CHAPTER 1 — # GETTING TO KNOW ACCESS 2016

INFOCUS

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

✓ gain an understanding of choosing database software

✓ learn how to start *Access* from the desktop

✓ gain understanding of the *Access Start* screen

✓ 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 work with the *Navigation* pane to filter database objects

✓ 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.

CHOOSING DATABASE SOFTWARE

Database software allows you to organise and store large quantities of data. For example, database software can be used to keep track of and work with client or inventory lists. These days there are a range of software options for working with databases and it's important to consider which one works best for you.

Microsoft Access And SQL Server

Microsoft provides a few database software options, with two of the most popular offerings being Microsoft Access and SQL Server. Microsoft Access is part of the suite of products known as Microsoft Office and is a desktop application (meaning it is installed and run on your desktop computer). It is great for quickly and easily building applications using it's built-in tools like table designers, forms and reports. Unlike some of the other Microsoft Office apps, Microsoft Access does not have an online or mobile app.

SQL Server is also a relational database management system; however, while Access is designed for smaller, simpler databases, SQL Server is designed for larger, more complex databases. For example, Access databases are allowed to have a maximum size of 2 gigabytes, whereas SQL Server databases can have a maximum size of 524,272 terabytes. Access 2016 databases allows a maximum of 255 concurrent users, whereas SQL Server allows up to 32,767.

Oracle

There are many other alternatives to Microsoft database software systems. One very popular database software program is Oracle. Oracle is designed for multiple users and can handle large amounts of data. It is comparable in ability and features to SQL Server, however there are several differences between the two. For example, the two programs use a different **Structured Query Language**. Structured Query Language (commonly known as SQL) is the computer language used for relational database management. The different languages mean that the two programs handle variables, stored procedures and built-in functions slightly differently from each other.

SQLite

SQLite is also a relational database system, however unlike SQL Server and Oracle, SQLite does not have a server. Instead it is integrated with the application that accesses the database. You can use SQLite for many purposes, such as storing data for an application (many Web browsers use SQLite to store history, bookmarks and so on) or storing data for a website (unless it receives a high volume of traffic). SQLite is small and fast but has a higher learning curve and does less than some other options.

Other Types Of Databases

All of the databases discussed above are relational database systems, meaning that they recognise relationships between pieces of data stored in tables. Relational database systems are very popular and widely used and are a good choice for most types of application development. There are many other types of database systems that you can use for advanced scenarios (such as distributed databases, real-time or operational databases and NoSQL databases) but they are outside the scope of this course.

Choosing The Right Software

Before you decide which database software is right for you, carefully consider the purpose of your database, the kind of information you need to store in your database, and whether you expect your database to grow and by how much.

SQL Server and Oracle are suitable for medium to large businesses as they are powerful and complex, but they can also be expensive and difficult to use. SQLite is small and fast but requires programming experience or other tools to be able to build applications. Microsoft Access is quick and easy to use and is more appropriate for those with little to no database experience or those looking to build applications with a minimum of fuss.

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

1

5
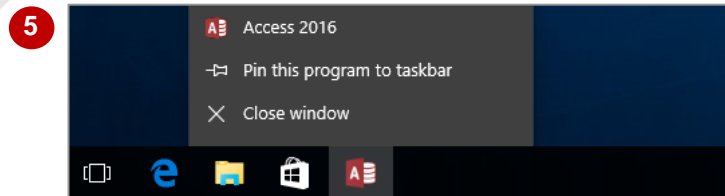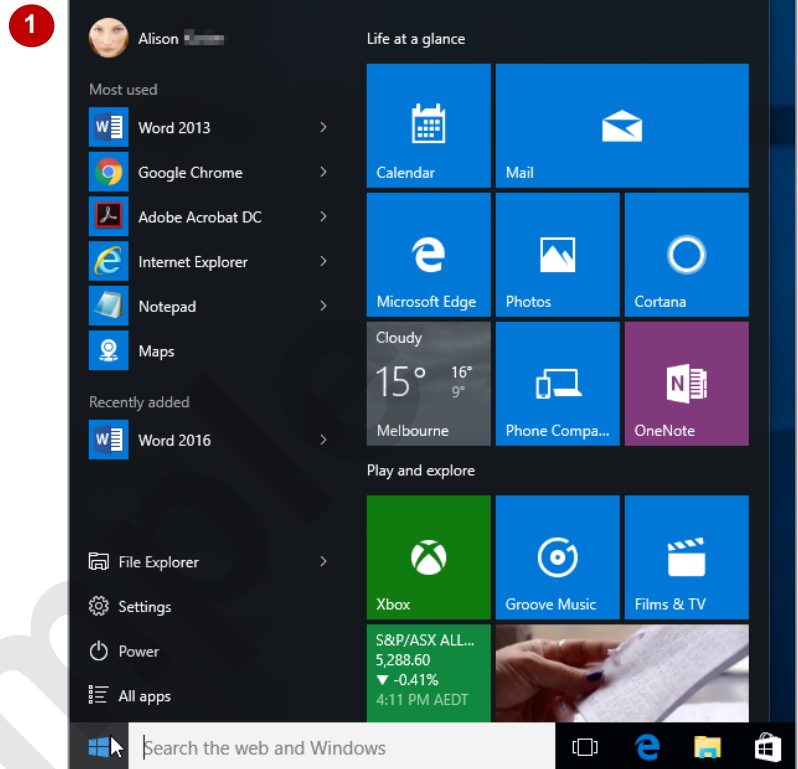
For Your Reference…

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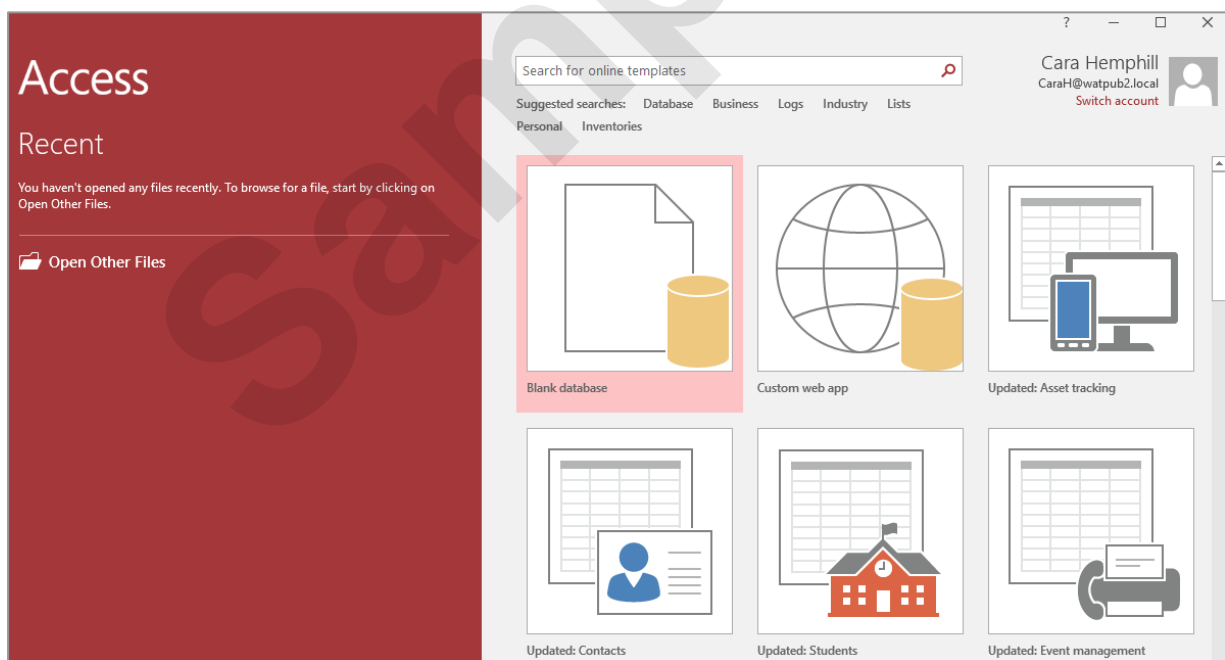
The ***start*** screen will only display when you launch the ***Access 2016*** application directly – that is, by clicking on ***Access 2016*** from the Windows 10 ***Start*** menu or clicking on the taskbar icon if the application has been pinned to the ***taskbar***.

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.

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.
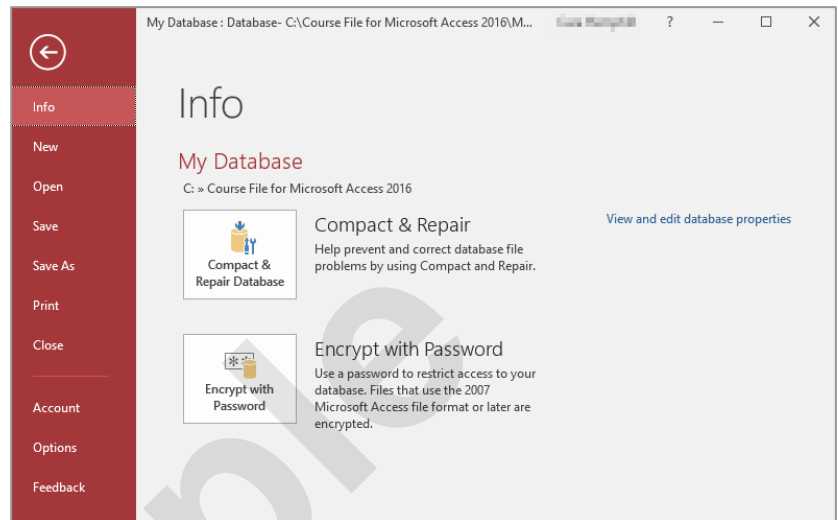
The Backstage Options

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 to 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.
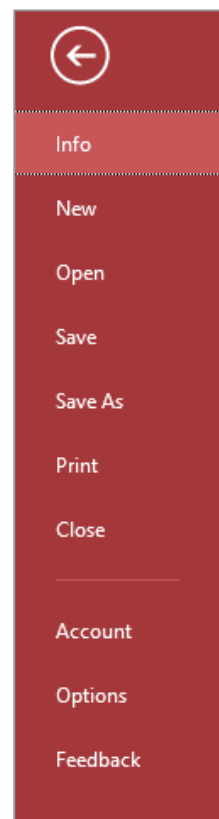
OPENING AN EXISTING DATABASE FILE

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 BSB – Office 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
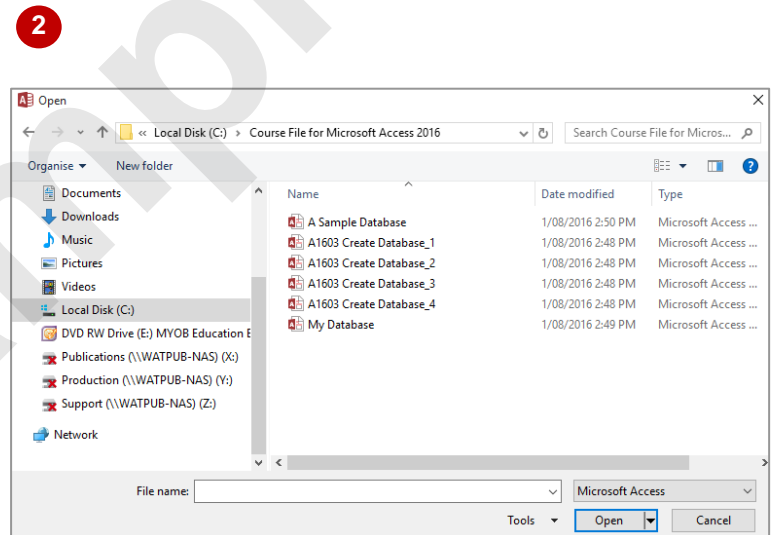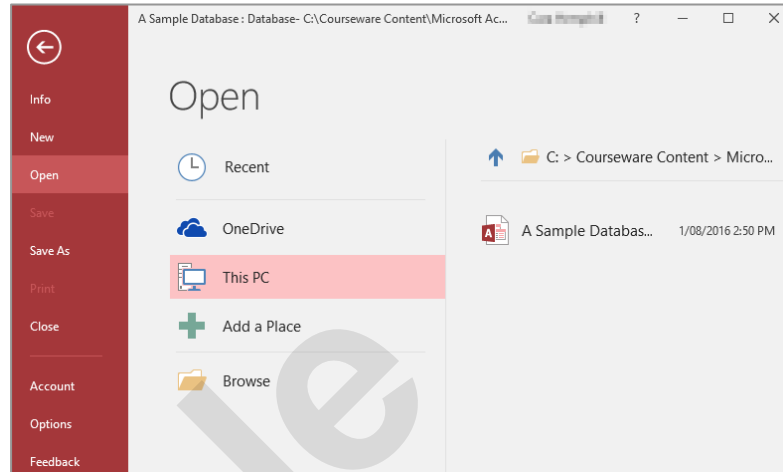
For Your Reference…

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.
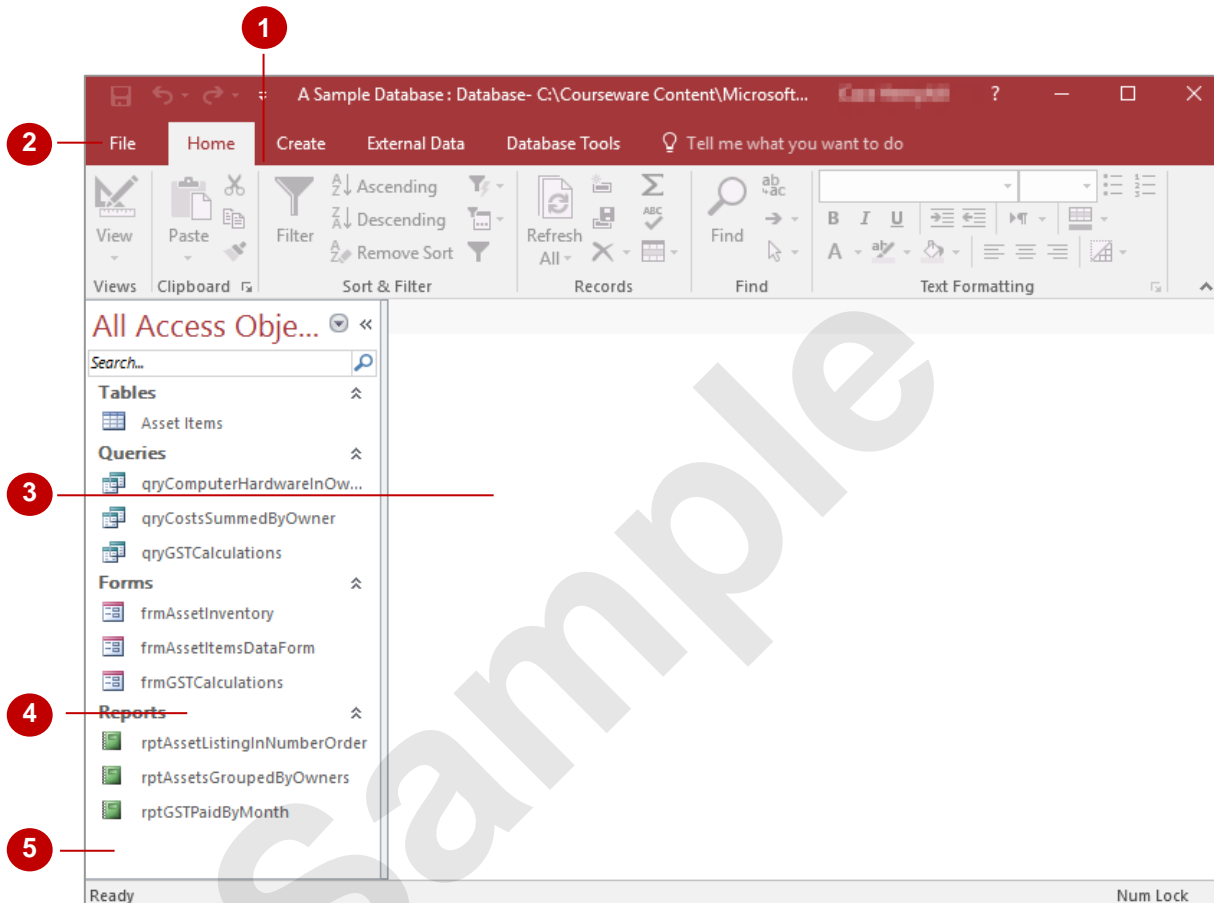
1 The **ribbon** is the tabbed band that appears across the top of the window. It is the command control centre of Access 2016. You use the **tabs** on the ribbon to access **commands** which have been categorised into **groups**. Commands can be buttons or sometimes include **galleries** of formatting 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.

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...

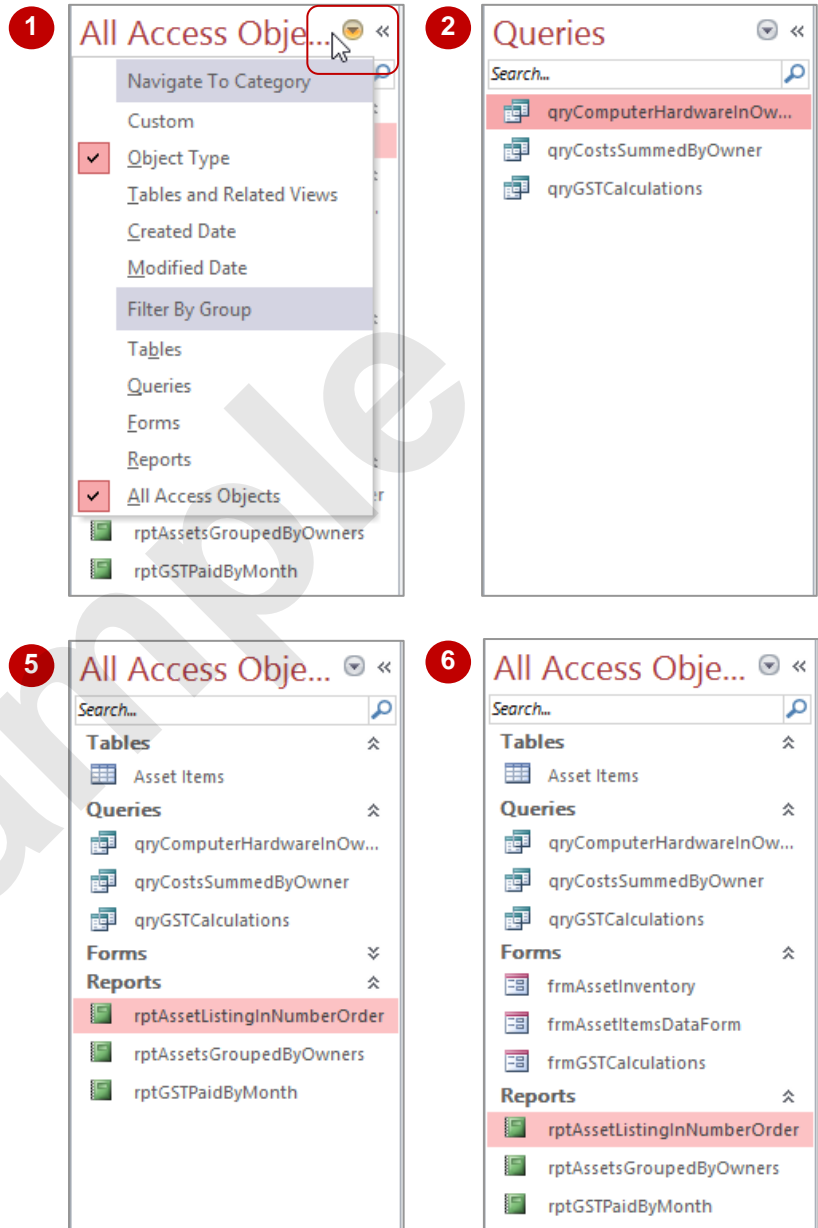**2** Select **Queries** under **Filter By Group** to see only the saved query objects in the database

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

1

All Access Obje...

Navigate To Category
  Custom
✓ Object Type
  Tables and Related Views
  Created Date
  Modified Date

Filter By Group
  Tables
  Queries
  Forms
  Reports
✓ All Access Objects

  rptAssetsGroupedByOwners
  rptGSTPaidByMonth

2

Queries

Search...

qryComputerHardwareInOw...
qryCostsSummedByOwner
qryGSTCalculations

5

All Access Obje...

Search...

Tables
  Asset Items
Queries
  qryComputerHardwareInOw...
  qryCostsSummedByOwner
  qryGSTCalculations
Forms
Reports
  rptAssetListingInNumberOrder
  rptAssetsGroupedByOwners
  rptGSTPaidByMonth

6

All Access Obje...

Search...

Tables
  Asset Items
Queries
  qryComputerHardwareInOw...
  qryCostsSummedByOwner
  qryGSTCalculations
Forms
  frmAssetInventory
  frmAssetItemsDataForm
  frmGSTCalculations
Reports
  rptAssetListingInNumberOrder
  rptAssetsGroupedByOwners
  rptGSTPaidByMonth

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.

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:

Open File

Before starting this exercise you MUST 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…

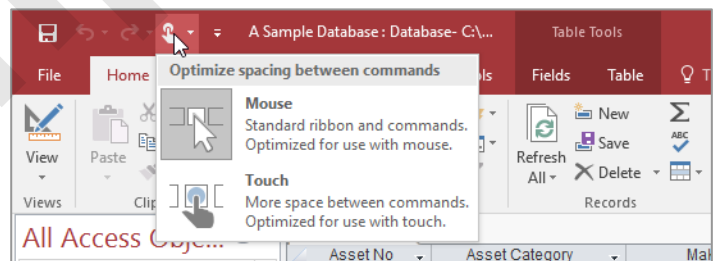**6** Right-click on *Touch/Mouse Mode* in the *QAT* and select **Remove from Quick Access Toolbar**
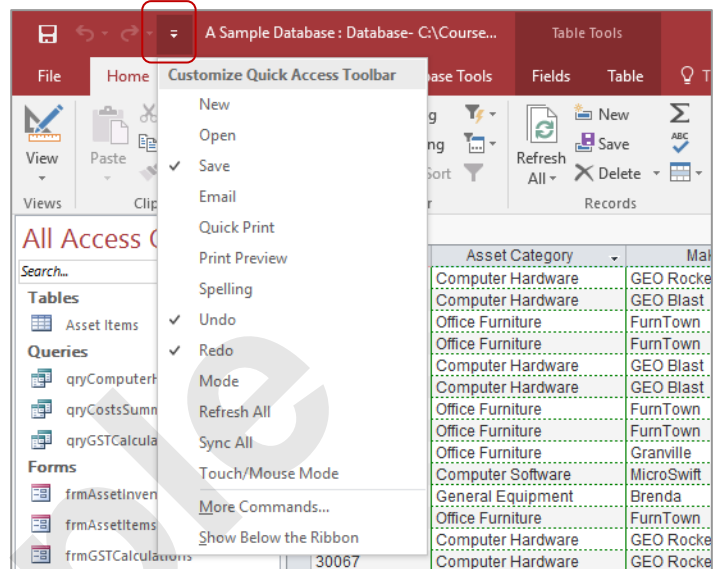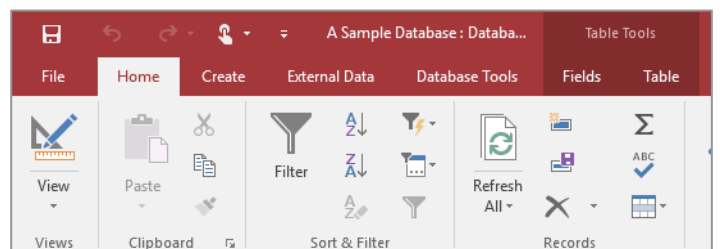

Despite its name, Touch mode can be used with a mouse and may suit people who have difficulty with fine mouse movements.

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
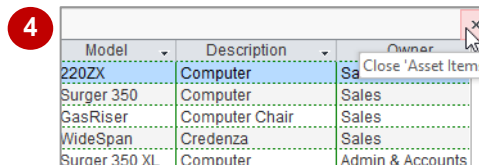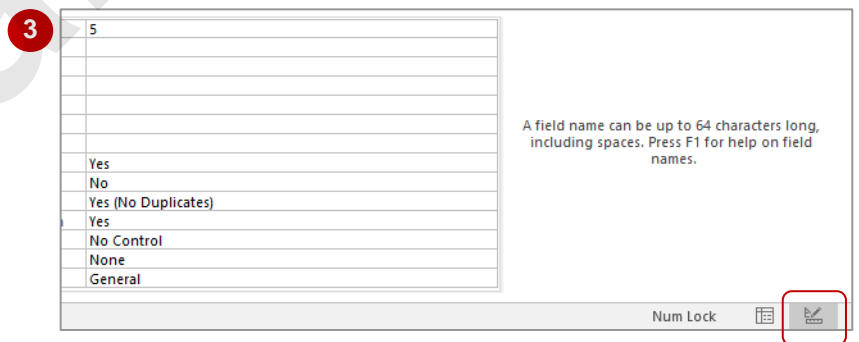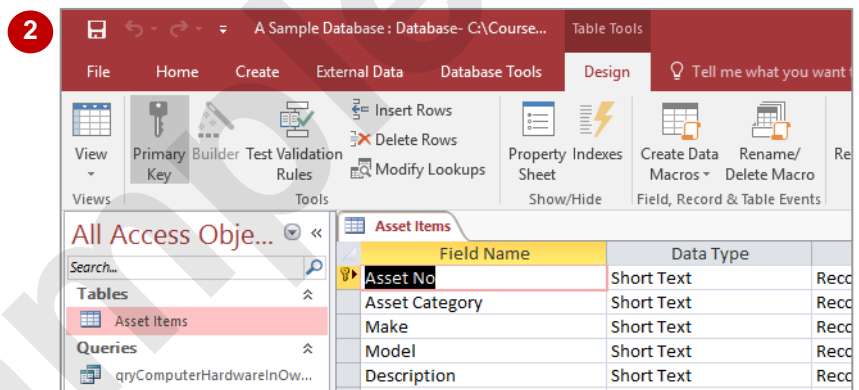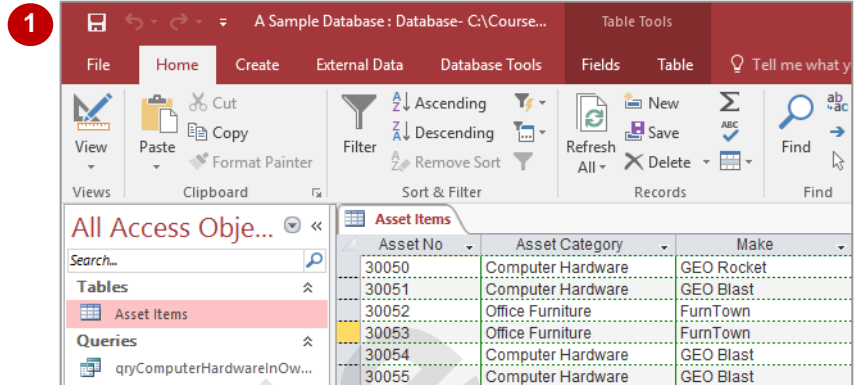
For Your Reference…

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
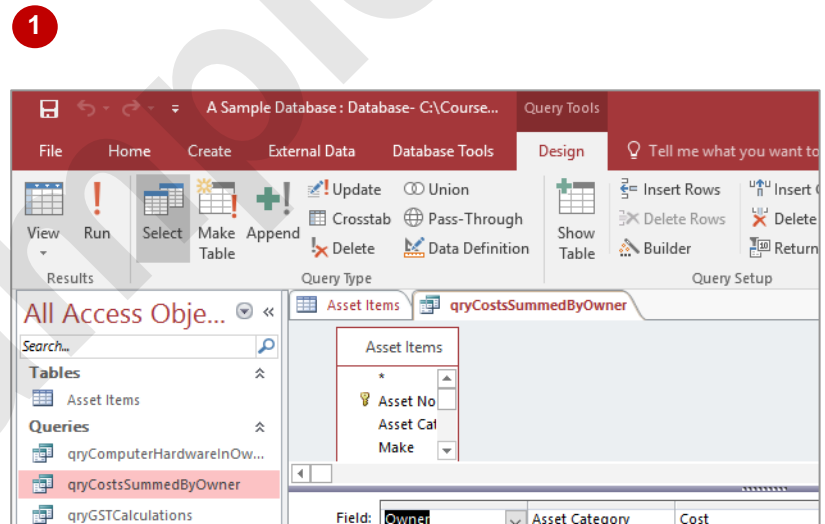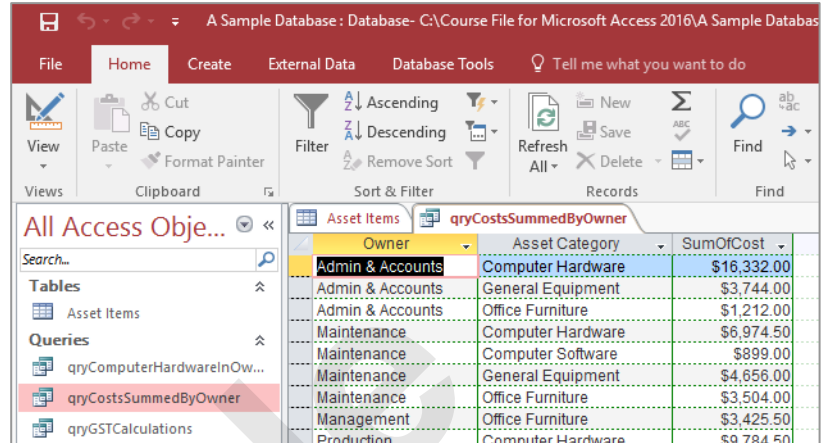
For Your Reference…

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.