

# Database Software

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## 1 Tables

We see how to create an Access database table.

### 1.1 Records and Fields, Tables and Databases

An Access database contains one or more tables. A table contains rows and columns. A row is called a record. A column is called a field.

Name	Date of Birth	Gender
Pearl Button	5 July 1989	female
Jo King	10 April 1991	male
Barry Cade	28 December 1990	male
Carrie Oakey	31 October 1988	female
Priti Manek	12 April 1992	female
Tim Burr	25 May 1993	male

a record

a field

With a database you can:

- store a large amount of data e.g. all the customers of a gas company
- search it e.g. look for Terry Bull's record
- sort it e.g. into descending order of gas users, highest first
- report on it e.g. list all those customers who owe you money
- add new customer records, remove past customer records, amend customer records e.g. record the money paid by a customer

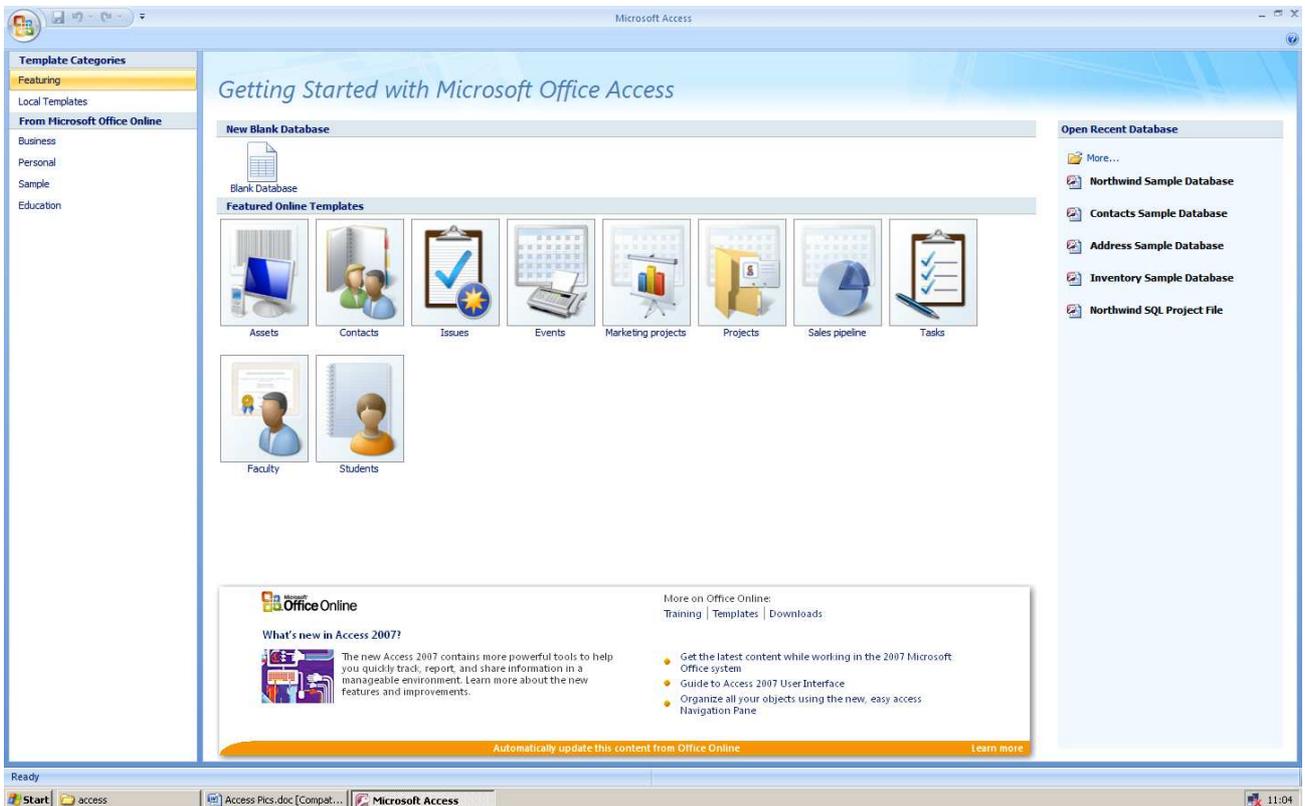
### 1.2 Scenario

Managing debtors, the people who owe you money, is essential for business success. From time to time, you write to your debtors, phone them or visit them to ask for the money they owe you. If it seems unlikely they will pay you in the near future, you take them to court. We shall use this scenario to investigate some of the features of Microsoft Access 2007.

### 1.3 Start Access

Before you start, create a folder, on either your memory stick or on your hard drive, to contain your database. I named mine *access*.

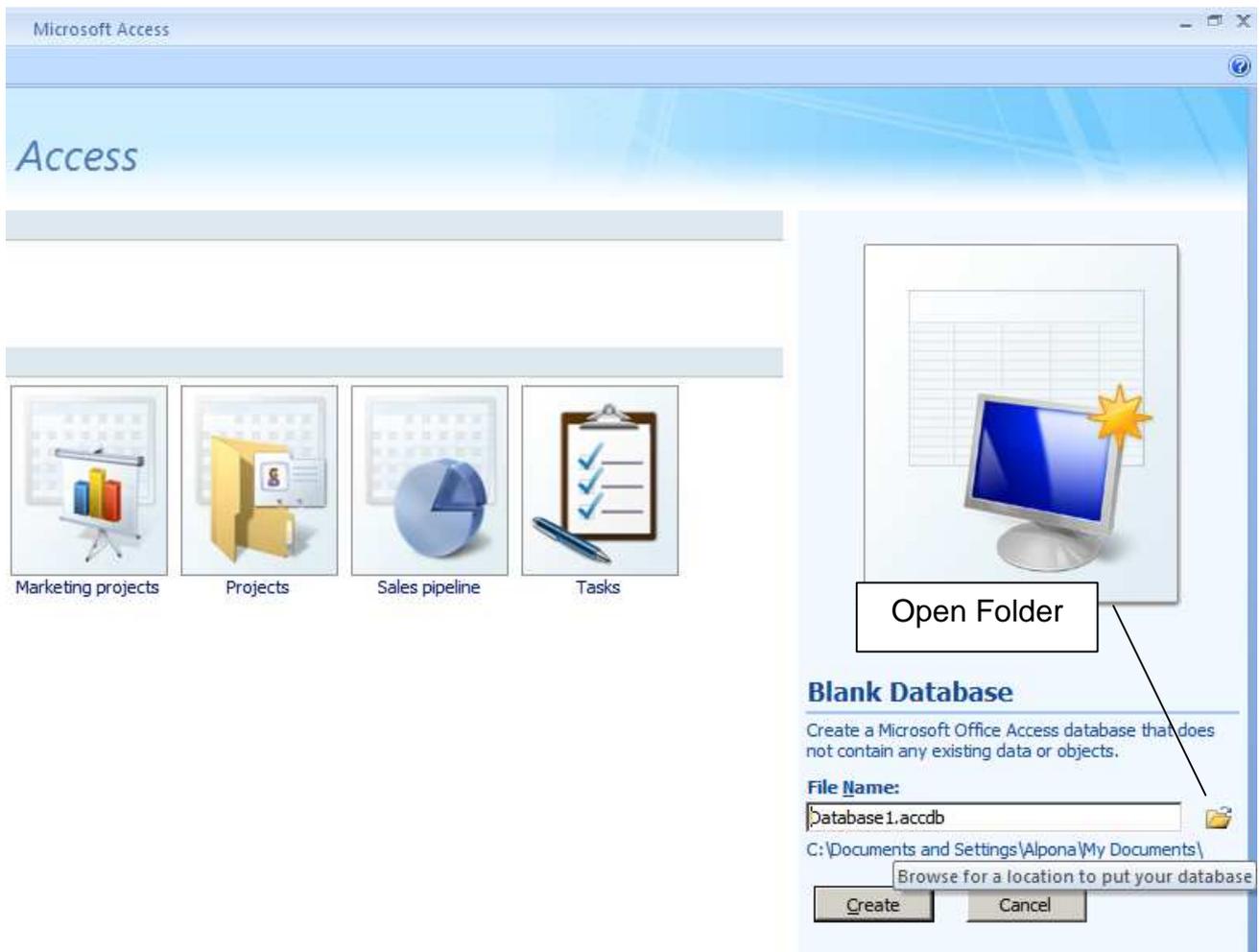
When you start Access 2007 it looks like this:



#### 1. choose Blank Database

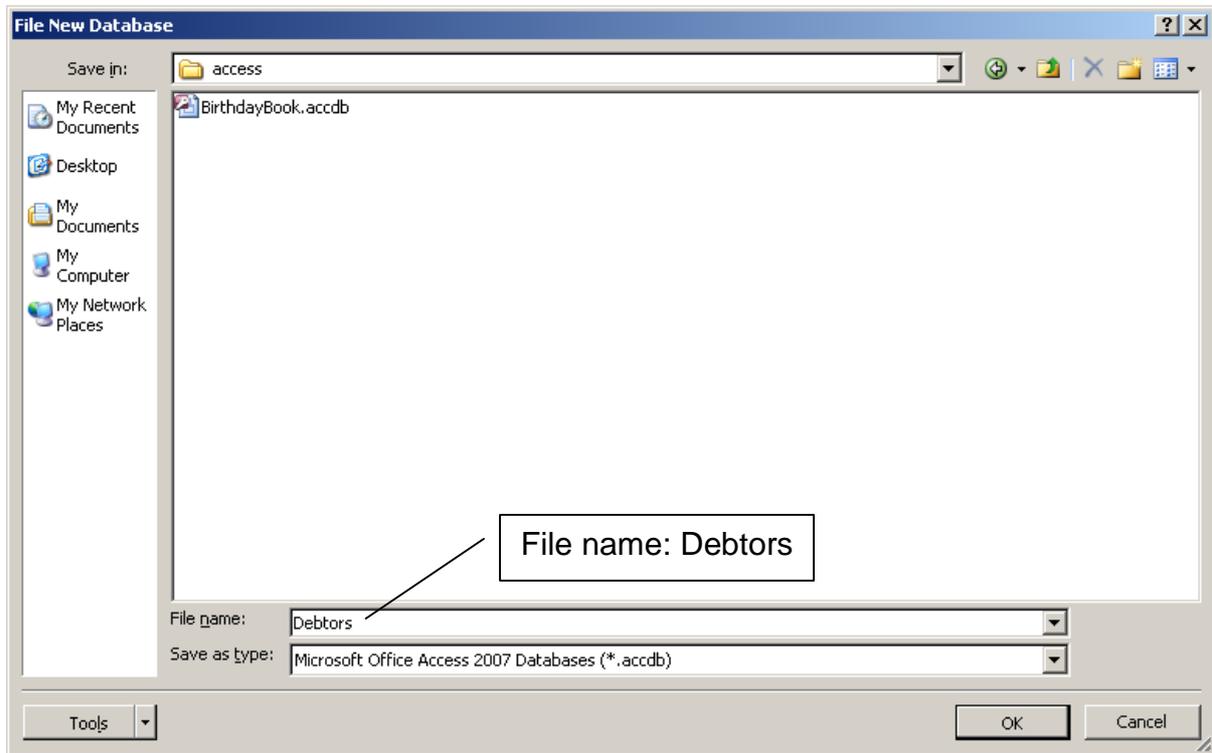


- click on the open folder icon to search for where you want to store your database



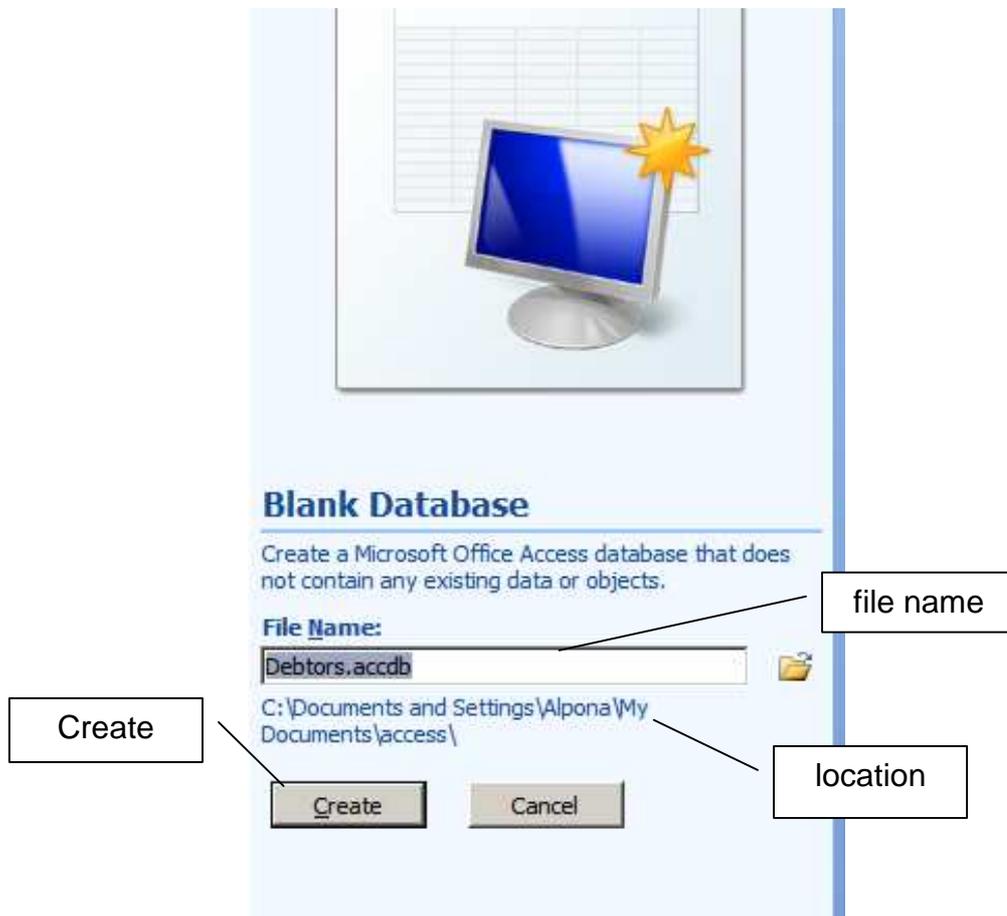
4

3. enter the filename *Debtors*.



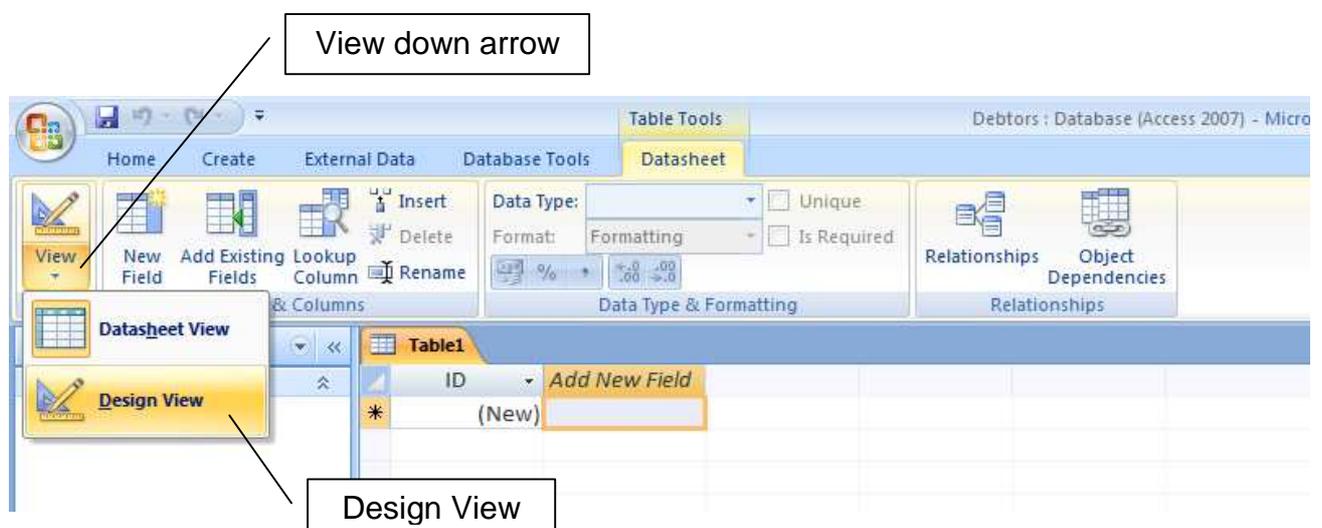
4. OK

5. check the location and filename
6. click Create



#### 1.4 Name the Table

1. click the View down arrow
2. choose Design View



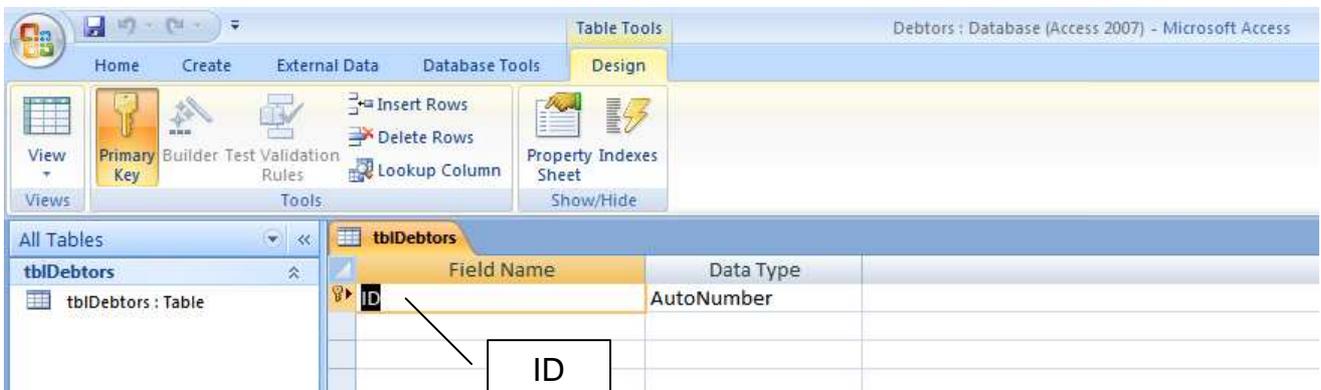
- replace Table1 with *tblDebtors*



- OK

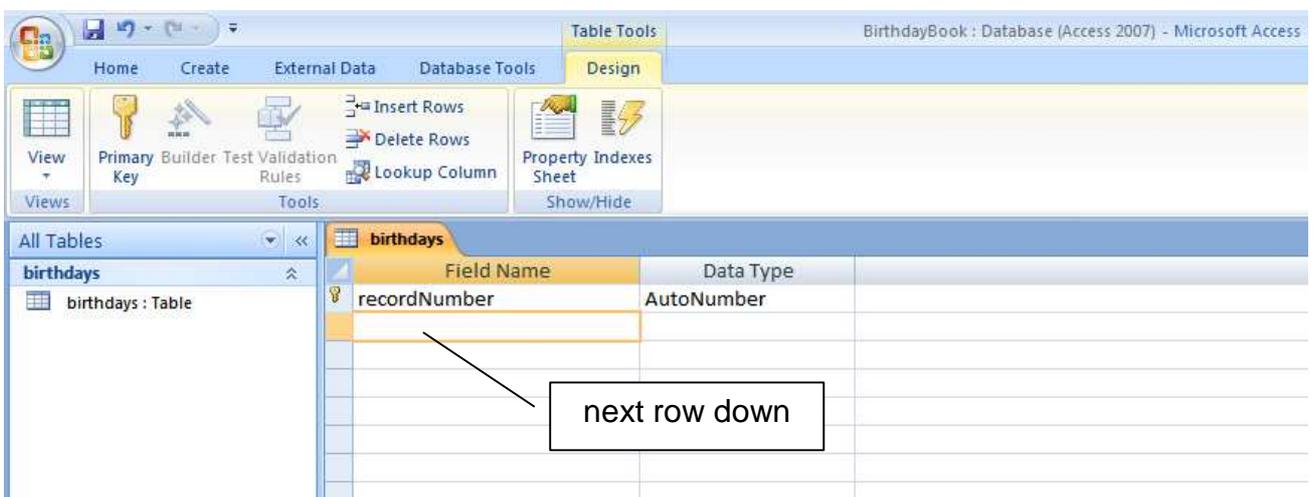
## 1.5 Create Fields

- replace ID with *recordNumber*



Notice that Primary Key is highlighted, and that the Data Type is AutoNumber. A primary key identifies each record. No two records have the same primary key. AutoNumber means that Access automatically generates the next new number every time we add a new record to the table.

- click in the next row down



3. enter *First Name* and press the Enter key on the keyboard

The screenshot shows the Microsoft Access 2007 interface in Design view for a table named **tblDebtors**. The ribbon is set to **Table Tools > Design**. The table structure is as follows:

Field Name	Data Type
Record Number	AutoNumber
First Name	Text

The **Field Properties** pane at the bottom shows the following settings for the selected **First Name** field:

Property	Value
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
Smart Tags	

Callout boxes indicate that the data type **Text** is acceptable and that the **Field Size** is set to 255.

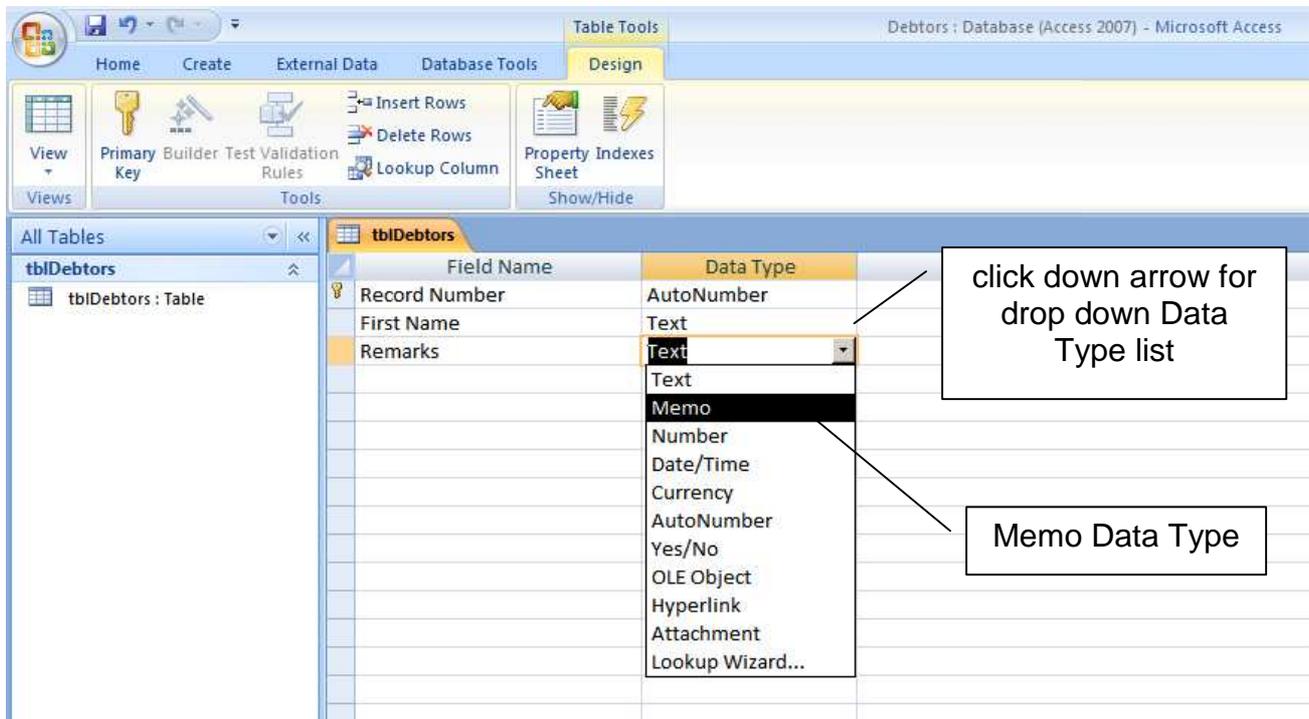
4. set Field Size to 15. Allowing 255 characters for a first name is a bit generous. 15 is a more realistic value.

The screenshot shows the Microsoft Access 2007 interface in Design view for a table named 'tblDebtors'. The ribbon includes 'Table Tools' and 'Design'. The 'tblDebtors' table is shown with two fields: 'Record Number' (AutoNumber) and 'First Name' (Text). The 'Field Properties' pane for the 'First Name' field is open, showing the 'Field Size' property set to 15. A callout box with the text 'Field Size = 15' points to the value 15 in the Field Size property.

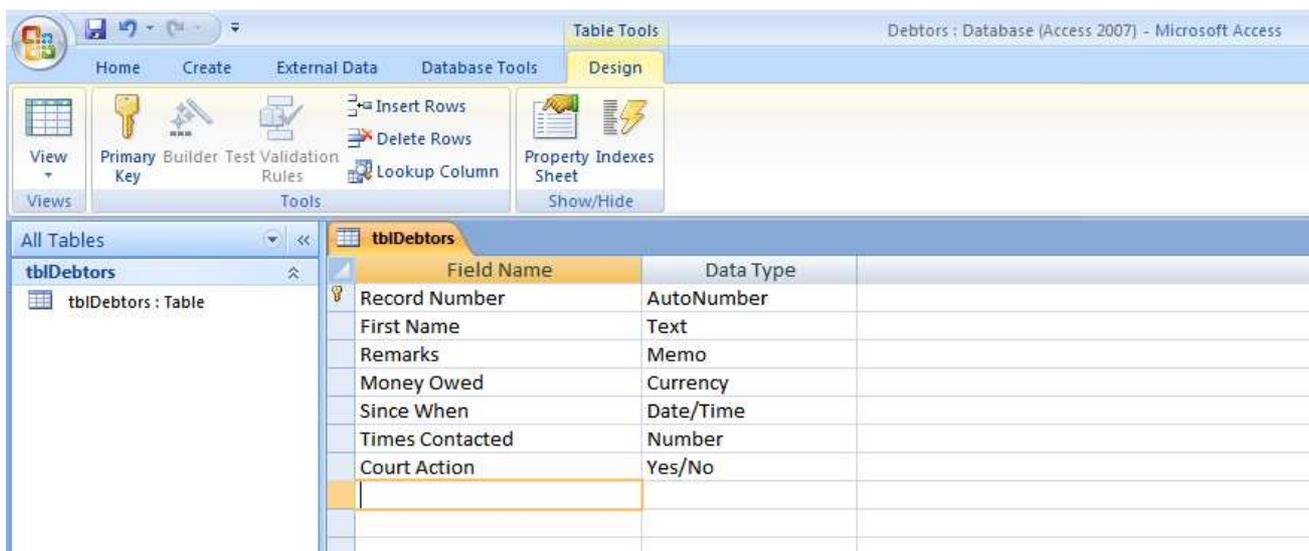
Field Name	Data Type
Record Number	AutoNumber
First Name	Text

Property	Value
Field Size	15
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
Smart Tags	

5. click in the next row down, enter *Remarks*
6. choose the Memo Data Type



7. complete the field names and data types as shown below:



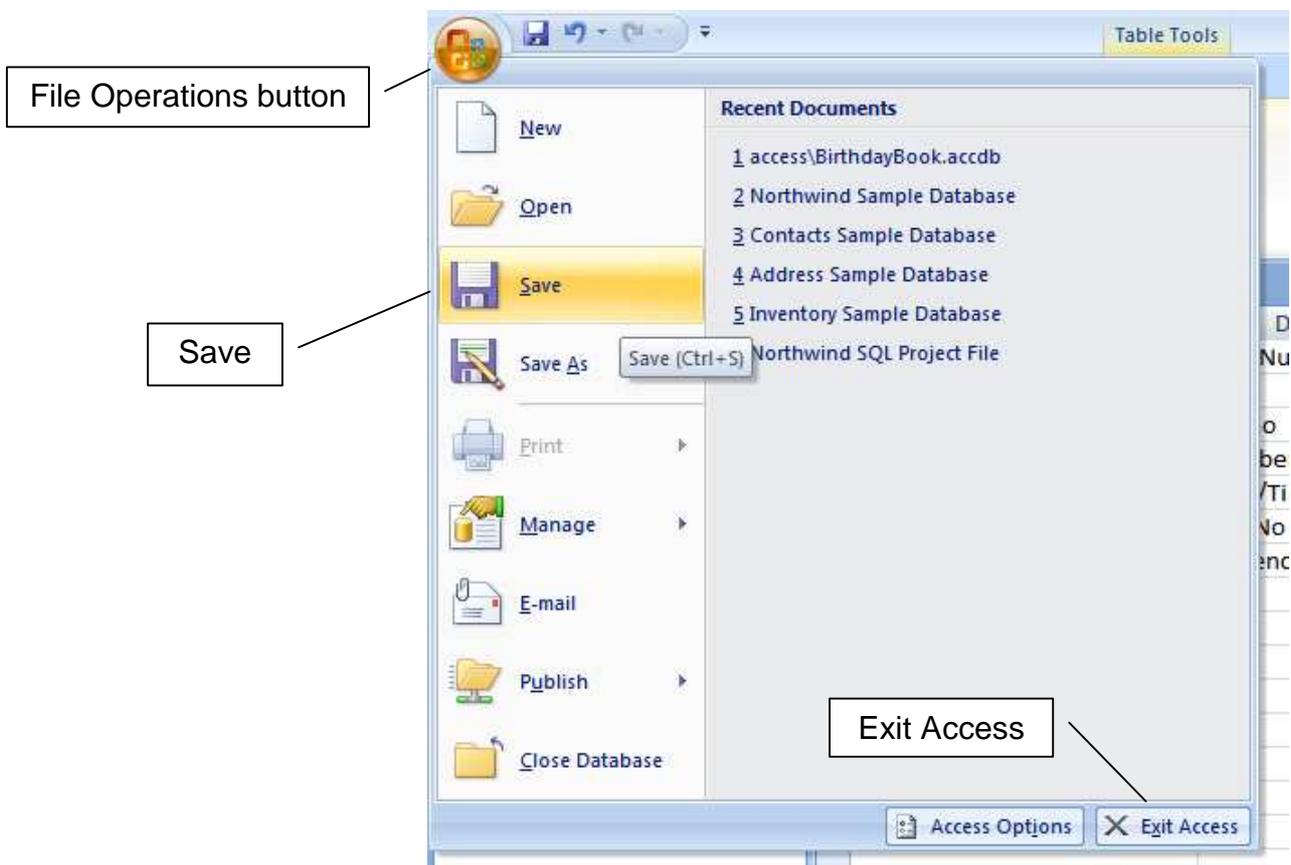
## 1.6 Data Types

A data type is a set of similar values e.g. all numbers, or all text. Access data types include:

<b>Text</b>	letters and digits. For example, 221B Baker Street
<b>Memo</b>	a lot of text
<b>Number</b>	you do arithmetic with numbers. For example, the number of keyboards in your stock is reduced by one every time you sell a keyboard.
<b>Date/Time</b>	Dates e.g. 27 August 2009, and time e.g. 22:19.
<b>Currency</b>	Great Britain Pounds (GBP). For example: £399.99
<b>AutoNumber</b>	an automatic counter that creates a new number each time you add a new record. Used for key fields to uniquely identify records.
<b>Yes/No</b>	true or false. Over 18? True.

## 1.7 Save and Exit

1. click on the File Operations button



- New** creates a new database
- Open** opens an existing database. You could click on a database listed under Recent Documents, or you could rapid double click a database on your memory stick, folder, or whatever
- Save** saves what you have done so far. Do this after each stage of your database development
- Save As** use to save your database under a different filename, possibly in a different location. Remember that you supplied the filename and location when you started a new database.
- Close** closes your current database. Leaves Access open.
- Exit Access** closes Access

2. choose Save
3. choose Exit Access

### Exercises 1.1

1. Create the database with the table and fields as shown above. We shall use this database in the next chapter.

**We have** seen how to start Microsoft Access 2007, create a table and fields, and close down Access.

**Next we** see how to add data to the database.

### Bibliography

*www.officetutorials.com* accessed August 2009  
*www.dealing-with-data.net* accessed August 2009