## Objectives: To create a small database with one table and one form.

*If you have any trouble with the practical details or the concepts involved in any of this work, you should talk to a demonstrator*

1. In using software, there are often several different ways of producing the same result. The schedules assume that the mouse is used rather than the keyboard. The demonstrators are there to help, and ***you should ask if you are unclear about the task, or if you need help in understanding a topic.*** However, they cannot be expected to know everything. In particular, if you get into difficulties by not following the suggested path, they may be unable to help.
2. As you reach each part, you should read the task carefully before you attempt it.
3. Go into the **Start** menu, click on **All Programs** ►. Open the **Microsoft Office 2007** group, and then open **Microsoft Office Access 2007.**
4. Activate the online help system by clicking on the **Help** icon. This should open **Microsoft Office Access Help**.

Click on the **Table of Contents** link. 

The material in the help system ‘books’ will be used as a tutorial aid in many practical sessions. Try opening and closing some books simply by clicking on them. You can alter the split between the help page window and the rest of the Access window if you wish. Adjust the size of the pane to suit you.

1. From the **File and Data Management** book, choose ***Create a new database****.* This section covers the basic process of starting Office Access 2007 and creating a database, either by using a template or by creating your own tables, forms, reports, and other database objects. It also details a few techniques that you can use to get information into your new database. There are two ways to create a database in Access 2007 – using a template or without using a template.

Follow the instructions under **Create a database without using a template** to create a new (blank) database.

You should choose an appropriate name, such as Prac1\_countries, as your database is to be for the information on **European countries provided**. Create your database in the directory d:\***yourID***\Documents (the default directory for creating\saving an Access database on IS machines).

*Navigation within Access Help is similar to typical internet browser navigation. You may choose to keep the Help pages open or close them. They can be easily opened by the* ***Help*** *icon.* 

1. After creating a new database, use the (Help) Contents window to open and then read the following sections *Database design* **🡺***Create a table* ***🡺 Overview*** *and* ***Create a new table.*** Similar help can be found in *Tables* **🡺** *Create a table* although this assumes you are not using the Table Design View.
2. In the **Database** window for your newly created blank database, you should be at the stage where a new, blank table is ready for creating. You will need to click on **View**, and then select **Design View**. You will be asked to save your table at this point. Please save it as something meaningful e.g. Country. If there is no table, click the **Create** tab and select Table Design. This opens the window for you to enter new fields for the table.
3. On **paper**, choose appropriate **field names** and **data types** for the European country data provided. For area, you should enter the**square km** data. It is bad practice to enter both if one can be calculated from the other. (A good design would use the DBMS to calculate the other; a bad design would include both). You *should* include the information on whether the capital is a seaport - indicated by Neptune’s trident -or not. You can obtain help on **data types** by putting the cursor in the data type box and pressing the **F1** key**.** Help is similarly available for the **Field size**, **Format** and other properties
4. The primary key is a unique identifier. Look at the data carefully and consider which field or combination of fields will have unique values. (You should think of a field(s) that will uniquely identify a record, even if other countries appear in Europe, or populations change.)
5. For each field:
* Click in the first blank row of the **Field Name** column and type the name for the field. It is best to choose names with only letters (and digits if sensible).
* Add a sensible description in the appropriate column - this is displayed in the status bar at the bottom of the screen to aid the user in data entry.
* In the **Data Type** column, click the arrow, and select the data type you want.
* For **Text** data types, set an appropriate **Field size** – you should choose the smallest possible to save space (use F1 help).
* For **Number** datatypes choose an appropriate **Field size**, **Format** and number of **Decimal Places**. Access 2007 makes this tricky!
* For **Date/Time** or **Yes/No** data types, choose a **Format** that mimics the data
1. Read *Database design 🡺 Create a table 🡺 Set a table’s primary key* (about half-way down the page)
2. Set the primary key for your table**.** You may choose **not** to accept Access’ automatic Primary Key. **Save** the table design with a **sensible** name e.g. Countries and then you have finished designing your table. \***Close** it\*.

**SIGN OFF POINT (1 of 3): Design Issues**

When you have implemented your table design in Access, you should the above work signed here by a demonstrator. The demonstrator will ask to see your table, and will ask about the data types, some field sizes, and your primary key. You may continue to work on until a demonstrator becomes free if you are confident about your choice of datatypes.

1. Go to the **Access** **Help** and read through *Forms and reports* **🡺 *Create a* *form***. In the database window, ensure you can see your new database, and then select your table. Click on the **Create** tab**.** Click on **Form.** Note that, although the form appears with the name you have given the table in the title bar of the form window, it has NOT yet been saved. **Save** the form with a meaningful name and then close it.
2. Read *Access Help* ***🡺*** *File and data management* ***🡺*** *Add one or more records to a database*In the database navigation side pane, double-click onthe form you createdunder the list of objects to open it.Add the data for the first two or three records using your form, noting that **Access** saves your data automatically as you move to the next record and that pressing the **Esc** button clears the data you are currently typing (so is a useful escape route!). Close your form.
3. Move back to the table in the navigation side pane and open your table by double-clicking. Access opens it in Datasheet view by default. To view the table in Design view, click on the ***View*** 🡺 ***Design View***.Now change to Datasheet view using the same method. Note that the button changes to show the design icon and can be used to change views easily.
4. The autoform you created is **bound** to the countries table so data for each record entered via the form will appear in the table as you can see. Add 3 more records in datasheet view, using the tab key to move between fields as before*.*
5. Close your table and open the form again. Use the navigator buttons to skip through the records and note that the new records you added to the table are visible via the form.

Remember the principle that users never get directly to your tables. Protect the data by using forms.

1. Close your database and Access. Use Explore My Computer (on the Windows desktop) to find your database file in **d:\docs** . Use the right mouse button shortcut menu to copy the database file to your central filestore **(m:**drive) and perhaps to a memory stick or Zip disc.

You need to this so that you don’t lose your work. **The PC drives are wiped clean every day.** Remember that your memory stick or Zip copy is an emergency backup. Do not use this to work from.

1. Go back to your copy in **d:\docs**, open it and add further records using your form until you have 10 records **including the data for Vatican City. Close your database file and transfer it to your central filestore.**

**SIGN OFF POINT (2 of 3): Autoform and record entry**

You may continue to work on until a demonstrator becomes free if you are confident.

1. Use a web browser (perhaps Internet Explorer) to find the Excel file europe.xlsx on the CS10610 Course Documents\Practical Worksheets page on Blackboard

Open it andsave itto **d:\docs,** observing the structure of the sheet. You may find it has saved to the Downloads folder. Close the file.

**IMPORTING DATA:**
We are going to import data from an Excel spreadsheet into a table.
Read through the section ***Access Help 🡺 External data 🡺 Import 🡺 Import or link to data in an Excel workbook***

1. When you have a new database open, click the ***External Data*** tab, and then choose the Excel icon. You will then be asked for the file location and which option you want. Find the europe.xlsx file and choose the first option - **Import the source data into a new table in the current database**.The Import Spreadsheet Wizard has the following three (bulleted) stages, each with its owndialogue box with navigation buttons (Next, Back etc):
* In the first dialogue box, make sure that the **First Row Contains Column Headings** box is selected before moving on.
In Excel files, the data are separated by a tab character. The long thin vertical lines separating the columns show what Access takes tobe a field. The line is placed by Access where it finds the tab delimiter character in the Excel file. Click on the **Next** button
* Notice that Access has picked up the field names from the first row and has made its best guess at a data types for the fields.(Click on each field in turn to see this - you will need to scroll). Do not make any amendments at this point.
* On the next screen, by default, Access tries to add an AutoNumber field as a primary key.Change this to ‘**Choose my own primary key’** and click on your choice of field. (If you wish to set a key on more than one field, you must do so later). Finish the import, giving the tablea suitable name, and open your new table in the database window. Checkthat your table makes sense!

If importing into an existing table, the Field names MUST be in the same order in the table as in the imported data. If you have previous experience and have time left, you might like to try importing into the database you created earlier.

1. Change the Seaport, other data types and field sizes as necessary if you have not done so already. Format the numbers so that there is a thousand separator comma and so that fields that are to hold only integer numbers show no decimal places.

**SIGN OFF POINT (3 of 3): Importing data**

You may continue to work on until a demonstrator becomes free if the import was successful.

1. Use **Print Preview** (in the **Office** menu  or from the Quick Access Toolbar) to lookat your table as it will appear when printed. Use **Page Setup** to change the **Page** to **landscape** and to check that the paper size is **A4**. Try out the **Zoom** (click left mousebutton). Return to Datasheet view. You can print a copy for your records if you wish.
2. **Close your database file, saving changes and transfer it to your central filestore.**

You should keep this practical sheet (and later ones) in a *practical file* that you should bring with you to all your practical sessions so that you can refer back to the techniques used in previous practicals if necessary. You may also include any printouts so that you can build up a collection of examples.

You should now have met the concepts:

* field
* record
* data type
* field properties
* primary key

If you are unsure about any of the above, you should discuss this with a demonstrator.