INFORMATION SYSTEMS SERVICES

Introductory Exercises in Microsoft Access XP

This document contains a series of exercises which give an introduction to the Access relational database program.

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TUT 107

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Contents

Format Conventions

In this document the following format conventions are used:

Commands that you must type in are shown in **bold Courier** font.	`WIN31`
Menu items are given in a **Bold, Arial** font.	**Windows Applications**
Keys that you press are enclosed in angle brackets.	**<Enter>**

Feedback

If you notice any mistakes in this document please contact the Information Officer. Email should be sent to the address **info-officer@leeds.ac.uk**

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Introduction

About Access

The aim of this document is to enable you to gain an insight into using the Microsoft Access database management system.

A database is a collection of information related to a particular subject or purpose, such as tracking customer orders, maintaining student records or monitoring patient activity. If your database is stored on a computer, it will be possible to perform tasks such as:

- selecting subsets of records that meet specific criteria;
- creating forms;
- creating reports;
- carrying out mail merge.

A computerised database is more than simply a repository for information. Its data can be analysed and presented graphically, or exported to another application such as Microsoft Excel.

The scope of this document is to introduce you to the Access user interface, to enable you to enter data, format data, set up simple queries, create forms and reports using the wizards, and export data. Since this is an introduction written for users with no experience of databases, it will only deal with a simple, single table database. There are other documents available which will enable you to understand the powerful relational aspects of Access. These cover relationships and design techniques, and take a more in-depth look at the objects (tables, queries, forms and reports) within Access.

The lessons have been designed in such a way that you are advised to complete a lesson and its exercise **before** proceeding to the next one.

Requirements

It is assumed that you already know how to login to the Novell network and run the Microsoft Windows XP operating system. No prior knowledge of databases in general, or Access in particular, is assumed.

Task 1   Getting Started

Objective   An existing database will be used for this exercise. In order for you to be able to use this database you will need to copy it into your own home directory.

Instructions To do this you will download the file from the ISS website then run Access.

Comment   Before starting this task you should be logged on to Windows XP.

Activity 1.1   Open the Netscape web browser and go to the URL:

`http://www.leeds.ac.uk/iss/documentation/tut/index.html`

Activity 1.2   Scroll down to **TUT 85** and right-click on the `tut85.mdb` link. Choose **Save Link As…** In the **Save As** dialog box choose a suitable directory to store the file in and click **<Save>**. Close Netscape.

Activity 1.3   To run Access click on the Access icon on your desktop, or find **Microsoft Access** under the **Programs, MS Office XP** on the **Start** menu.
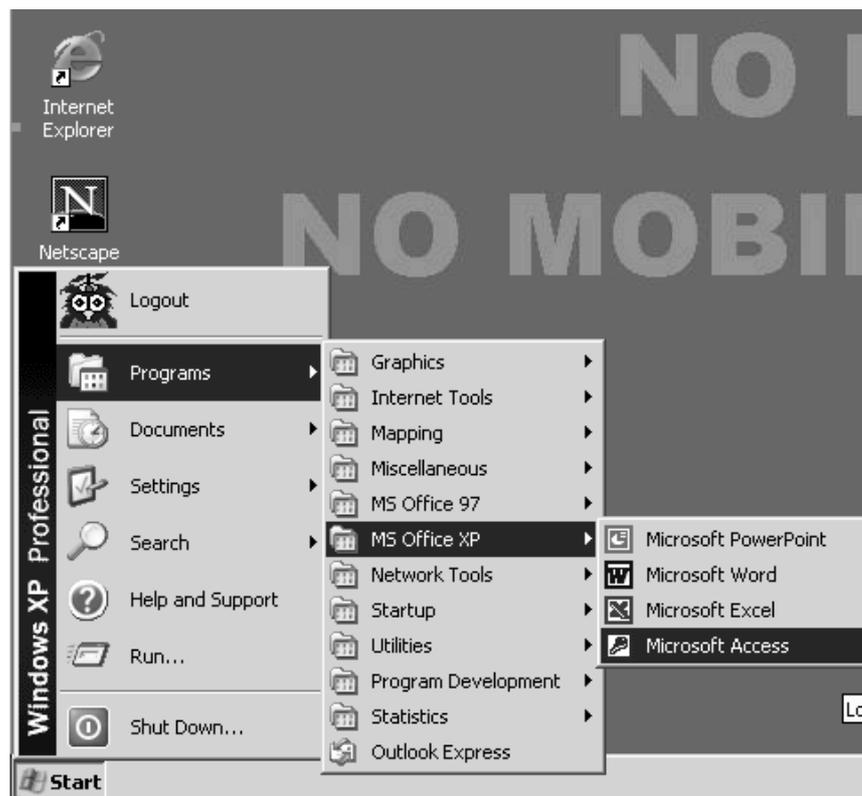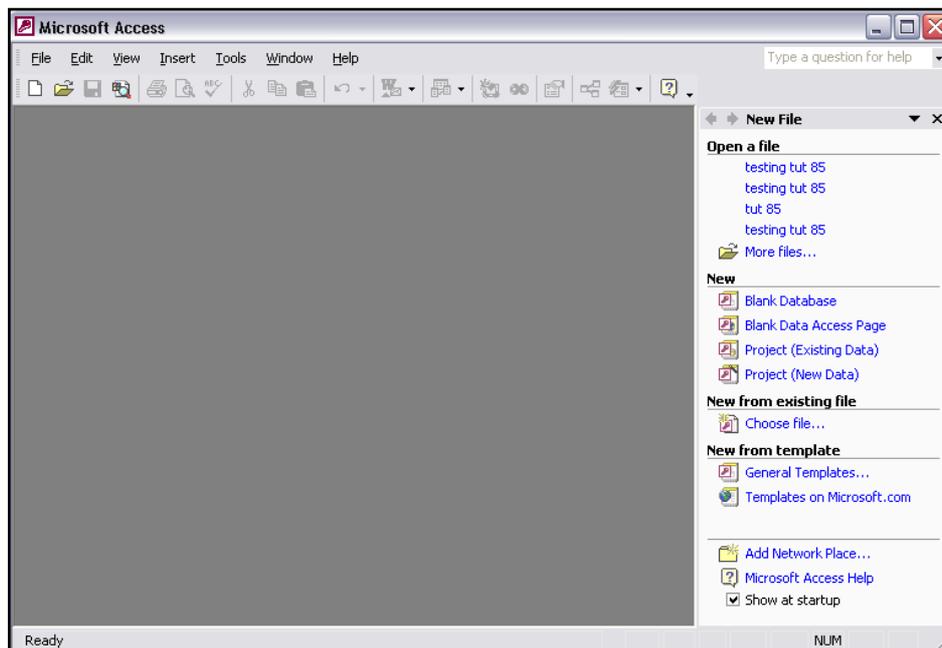
Task 2   The Access Screen

Objective   To identify the parts of the Access screen, and know how to use them effectively.

Instructions   You will learn the parts of the Access screen by observation and create a new Access database.

Activity 2.1   When you have opened Access you may see a panel on the right of the screen. If so, click on the **New > Blank Database** option.
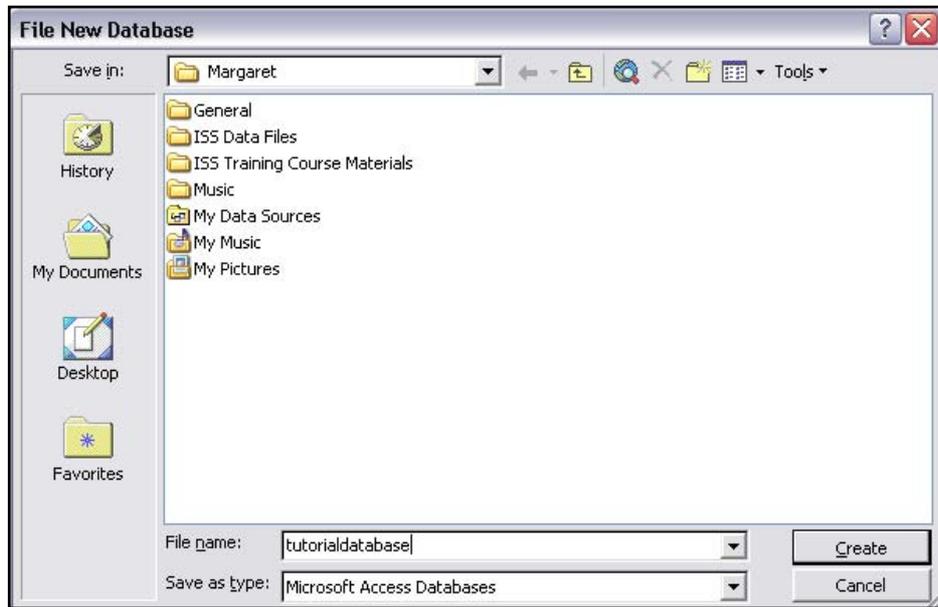

If you do not see this panel, click on the **New Database** icon on the toolbar.
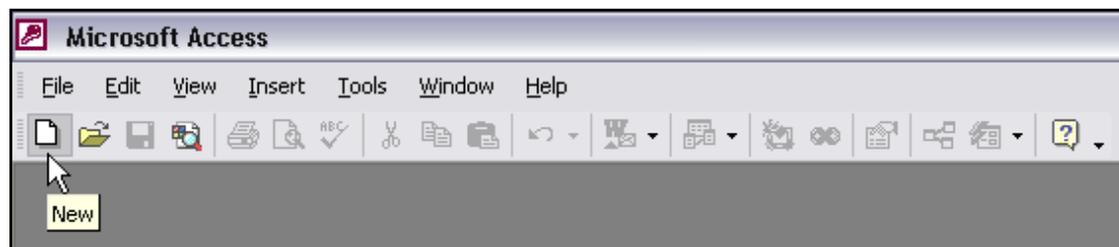
At the next dialog box, type a suitable name in the **File Name** box, and a suitable location in the **Save In** box. Now click on the **<Create>** button.

Familiarise yourself with the Access database window. If the Access window is only displayed on part of your screen, you can enlarge it by clicking on the **Maximise**

button to the right of the database **Title Bar**. At this stage many of the items on the toolbar will be 'greyed out' as they are not applicable at the moment.
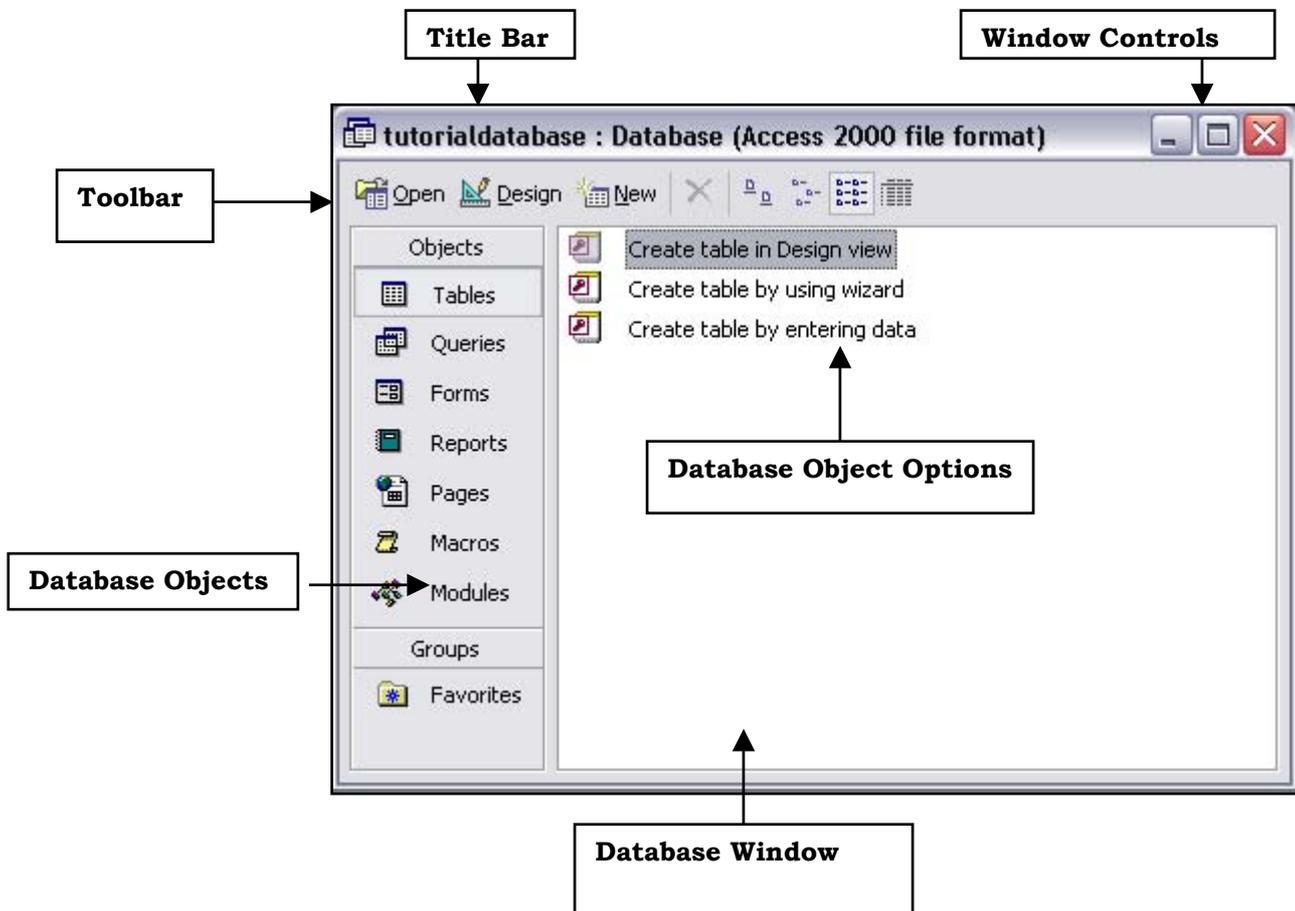
Task 3   Designing a Table

Objective   To select appropriate field types and enter data.

Instructions You will create a table structure, and then enter some data.

Comments   You are manager of a new video rental company. At present you have rental details of all transactions to date, as well as details of videos and customers. Your task is to set up a database of customers.

Activity 3.1 First you must create a table. Click on the **Table** tab   ⊞ Tables   in the database window and then double-click on **Create Table in Design View** in the database objects options window.


Activity 3.2 You can now set up the structure of your table. The first field you require is a membership number, so type **MemberId** in the left hand column. A suitable data type for this would be a number. Click in the first row of the **Data Type** column, a down-arrow appears. Click on this arrow to see the available types of field. Choose **Autonumber**, so that it will not be necessary to type in a number for every member – Access will automatically increment this field each time a new record is added.

Click in the second row of the table in the **Field Name** column. The name, address and telephone number are required for each member. When a field is set up in a database, it should contain only one piece of information, so the name will be recorded as three separate fields: Title, Surname, Initials. These can be joined again later in a query if required, and the existing structure gives us the advantage of being able to sort a report into alphabetical order of surname – a facility which would not be available if a name had been recorded as "Mr. A. S. Smithson".

Activity 3.3 Create the field for the title. This time it should be a text field. Choose text from the available types. Note that any kind of character can be stored in a text field, but only numbers can be stored in the numeric field types (number, autonumber, currency).

In the lower window, properties are listed. The title field only requires six characters to allow for Mr, Mrs, Miss, Ms, and Doctor, so modify the field size to 6.
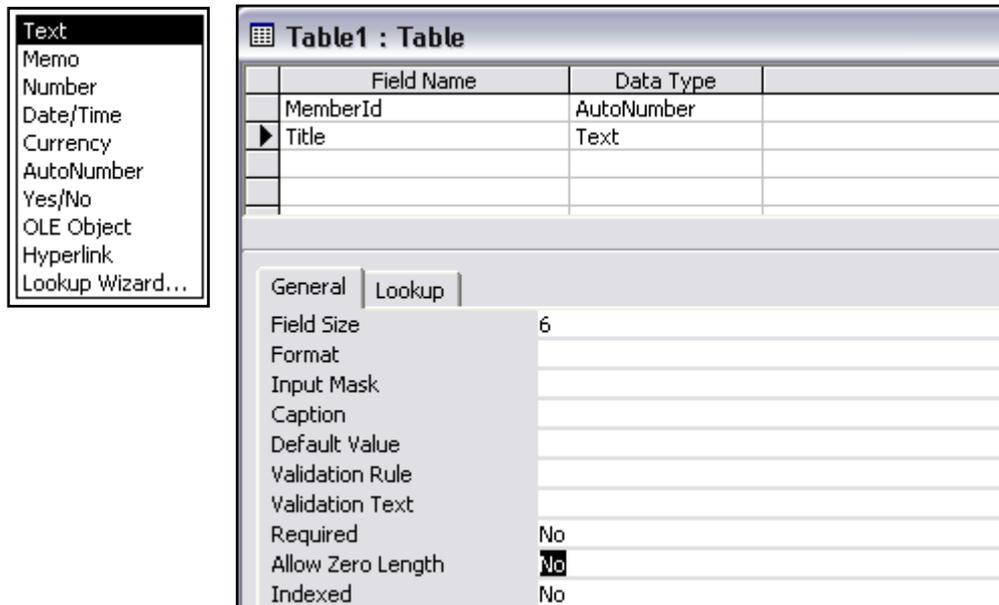
Repeat this process to create **Text** fields for initials and surname, telephone number, address1, address2, Postcode and a **Date/Time** field for date of birth. The telephone number is entered as text field to allow it to include spaces.

Activity 3.4 Before saving the table, click in the MemberId field and then click on

the **Primary Key** icon on the toolbar. This will set the primary key value for the members table. (A key field is **a unique identifier for the record**.)

The table can be saved at any stage by clicking on the

Save icon on the toolbar. Do this now, and when prompted for a

name for the table, type **Members** and click on **<OK>**.

Note that if you try to save a table without setting a primary key field, a warning message will appear, and you will have a choice of adding the key, allowing Access to create a key for you (in which case it will be a field of type **Autonumber**) or not having a key at all. It is advisable to have a primary key for each table in your database.

Select **Close** from the **File** menu to close the table.

Task 4   Entering and Editing Data

Objective   To enter new data and edit existing data.

Instructions   You will enter and modify data in the table using the keyboard and mouse.

Activity 4.1   In the database window, click on the **Members** table and then click on the **<Open>** button. This displays the table in datasheet view, where data can be added. The first field in the table is an Autonumber field, which Access will add for each new record. Press the **<Tab>** key to get to the second field (column). Enter the following data:

```
Mr <Tab>    A <Tab>    Jones <Tab> 01274 678921 <Tab>
    1 Maple Drive <Tab>    Bradford <Tab>    BD12 4AN
<Tab>
01/12/55 <Tab>
```

Activity 4.2   There are several ways of moving around records in a table. Click in the surname field. Press the **<Tab>** key to move to the next field. Return to the previous field by pressing **<Shift>** + **<Tab>.** Press the **<End>** key on the keyboard to move to the last field in a record. Now use the **<Home>** key to return to the first field. At the end of the record, press **<Return>** to move to the next record (row).

To move to a cell in a different record, either click in the required cell with the mouse, or use the arrow keys on the keyboard for navigation.

Activity 4.3   Select **Open Database…** from the **File** menu, change the directory in the **Look in:** box to the directory you saved the example database in, type its name (**tut85.mdb**) in the **File name:** box and click on the **Open** button. This database contains the Members table with several records already entered. Errors have been found in the table so you will now have to edit the data. Double click the table to open it.

The surname of the fourth member should have been **Flatley**. To replace the existing entry, double click in the cell that contains the surname **Plat** to highlight the cell contents and type in the correct name. The third member's surname has been spelled incorrectly. To remove the extra 's' at the end of '**Lewiss**', click in that cell just to the right of the name. This will put you into edit mode. Use the **<Backspace>** key to delete the second 's'.

Activity 4.4   One of the members has left so you need to delete his record. To do this, click in the record selector region

(the grey area to the left of the record) of record 8. The whole record will be highlighted in black. Press the **<Delete>** key. When you see the warning message, click on **<Yes>**.
Select **Close** from the **File** menu to close the table.

Task 5   Creating a Query

Objective   To create a query that will allow you to select a subset of your records.

**Instructions** You will use the **<New>** button in the **Queries** tab in the database window.

Comments   There are several kinds of query in Access (select, update, delete, maketable). We'll consider just select queries in this tutorial.

Activity 5.1   Click on the **Queries** tab in the database window and then click on the **New** button.

Select **Design View** from the **New Query** dialog box and click on **<OK>**. In the **Show Table** dialog box select the Members table and click on **<Add>**. Next click on **<Close>** to remove the dialog box.

Double-click the title bar of the Members table in the top of the Select Query window to highlight all the fields.
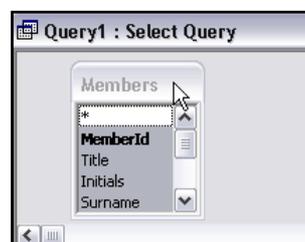
Move the mouse over any of the field names and holding the left mouse button down, drag them to the top left cell of the query grid and then release the mouse button.

Field:	Title	Initials	Surnam	Tel	Address1	Address2	Postcode	Date of birl
Table:	Membeı	Member	Member	Membeı	Members	Members	Members	Members
Sort:								
Show:	☑	☑	☑	☑	☑	☑	☑	☑
Criteria:								>1/1/80

The fifth row of the query grid is the criteria row, and this is where you put the constraints. To select the records for members who were born after the first of January 1980 type **>1/1/80** in the criteria row under the Date of Birth column. When you press the **<Return>** key, Access will place hash signs before and after the date to indicate that the field is a date type.

Date of birl
Members
☑
>#01/01/80#

Now click on the **Run** icon [!] on the toolbar to execute the query. Three records should be retrieved.

Date of birth	
06/06/84	
07/08/83	
07/09/90	

Activity 5.2 You should now save the query. Click on the **<Close>** button at the top right of the query screen. When you are asked if you want to save the design of the query, click **<Yes>** and at the next screen type in **Age** for the name of the query. Click **<OK>** and you will see the name of the query in the database window.

Activity 5.3 It is often useful to have an interactive query, which will prompt for input each time it is run. In Access this type of query is known as a *parameter query*. A parameter query is constructed in the same way as a select query, except that in the criteria row, a prompt is typed within square brackets.

Create a new query (click on the **Queries** tab if it is not already selected) and then click on **<New>**. Repeat the process described in Activity 5.1 to add all the fields from the Members table to the query grid. Click in the criteria row in the surname column and type **[Enter the member's surname]**. You must use square brackets for a parameter query. Click on the **Run** icon (the red exclamation mark) on the toolbar.

Field:	MemberId ▼	Title	Initials	Surname
Table:	Members	Members	Members	Members
Sort:				
Show:	☑	☑	☑	☑
Criteria:				[Enter the member's surname]
or:				

At the next dialog box type **Smith** and click **<OK>**.

Enter Parameter Value

Enter the member's surname

Smith

| OK | Cancel |

Mrs Smith's record will be shown. Click on **Save** and call the query `Surname`. Close the query.

From the database window, select the Surname query and click **<Open>**. The query will run again and this time you can enter a different surname.

Activity 5.4 A *wild card* can be used to select a group of records when only part of the value is known, for example surnames beginning with Sm could be found by typing `Sm*` in the criteria row under the Surname column. Suppose it is necessary to find all the customers who live in the Leeds area. Create a new query; select just the fields `Surname`, `Telephone` and `Postcode`. (Drag the fields down one by one rather than selecting all of them and drop them into the Field row of the grid.) In the criteria row of the postcode column enter `LS*`. Run the query by clicking on the exclamation mark.

Click on the **<Close>** box in the query window to close the query and save it using the name `Postcode`.

Task 6   Creating a New Form

Objective   To make use of the Access form wizard and to see the different views of a form.

Instructions You will use the form wizard to create a form for data entry.

Comments   A wizard is a program which helps you to achieve a goal by giving step-by-step instructions.
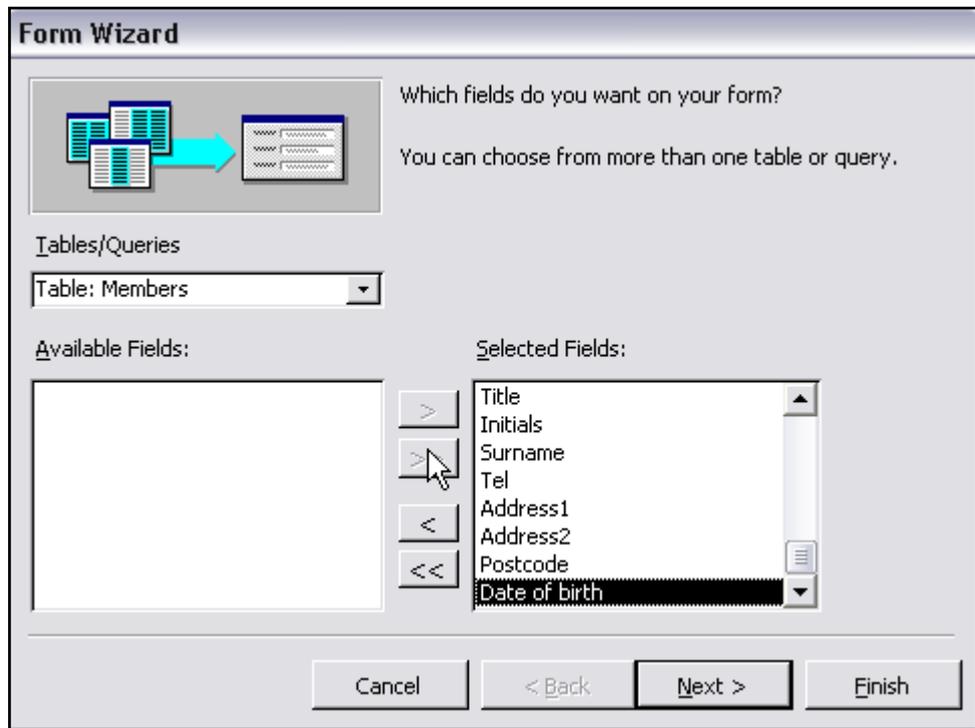

Activity 6.1   Click on the **Form** tab in the database window and then click on **New**. From the dialog box choose **Form Wizard** and then click on the down arrow in the lower window.
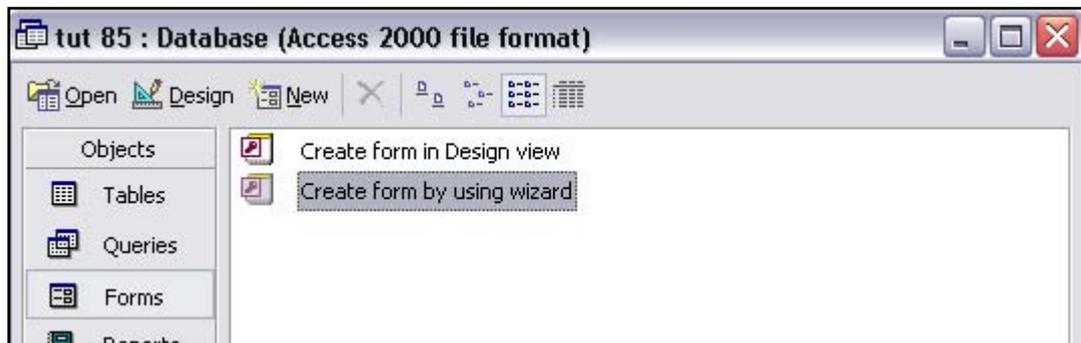
From the list of tables and queries, select **Members** and click on **<OK>**.
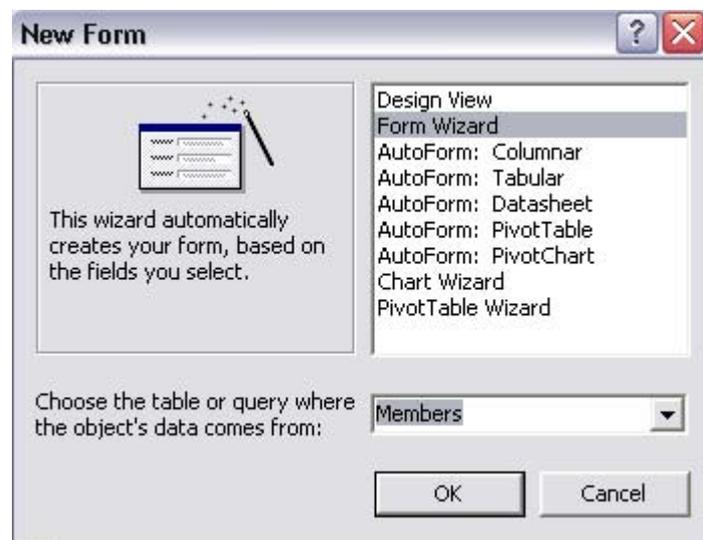
In the **Form Wizard** dialog box click on the double headed arrow ›› to select all the fields, and click **<Next>**.

You will now be offered a selection of layouts. Select one that you like and click **<Next>.** Now the wizard will offer you a number of pre-formatted styles. Click on the one you prefer and then click **<Next>**. Finally you will be asked for a name for your form. Type a name and click **<Finish>**.

The form is now displayed in *Form View*. At the bottom of the form you will see arrows for record navigation. The innermost pair allows you to move forward or backward one record at a time. The outer
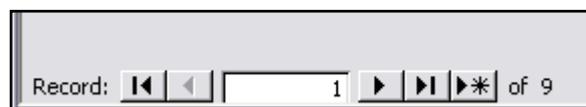
pairs enable you to jump to the beginning or end of the file, and the rightmost arrow which has a star on it will move to a new (empty) record so that you can add new data. Any data you add to a form will be added to the table on which the form is based.

Click on the **<Close>** button in the Form window to close your form.

Activity 6.2 When we created a table, we defined the structure in *Design View* and entered the data in *Datasheet View*. When we created a query, we set constraints in the query grid in *Design View* and viewed the result of the query in *Datasheet View*. Like tables and queries, forms have a *Design View* as well as a *Form View*. In the database window select your form and click on **<Design>**. In this view it would be possible to modify the appearance of the form – by changing the background colour for example.

Click on the **<Close>** button in the Form window to close your form.

Task 7   Creating a Report

Objective   To create a report using the Report wizard.

Instructions   You will create a basic report using the wizard and then make minor alterations.

Activity 7.1   Click on the **Report** tab in the database window and then click on **<New>**. From the upper window select **Report Wizard** and from the lower window click on the down arrow and select the **Members** table as the basis for the report. Click **<OK>**.
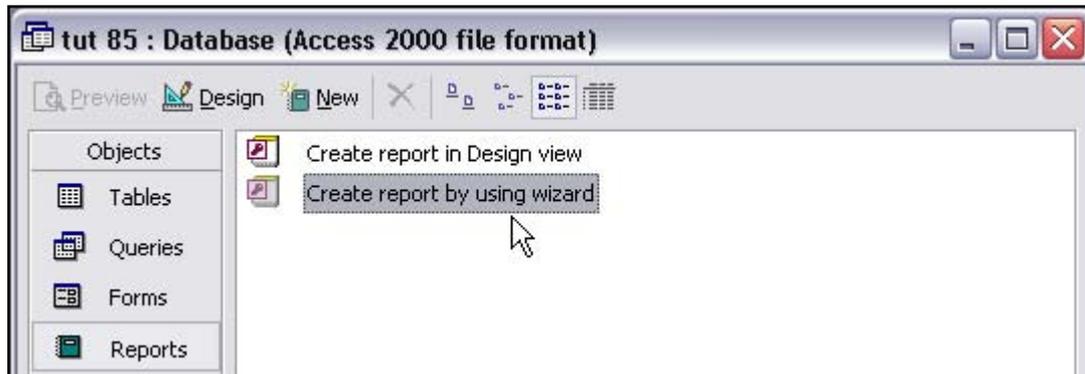
At the next screen using the single arrow ⟩ to select just the fields Title, **Initials**, **Surname** and **Tel**. Click **<Next>**. We do not require any grouping levels, so at the next screen click **<Next>**.

It would be useful to have our report listed in alphabetical order of surname, so at the next screen click on the drop down arrow in the first box and choose **Surname** from the list. Click **<Next>**, and select a layout and orientation for the report. Now click **<Finish>**.

Activity 7.2   In the last activity, the wizard created our report. It is possible to make alterations to the report, but these must be made in Design View. Change to Design view now by clicking on the Design view icon

![Design icon] on the toolbar. Note that the report contains different sections, e.g. Report Header, Page Header and Detail. You will now make the title of the report central, change its font size to 36, change the font colour to green and change the background of the report header to blue.

- Click on the title to select it.
  Change its font size to 36 using the ![Times New Roman | 36] **Font Size** box on the toolbar. You will now find that the label box is no longer big enough to contain the title, so click on **Format** > **Size** > **To Fit** on the menu bar.

- Drag the header to the centre of the screen. (You may need to click away from the title and then re-select it before dragging.)

- With the title still selected, click on the down arrow in the **Font / Fore Color** icon on the toolbar. From the palette choose green.

- Click in the report header region, away from the title. Click on the down arrow in the **Fill/Back Color** icon on the toolbar and choose blue from the palette.

Activity 7.3   Click on the **Close** box in the Report window. You are asked if you want to save the changes. Click on **<Yes>** to save the Report.

Task 8   Printing

Objective   To print information from the database.

Instructions You will learn to print data from tables, and preview and print reports.
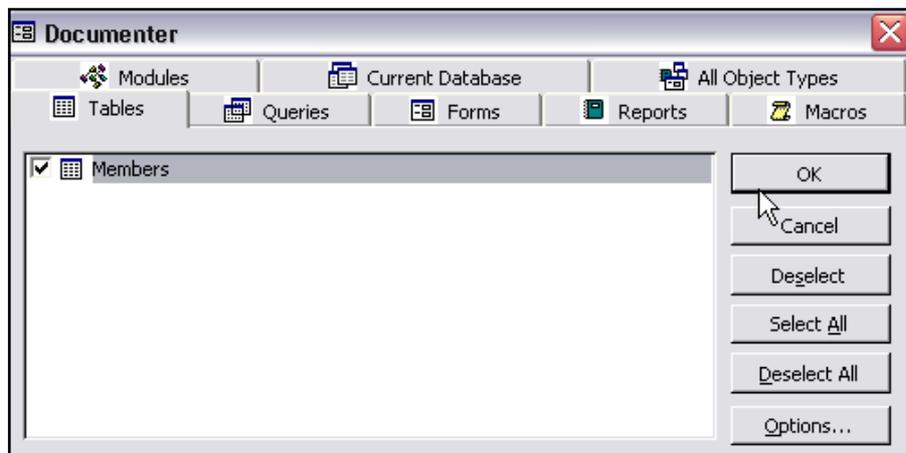
Activity 8.1 Click on the **Tables** tab in the database window and open the Members table in datasheet view i.e. with the data visible. Choose **File** > **Page Setup** from the menu bar. Click on the **Margins** tab to view your page margins. Click on the **Page** tab to view the paper size and orientation. Make sure that the paper size is set to **A4**. Click on **<OK>** to close the dialog box.
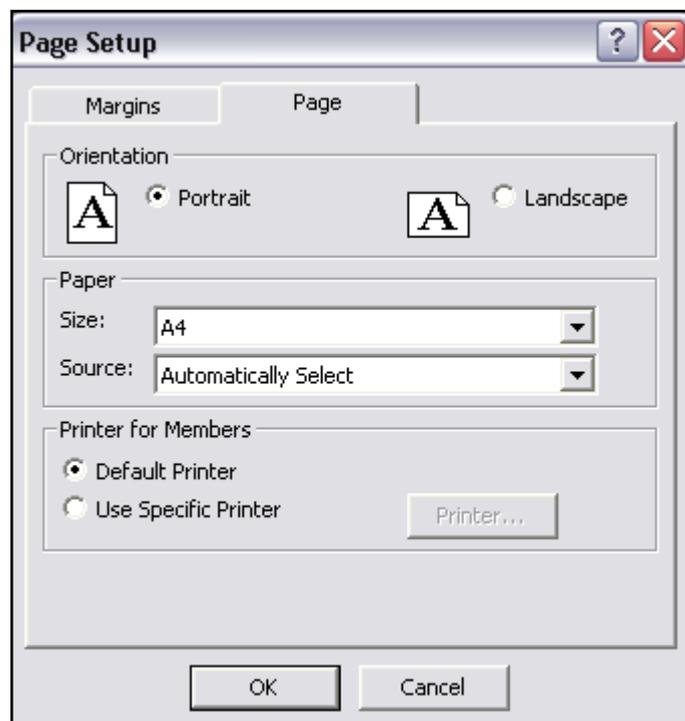
Activity 8.2 Select **File** > **Print** from the menu bar. A print dialog box opens. Make sure the correct printer is selected and click on **<OK>** to print the contents of the Members table.

Activity 8.3   For documentation purposes it is a good idea to keep a copy of the table design, and Access has a facility to do this. Click on **Tools** > **Analyze** > **Documenter**.

Select the Members table by clicking in its check box and click **<OK>**. A report will now open which contains details of each field in your table. The report can be printed by clicking on the **Print** icon on the toolbar. In our example we have printed only the table details. By clicking on the **Form** and **Report** tabs in the Documenter window we could have selected the form and report properties as well. If other details are required, click on the **<Options>** button in the Documenter window and select the properties required.

Activity 8.4   You can also print directly from the database window. Click on the Reports tab in the database window and click on the report to select it. Choose **File** > **Print** from the menu bar to print the report.

Activity 8.5   Open the report in **Preview** mode. It can now be printed either by clicking on the **Print** icon or by clicking on **File** > **Print** from the menu bar. Close the report.

Task 9   Exporting Data

Objective   To export data from Access to other applications.

Instructions You will export data to Excel and Word.

Activity 9.1 Go to the database window click on **File** > **Export...** From the next dialog box select **To an External File or Database** and click <**OK**>.

Select a directory to save the file in from the **Save in:** box. Select **Microsoft Excel 97 - 2002** from the list of file types in the **Save as type:** box. Click on **<Export>**.
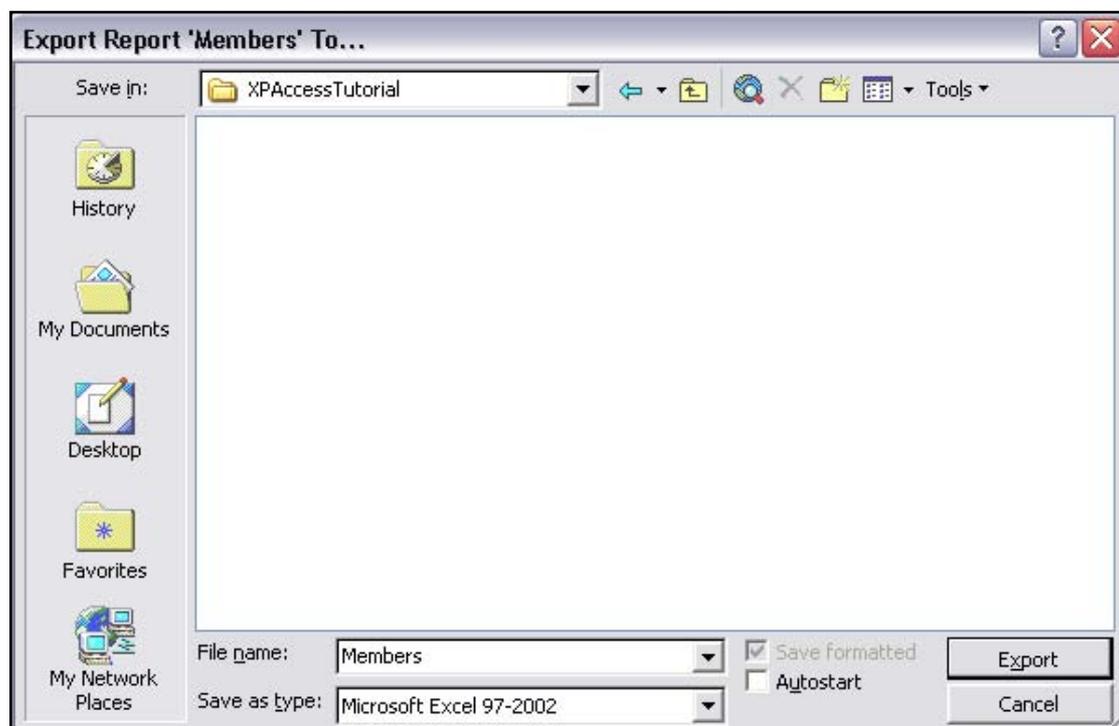
Activity 9.2 Click on the **Tables** tab in the database windows and open the members table in Datasheet View. Select all the records by clicking and dragging in the record selector area to the left of the records and click on the **Copy** icon.

Activity 9.3 Run Word by choosing **Programs** > **Microsoft Word** from the Windows **Start** menu. Click on the **Paste** icon in Word to copy the Members table into the new document. Choose **File** > **Exit** to close Word, saving the document if you want to.

Task 10   Finishing Access

Objective   To quit Access.

Instructions You will use the **Exit** and **Close** commands from the **File** menu.

Comments   You should always quit any computer program when you have finished your session. Never switch off the computer when Access is still running unless absolutely necessary as this may corrupt your database files. Also never leave a computer whilst you are still logged on to it as others may use your Novell account and they could potentially damage your files.

Activity 10.1 If you want to close Access completely, select the **Exit** option from the **File** menu.

Activity 10.2 If you want to close the current database, but continue to work in Access, select **File > Close** from the menu, or click the **Close** icon at the top right of the database window.