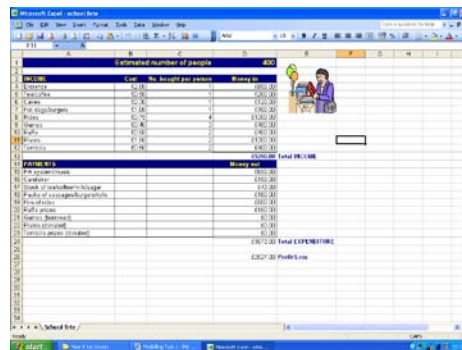


# DATA HANDLING: SETTING UP A DATABASE



	Estimated number of people	Cost per person	Money spent
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## DATA HANDLING: CONTENTS

- Creating a simple database
- Creating & using tables
- Using data fields, records, data types, field sizes, primary key


## DATA HANDLING: TASK 1

Before you begin this task you should create a new folder in your user area. Call it 'Data Handling'.

Within this folder create another named 'Database Task 1'.

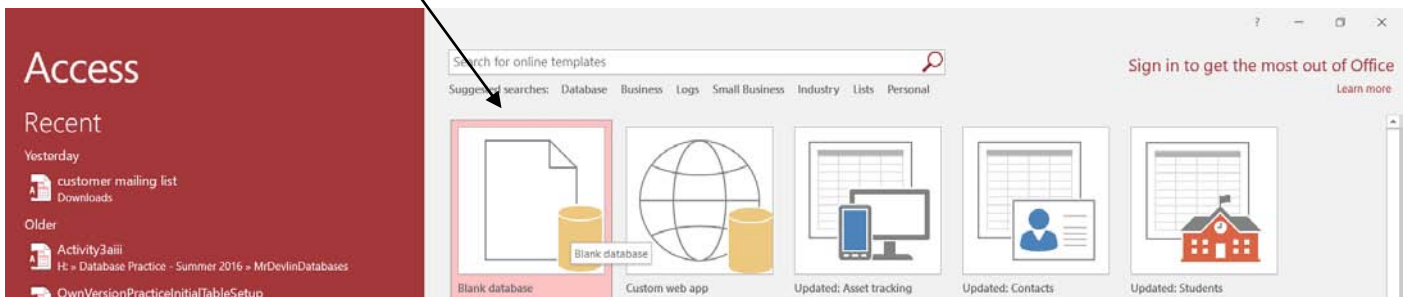
### CREATING A DATABASE

We will now set up a simple database...

To do this you will need to open Microsoft Access. 

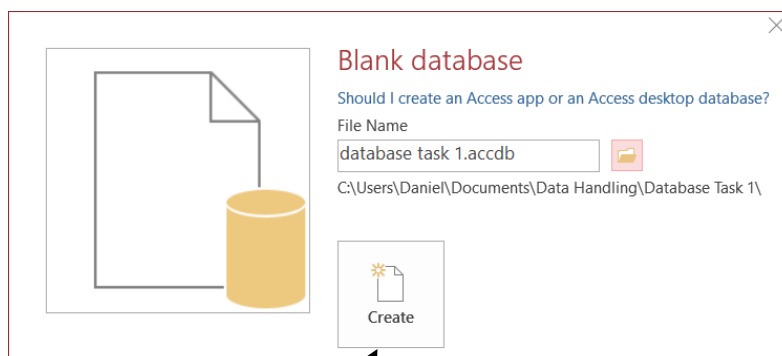
Unlike most applications, when you open Access a new document is not automatically created for you. In Access you need to save your database and name it, before you can work on it. You need to do the following:

When you open Access you should select 'Blank database...' from the options displayed.



The window below will appear, requesting a name for your database.

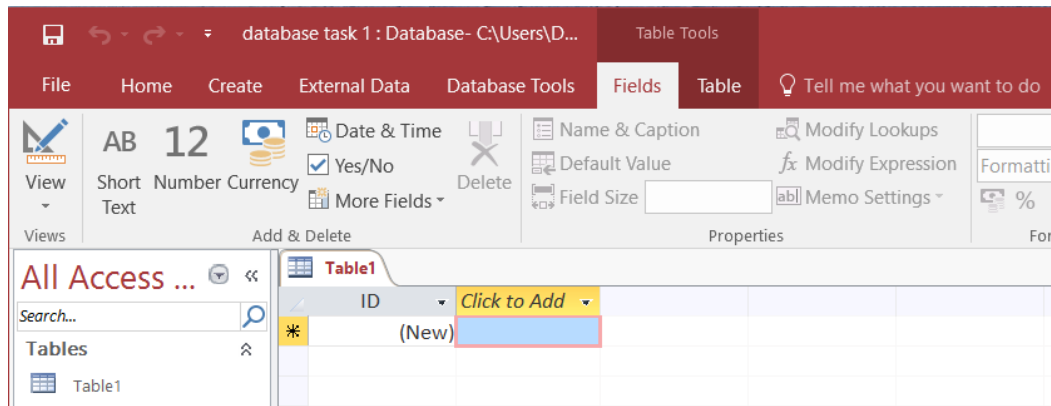
Enter 'database task 1' as the file name for the database, making sure that you save the database in the 'Data Handling' > 'Database Task 1' folder that you created at the beginning of this workbook.



After entering a file name, select 'Create'.

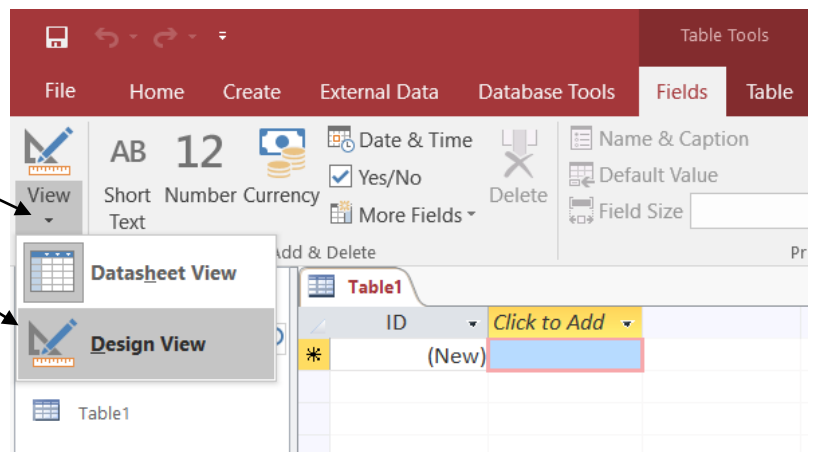
## SETTING UP THE DATABASE - TABLES

After saving the database, the following window will appear. This is the main option box that you will use to set up everything within the database.

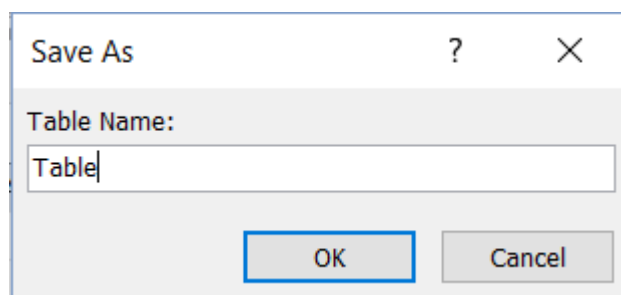


The first thing that we need to do is create a *table*. A table is a collection of data about a specific topic. This will form the foundation to our database and the information that it will contain. Although an initial table has been created in Access called Table 1 it has not been saved.

- Click the arrow at the bottom of the view option.
- Select Design View.



- The following window will be displayed:



- Change the name of the table to 'Customer Table'.

Save As

?

×

Table Name:

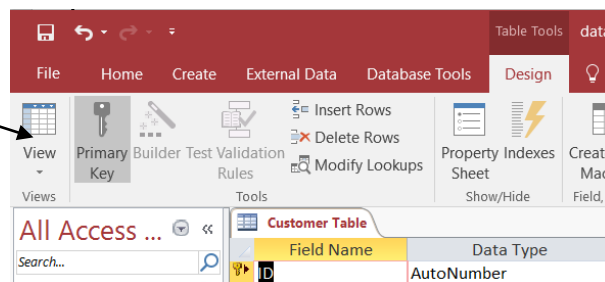
Customer Table

OK

Cancel

- Click OK to save the table.

When the table loads in design view it will look like:



Tables organise data into columns (called *fields*) and rows (called *records*). For example, in a database containing details about customers, examples of *fields* would be: forename, surname, address, telephone number. Each customer in the database would be a *record*.

## FIELDS

We need to set up a table by entering the field names that we require. The easiest way to do this is in 'design view' layout (shown in the image above - you should have this displayed on your screen now).

In the field name column type the following fields:

- Title
- Forename
- Surname
- Road
- Town
- County
- Postcode
- Home telephone number
- Mobile telephone number
- Age

	Field Name	Data Type
🔑	ID	AutoNumber
	Title	Short Text
	Forename	Short Text
	Surname	Short Text
	Road	Short Text
	Town	Short Text
	County	Short Text
	Postcode	Short Text
	Home telephone number	Short Text
	Mobile telephone number	Short Text
	Age	Short Text

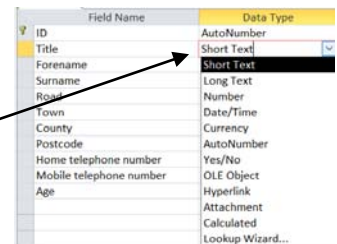
## DATA TYPES

Now that we have entered the fields that we require, we need to set up the *data type* for each field. The data type determines what type of data a field can hold, for example number or text.

## TASK 1

For each of the fields that you have entered you need to decide what type of data the field will hold.

You need to click in the 'data type' column next to the field you want to set the data type for and select the most appropriate type from the drop down menu.



Field Name	Data Type
ID	AutoNumber
Title	Short Text
Forename	Short Text
Surname	Long Text
Road	Number
Town	Date/Time
County	Currency
Postcode	AutoNumber
Home telephone number	Yes/No
Mobile telephone number	OLE Object
Age	Hyperlink
	Attachment
	Calculated
	Lookup Wizard...

## Answers to Task 1

Check that you have title, forename, surname, road, town, county and postcode set with data type short text. Age should be number.

Note: If text is chosen, this includes numbers and letters e.g. an address would contain both so text is the most appropriate option.

Telephone numbers are more complicated! You would think that they should be set with number as the data type - actually they need to be text! This does not sound logical as there are only numbers entered. However, if the data type is set to number, when the user tries to enter a number that will begin with 0 (e.g. 01926 for the area code), the 0 is automatically taken away from the beginning, as strictly a number does not have a 0 before.

The rule is therefore: for a telephone number use **short text** as the data type.

## FIELD SIZES

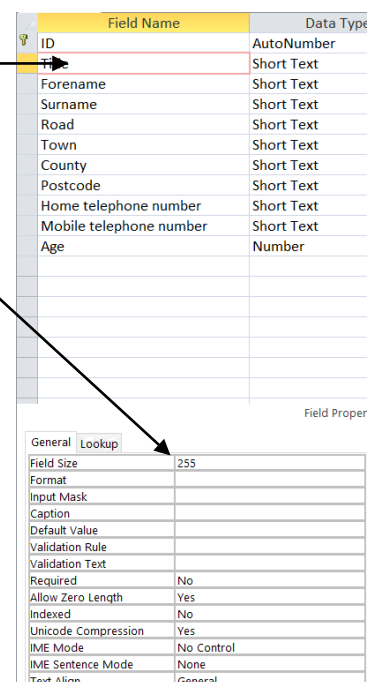
We now need to think about field sizes. Field sizes are used to set the maximum number of characters that can be entered into a field. This helps reduce the amount of storage space required to save the database. To set up field sizes you should do the following:

Select the Title field - you will see that an arrow points to it to show that it is selected

You will now see that the default field size is set to 255.

You need to change this to a more appropriate size. 'Miss' is possibly the largest value that would be entered so a field size of 4 would be appropriate.

Type in 4, to replace 50.



Field Name	Data Type
ID	AutoNumber
Title	Short Text
Forename	Short Text
Surname	Short Text
Road	Short Text
Town	Short Text
County	Short Text
Postcode	Short Text
Home telephone number	Short Text
Mobile telephone number	Short Text
Age	Number

Field Properties	
General	Lookup
Field Size	255
Format	
Input Mask	
Caption	
Default Value	
Validation Rule	
Validation Text	
Required	No
Allow Zero Length	Yes
Indexed	No
Unicode Compression	Yes
IME Mode	No Control
IME Sentence Mode	None
Text Align	General

## TASK 2

Select each field in turn and set an appropriate field size. Remember that spaces count!

### Answers to Task 2

The values you have chosen in Task 2 do not have to be exactly the same as I suggest, but should be around the same values:

Field Name	Field Size
Title	4
Forename	15
Surname	15
Road	25
Town	15
County	15
Postcode	7
Home Telephone Number	11
Mobile Telephone Number	11
Age	3

### PRIMARY KEY

In a database it is very important to set a primary key. A primary key is just simply a field that will uniquely identify a record.

Example: If we are thinking about a school database, each pupil in the school will be a record. To identify a pupil it is not possible to use any of the fields we have set in our database already, as there is no single field that will identify a pupil. We cannot use forename or surname, as often more than one pupil has the same.

In this school an office number identifies each pupil. No two pupils will have the same office number - it is unique to the pupil.

This is all a primary key is.

It is possible to set up your own primary key (i.e. office number / customer number) or Microsoft Access can set up one automatically for you.

You need to set a field called 'Customer Number' to act as the primary key - the field that will identify each customer in the database. Access by default creates a field with the name ID to act as the primary key. To change this to reference a field called 'Customer Number' all we have to do is rename the ID field.

To rename the ID field click on the field under the 'Field Name' Column. The type in 'Customer Number'.

Field Name	Data Type
Customer Number	AutoNumber
Title	Short Text

The Data Type AutoNumber will automatically insert a number into this field on each record. The number will be unique to each record.

To check that the 'Customer Number' field is correctly set as the primary key for the table look at the Field Name. There should be a small key symbol to the left of the 'Customer Number' field name.

Field Name	Data Type
 Customer Number	AutoNumber

## ENTERING DATA INTO YOUR TABLE

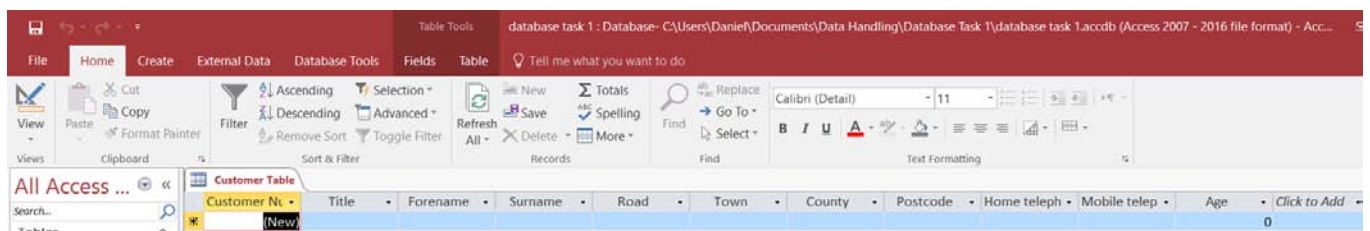
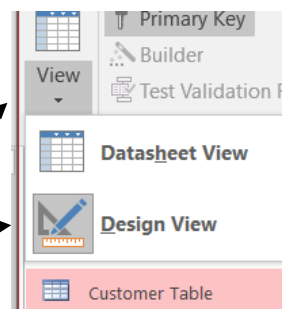
You have now set up your table! Before you do anything else you need to save it:

- Select 'File'
- Select 'Save'

The next step is to enter data into the table.

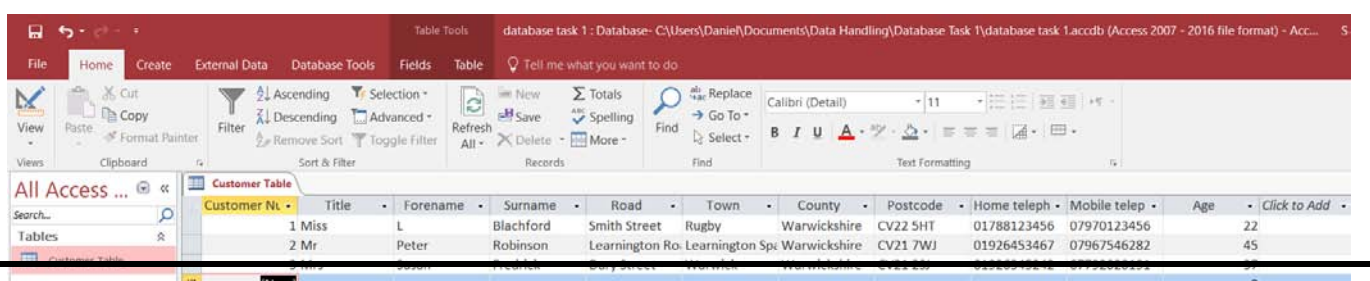
To enter data:

- From the toolbar, select the arrow below the view icon
- From the drop-down box, select 'Datasheet view'



You will see the table set out as above. Each column represents a field and each row represents a record.

Add 3 records to your table. Remember Customer Number is automatically generated for you so you do not need to enter anything into this field.



Your table should look similar to the one shown above. Every person is a record (with a unique number to identify each) and every column is a field to record the details. Each record in a table has the same fields.

You should now SAVE your database:

- Select 'File'
- Select 'Save'
- Close the table - 'File' > 'Close'



### TASK 3

Now it's your turn....

1. You need to create a new **database** of DVDs that are in stock at a rental shop. Save the database as 'DVDs'
2. Create a new **table** in the database that has the following **fields**. You should call the table DVDs in store.
  - DVD title e.g. Pretty Woman
  - Director e.g. Randal Kleiser
  - Classification e.g. PG
  - Genre e.g. Musical
  - Starring e.g. John Travolta, Olivia Newton-John
  - Number of discs e.g. 1
  - Main Language e.g. English
  - Product Code e.g. 123456
3. Select appropriate data types for each of the fields you have created
4. Select appropriate field sizes for each of the fields
5. Select or insert an appropriate primary key
6. Make sure the table is saved
7. Add 3 records to the table