

# Easy Way



***Teach yourself...***

**Microsoft Access 2010**

(Level 2)

- ☒ Easy to follow
- ☒ Step-by-step instructions
- ☒ Written in plain English

*A Cheryl Price Publication*

## **Easy Way - Microsoft Access 2010** (Level 2)

This book is designed to teach beginner topics for learning Microsoft Access 2010. It contains simple step-by-step exercises to guide you through the learning process.

There are dozens of exercises including consolidation exercises, both theory and practical at the end of each section.

The process of consolidation and accumulation of learning is unique to the Cheryl Price books.

**Retrievable exercise files** are used with this book. These are available for free download from our web site at [www.cherylprice.co.nz](http://www.cherylprice.co.nz). Instructions for downloading are included on the next page.

© Cherylprice.co.nz Limited

*Author:*

Cheryl Price

T.Dip.WP, T.Dip.T

**ISBN 978-1-927155-16-5**

### **Disclaimer**

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, scanning, recording, or any information storage and retrieval system, without permission in writing from Cherylprice.co.nz Limited. No patent liability is assumed with respect to the use of the information contained herein. While every precaution has been taken in the preparation of this book, the publisher and authors assume no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained herein.

### **Cherylprice.co.nz Limited**

PO Box 187  
Matakana 0948  
Auckland

Phone: (09) 422 7230  
Mobile: 021 715566  
Fax: (09) 422 7236


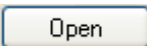




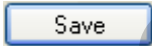
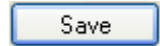
### **Web address:**

[www.cherylprice.co.nz](http://www.cherylprice.co.nz)

**Published in New Zealand**

# Downloading Exercise Files

Exercise files can be downloaded from the Cheryl Price web site as follows:

1	In your web browser, type: <b>www.cherylprice.co.nz</b>
2	Press Enter on the keyboard to display the Cheryl Price website.
3	Click on the Resources tab as shown at the right. 
4	Click on <u>Easy Way – Microsoft Access 2010</u>
5	Click on the <u>Free download</u> hyperlink, ie <b>Access 2010, Level 2</b> <u>Free Download</u> The File Download dialog box will display.
6	If you have Winzip use the following instructions otherwise move to step 7.
	a Click on  .
	b Click on the  of the  button.
	c If My Documents folder is not displayed click on <b>Set default unzip folder</b> at the bottom of the list. Ensure My Documents is selected then click on Select Folder .
	d Click on the  of the  button and click on the My Documents folder. The files will be unzipped.
7	Click on  and ensure My Documents folder is displayed. Click on 
8	Click on Open Folder which will display My Documents folder. Right click on the zipped exercise file and select Extract All. Click on Extract. A folder will be created containing the exercise files. You will need to double click on this folder to use the exercise files in this book.

# Table of Contents

## Section 1 - Database Theory, Entering Simple Data, Field Types

What is a Database?	2
Uses of Databases	2
Advantages of Databases	2
Different Types of Databases Models	3
Flat File Data Model (Single Table)	3
Relational Data Model (Multiple Tables)	3
Hierarchical Data Model (Tree-like Structure)	4
Network Data Model (Tree-like Structure)	4
Starting Access 2010	6
Backstage View	7
File Tab	7
Quick Access Toolbar	7
Available Templates Window	7
Title Bar	7
Minimize, Maximize and Restore Down	7
Close	7
Microsoft Access Help	8
Opening a Database	8
Security Settings	9
MovieMaker Database	10
Using the Quick Access Toolbar	10
Quick Access Toolbar List	10
Customise Quick Access Toolbar	10
Closing Access 2010	11
The Database Window	12
Ribbon	12
Navigation Pane	12
Database Objects	12
Shutter Bar Open/Close Button	12
Home Tab	12
Icon Controls	12
Group Controls	13
Create Tab	13
Contextual Tabs	13
Use the Navigation Pane to View Different Objects	14
Use the Navigation Pane to View All Objects	14
Database Objects	15
Naming Conventions	15
Tables	16
Queries	17
Forms	18
Reports	19
Macros	20
Closing the Navigation Pane	20
Using Database Objects	21
Closing the Database	26
Exiting Access	26

## **Section 2 – Planning a Database, Creating a Database, Amending and Printing a Table**

Use a Database to Solve a Problem .....	28
Scenario – Care Cosmetics Ltd.....	28
Information Required.....	29
Database Plan.....	30
Database Specifications .....	31
Type of Database .....	32
Database Software .....	32
Create a New Database and Table .....	33
Adding Fields to a Database Table .....	34
The Lookup Wizard .....	35
Understanding Field Data Types .....	37
Applying Date Data Types .....	38
Field Properties .....	39
Field Size .....	39
Understanding the Primary Key .....	40
View the Primary Key .....	40
Datasheet/Design View.....	40
Entering Records into a Table .....	41
Amend a Record in a Table .....	44
Amend Field Properties .....	44
Add Captions .....	45
Widen Columns .....	46
Date and Number Formats.....	46
Check Date and Number Formats.....	48
Delete Records from a Table .....	49
Print Preview.....	50
Change Orientation and Margins.....	51
Print the Table.....	52
Revision .....	53
Consolidation Exercise .....	54

## **Section 3 - Create and Use Forms**

Forms .....	56
Introduction.....	56
The Forms Group.....	56
Creating a Form .....	56
Create a Form.....	57
Enter a new record into a form .....	58
The Form Window .....	59
Viewing a Form .....	59
Layout View .....	60
The Form Layout Window .....	60
Formatting the Form .....	61
Format Ribbon .....	61
Change the Font Format .....	61
Resize the Form Fields .....	63
Modifying Data Alignment .....	64
Modify a Header .....	65
Add a New Record .....	66
Themes.....	67
Additional Design Options .....	68
Create a Form using the Form Wizard.....	69
Modify the Header .....	70

Add Fields.....	71
Add Fields to a Table.....	71
Add New Fields to an Existing Form .....	71
Adding New Field Information.....	73
Hide Columns.....	73
Unhide Columns.....	74
Manipulate Data using Datasheet View.....	75
Sort Records .....	75
Apply a Filter.....	76
Scenario – Seedyse Ltd.....	77
Revision .....	79
Consolidation Exercises.....	81
<b>Section 4 - Create Queries, Use Criteria in Queries</b>	
Queries.....	84
Data Retrieval Queries.....	84
The Queries Group.....	84
The Simple Query Wizard .....	84
The Query Window .....	87
Design View .....	87
Save the Query.....	88
Print a Query.....	88
Create a Query in Design View .....	90
Add Criteria to a Query .....	91
Add New Data .....	92
Run the Query.....	93
Modify a Query.....	94
Delete a Field.....	94
Use Multiple Criteria Operators .....	95
Use AND and OR Expressions.....	96
Use Save As.....	96
Use > and < Operators .....	97
Use Criteria on Multiple Fields .....	103
Additional Queries.....	105
Additional Multiple Criteria Queries.....	107
Advanced Summary Exercise.....	107
Revision .....	110
Consolidation Exercises.....	112
<b>Section 5 – Create Reports, Modify Reports</b>	
Reports.....	114
The Reports Group.....	114
Use the Report Wizard.....	114
The Print Preview Window.....	118
Examine the Report Window.....	119
Modify a Report.....	119
Layout View .....	119
The Report Layout Window .....	120
Formatting the Report.....	121
Format Ribbon.....	121
Change the Header Font Format.....	121
Resize the Report Columns .....	122
Format the Column Headings.....	124
Modify the Page Footer .....	124
Sort and Group a Report.....	125

Preview and Print a Report .....	126
Create a Report from a Query .....	127
Modify the Report .....	128
Create a Report using Summary Options .....	130
Format the Summary Report.....	132
Additional Exercise.....	135
Evaluating a Database.....	137
User Documentation .....	137
Queries/Reports using the CD Database.....	138
Revision .....	142
Consolidation Exercises.....	143

## Exercise Files used in this book

(Instructions are at the front of this book for downloading retrievable files from our web site.)

Names of files	
Care Cosmetics Staff	Fresh Products Database
Coronation Road Book Store	MovieMaker Database
Database Documents	Southfield Mall Tenants
Deep Blue Dive Club	



## Learning Outcomes

*At the end of this section you should be able to -*

- ☐ Understand database concepts and uses of databases
- ☐ Understand the different types of databases
- ☐ Start Access 2010
- ☐ Open an existing database
- ☐ Understand the database window and database objects
- ☐ Open a database table
- ☐ Identify parts of a table
- ☐ Navigate through records in a table
- ☐ Manipulate data in a table by filtering and sorting records
- ☐ Add a new record to a table
- ☐ Delete a record from a table
- ☐ Close a database table
- ☐ Close a database
- ☐ Exit Access

# What is a Database?

A database is an organised collection of information on a specific subject. We use databases all the time in everyday life – the telephone directory, for example, is a database.

Other examples of databases could be:

- Recipe book
- List of employee details (start date, name, address, date of birth, salary)
- List of CD collection (name of CD, date of release, artist/band)
- Stock listing (product name, number of stock, supplier, type of product)
- Library (where all the books are categorised and then stored alphabetically within the category making them easy to find)

The data in an Access 2010 database is stored in one or more tables. A table is made up of records, and records are made up of fields. In a **Customers** table, a record could be:

**Smith Jane 319 Alfred St East Sydney NSW 2010 (02) 9955 2523**

The fields could be called:

**Surname FirstName Street Suburb State PostCode PhoneNumber**

## Uses of Databases

Databases hold information. This information can be searched and selected.

For example:

- A telephone directory is used to search for the telephone number of a person whose name is known to you. You already know the contents of the Surname field, and usually the FirstName field – these are your *search criteria*.
- The *search criteria* are then used to look up the additional information about the person – i.e. to find the particular record and therefore the address and telephone number of the person.
- If you only know one criterion value (e.g. the Surname), you will find many more matching records than if you know more criteria (e.g. the Surname, FirstName and StreetAddress).

## Advantages of Databases

Databases are designed to store large amounts of data. They allow you to control the way the data is organised and displayed.

Once the required information has been stored in a database, it can be used in many ways. For example, you can format and print it as a report. Charts can also be created using information in the database.

Examples of database programs other than Access 2010 are Lotus Approach, DataEase, and Dbase IV.

## Different Types of Databases Models

There are several different types of Database Models: Flat File, Relational, Hierarchical, and Network models. Each is briefly described here.

### Flat File Data Model (Single Table)

This data model stores data in a single table in rows and columns. There are no links to any other sources of data. Data stored in a single Excel spreadsheet is an example of a flat file database.

If only one table is used for a database all data will be stored in and accessed from that table. This is an example of a Flat File Database.

#### Clients' Pet Visits

ClientID	Title	FirstName	LastName	Address	PetName	PetType	VisitDate	Reason
Andrw1	Mrs	Judy	Andrews	2 Ocean View Rd	Lassie	dog	30/11/2005	Injury
Evans1	Mr	Bill	Evans	34 Hopetown Rd	Matthew	cat	22/11/2005	Illness
Robbn1	Dr	Jonathan	Robbins	122 Crowley Court	Tippy	bird	19/11/2005	Illness
Evans1	Mr	Bill	Evans	34 Hopetown Rd	Jennifer	bird	18/11/2005	Injury
Evans1	Mr	Bill	Evans	34 Hopetown Rd	Matthew	cat	11/11/2005	Routine
Evans1	Mr	Bill	Evans	34 Hopetown Rd	Matthew	cat	03/11/2005	Illness
Andrw1	Mrs	Judy	Andrews	2 Ocean View Rd	Zachary	dog	02/11/2005	Illness

You will notice that data duplication occurs in this Flat File Data Model. For example:

- Mr Bill Evans's name and address appears in each of his records.
- He has two pets, a cat and a bird and has visited the Vet several times with these pets. Their names and types are also duplicated.

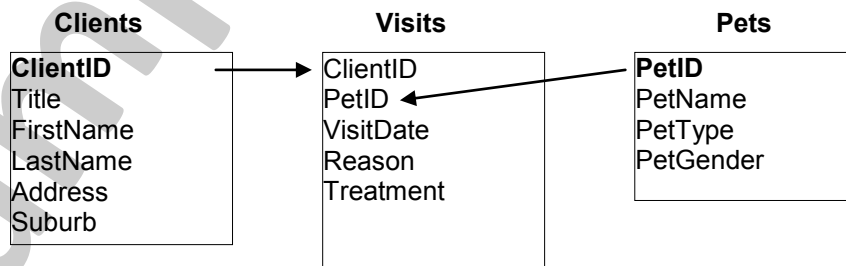
Data duplication is a problem with the Flat File Data Model, and this increases the chances of it being entered incorrectly.

### Relational Data Model (Multiple Tables)

Data in this model is stored in multiple tables, each on a specific subject. Sometimes you will want to combine data from two or more tables, and this requires that Relationships have been created between them.

If we took the single table example above and converted it into a relational database, we would split the data into three separate tables. This would remove the problem of duplication of data.

The diagram below shows an example of relationships between tables.



The tables would appear as shown on the following page. Each table is storing data on a specific topic. The tables are related by a common field: **Clients** and **Visits** by ClientID, and **Pets** and **Visits** by PetID.

## Clients Table

ClientID	Title	FirstName	LastName	Address	Suburb
Evans1	Mr	Bill	Evans	34 Hopetown Rd	Takapuna
Andrw1	Mrs	Judy	Andrews	2 Ocean View Rd	Torbay
Robbn1	Dr	Jonathan	Robbins	122 Crowley Court	Epsom

## Pets Table

PetID	PetName	PetType	PetGender
1	Jennifer	bird	F
2	Matthew	cat	M
3	Lassie	dog	F
4	Zachary	dog	M
5	Tippy	bird	F

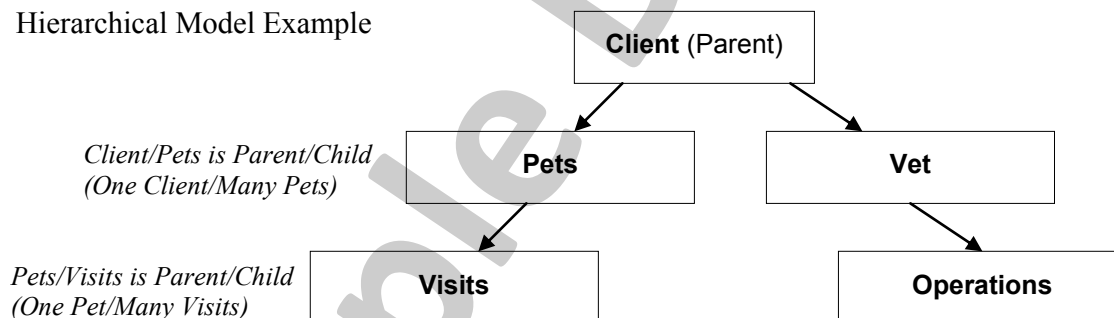
## Visits Table

ClientID	PetID	VisitDate	Reason	Treatment
Evans1	1	18/11/2005	Injury	Bandage leg
Evans1	2	03/11/2005	Illness	Medication for cat fever
Evans1	2	11/11/2005	Routine	Full examination, no problems
Evans1	2	22/11/2005	Illness	Under observation
Andrw1	3	30/11/2005	Injury	Operation
Andrw1	4	02/11/2005	Illness	Injection for diarrhoea
Robbn1	5	19/11/2005	Illness	Ointment

## Hierarchical Data Model (Tree-like Structure)

The Hierarchical model is organised in a tree-like structure. This means it allows there to be repeating information in the data that uses parent/child relationships. A parent/child relationship means that each parent may have many children but each child will only have one parent.

Hierarchical Model Example



If we were to use this on the Client and Pets example the Client is the Parent and the Pet is the Child. Under a Hierarchical structure One Client may have many Pets, but each Pet may only have One Client (Owner).

## Network Data Model (Tree-like Structure)

The Network Model uses objects and their relationships in a more flexible way. The important thing about a Network Model is it is viewed as a graph using object types which are referred to as nodes and relationship types which are referred to as arcs.

When you compare the hierarchical model with the tree structure which has one parent and many children records this model gives the flexibility of having multiple parent and child records which make up a graph type of structure.

This model was used widely in the early years of computing. However, as computer processing became faster, people began using the Relational Model in preference to the Network Data models.

Explanation of a Relational Database

In business and personal life, you keep track of information from a variety of sources, each related to a particular topic or purpose. Your knowledge and organizational skills are required to coordinate information from all these sources.

Customer addresses in a mailing list

Product information in a file cabinet

Invoices in a spreadsheet

Supplier phone numbers in a card file

Once you've added data to your database, you'll want to analyze the data in different ways. You can use a query to perform calculations and totals, or to select only certain kinds of data. For example, you can define a query to show all customers who have placed orders of \$5000.00 or more within the last year.

Customers

Company Name	Contact Name
Around the Horn	Thomas Hardy
Ernst Handel	Roland Mendel
Foiles gourmandes	Marine Rance

Orders

OrderDate
1995-06-12

Order Details

UnitPrice	Quantity
100	1

Field: CompanyName ContactName OrderAmount: Sum([UnitPrice]\*[Quantity]) OrderDate

Table: Customers Customers Group By Expression

Sort: Ascending

Show Criteria: >5000 Between Date() And Date()-365

It's usually easiest to add data to a database by using a form. In Microsoft Access, you can use a form to add, view, and edit your data one or more records at a time. You can also work with data from several tables at once with forms, and automate tasks by including macros or Visual Basic in your forms.

You can create a form that looks just like a printed paper form with instructions on how to fill it out.

Automate tasks

Print Invoice

Orders

Bill To:

Franchi S.p.A.  
Via Monte Bianco 34  
Torino 10100  
Italy

Salesperson: Suyama, Michael

Order ID: 10000 Order Date: 12-Jun-95

Product	Unit Price	Quantity	Extended Price
Alice Mutton	\$27.00	4	\$108.00

Using reports, you can print your data in a broad variety of layouts and type styles. Reports can print data from fields; text you define; totals and the results of calculations; or charts, pictures, or other objects — even another report. You can also use reports to print mailing labels.

Use a report to print mailing labels to send a discount offer to your best customers.

Antonio Moreno Taqueria  
Mataderos 2312  
Mexico D.F. 05023  
Mexico

Around the Horn  
120 Hanover Sq.  
London QA1 1DP  
UK

Berglunds snabbköp  
Berguvsvägen 8  
Luleå S-958 22  
Sweden

Bon app'  
12, rue des Bouchers  
Marseille 13008  
France

Bottom-Dollar Markets  
23 Tsawassen Blvd  
Tsawassen BC T2F 8M4  
Canada

# Starting Access 2010

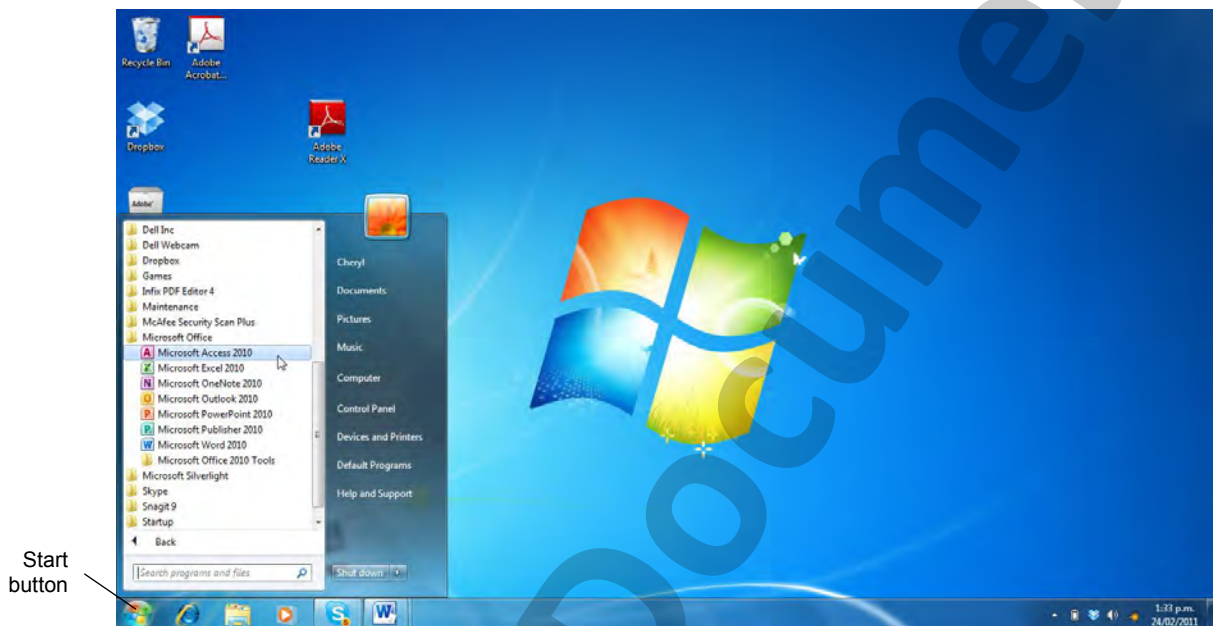
## Exercise 1



- 1 Click on the Start button and hover the cursor on All Programs.

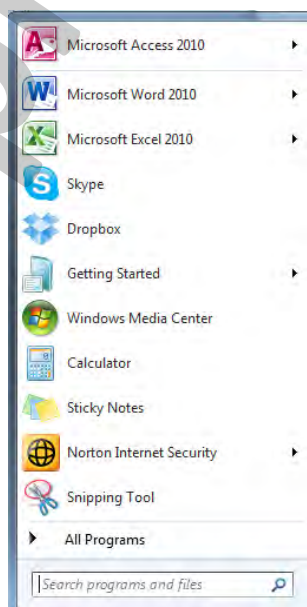
A menu of all programs appears.

- 2 If necessary scroll to the Microsoft Office folder, click on it, and select Microsoft Access 2010 as shown below.



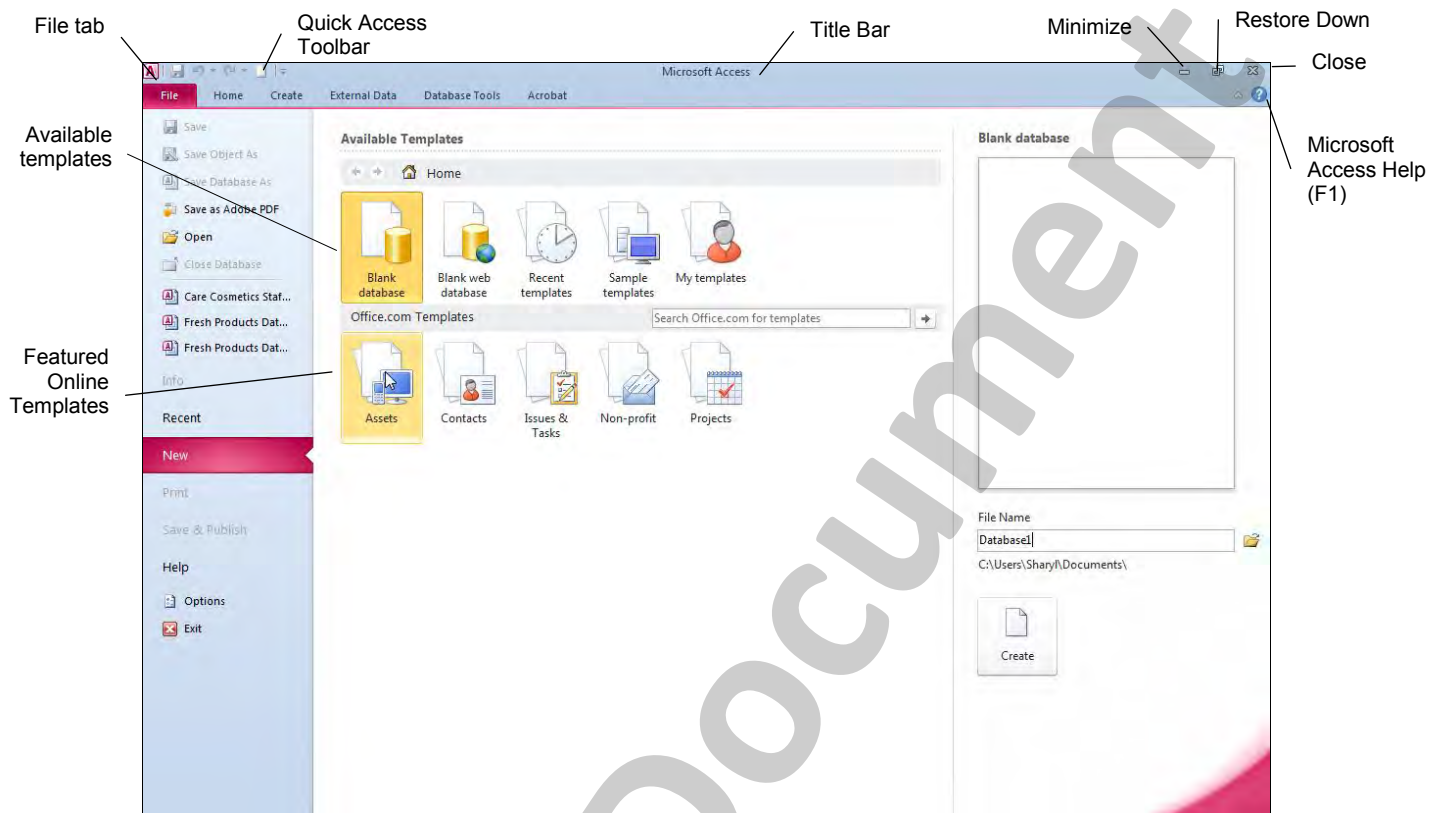
**Note** When you have used Access 2010 once (or more) it will appear on your Start menu as shown below.

You can just click on it to start Access.



# Backstage View

When you open Access 2010 you see Backstage view. The File tab on the left contains commands that help you manage your files, eg Save, Open, Print, New, etc.



Parts of Backstage view include:

## File Tab

The File tab replaces the Office Button in Access 2007 and the File menu in Access 2003.

## Quick Access Toolbar

The Quick Access Toolbar is a useful feature for accessing your most frequently used commands.

## Available Templates Window

From this section you can create a new Blank Database, create a database based on a custom template, or view some of Access 2010's Featured Online Templates.

## Title Bar

If you have a database open, the file name appears on the title bar. (There is no file name shown in the above illustration because a database is not open.)

## Minimize, Maximize and Restore Down

These buttons are used to reduce the main window to a button on the Taskbar (minimise) and increase the size of the main window (maximise). When the window is maximised, the Maximize button will display as the Restore Down button.



## Close

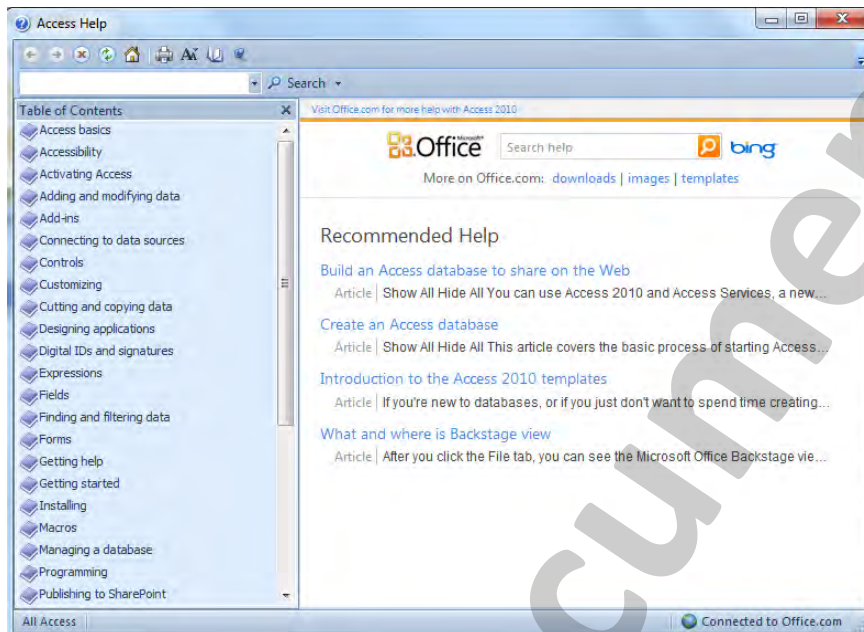
The Close button  shuts down Access 2010.

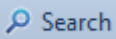



## Microsoft Access Help

### Exercise 2


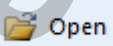
- 1 Click on the Microsoft Access Help button  in the top right corner of the window to display the Access Help window.

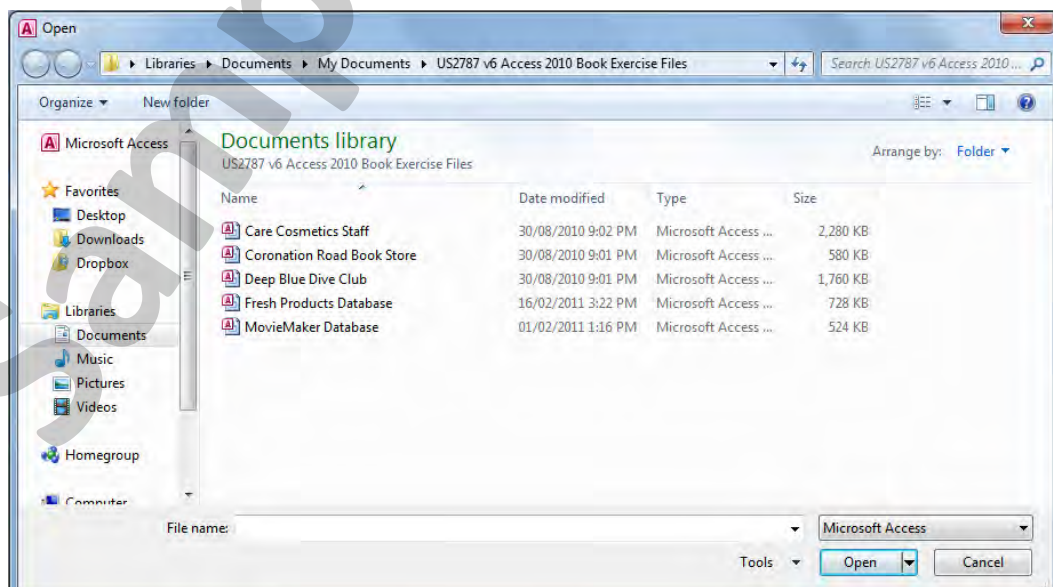


- 2 Browse the Table of Contents or type a specific topic into the Search Box above it and click on .
- 3 Click on the Close button  to exit from Help.

## Opening a Database

### Exercise 3

- 1 Click on  then click on . The Open dialog box will display existing database files that are included with this book.



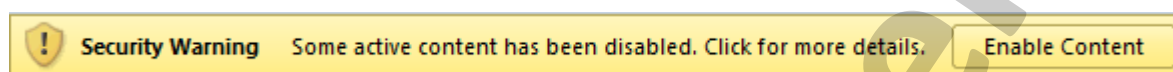


- 2 Click on **MovieMaker Database**.

- 3 Click on .

Access 2010 has improved security measures to protect your PC from viruses. Many database files contain shortcut programs called *macros* that are designed to help the user work more efficiently. A macro could also be a virus however and Access 2010 may try to warn you about this.

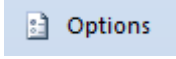
Unless your security settings are already set to the lowest level, Access 2010 may display the following security warning when you click on Open.

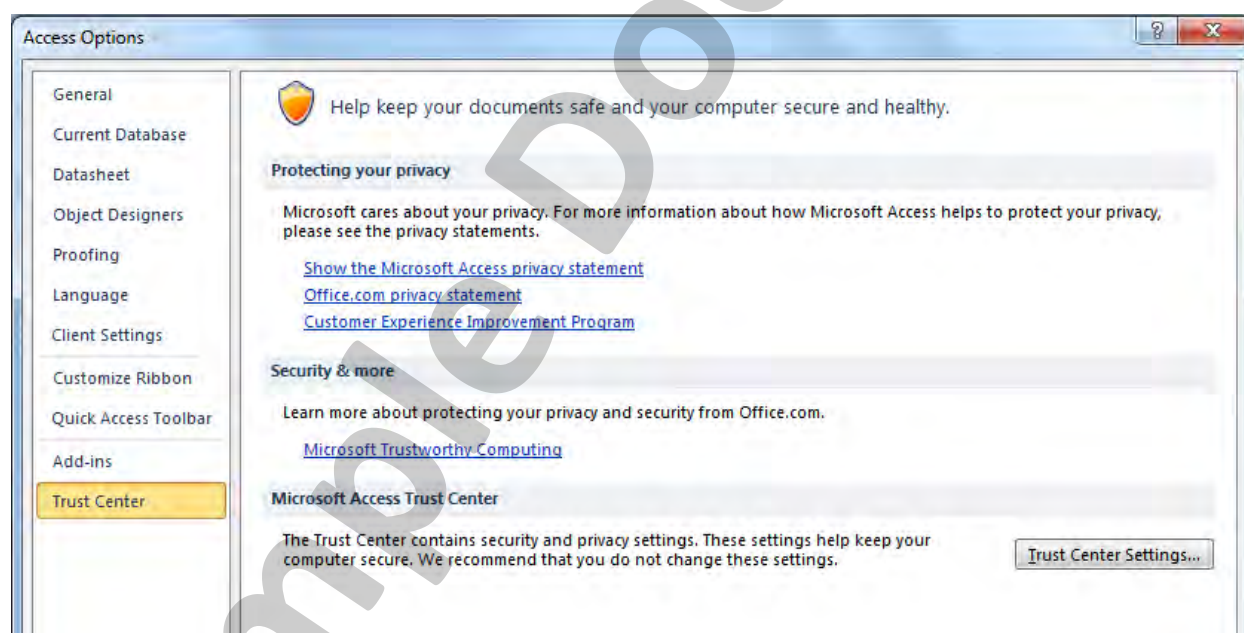


- 4 Click on  because the database is clear of viruses.

The database is now enabled so it can be accessed and used.

## Security Settings

To view your current security settings you can click the File tab and select  from the menu. In the Access Options dialog box click on Trust Center.



It is essential that you ensure the security of your computer, by using and maintaining up-to-date anti-virus software.

If you make changes click on OK, or click on Cancel.

## MovieMaker Database

The database that has been opened is a simple database designed to keep track of videos for a video shop.

The MovieMaker Database can be used as follows:

- To search for specific videos
- To find a specific type of video, eg action, romance, comedy
- To see in how many videos the lead role is played by a specific actor or actress
- To search for a specific director
- To see if a video is in the shop or on lease



Before you start using this database you will add buttons to the Quick Access Toolbar for speedy use of common commands.

## Using the Quick Access Toolbar

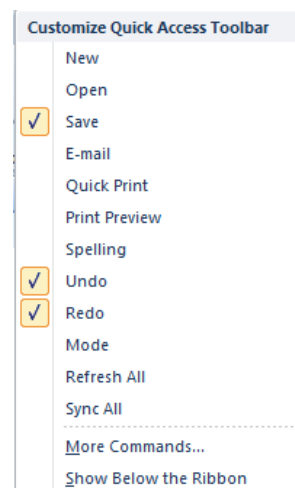
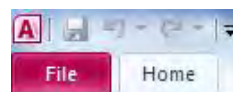
The Quick Access Toolbar is a useful feature for accessing your most frequently used commands. Commands can be added or removed, and the toolbar itself can be positioned either above or below the ribbon. (In Access 2010 the ribbon can also be customised.)

### Quick Access Toolbar List

#### Exercise 4

- 1 Click on the Customize Quick Access Toolbar  to the right of the Quick Access Toolbar. The Customize Quick Access Toolbar menu will be displayed.  
A tick is shown at the left of every option that displays presently on the Toolbar.
- 2 Click on New to add it to the Quick Access Toolbar.
- 3 Click on the  again and click on Open.
- 4 Add the following options to the Toolbar using the same steps.


**Quick Print, Print Preview, Spelling**



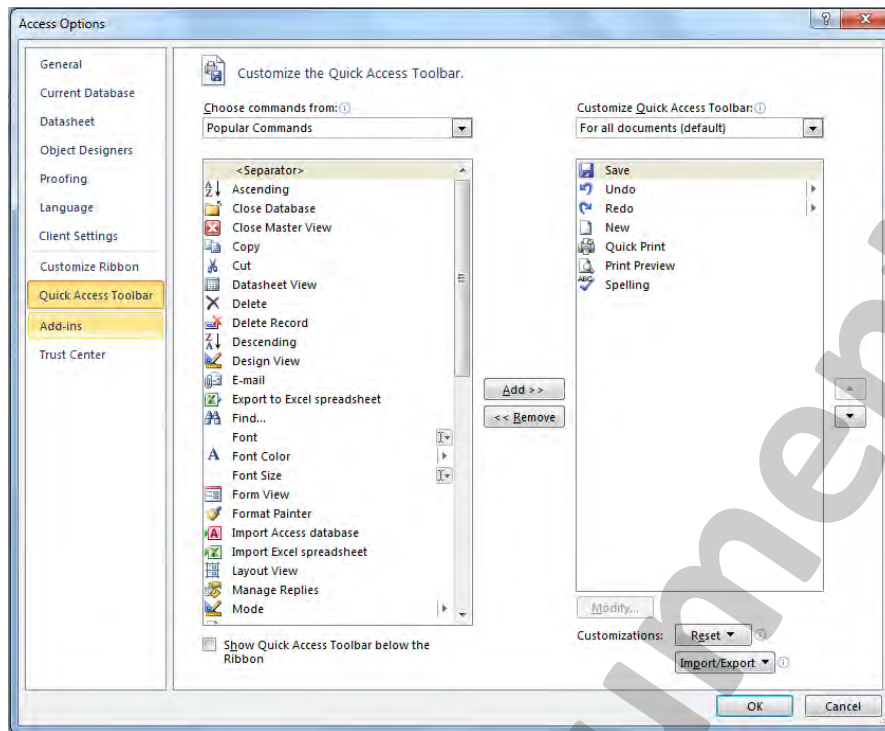
### Customise Quick Access Toolbar


Some other useful options that are not on the Quick Access Toolbar list can be added using the following steps.

#### Exercise 5


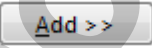
- 1 Click on the Customize Quick Access Toolbar button  to the right of the Quick Access Toolbar and select *More Commands...*


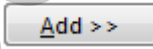
The Access Options dialog box will display, with the Customize option selected.



2 Click on the Choose Commands from:  and select All Commands. The commands are listed in alphabetical order.

3 In the list at the left, scroll down until the Close commands are displayed.

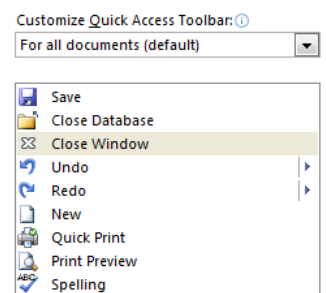
4 Click on  **Close Database** then click on .


5 Click on  **Close Window** then click on . The two commands will be added to the Quick Access Toolbar list on the right of the Access Options dialog box as shown at the right.

6 Click in the following option ☒ **Show Quick Access Toolbar below the Ribbon**

7 Click on  to save the changes to the Toolbar.

The Quick Access Toolbar is now displayed between the document area and the ribbon as shown at the right.




8 Click on the Customize Quick Access Toolbar button  again and select Show Above the Ribbon to restore the Quick Access Toolbar to the original position.


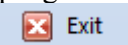


The position in which you display the Quick Access Toolbar is entirely up to you.

The commands that you have added in the above exercise will be used throughout the remainder of this book. (You may wish to add other commands now, or as you work through the book.)

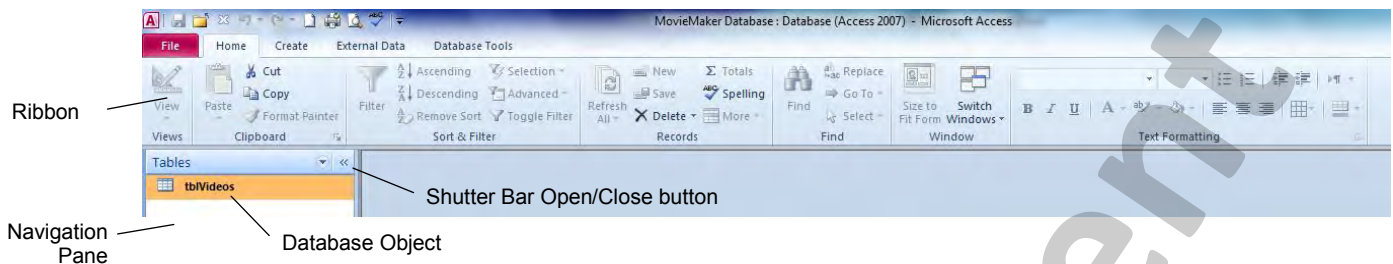
## Closing Access 2010

Leave the MovieMaker Database open but when you want to close the database use the Close Database button on the Quick Access Toolbar or  **Close Database** on the File tab menu.

**Note** In Access 2010, clicking on the Close Window button on the Quick Access Toolbar OR at the top right of the screen  will close Access down completely. You can also click on  **Exit** at the bottom of the File Tab menu to close Access 2010.

# The Database Window

When a database is opened the ribbon will display at the top of the Access 2010 window and the Navigation Pane will open to show the Database Objects for that database.



## Ribbon

The ribbon displays options in groups that can be used to format, modify text, manage records and sort and filter data.

## Navigation Pane

The Navigation Pane can be used to access the database objects, eg the MovieMaker Database and its tables, forms, queries and reports.

## Database Objects

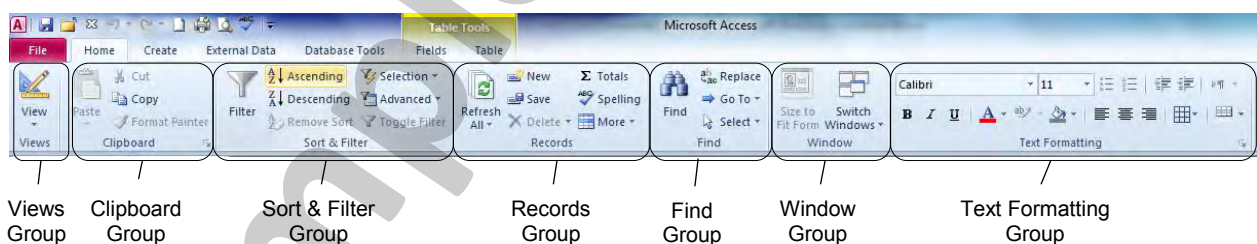
The database objects are displayed in the Navigation Pane. Double click on the type of object you wish to use, eg the table displayed above.

## Shutter Bar Open/Close Button

The Shutter Bar Open/Close Button allows you to close the Navigation Pane. Click on the button again to open the Navigation Pane.

## Home Tab

When an object from the database is opened the Home tab will display on the ribbon.



## Icon Controls

Several of the icons in the groups on the ribbons display a drop down arrow at the right. This arrow can be used to display a gallery or list of more options as shown at the right.

