University of Reading

Microsoft Access 2010™
An Essential Guide (Level 1)

Contents

This document is an introduction to Microsoft Access 2010, running under Microsoft Windows XP. For further information see *Microsoft Access 2010 - An Intermediate Guide*.

Introduction

A database is a computer program for storing information in an easily retrievable form. It is used mainly to store text and numbers (for example, the Library catalogue, which includes the author, title, class number and accession number for each book).

Most modern databases also allow the storage of other types of information such as dates, hyperlinks, pictures and sounds. As well as being able to store data, a database allows you to select information quickly and easily (for example, a list of the books written by a particular author or those on a certain subject). Finally, it may allow you to produce printed summaries (reports) of the information selected.

When setting up your own database, it is important to plan its use in advance. This is particularly important if you are setting one up which will be used by other people. Among the things which you should consider are:

- What information you will need to store
- What information you want to get out
- Who the data is intended for and how other users will use it
- Whether you want to restrict access to parts of the data to some users only
- Who is allowed to add or change data
- If your data refers to actual people, it may need to be registered under the *Data Protection Act* (though this doesn't apply to a personal database of family and friends)

Although you can change the specifications of your database as you develop it, you will save yourself a lot of work if as much as possible is planned in advance.

Microsoft Access is a relational database management system (which allows you to link together data stored in more than one table). It is fully supported by IT Services and is available for personal purchase as part of the *Ultimate Steal* and for departmental installation under the Microsoft *Select Agreement*.

Starting Microsoft Access

If you are using an IT Services machine, login as usual by entering your `username` and `password`. Then, to start up the program:

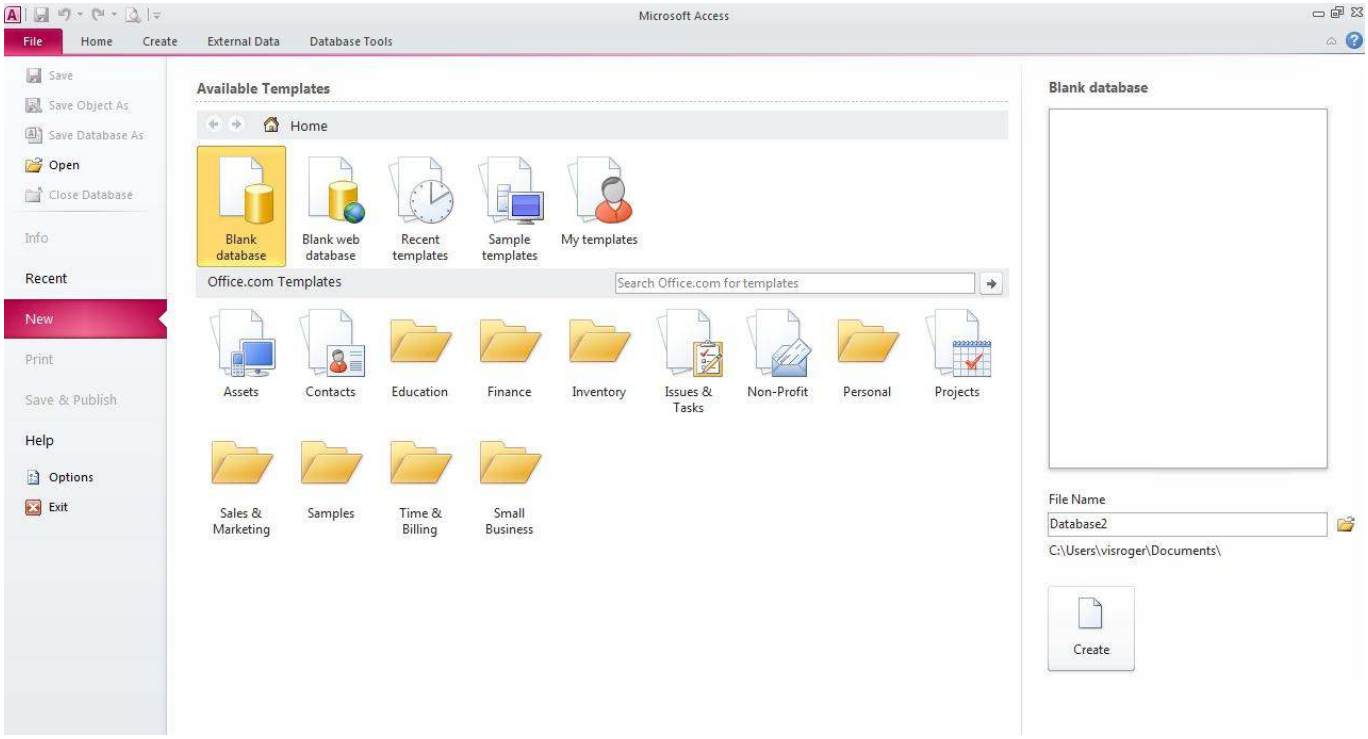
1. Open the Windows **Start** button and choose **All Programs**
2. Select **Microsoft Office** then **Microsoft Access 2010**

Tip: If you *right click* on the **Microsoft Access** entry in the menu and choose **Send To** then **Desktop (create shortcut)** you'll have an icon on the *Desktop* for future easy access. You can also do this with any Access file.

The Access Screen

On entering Access you are presented with a screen showing available templates, which have been designed to help you create your own databases. You can search for further templates at Office.com. These templates can be quite helpful for particular applications but you nearly always have to tailor the database produced to your own requirements.

You can also either create a new blank database (without help) or open an existing one. In this course you are going to use an existing database, to see how it is set up and how it can be used.

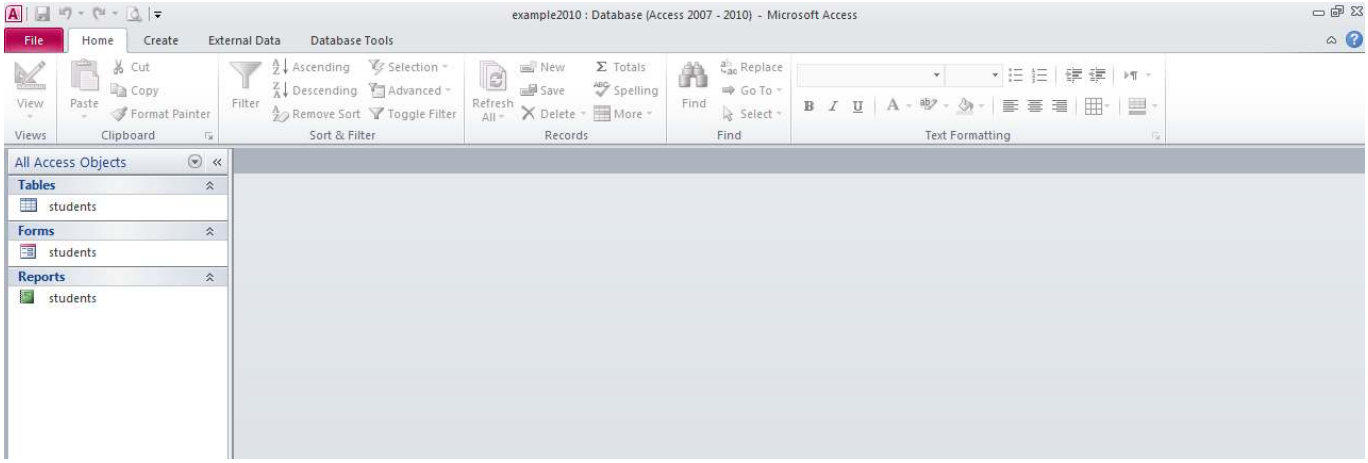


1. Click on **Open** (or simply press **<Ctrl o>**)
2. An *Open* window appears – scroll down on the left and click on **My Computer** then on **Data (D:)**
3. *Double click* on the folder called **Training** to open it
4. Click on **example2010.accdb** from the list which appears and press **<Enter>** or click on **[Open]**

*Note: For those using these notes on a computer not run by IT Services, the example file can be downloaded from the link provided at step **4** above.*

Users are welcome to take a copy of the example file if they want to practice.

The Navigation Pane



In the next screen, the *Navigation Pane* appears on the left. This controls navigation within a particular database. A database is made up of several *objects*, grouped into a single file. This database has been set up to show All Access Objects which currently exist in this database, but there are other types of object as well which do not currently appear. You will be meeting some of these later in the course.

The arrow at the top of the pane (to the right of *All Access Objects*) lets you select specific types of object.

The full list is:

- **Tables** - hold the raw data
- **Queries** - extract part of the raw data to produce *dynasets* - dynamic sets of data which can change each time the query is run (to reflect any changes to the data in the tables)
- **Forms** - user-friendly layouts to display data on the screen (either in a table or from a query)
- **Reports** - output files, ready for printing
- **Pages** - for creating/editing WWW pages
- **Macros** - lists of commands to perform particular functions
- **Modules** - programs which expert users write in a programming language called Access Basic to perform tailor-made functions not generally available

The objects are accessed from the *Navigation Pane*. Pages, Macros and Modules are not dealt with in this course. As you use the different objects, the tabs on the *Ribbon* change appropriately.

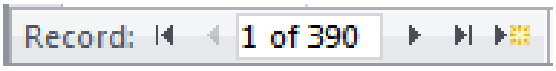
1. Click on a double arrow on the right to show or hide the objects in a particular group
2. Click on the single arrow at the top of the *Navigation Pane* to view further display options

Part 1: Using an Existing Table

Begin by investigating the table named *students*. This contains data relating to imaginary students in a fictitious department in the University, but it could equally be members of a club or just information about your friends and relatives.

1. Select the **students** table then press **<Enter>** (or *double click* with the mouse) to open it

A new pane opens on the right showing the data set out in a table. This method of display (known as *Datasheet View*) shows the data in columns and rows, similar to a spreadsheet. There are a number of entries (*records*), one for each student, which each take up one line or row of the table. For each student, various items of data are recorded in columns - each column contains one variable (or *field*). On the top of the table is a tab, which provides easy access when you have more than one object open.



Immediately below the data is the *status bar*, which shows you are positioned at Record 1 (of 390). The *current record* has a slightly darker background, while the column on the far left is yellow-orange (the *current field* has a coloured border). You can move the indicator down to the next record by clicking on the button immediately to the right of the number 1 on the status bar. The next button to the right takes you to the end of the table - click on this and you should be at Record 390. Matching buttons on the left take you back a single record and back to Record 1 - try out these too. You can also move up and down using the arrow keys on the keyboard. The scroll bar down the right edge of the table window moves the display up and down.

Another scroll bar is provided at the foot of the window for moving to the left and right when the records extend over more than one screen. To move from field to field across a record, use the ***<right arrow>*** and ***<left arrow>*** keys or **<Tab>** and **<Shift Tab>**. The **<End>** key takes you to the last field, the **<Home>** key to the first. **<Page Up>** and **<Page Down>** take you up and down a screen, while **<Ctrl Home>** and **<Ctrl End>** take you to the first field of the top record and final field of the last record, respectively.

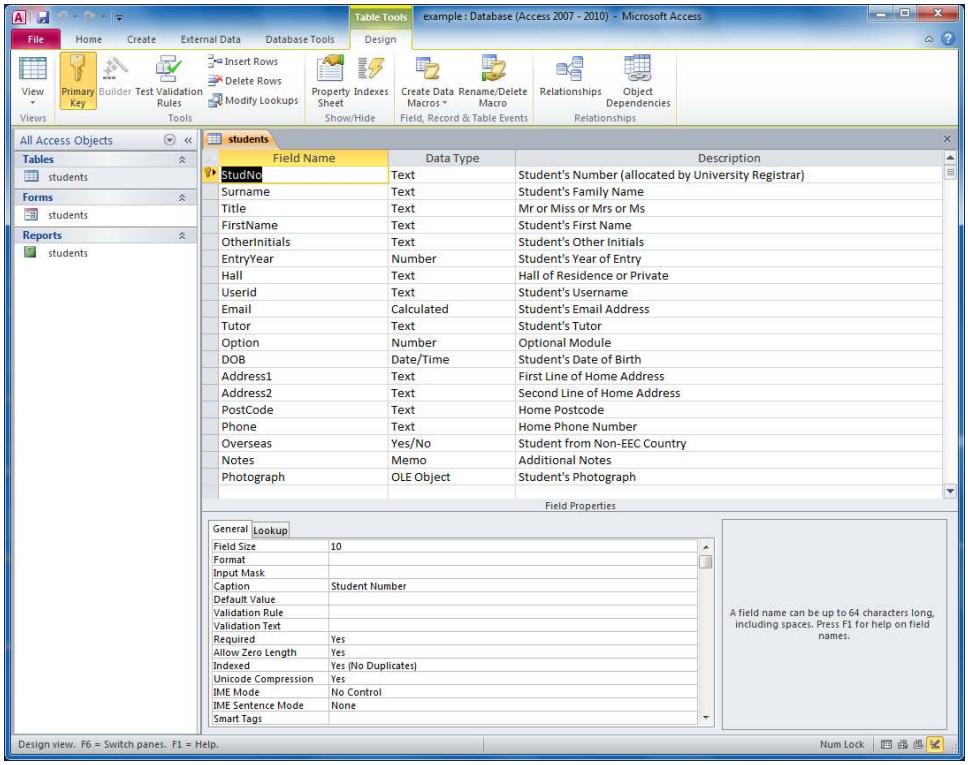
View: 

or 

To see exactly what each record contains and how it has been set up:

2. Click on the **[View]** button (the first on the **Home** tab) – a *Design* tab is added to the *Ribbon*

The *Table Design* pane lists the field names, indicates their data types and also shows the *field properties*. The screen appears as below:



The fields (and properties) are as follows:

- **StudNo**: A *text* field containing each student's personal id, as allocated by the University Registrar's Office. Text fields are the commonest type of fields and can be used to store any characters (letters, punctuation, numbers etc). Numbers should be stored as *text* if not being used in calculations. This field is set up to hold up to 10 characters and a *Caption* is used to expand the field name. This number uniquely identifies each student - the *Required* property has been set to **Yes** and *Indexed* is set to **Yes (No Duplicates)**. This field has also been used to set up a *Primary Key*, which you will learn more about later.

Tip: It's good practice not to include spaces in field names (or in the names of tables / queries / forms / etc). Instead, make use of *Captions* to expand the field name (to include any spaces). Not only do you have less characters to type but it makes manipulation of the data much easier if you find you need to use more advanced database features.

3. Press ***<down arrow>*** to move to the next field (then repeat this for each field):
   - **Surname**: A *text* field containing the Family Name of each student. This field is required, can hold up to 25 characters and is *Indexed* as **Yes (Duplicates OK)**
   - **Title**: Another *text* field but this time for up to 4 characters. Here, we know the possible values (Mr/Mrs/Miss/Ms) and can set up a *Validation Rule* to check that the data entered is correct - if it is not, the *Validation Text* is displayed. A *Default Value* (Mr) has also been set
   - **FirstName**: Another *text* field for student's first name - up to 20 characters
   - **OtherInitials**: A *text* field for any other initials - up to 6 characters
   - **EntryYear**: A *number* field recording the student's year of entry. Numbers can be stored using different field sizes; here, an *integer* is used - see the Appendix for a full explanation. This could also be stored as a *text* or *date/time* field, depending on how it is to be used. The *Default Value* is set to the current year using built-in *Functions*.
   - **Hall**: Another *text* field where the values are known (there are only certain Halls of Residence) so a *Validation Rule* has been set - up to 15 characters. A *Default Value* (Private) has also been set