Using Microsoft Access Database

Work BASE TRAINING

CAMPAIGN FOR LEARNING

Name:

FOR Learning Work SERIES

Using Microsoft Access Database

CONTENTS

Booklet 18

Introduction

Using Microsoft Access Database is one of a valuable and user-friendly new series of easy-to-read booklets created specially to help you develop at work. The materials have been created from actual experience in workplace training. Experts from Workbase Training and Campaign for Learning have pooled their knowledge and experience to involve you in learning new skills and building on those you already have. The booklet is divided into clear *sections*, containing specially devised *activities*. There are additional *exercises* at the end of the *sections* to allow you to practise as you learn. You will need to use a computer to carry out some of the *activities*.

Before you begin using this booklet, it is assumed that:

- you will have already received an introduction to the computer
- you are familiar with the keyboard and you can use a mouse to point, click, double-click and drag
- you are using Windows software.

Information and skills you will acquire

Using Microsoft Access Database will enable you to:

☐ Understand what a database is and become familiar with the layout of a database screen.

☐ Create, close, open, make corrections, print and save a database.

☐ Sort a database and extract information from it.

☐ Understand the difference between a database form and a report.

Getting the most out of this booklet

☐ You may want to work your way through the booklet from start to finish or focus on an area of interest.

☐ Once you have completed the questionnaire on page 4 you will be able to see clearly which topics you need most help with, and which areas you can safely leave out.

☐ You may want to ask your supervisor or another colleague for their views on the areas you could work on, or for help with the activities in the booklet.

☐ As you may want to use the booklet for future reference, you may want to write the answers out in rough first and then write them in the booklet.

Questionnaire

What do you need most help with?

This questionnaire is to enable you to think about which areas of database skills you need most help with. *Tick boxes as appropriate.*

	1	2	3
	I need a lot of help.	**I need some help.**	**I can cope.**
SECTION 1: What databases can be used for			
SECTION 2: Understanding the layout of a database screen			
Understanding what the different picture symbols on the screen do			
SECTION 3: Creating a new database			
Making corrections to a database			
Knowing what to do when I make a mistake			
Saving a database			
Closing a database			
Opening a database			
SECTION 4: Sorting a database			
Searching a database for specific information			
SECTION 5: Working in database form view			
Creating a database report			

The most important areas for you to concentrate on are those which you have marked 1 or 2.

Section 1 UNDERSTANDING DATABASES

What is a database?

A database is used for storing a lot of similar information in an organised way using a computer and a database program like Microsoft Access or Lotus Approach.

A telephone directory is a good example of a database. It contains a very long list of names, addresses and telephone numbers organised in a structured way and sorted in alphabetical order of surname. A database is used for storing lists that you may handwrite in everyday and business life. A database can be used to store personal and business address details, employee details, customer and supplier records and sales or product information. A database can save time by storing the information for you.

Not only can you store vast amounts of information in a database, but also it is designed to allow you to **manipulate** the information stored in various ways. You can:

- make changes to details
- add and remove details from a database list
- sort the information in various ways, e.g. sort by Surname and sort by City
- search through the database to extract specific information, e.g. all who live in the City of London and everyone with a surname beginning with 'S'
- save all the different versions of sorted and specific extracted information and still leave the original database list intact
- work in a form view seeing one record at a time rather than all records
- create and print various reports from data contained within a database.

A database can be used in many ways, from very simple to very complex. Essentially, you store and manipulate information contained in a database.

Tables are the heart or central storage place for information in a database. Tables are organised in a column and row format. You design a table by deciding on the column headings you wish to use, then record the individual details along a row.
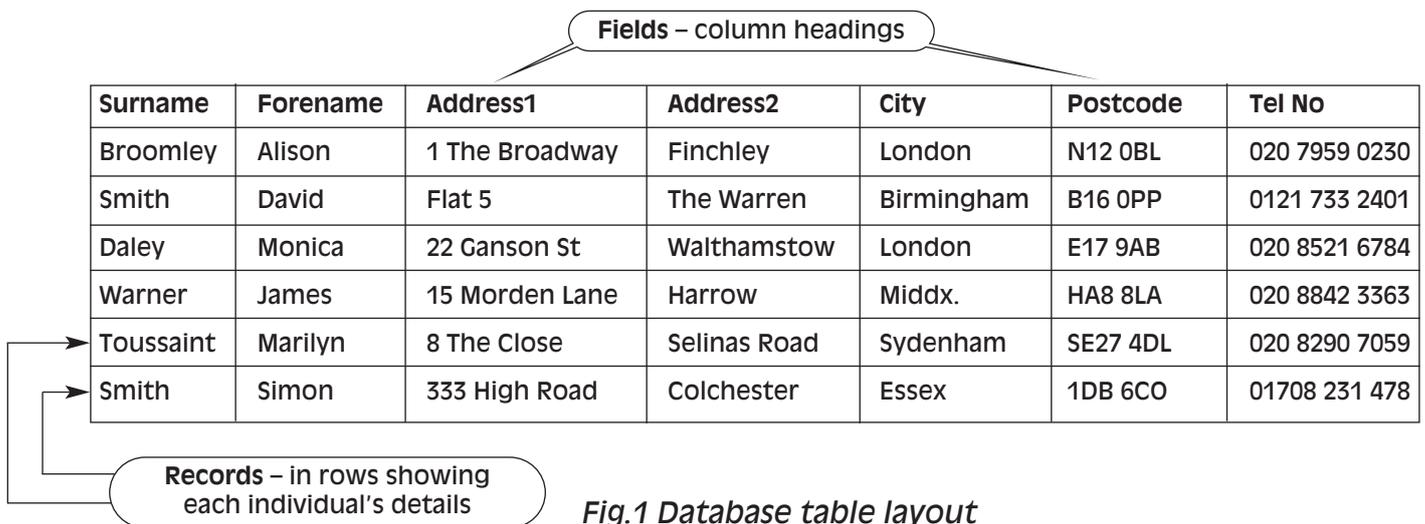
Surname	Forename	Address1	Address2	City	Postcode	Tel No
Broomley	Alison	1 The Broadway	Finchley	London	N12 0BL	020 7959 0230
Smith	David	Flat 5	The Warren	Birmingham	B16 0PP	0121 733 2401
Daley	Monica	22 Ganson St	Walthamstow	London	E17 9AB	020 8521 6784
Warner	James	15 Morden Lane	Harrow	Middx.	HA8 8LA	020 8842 3363
Toussaint	Marilyn	8 The Close	Selinas Road	Sydenham	SE27 4DL	020 8290 7059
Smith	Simon	333 High Road	Colchester	Essex	1DB 6CO	01708 231 478

Records – in rows showing each individual's details

Fig.1 Database table layout

Tables can accommodate hundreds of records and many field headings. To make a database more manageable, a database table should not contain too many field headings. Too many field headings can make a database difficult to navigate through as you will not be able to see the whole table across the screen. To overcome this, more than one table can be created in a database. Tables of related information can then be linked to display the information in two or more tables when required. Databases are therefore referred to as relational databases, as you can relate to more than one table by linking them within a database. For example, if you wanted to maintain an employee details database, you could have one table for names and telephone numbers. Another table could be created for other information like job title, department, manager. PAYE information could be kept in another table.

Once you have all your information in tables, you can then manipulate the database in various ways.

Part of getting used to databases will be to understand some of the words that are used to describe features that you will use. A list of common words with explanations has been included at the end of this booklet.

Databases contain different views and objects that can be used. Using a computer to produce databases is easier if you understand the different objects that are available and what they are used for. You may never use all the features and functions available in a database but it is good to know the aspects you will use and not be confused by the rest! Once you have learned the basic skills, you can then go on to master some more advanced skills if you wish. Learning a bit at a time is the

best way to get the most out of developing your skills using a computer spreadsheet package. Improvement will come with practice! As you practise working with databases, it will save time and can be enjoyable to create something of your own.

Different database programs may work slightly differently but essentially they perform similar tasks. Microsoft Access database is used for most examples.

Activity 1

Define what a database package is

1. A database is

_____

_____

2. You can use a database package for

_____

_____

You will find the feedback to this activity on page 31.

_____

Key Learning Points

☐ Databases are used for storing large amounts of information in an organised way.

☐ Database information is stored in a table arranged in column and row format.

☐ Once created, a database can be manipulated and changed in various ways.

☐ You can sort and search for extracts of information contained in a database.

Section2 OBJECTS SEEN IN A DATABASE PROGRAM

Different parts of a database program

To get the best use out of databases, it is helpful to know what the different parts of a database are used for. Database objects are icons or options you can use to do different things within the database. The objects in a database are linked in that they all use the same information but some allow you to enter information and some objects allow you to manipulate and present database information. Objects are useful and give you choices as to how you use and manipulate a database. Different programs display database objects in different ways. Even though the database screens may look a little different, the programs essentially try to achieve the same activities and outcomes.

Objects

Databases contain objects that can be used to achieve different outcomes using the same information.

Tables

Tables are the starting point for a database, where the structure for the database is designed. You design a database table by deciding on the headings to use for columns. Once the headings are designed, records are entered along a row under the appropriate heading.

Surname	Forename	Address1	Address2	City	Postcode	Tel no:
Broomley	Alison	1 The Broadway	Finchley	London	N12 0BL	020 7959 0230
Smith	David	Flat 5	The Warren	Birmingham	B16 0PP	0121 733 2401
Daley	Monica	22 Ganson St	Walthamstow	London	E17 9AB	020 8521 6784
Warner	James	15 Morden Lane	Harrow	Middx	HA8 8LA	020 8842 3363
Toussaint	Marilyn	8 The Close	Selinas Road	Sydenham	SE27 4DL	020 8290 7059
Smith	Simon	333 High Road	Colchester	Essex	1DB 6OO	01708 231 478

My address book : Table

Fig. 2 Database Table

Forms

Information can also be entered in Form view. Form view allows you to type in boxes rather than in cells along a row. You can design a form to display one record at a time or all records. A form uses data from a table. You therefore see the same information whether you are in form view or table view. You choose the view that you prefer to work with.

Fig.3 Database Form in column view

Fig.4 Database Form in tabular view

Queries   Queries are used to sort, search and perform calculations on information contained within a table whilst the table remains intact. Using a query is like taking a copy of the table to manipulate in various ways. You can save each query created. For example, you can search for all who live in London and create another search for all whose surname begins with 'S'. Queries look like a table but contain the extracted information.

Fig.5 Database Query search results for London addresses

Fig. 6 Database Query search result for surnames beginning with 'S'

Reports

Reports are used for printing information contained in a table, query or form. A report allows you to choose different styles of presentation. You can also create summary and grouping of information from a table, query or form.

My address book report

Surname	Forename	Address1	Address2	City	Postcode	Tel no:
Broomley	Alison	1 The Broadway	Finchley	London	N12 0B	020 7959 0230
Daley	Monica	22 Ganson St	Walthamstow	London	E17 9A	020 8521 6784
Smith	Simon	333 High Road	Colchester	Essex	1DB 6C	01708 231 478
Smith	David	Flat 5	The Warren	Birmingham	B16 0P	0121 733 2401
Toussaint	Marilyn	8 The Close	Selinas Road	Sydenham	SE27 4	020 8290 7059
Warner	James	15 Morden Lane	Harrow	Middx	HA8 8L	020 8842 3363

Fig. 7 Database Report using the table information – report has been sorted by surname

Databases are very flexible and can save time. The information is typed into a database once and, whether you use a form, query or report, all the data can be saved and printed, keeping the original table intact.

Key Learning Points

- [ ] Databases use objects to allow you to view and present the database in various ways.

- [ ] The most common objects are tables, forms, queries and reports.

- [ ] All objects use or borrow the information contained within a table whilst keeping the table intact.

- [ ] You can choose which view you prefer to use – a table or a form.

- [ ] A query is used to sort and search for information contained within a table.

- [ ] Reports allow you to manipulate the table further and choose a style for printing the database.

Section 3 — CREATING AND CHANGING A DATABASE STRUCTURE

How to create the database structure

Creating a database structure includes deciding on headings to use and how you may wish to manipulate the database in terms of sorting the data and searching for specific information contained within the database.

In order to sort or search the database efficiently, it is better not to hold too much data under a field heading. For example, a separate field for Surname and First name will make it easier to sort and search by surname or first name. An address can be split into two or three headings, as you would address an envelope, using a different field for each line of the address and the postcode. (See fig. 1).

When sorting and searching, the database recognises the first letter or character in each field cell. If all information is placed under one address field and you wish to search for addresses in London, because London is not the first word in the field, the database would not be able to extract that information.

Data Types

As well as listing the headings, you will also have to decide on a **Data Type**. The data type indicates the type of data that will be held under a field heading. For example, you can choose a *Date* data type if you were working with dates. The database will recognise that the data under the field consists of dates only. Choosing a data type keeps the data under a field heading consistent, and assists the database with sorting, searching and performing calculations on a field.

Data Type Examples	Description
Text	For letters and numbers that are not dates or numbers that do not require calculation. The field can contain up to 255 characters and can include spaces.
Memo	For lengthy text, e.g. notes and comments. Can contain up to 64,000 characters.
Number	For numbers.
Date/time	For using, sorting and searching for dates and/or time.
Currency	For working with money.
AutoNumber	Creates a number and follows with the next consecutive number to number entries automatically in a field.
Yes/No	Use when only two variables apply, e.g. Yes/No, On/Off, True/False.

Field headings

The first step in creating a database structure is to design and list the field headings. Once all the field headings and data types have been entered and saved, you will be ready to record the details under the relevant field heading.

1. From the File menu, select **New** database.
2. **Save** the database.
3. Select **Table**.
4. Go to **Design View** to create the heading structure.
5. List headings you wish to use under **Field Name**.
6. For each field, select a **Data Type**.
7. Optional: decide what the maximum number of characters will be in each field and enter in **Field Size** in the Field Properties section – you can adjust the width of columns after creating the database.
8. Click on **OK** or switch to **Datasheet View** toolbar icon when headings list is complete.
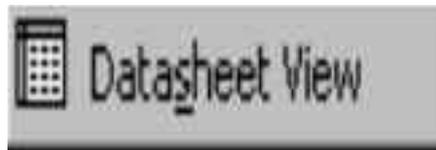
(Note: Datasheet View may also be referred to as 'Browse' View.)

9. **Save** the table structure you have just created.
10. Switch to **Datasheet View** to see the headings across the top of the screen.
11. You will now be ready to start entering the records under the heading names.

Field Name: list headings to be used in database.

Data Type: click in the cell to the right of the heading. Click on the triangle and select a data type that relates to the heading.

Field Property: allows you to fine tune how data under a field heading will appear. Click with mouse white box.

Description: enter text for a description if the heading name is not explanatory or if you want to make a note about the heading or content.

Field Size: enter a number for the maximum length of characters for a field – optional.

Description: wherever the cursor is placed – provides a description for the section, e.g. the cursor is in data type.

Fig.8 Database Table Design View – to create headings for table

Field properties

Field properties allow you to further fine tune how you wish a field to be used. You can set the maximum characters to be held under a field by changing the field size number. You can choose a format for displaying, for example, numbers and dates. A date can be displayed as a short (01/01/00) or long date (1 January 2000). Placing the cursor within any field property will display help text on how the field property is used.
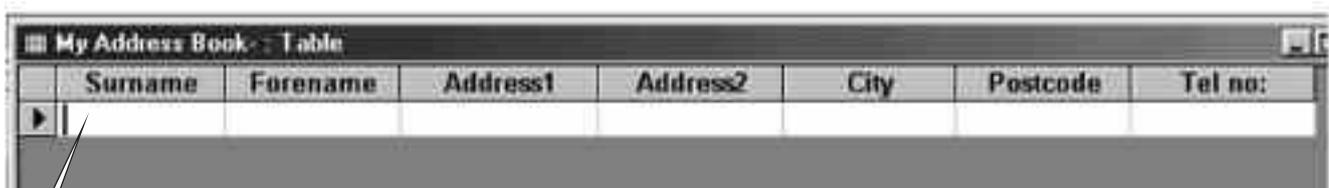
Entering data in a database table

Once you have:

- created your database field headings
- saved the structure
- switched to Datasheet View,

you will be presented with your table to start entering records. The headings listed in Design View now appear across the first grey shaded row of the table.

- The white area is where you start recording the details under the correct headings.
- As soon as you begin to type in details along the row, another row will appear ready for the next record details to be entered.
- To move to the next cell under a heading, use the mouse to click into the next cell.
- Records typed into a database table are saved automatically.

Note: Record details can be entered only in the next available row at the bottom of a table. You cannot insert rows within a table.

Start entering record details here.

Fig.9 Database Table Datasheet View – to enter record details in table

Record counter

At the bottom of a table, there is a record counter that displays the number of records in the table. The record counter enables you to manage the table by displaying the number of current records and the total number of records in the table. You can also move to different records by using the triangles to move back and forward through the records in the table.
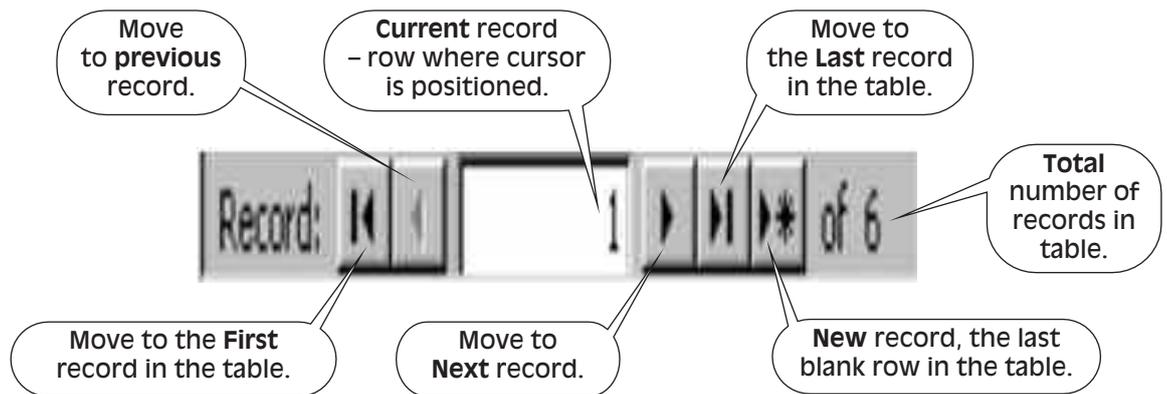
Move to **previous** record.

Current record – row where cursor is positioned.

Move to the **Last** record in the table.

Total number of records in table.

Move to the **First** record in the table.

Move to **Next** record.

New record, the last blank row in the table.

Fig.10 Database Table Record Counter – use to move through records

Making changes to a database table

You can edit and make changes to the database table in various ways. You can add new headings and remove unwanted headings. Additional records can be added to the table. Records no longer required can be deleted and corrections can be made.

Inserting a new field heading:
1. Place the cursor in the column where the new column will go.
2. From the **Insert** menu option, select **Column**. A blank column will appear on the screen.
3. To rename the column, click on the **Format** menu and select **Rename Column**. Type in the new column heading name.

Deleting a column heading:
1. Place the cursor in the column to be deleted.
2. From the **Edit** menu option, select **Delete Column**. The column will disappear from the screen.

You can also go back to design view to insert and delete columns by adding or deleting heading names from the list.

Adding a new record:
New record details must be added in the blank row after the last row.

Deleting a record:
Select the row to be deleted by clicking on the grey area at the beginning of the row. Press the **Delete** key on the keyboard.

Making changes to record details:
Place the cursor within the cell to be amended and make the required changes to the text.

Working with more than one table

You can create more than one table in a database. This can make it easier to manage a lot of data. For example, a database containing employee details may contain the following information – personal details, salary details, work department and manager details. Rather than using one table for all these details, separate tables that group the relevant information together can be created so that you can work with one table at a time rather than having to navigate through a table that contains a large number of headings and details.

Tables in a database can be linked to combine data from more than one table so that you can see the contents of more than one table at a time. This makes the database more manageable as each table is not too large, and you can work with the tables you need. Tables can be combined and viewed in various ways – for example, if you wish to look at personal details and salary details, the tables can be linked and viewed together for that purpose.

Using preset databases

Alternatively, you can use a wizard or smartmaster from the list available in the database program from **File** and **New**. A wizard is a helper that guides you step by step through the process of creating a database. You would choose a database similar to the one you would like to create and make modifications during the creation process to fine tune the preset wizard to the structure you want to create. For example, you may or may not see the exact category you require for your address book but you can choose one that is similar, like the suppliers category, that would contain the structure for names and addresses.

Save, close, open and print functions

Saving a database table: Records typed into a database table are saved automatically. Creating and making changes to the field heading structure of a database are saved manually. You will be prompted to save changes when you create or make changes to the database table structure.

Closing a database: To close a database table, click once on **File** and select **Close** from the menu options. You can also use the **X** in the top right-hand corner of the table. Remember that a table is contained within the main database. After closing the table, you will need to close the database main window when you have finished working with the database.

Opening an existing database: Click once on **File** and

select **Open** from the menu options. Select the database to be opened. Remember that the database name will be different from the table name contained within the database.

Printing a database table: Click once on **File** and **Print** from the menu options whilst the table is displayed on the screen.

Activity2

1. Which character in a field heading does a database recognise?

☐ (a) Any character in a field heading
☐ (b) The first character in a field heading
☐ (c) The database does not recognise characters

2. Why is the database structure important?

☐ (a) The database structure is not important
☐ (b) To make the database look presentable
☐ (c) To make it easier to sort and search the database

3. What does a wizard do?

☐ (a) Perform magic
☐ (b) Guide the process of creating a database
☐ (c) Make the database look presentable

4. Which data type would you use if you were entering dates of birth?

☐ (a) Text
☐ (b) Memo
☐ (c) Number
☐ (d) Date

You will find the feedback to this activity on page 31.

Activity3

List the headings you would use to keep details of personal or business contacts in a database:

_____

_____

_____

_____

_____

You will find the feedback to this activity on page 31.

Activity4

Create the following database table:

Surname	Forename	Address1	Address2	City	Postcode	Tel No
Broomley	Alison	1 The Broadway	Finchley	London	N12 0BL	020 7959 0230
Smith	David	Flat 5	The Warren	Birmingham	B16 0PP	0121 733 2401
Daley	Monica	22 Ganson St	Walthamstow	London	E17 9AB	020 8521 6784
Warner	James	15 Morden Lane	Harrow	Middx	HA8 8LA	020 8842 3363
Toussaint	Marilyn	8 The Close	Selinas Road	Sydenham	SE27 4DL	020 8290 7059
Smith	Simon	333 High Road	Colchester	Essex	1DB 6CO	01708 231 478

*There is no feedback
to this activity.*

Key Learning Points

- To create a database structure, you need to think about the headings you wish to use in a database and how you may want to manipulate it.

- Headings are listed in design view when creating a database table structure and record details are entered in datasheet view.

- Record details can only be entered in the next available row at the bottom of a table. You cannot insert rows within a table.

- You can make various changes to the database table. You can insert and delete columns and rows as well as make changes to the data in the table.

- There are predefined databases in the program where you are given help to create the database, e.g. a wizard.

- If the database consists of many headings, more than one table can be created.

- A table is an object that is contained within the main database.

Section4 SORTING AND SEARCHING FOR SPECIFIC RECORDS

Sorting

Databases are flexible and can be sorted in various ways. A database can be sorted from table, query, form or report.

Sorting a database table

From the database table, records can be sorted temporarily using A–Z on the toolbar or permanently using a primary key.

1. Use A–Z key to sort by ensuring your cursor is positioned in a cell under the heading you wish to sort from. Click once on the A–Z toolbar icon to sort in alphabetical order. The table will now be sorted in the order chosen.

Sort toolbar icon

Tables can only be sorted by one heading at a time. You can view the various sorts immediately in a table. You may also want to bring the table back to its original order.

You can also **unsort** the table by clicking on the **Records** menu option and choosing **Remove sort** from the list of options. The table will now be back to its original order.

A query can be used to sort a table and the different sort versions can be saved for future reference. Queries will be explained on page 20.

2. Attach a primary key to the field heading by which the table will always be sorted to allow permanent, automatic sorting by specified field heading.

Note: when using a primary key, the field cannot contain any duplicate names, e.g. if Smith appears twice under the heading, a primary key cannot be used.

Primary key toolbar icon

To attach a primary key to a field heading:

- go back to design view of the table
- position the cursor in the cell containing the heading for the table to be permanently sorted
- click once on the primary key toolbar icon
- the key icon symbol will appear to the left of the selected heading
- save the change to the database table structure
- switch to datasheet view and the records under the heading containing the primary key will be sorted.

Searching for specific records

Once a database is created and all the records entered, you may want to find a specific record or range of records that meet a particular criterion. For example, you may want to find all records with the surname beginning with 'S'. A database can be used to extract specific records from a table in various ways.

Extracting records within a table

Records can be extracted from within a table either by using **Find** to look for a specific record or by using a **filter** to extract records that meet a particular criterion.

Using the Find feature

Find allows you to specify a word you are looking for by typing a word that is equal to it in the Find What box whilst the database table is still on the screen.

Position the cursor within the field where the data will be found, e.g. Surname. Select the **Find** toolbar icon to view the Find dialogue box. Type the word you are trying to find in the Find What box. Click once on Find Next. You will then see the found word highlighted in the background on the database table. Once you have found the word for the record you were seeking, click once on cancel to close the find dialogue box.
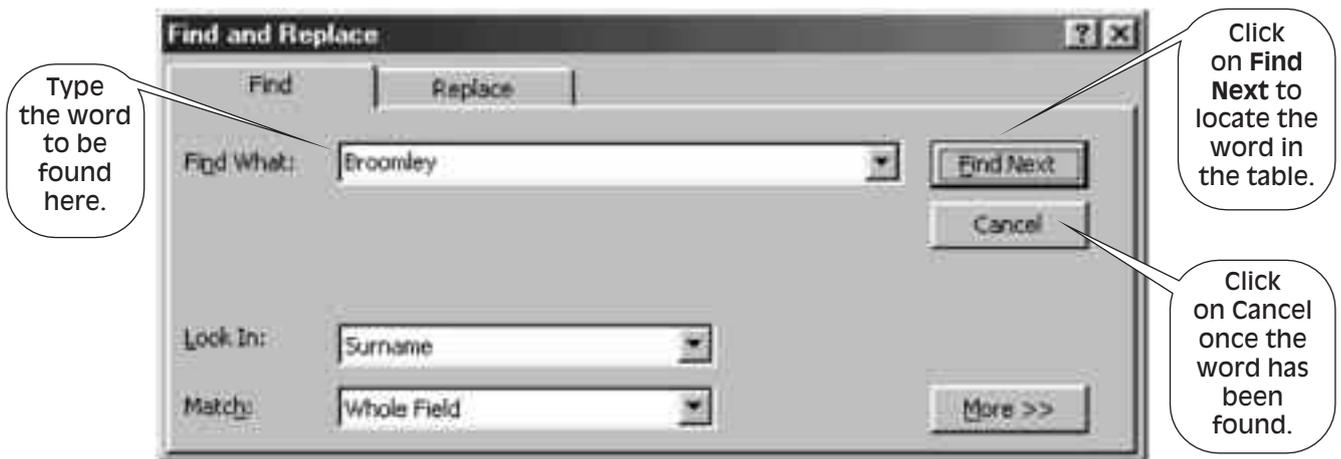

Find toolbar icon

Type the word to be found here. → Find What: Broomley

Click on Find Next to locate the word in the table. → Find Next

Click on Cancel once the word has been found. → Cancel

Fig. 11 Find dialogue box

Using a Filter to extract specific records

Filtering allows you to find records within a table. To search for addresses in London, position the cursor within a cell that has the word London in it and click once on Filter by selection. All London addresses will be displayed.

To remove the filter and return to the original table, click once on the Remove filter icon.

Filter by selection   *Remove filter*

Extracting records using a query

A query can be used to extract specific information from a database table. Records can also be sorted using a query. Extracted information can be saved and used for future reference. As the table is updated, the query is also updated. Queries are constructed in design view and the result viewed in datasheet view.

A query is quite versatile and can be used to extract:

- a specific record
  – type in record detail under a relevant field heading
- a range of records
  – e.g. all those who live in 'London'
- values
  – e.g. less than, greater than, equal to
- more than one criterion
  – e.g. those living in 'London' with surname beginning with 'B'.

A query can also be used to sort records.

A query window displays rows containing the following details:

Row heading	Description
Field	Drag field headings to each cell along this row.
Table	Table name will automatically be displayed here.
Sort	Click under the required heading, along the sort row and choose ascending or descending order sort.
Show	A ✔ indicates that the heading will be displayed after completing the query. No ✔ means the heading will be hidden.
Criteria	Used to type in specifically what is being searched for, e.g. London.
Or	In a query you can search for something **or** something else, e.g. London or Middx.

To create a query:
- select **Query** from the database main window
- select the **table** to be queried
- drag fields to next available cell on the field row
- to sort – click under correct field heading along the sort row and choose ascending or descending order
- to show or hide field headings – to display a field heading, the ✔ should remain under the relevant field headings along the show row. To hide a field heading, click on the relevant ✔ to remove it. The heading will not be displayed
- criteria is used for specific extracts, e.g. London. Type in what you are searching for
- the query can be saved with a relevant name for future reference.

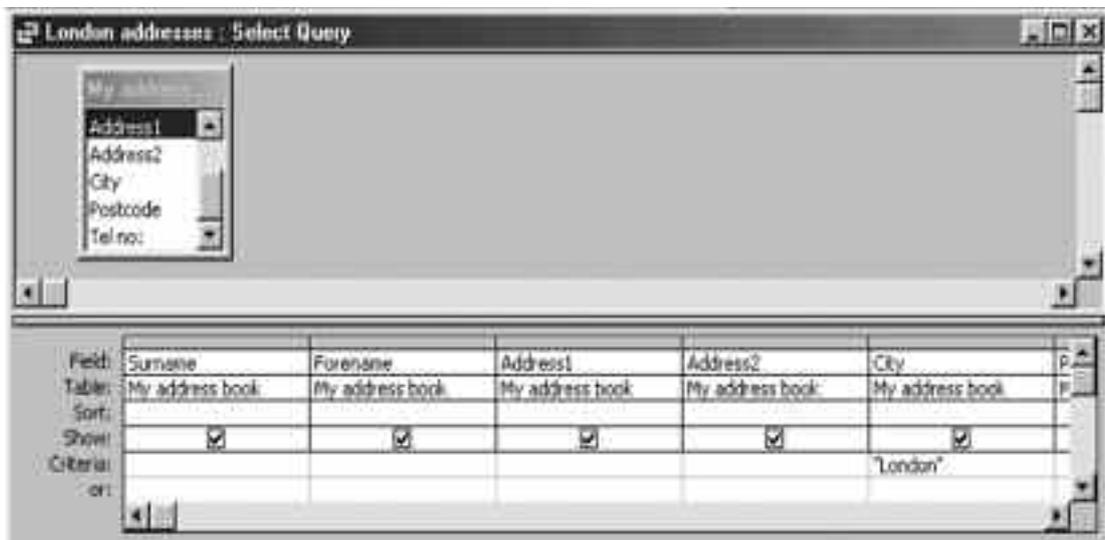As the table is updated, the query will also be updated.

Fig. 12 Query window in design view

To view the query result, switch to datasheet view.

Fig. 13 'London' query result in datasheet view

Note: If the query does not return the correct result, go back to design view and check details typed in to ensure they are correct. Details typed in criteria must be the same as they appear in the table. A query can only find what appears in the table.

A query 'borrows' the table details. The original table will remain intact.

Search operators

To assist with queries, common search operators can be used for criteria as follows:

Wildcards

Code	Description	Example
*	Asterisk* can be used in place of any following characters	S* finds records in the field that begin with 'S' and end with anything, e.g. Smith
?	Question mark? Represents any single character	H?ll finds any 4 letter records that begin with the letter 'H' and end with 'll'. The second character can be any letter, e.g. Hall, Hill, Hull

Search operators for values

Code	Description	Example
>	Greater than	> 2 finds values more than 2
<	Less than	< 2 finds values less than 2
<=	Less than or equal to	<= 2 find values of 2 or less
>=	Greater than or equal to	>= 2 find values of 2 or more
<>	Not equal	<> 2 find values that are not 2

Selection operators

Code	Description	Example
Between	To select a range of numbers or dates	Between 10 and 20
Like	To find similar records using wildcards	Like S*

Queries are very useful when searching for simple and/or complex extracts from a database table. As queries can also be saved, you will always have a copy of the table in the various forms you require.

Activity 5

Example: To search for addresses in London, how would details be entered in a query?

Field	City
Table	
Sort	
Show	
Criteria	London
Or	

1. To search for addresses in Essex, where would you enter the details?

Field	
Table	
Sort	
Show	
Criteria	
Or	

2. To search for anyone with a surname beginning with 'W', where would you enter the details?

Field	
Table	
Sort	
Show	
Criteria	
Or	

You will find the feedback to this activity on page 31.

Key Learning Points

☐ Database tables can be sorted using a table or query.

☐ A query is used to extract specific records from a database table.

☐ Tables can be sorted permanently using a primary key if the heading does not contain duplicate names.

☐ Find and filter can be used to extract records within a table.

☐ Queries are constructed in design view and the result viewed in datasheet view.

☐ Queries 'borrow' and use a copy of the original table. The original table remains intact.

☐ Queries can be saved for future use.

☐ As the table is updated, any query containing the same details will also be updated.

Section5 USING DATABASE FORMS AND REPORTS

Database forms and reports offer alternative views of a database table or query. A form is similar to a paper-based form with headed boxes for entering data. A form can be used to view a single record or multiple records in a database. Unlike a table, a form can be laid out in a clearer, customised, user-friendly way and can also be printed. A report is not used to enter and edit data, it is used to display data in a more presentable form. You can also group and summarise data, as well as perform calculations in a report, using data from a table, query or form.

Working with database forms

Working with forms, you can use a wizard to assist you in creating an **auto form** to display the type of form layout required (See figs 3 and 4). Select the **Form** object and **New Form** to begin creating a form. Select the type of form required and choose the table or query to be displayed.
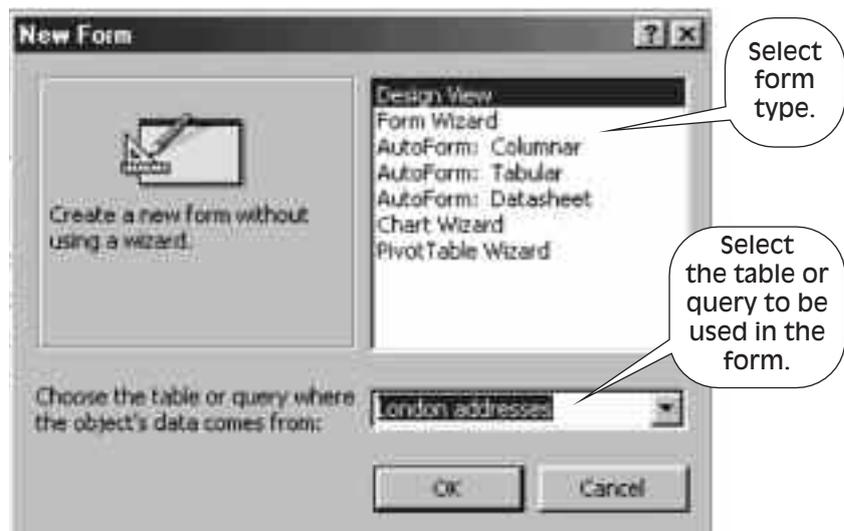
Select form type.

Select the table or query to be used in the form.

Fig. 14 Database New Form dialogue box

Form types

Form type	Description
Design view	Create your own layout for a form in design view
Form wizard	Step-by-step guide to create a form
AutoForm: Columnar	Single record displayed with headings on the left and detail boxes on the right
AutoForm: Tabular	Records displayed similar to a table
AutoForm: Datasheet	Very similar to a table
Chart Wizard	Step-by-step guide to create a graph
Pivot Table Wizard	Table that allows you to summarise and analyse data in different ways

Form design

Once the form layout is displayed showing the records that were contained in the database table or query, you can manipulate the form and change the layout as preferred. For example, all of a record may not be displayed. Some text may be hidden if the box is too small to display all of the record content. Similarly, the record to be held in the box may contain only a small number of letters or numbers so the box may be too large for the type of record. To change the layout of a form, you can work in '**Form Design View'** to:

- insert a heading in the **Form Header** section
- insert details in the **Form Footer** section, e.g. page numbers
- increase or decrease the size of the heading or detail boxes
- move boxes and place them where you want them to appear on a page.

Forms consist of **Labels** representing box headings and **Text boxes** that contain the record details. Record details can be entered and edited in the text box. Text is aligned on the left-hand side of a box and numbers are aligned from the right-hand side of the box.

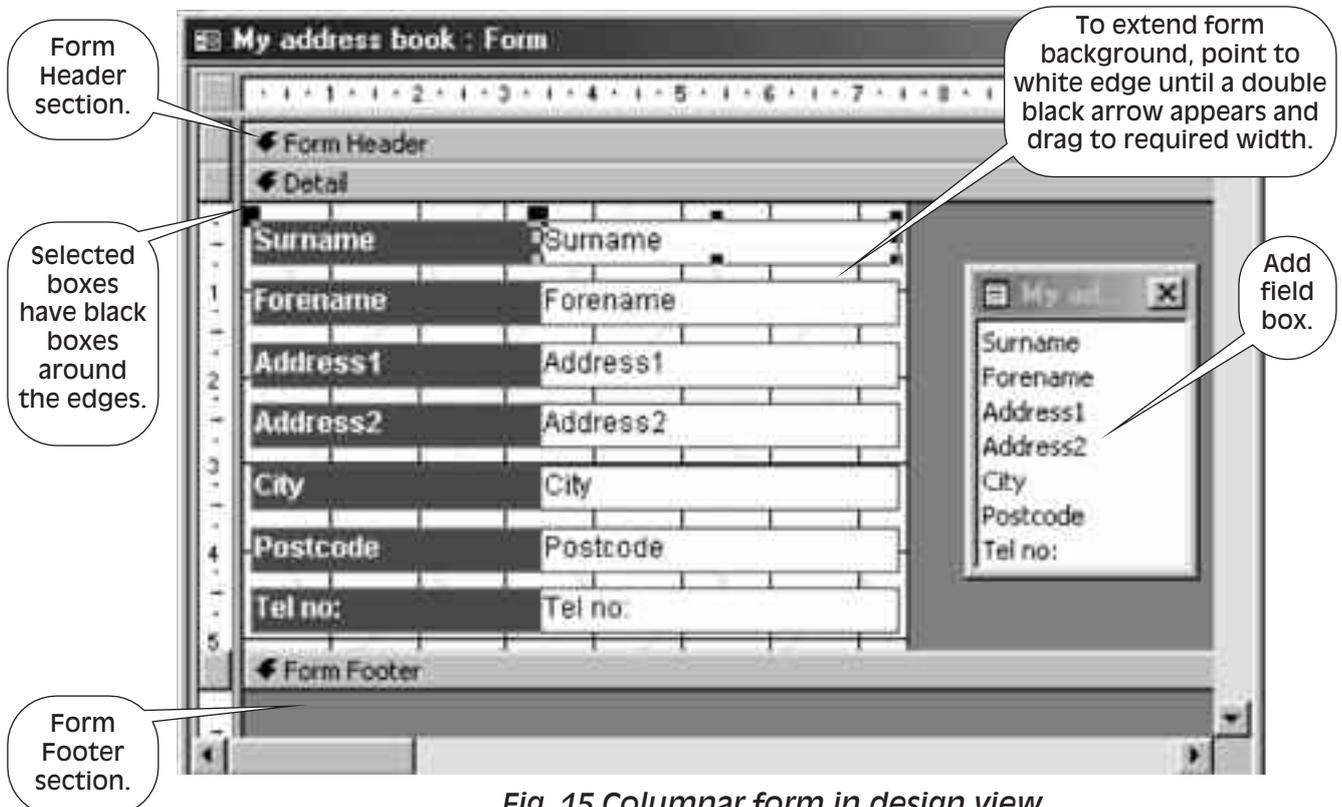| **Label**	**Text box**
Heading	Record details

Fig. 15 Columnar form in design view

Form 'design view' layout

Form design view is divided into three sections:

Form Header	Where you can type your own heading for the form
Details	Labels and text boxes for headings and record details
Form Footer	Enter details at the bottom of the form page

Moving and resizing labels and text boxes

To extend the background of a form:
Point to the edge of the white right section of the form. When a double-edged black arrow appears, ←→ drag the white background to the desired width. When moving form boxes, they must be placed on the white section.

To select text boxes and labels:
Point to a label or text box and click once with the mouse. Black boxes will appear around the edges of the label and/or text box. Both label and text box will be selected. Once selected, the boxes can be moved and resized.

To move label and box together:
Select a box to highlight both label and text box. Move mouse pointer around the box until a hand appears 🖐. Drag boxes to the desired location.

To move either label or text box:
Select the relevant box. Point to the top left black box on the box to be moved until a hand with the index finger extended appears ☝. Drag the single box to the desired location

To resize a label or text box:
Select the required box. On the right edge of the box, three selection boxes should be displayed. Point to the middle selection box until a double-edged black arrow appears ←→. Drag to extend or reduce the size of the box.

Moving and resizing boxes takes a little practice. Don't be afraid to try. If you make a mistake, use the undo toolbar icon immediately. The undo icon cancels the last thing you did.

Undo toolbar icon

Inserting main headings and footer details

Use the toolbox to add special features to a database form. For example, *Aa* is used for adding text or numbers to the header and footer areas. Click on *Aa*. Click on the form where text will be placed and type the text required.

Aa is for adding text to a form.

Form design view toolbox

To create a form heading:
Create space for a heading by pointing to the bottom edge of the Form Header section until the mouse pointer displays the resizing tool ◄╫►. Drag downwards to create space for a heading. Click on *Aa* on the toolbox, click on the form background where the heading is to appear and start typing the heading text.

To create a form footer:
Click on *Aa* in the toolbox, click on the form background where the footer is to appear and start typing the footer text.

Working with database reports

Reports are used to display database tables, queries and forms in a presentable format. You can create a report using the report object. Select a new report and the table, query or form to be displayed as a report. You can choose an auto report or use a wizard to guide you through creating your report. Follow the steps using the wizard and click on Next once you have made your selections.

Using a wizard, you can choose:
• the field headings to be displayed in the report
• to group similar details, e.g. all London addresses
• to sort the report by a particular field
• a predefined layout from a list for your report
• a fancy or plain background, e.g. grey background
• a title for your report.

The report will be displayed with all details from the table, query or form chosen (see fig. 7). Included in a report footer are page numbers and the current date.

Report views
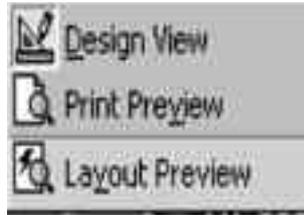
Design View	To modify your report design
Print Preview	Report as it will be printed
Layout Preview	Sample of records in your report

Modifying a database report

Once you have created a report, changes can be made to the layout of the boxes in much the same way as you would modify a form. To change the layout of a report, you can use 'Report Design View' to:

- insert a heading in the **Report Header** section
- insert details in the **Report Footer** section, e.g. page numbers
- increase or decrease the size of the heading or detail boxes
- move boxes and place them where you want them to appear on a page.

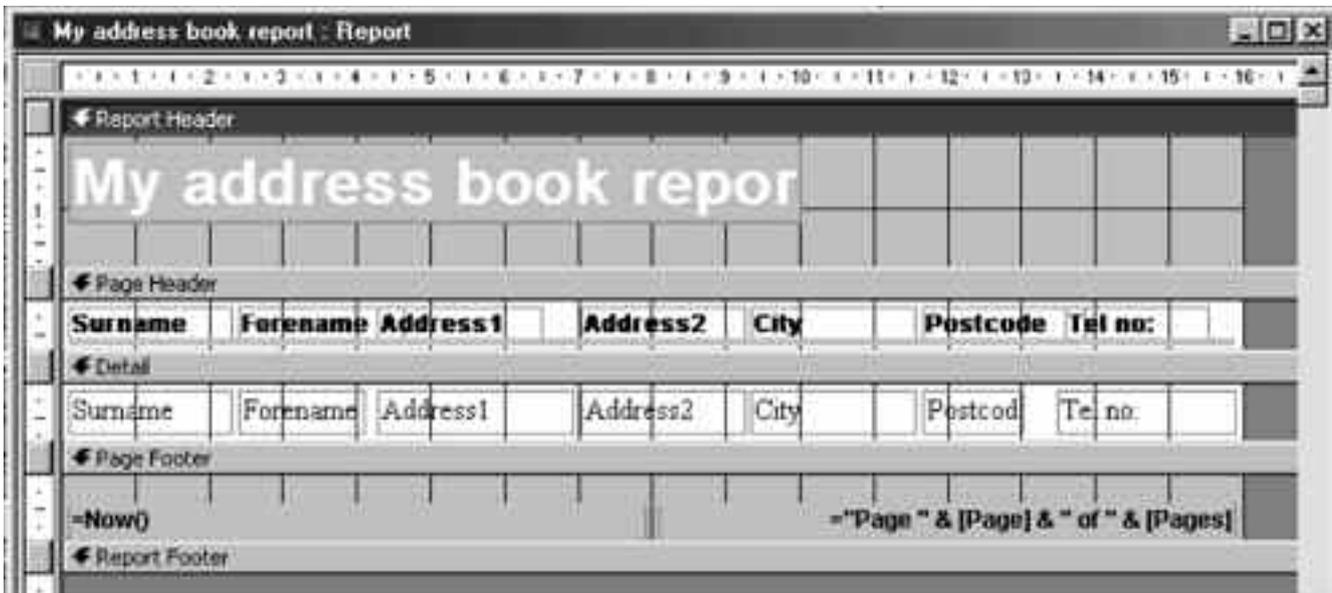Reports consist of **Labels** representing box Headings and **Text boxes** that contain the record details.

Fig.16 Report design view layout

Report design view is divided into three sections:

Section	Description
Report Header	Where you can type your own heading for the report.
Page Header	Where the field heading labels are placed – the heading will then appear only at the top of each page.
Details	Labels and text boxes for headings and record details.
Report Footer	Enter details at the bottom of the report page. The date and page numbers are displayed here. =Now() is the code for the date. ="Page" is the code for page numbering.

To move and resize labels and text boxes and include header and footer details, follow the steps for modifying forms above. You can also use the toolbox to add text to your report.

A*ctivity*6

1. Create a columnar auto form.
2. Switch to form design view and modify the design layout.

A*ctivity* 7

1. Create an auto report.
2. Create a report using the report wizard.
3. Switch to design view and modify the report design layout.

There is no feedback to these activities.

Key Learning Points

☐ Database tables can be viewed as forms or reports.

☐ Several different form layouts are available.

☐ In a form, text can be entered and changed, using 'Form Design View'.

☐ The purpose of a report is to display data in a presentable form.

☐ The layout of a report can be modified to make it easier to understand.

FeedBack toActivities

FEEDBACK TO ACTIVITY 1

1. A database package is – a program for storing a lot of similar information in an organised way.
2. You can use a database package for:
   - a personal telephone & address book
   - customer/supplier details
   - employee records
   - contacts details
   - information on key organisations
   - technical terms
   - market data, and others

FEEDBACK TO ACTIVITY 2

1. (b) The first character in a field
2. (c) To make it easier to sort and search the database
3. (b) Guide the process of creating a database
4. (d) Date

FEEDBACK TO ACTIVITY 3

- Surname
- First name
- Job title
- Company name
- Address1
- Address2
- City
- Postcode
- Tel No.
- Fax No.
- Mobile No.
- E-mail address

FEEDBACK TO ACTIVITY 5

1.

Field	City
Table	
Sort	
Show	
Criteria	Essex
Or	

2.

Field	Surname
Table	
Sort	
Show	
Criteria	W*
Or	

Glossary
of terms used

Browse	View for entering and editing data using Lotus Approach.
Cancel	Click on cancel if a dialogue box appears that you do not wish to use.
Cell	Boxed typing area in a database table. Click with the mouse to type within the cell.
Close	Remove a database from the screen by closing it. Select 'Close' from the 'File' menu.
Criteria	What you search for using a database query, e.g. London addresses. Type 'London' in the criteria row under the 'City' heading in a query.
Cursor	Flashing symbol within a database cell. Text typed will appear where the cursor is flashing. You can move the cursor by using the mouse to point and click where you want the cursor to be placed.
Data type	The type of data that will be contained under a field heading, e.g. date data type can be used for dates, and text data type can be used for words. This makes it easier to sort a database.
Database	A collection of records stored in an organised way. Field headings are designed and record details are entered under each field. You can sort and search records using a database.
Delete	Remove letters or words by using the backspace or delete keys on the keyboard.
Dialogue box	A box that appears when some toolbar icons or menu options are used.
Datasheet view	This view is used to enter and edit record details. Datasheet view is also to view the result of a query.
Design view	Used to set up the database structure. The structure consists of listing headings to be used in the database.
Edit	Make changes to a typed database. You can insert and delete letters or words in a database table cell.

Enter	The enter key on the keyboard moves the cursor to the next cell in the database table or form.
Field heading	Heading created when designing a database structure.
File	A database object including its tables, queries, forms and reports.
Filename	The name given to a database when it is saved. You will look for the filename when you wish to open the database.
Filter	Select a record to view all entries with the same data within a cell, e.g. select 'London' to view all cells containing 'London' within that field.
Find	Search for a word/number within a specified field column.
Folder	Storage area for a database. Usually yellow and is the computerised version of a paper folder that databases are stored in.
Form	Alternative view of a database table consisting of headings and boxes to type into. You can enter, edit and print data using a form.
Formatting	Changing the look of a database, e.g. making some text stand out.
Functions	Different options that can be selected from the toolbar icons or menu options, e.g. print. Sometimes also called options.
Highlighting	See **Selecting**.
Icons	Picture symbols used to activate different functions, e.g. Print.
Insert	Add letters or words anywhere in a database table, query or form by positioning the cursor where the insertion is to appear.
Label	A database field heading box displayed in design view.
Layout	How text is presented on a page, e.g. spacing used, centring.

Line spaces	Extra space inserted between lines of typed text.
Menu options	Grey bar near the top of the screen that starts with the word File and ends with Help. Clicking on any word brings down a list of different functions that can be used.
Objects	Different icons you can use to carry out specific functions. Table, query, form and report are different database objects.
OK	After choosing options in a dialogue box, click on OK to accept the options.
Open	Retrieve a file stored in the computer and display it on the screen.
Options	Alternative word for functions (see **Functions**).
Page	Alternative word for a database or file (see **Database**).
Paste	To place text that has been cut or copied. Ensure the cursor is in the position where text is to be placed before clicking on the paste icon.
Primary key	Used for sorting records automatically in a database. In design view, select the field heading that the table will be sorted by, e.g. surname, and click on the primary key toolbar icon.
Print	Produce a copy of a database on a sheet of paper (hard copy).
Query	Use a query to extract records that meet a specified criteria, e.g. type 'London' in the criteria row under the 'City' heading in a query to display London records on the screen only. Queries can also be used for calculations.
Records	Each line of detail in a database.
Report	Alternative view of a database. Useful for presenting data. You can also sort, group and carry out calculations using a report.

Save	To store a database on the computer for future reference.
Scroll bar	Grey bar with a black triangle at each end that allows you to move up and down or left to right to see the parts of the page that are hidden from view.
Search	Type a word using Find or a query to find and display records on the screen that meet the specified criteria.
Selecting	Highlighting by dragging over a selection of words or letters until they are all black. Selecting is used when you wish to carry out a function on the selected area only.
Show	Allows you to decide which columns are to be displayed and which columns are to be hidden.
Sort	Sort records in ascending (A–Z) or descending (Z–A) order by field heading.
Spell check	Database packages contain a dictionary that checks the spelling of words. Click on the 'ABC' toolbar icon.
Table	A chart consisting of columns containing field headings and rows that contain individual record details. You can sort and find records in a table.
Text box	A box containing record details in database design view.
Text enhancements	Making text stand out by using bold, italic and underline.
Toolbar	A row of picture symbols along a grey bar that represent different functions that are available for your use.
Toolbar icons	Each picture on a toolbar is known as an icon.
Toolbox	Box with different icons that can be used to modify a database.
Undo	Used to cancel the last action – click on undo immediately after you make a mistake to cancel the last action.

Do you:
Wish that you were able to understand and
use databases?
Panic when you are asked to prepare tables
on the computer?
Worry that you will delete the information
on the database if you have to make a change?
Want to know how to store information, create a
database and make changes if necessary?

If you answered 'Yes' to one or more of these
questions, you will find that the activities in this
booklet will help you with the following:

• understand what a database is
• create and change databases
• extract and print information from a database
• explain some of the common words used.

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