report**:

1. Click on the **Create** tab, click on **Report Wizard** and create a report, selecting the field to be grouped on as the first field
2. Select this field on the **Grouping** screen
3. Complete the wizard and save the report

Handy to Know...

- When creating a grouped report, you may find that you need to make minor adjustments to column widths in **Layout View** to be able to see all of the grouping column.

CREATING A STATISTICAL REPORT

One great feature of reports is the ability to summarise the data in the database. For example, reports allow you to calculate the total (sum), minimum, maximum, average, and

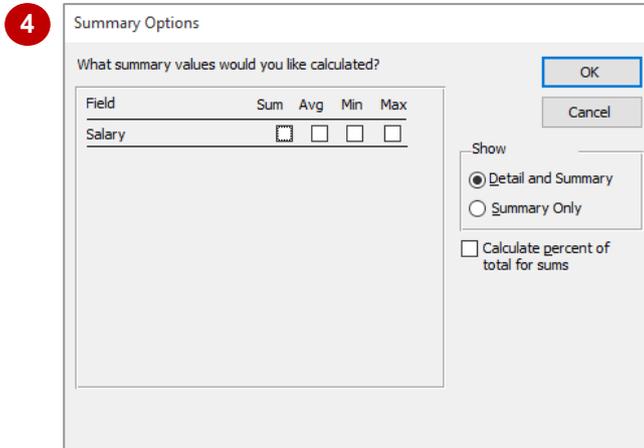
number of records (count) for numerical fields in a database. You can also count non-numerical fields. These **statistical reports** assist with analysis of the data in the database.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file Reports_6.accdb...

- 1 In the **Navigation** pane, click on the **Employees** table, click on the **Create** tab and click on **Report Wizard** in the **Reports** group
- 2 Double-click on **Department** and **Salary**, then click on **[Next]**
- 3 Double-click on **Department** as the **Grouping** level, then click on **[Next]**
- 4 Click on **[Summary Options]** to display the **Summary Options** dialog box
- 5 Click in the tick boxes for **Sum**, **Avg**, **Min** and **Max**, then click on **Summary Only** in **Show**
- 6 Click on **[OK]** to return to the Wizard, then click on **[Next]** and complete the settings as shown
- 7 Click on **[Finish]** to build the report
We will fix the hash signs in the next exercise...
- 8 Close the report



6	Screen Layout Title	Settings Stepped & Portrait Salary Analysis Report	Click on... [Next]
---	---------------------	---	-----------------------



For Your Reference...

To create a **statistical summary report**.

1. Create a grouped report using the wizard
2. Click on **[Summary Options]** on the sorting screen
3. Click on the statistics required then click on **[OK]** and finish creating the report

Handy to Know...

- When a report displays hash signs (#####) in lieu of numbers, it is because the column size in the report isn't large enough to display the values in the fields.

WORKING WITH GROUPED REPORTS

If a column is not wide enough to display values, Access will substitute the values with cryptic signs like the hash (#) symbol. This can happen when using the statistical functions (*sum*, *avg*,

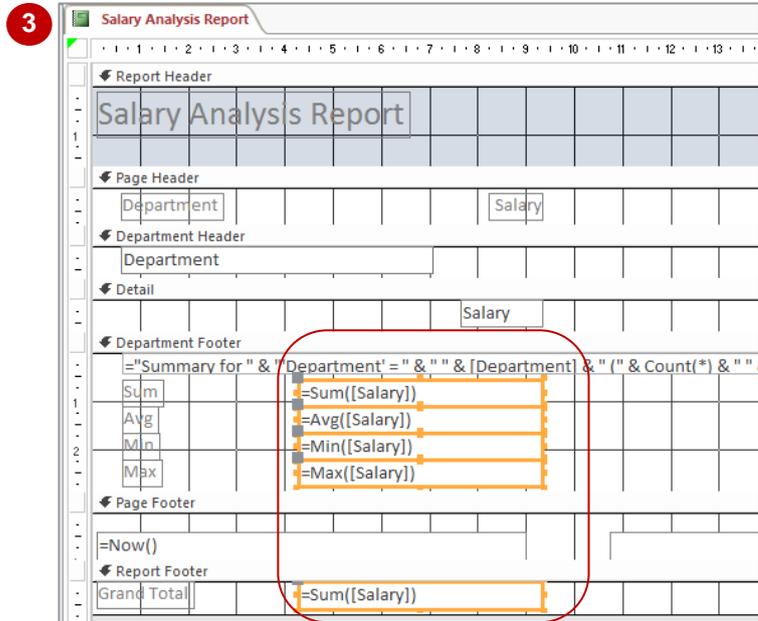
etc.) on the values that involve many numbers, such as currency. To correct this problem you will need to access either **Layout View** or **Design View** and modify the column widths.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *Reports_7.accdb...*

- 1 In the **Navigation** pane, double-click on **Salary Analysis Report** to run it
Here you can see the hash signs replacing numbers...
- 2 Switch to **Design View**
- 3 In **Department Footer**, click on **=Sum([Sal]**, hold down **Shift** and click on **=Avg([Sal, =Min([Sal, =Max([Sal** and **=Sum([Sal** (in **Report Footer**)
You should have selected five fields...
- 4 Point to the left border of one of the selected fields, click and drag to the left until the fields are about 3 times as long
- 5 Click on the **Home** tab, click on the bottom half of **View** in the **Views** group, then select **Report View** to run the report – this time the values are displayed
- 6 Save and close the report



For Your Reference...

To **modify the layout** of a **grouped report**:

1. Open the report in either **Report Layout** or **Report Design** view
2. Make the changes to the layout as required

Handy to Know...

- You can adjust field widths either through **Report Design** view or in **Report Layout** view. However, **=Sum** (that sums the footer) is easier to access in **Report Design** view.



Congratulations!

You have now completed Microsoft Access 2016 - An Introduction. Microsoft Access 2016 - An Introduction was designed to get you to the point where you can competently perform a variety of operations.

We have tried to build up your skills and knowledge by having you work through specific tasks. The step by step approach will serve as a reference for you when you need to repeat a task.

Where To From Here?

The following is a little advice about what to do next:

- Spend some time playing with what you have learnt. You should reinforce the skills that you have acquired and use some of the application's commands. This will test just how much of the concepts and features have stuck! Don't try a big task just yet if you can avoid it - small is a good way to start.
- Some aspects of the course may now be a little vague. Go over some of the points that you may be unclear about. Use the examples and exercises in these notes and have another go - these step-by-step notes were designed to help you in the classroom and in the work place!

Here are a few techniques and strategies that we've found handy for learning more about technology:

- read computer magazines - there are often useful articles about specific techniques
- if you have the skills and facilities browse the Internet, specifically the technical pages of the application that you have just learnt
- take an interest in what your work colleagues have done and how they did it - we don't suggest that you plagiarise but you can certainly learn from the techniques of others
- if your software came with a manual (which is rare nowadays) spend a bit of time each day reading a few pages. Then try the techniques out straight away - over a period of time you'll learn a lot this way
- and of course, there are also more courses and books for you to work through.

Hungry for More?

We live in an ever-changing world where we all need to review and upgrade our skills.

If you have received this course book on a training course why not ask the tutor or trainer for other courses that may be of benefit to you. If you are attending a college ask for one of their brochures.

Alternatively, if you've enjoyed using this course book you can find others that cover a wide range of topics at our web site www.watsoniapublishing.com.

INDEX

A

accdb file format..... 18, 28
adding fields 37
adding records.....60, 61, 63, 64, 71
additional queries..... 145
aligning controls 126
allow zero length 38
AND queries..... 140
AutoNumber field..... 22
AutoNumber field type..... 20
avg 155

B

Backstage View..... 6, 7
backup 45
basic forms 110, 111
basic reports 148, 149
best fit 90
Between Dates 102
blank database 5
Blank Database icon 6
bold..... 92
bound control 120

C

caption..... 38, 40
captions 128
cascade delete 48, 55
Cascade Delete 53
cascade deletes 54
cascade update..... 48, 55
Cascade Update..... 53
cascade updates 54
clearing criteria 141
clearing filters 101
close a table..... 31
closing a database 15
column widths 90, 152, 156
columns, hide 95
columns, show 96
columns, unhide 96
commands 9
compact a database 87
compact on close..... 87
complex reports 148
connecting tables 24
control source..... 130
control stack 123, 124, 125
control widths..... 124
controls..... 120, 125
controls, Resize..... 124
copying tables..... 45
creating a query design 137
creating tables 29
criteria 136, 141

current record.....76

D

data binding..... 113
Data view 14
database compaction 87
database file 7, 18, 28
database objects..... 2, 10
database templates 6
Datasheet Formatting 91
Datasheet view 13, 36, 138
date and time..... 134
date filters..... 102
date formats 42
Date() 130
DBMS 2
decimal places 38, 41
default form 61
deleting a record..... 81
deleting a table 46
deleting data 79
deleting fields 44
deleting forms..... 118
deleting queries 144
deleting records..... 117
deleting several records..... 82
delimited text file..... 105
design mode 2
Design view 13, 14, 36, 115, 150
Design View 120, 121
desktop, starting Access from..... 3
details table 34
display mode..... 2

E

edit icon 116
editing in forms..... 116
editing records 78, 116
exiting from Access..... 16
Export Wizard 104
exporting records..... 104, 105
expressions 130
external data source 108

F

field names 40
field naming 40
field properties 19, 29
field size 19, 38, 39
fields 19
File area 7
File tab 8
filter by selection 101
filter database objects 10
filtering dates 102
filtering records 140

filters 100, 101
find and replace 85
Find What dialog box 84
finding 84
first record 76
fixed length text file 105
font colour 92
font size..... 92
fonts 92
form 129
Form command..... 110, 111
form header 134
form layout 62
Form View 115
form views 121
Form Wizard..... 110, 114
format 38
formatting 91
formatting controls 131
formatting dates 42
forms..... 2, 61, 63, 69, 110, 115, 120
forms, tab order 133
formula..... 130
freezing columns 94

G

Get External Data 65
grouped reports 154, 155, 156
grouping 154
groups 9

H

hiding columns 95

I

import from Excel..... 106
importing data 106, 107
importing records 65
indexing..... 20, 30, 38, 43
inner joins 56
input mask 38
insert row 37
italic..... 92

J

joins..... 53, 55

L

labels 128
last record 76

Layout View	14, 115, 120, 121, 149, 150, 152
linking	108
listing database objects	10
long date	42
lookup fields	49
lookup relationships	23
lookup table	19, 24, 32, 50
lookup tables	29, 49, 51
Lookup wizard	24
Lookup Wizard	50, 51

M

many-to-many	48
max	155
mdb file format	18, 28
medium date	42
Microsoft Excel	65, 104, 106
min	155
Modify Lookup	24
Mouse mode	12
moving controls	125
moving fields	93
multi-field sorting	99
multiple item forms	110

N

navigating records	76, 77
navigation bar	76
Navigation Pane	8, 10
New (blank) record	76
next record	76
null fields	20

O

object properties	127
objects	120
Office 365	5
Office Online	6
one-to-many	48
one-to-many relationships	23, 49
one-to-one	48
online servers	5
Open area	7
opening a database	7
opening a form	115
opening a table	36
outer joins	56

P

phone number field	34
pinning icon to taskbar	3

preventing duplicates	43
previewing reports	151
previous record	76
primary key	20, 23, 30, 53
Print dialog box	86
Print Preview view	150
printing	86
printing relationships	25
printing reports	151
properties	38, 120, 127

Q

QAT	11
QBE	136
queries	2, 14, 113, 136, 138
query binding	113
query criteria	140
query design	138
Query Design	139
query grid	136
Quick Access Toolbar, Add commands	11
quick forms	111

R

Recent Database listing	6
records	60, 61
records, transactional	68
referential integrity	48, 53, 54, 55, 56
relationship report	57
relationships	52
relationships, table	54
repair a database	87
Report Design	156
Report Layout	156
report template	148
Report View	149, 150
report widths	152
Report Wizard	148, 153, 154, 155
reports	2, 14, 148
ribbon	8, 9
running queries	138, 143

S

Save Object As	142
saving	142
saving a table design	21, 31
saving forms	62
saving queries	142
search and replace	85
Search box	83
searching	83
searching within a field	84
Security and Messages area	8

select queries	136
selecting data	79
selecting objects	122
selection border	122
SharePoint server	4
short date	42
Show Table dialog box	137
simple filters	100
smart tags	38
smartphone display	12
sort ascending	98
sort descending	98
sorting	43, 98, 99
split form	110, 112
SQL	51
square brackets	130
Start screen	4
statistical report	155
subdatasheet	71, 72, 73
sum	155

T

tab order	132, 133
Table Design	19
table fonts	92
table joins	53, 56
table relationships	23, 25, 48, 52
tables	2, 13
tablet display	12
tabs	9
taskbar, pinning icon	3
templates	4, 5, 6, 120
text align	38
text file	107
text files	105
tooggling filters	101
Touch mode	12
transaction table	22, 24
transactional records	68, 69, 70
transactions table	33

U

unbound control	120, 129
undo	80
unfreeze columns	94
unhiding columns	96

V

validations	38
viewing relationships	25, 52
viewing reports	150