

Microsoft Access – from creating new Database to Queries

Let's say, you have an Excel sheet that contains infos for 9 boreholes:

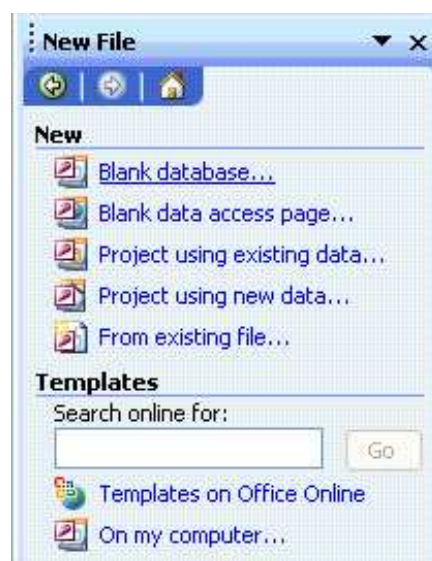
- their x and y coordinates, and
- layer depths (each borehole has two layers, layerA and layerB).

In practice, you could have sheets with millions of data. Here it's a pretty small example. Now, let's save the Excel sheet as 'Example-1' (here Example-1.xls).

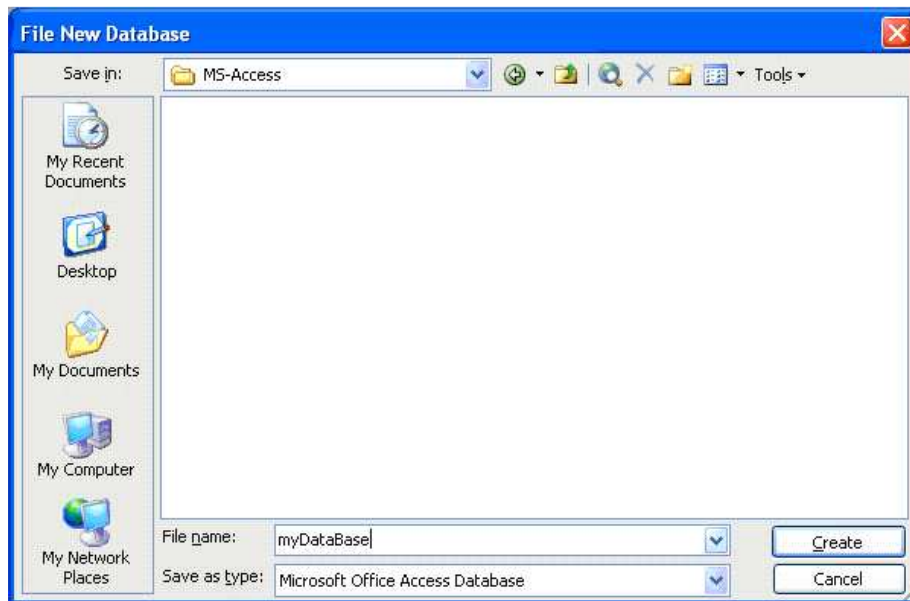
	A	B	C	D	E
1	x-coord	y-coord	layerA	layerB	
2	2	3	12.3	40.15	
3	4	8	21	49.34	
4	8	6	18.9	25.82	
5	7	1	15.2	55.36	
6	1	9	16	63.61	
7	5	4	10.6	32.75	
8	9	8	9.8	41.55	
9	6	7	11	36.21	
10	10	1	14.5	44.94	
11					

Now we want to create a database and make some queries on it. So open Microsoft Access.

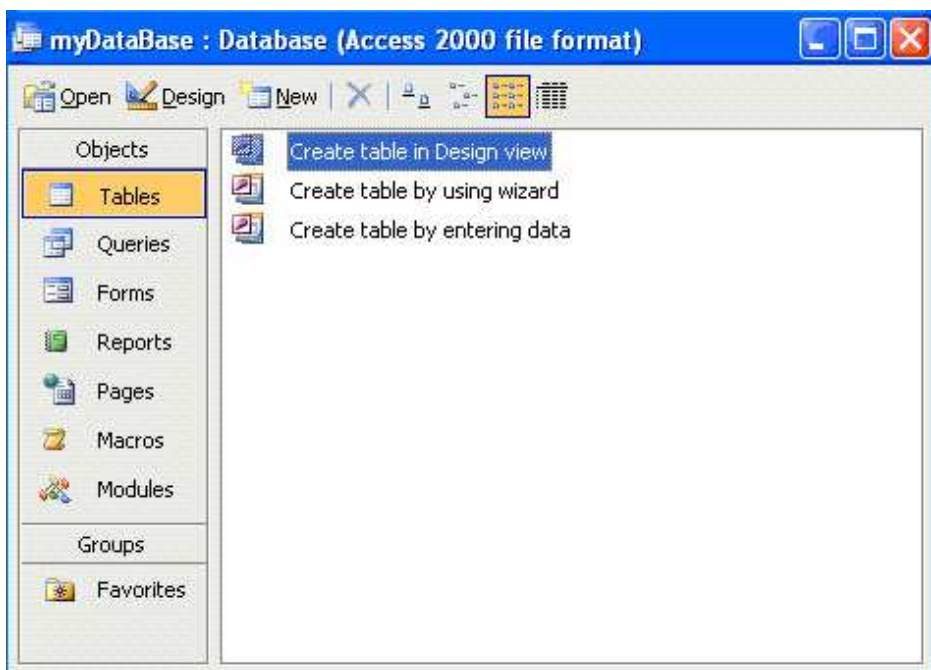
Click on 'File', choose 'New'. On the right side there will appear a new pan with name 'New File'. Click on 'Blank database...'



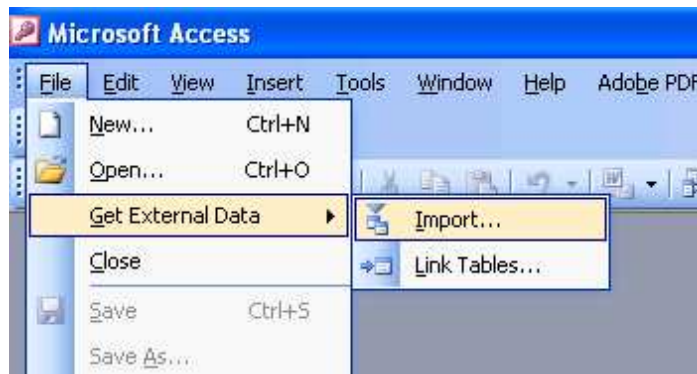
Now select a folder or create a new folder to save your data there. Here, we opened a folder named 'MS-Access' and saved the created database as 'myDataBase'. Click on 'Create'.



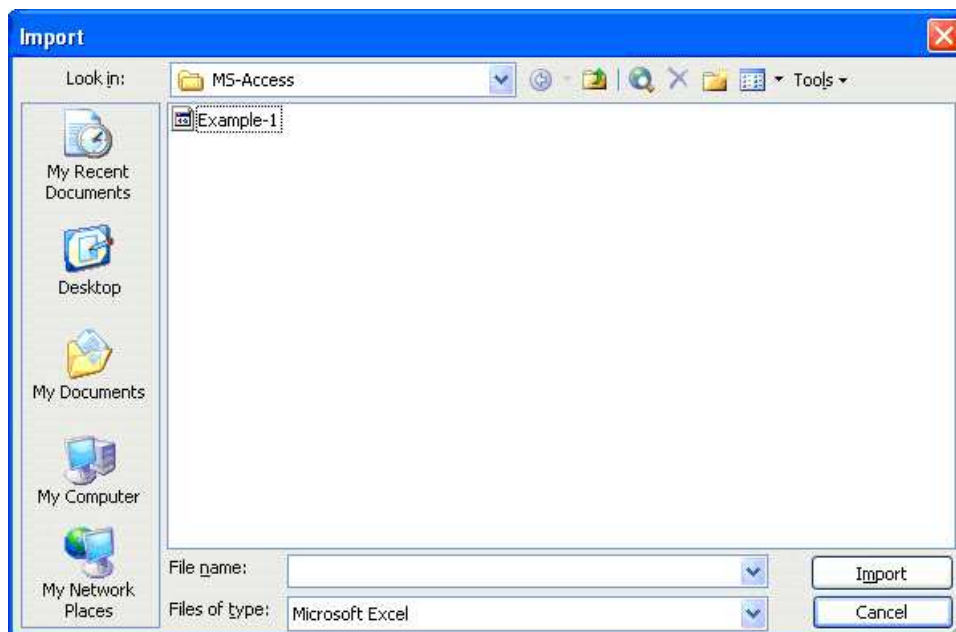
Now the first step towards creating Access Database has just started. You will see by default 'Tables' and 'Create table in Design view' is selected.



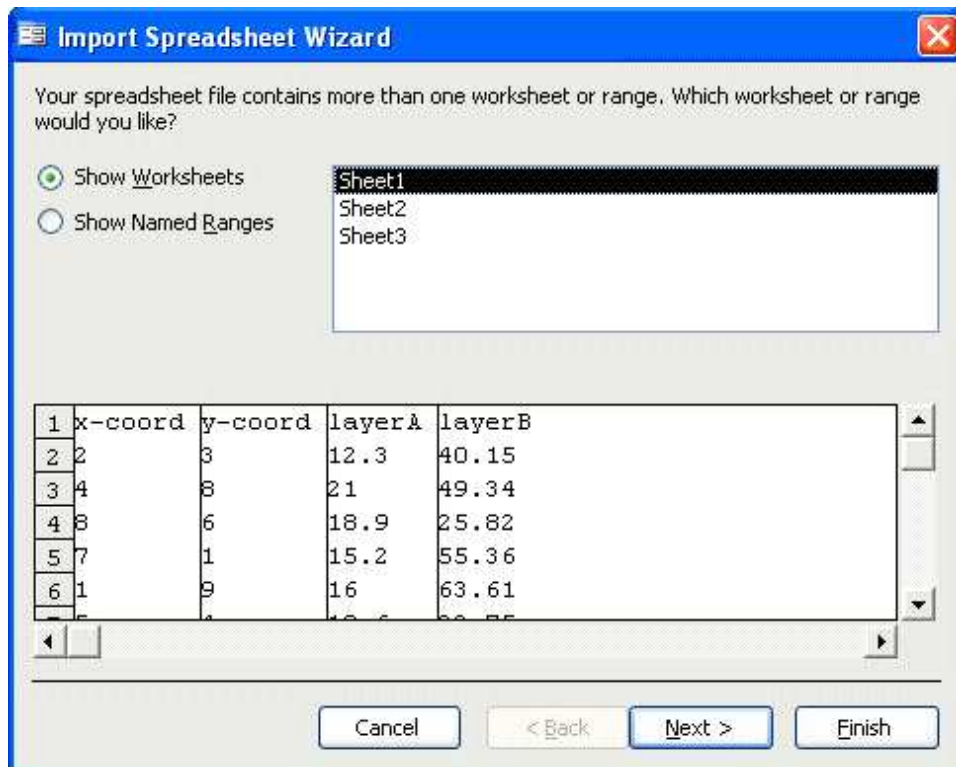
Now you have to import the Excel data sheet. So go to 'File' and click on 'Get External Data' then 'Import'.



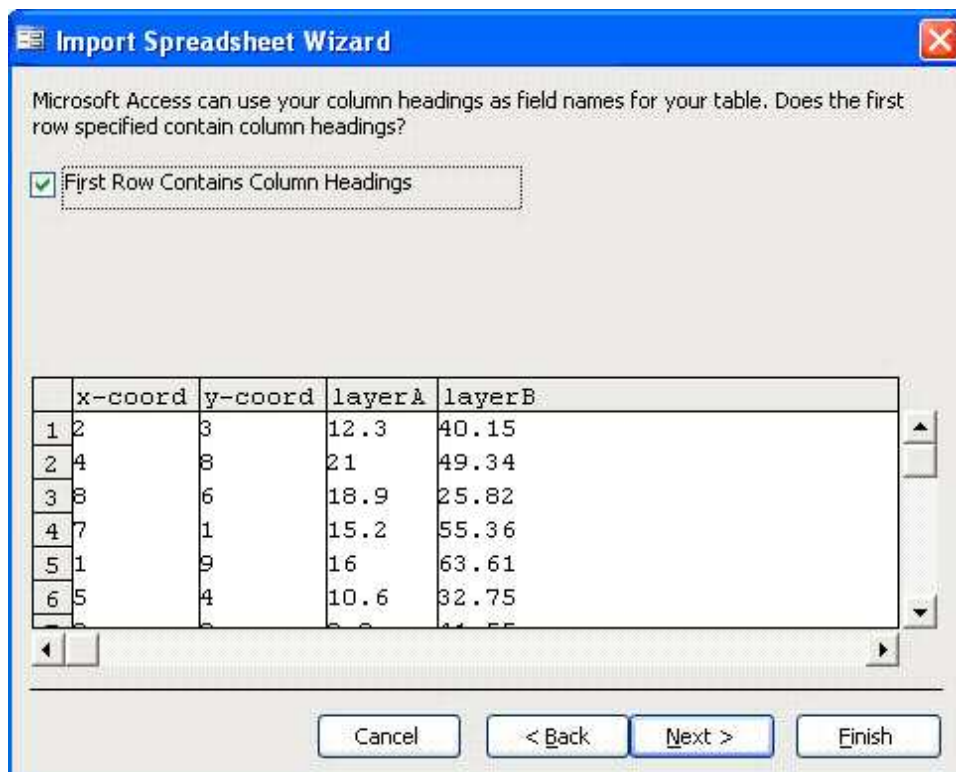
Now import the excel file. Here it's Example-1.xls. Select the file and click on 'Import'.



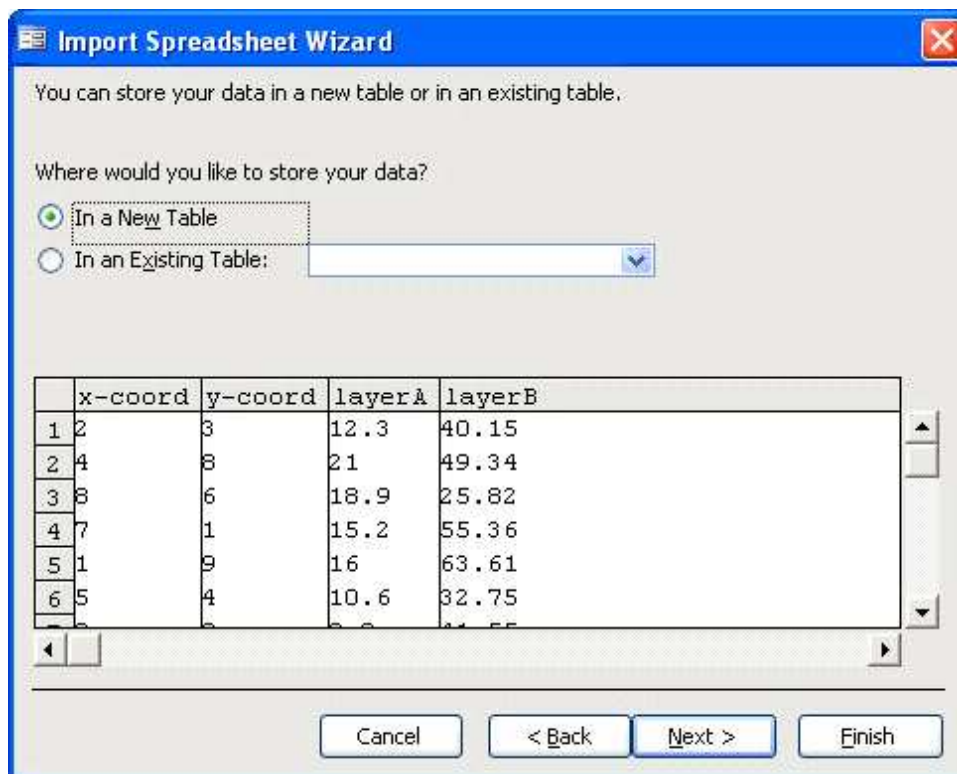
Now 'Import Spreadsheet Wizard' will open. As you see, you could have many sheets in your excel file and you could work with any one of them. Here we remain on 'Sheet1'.



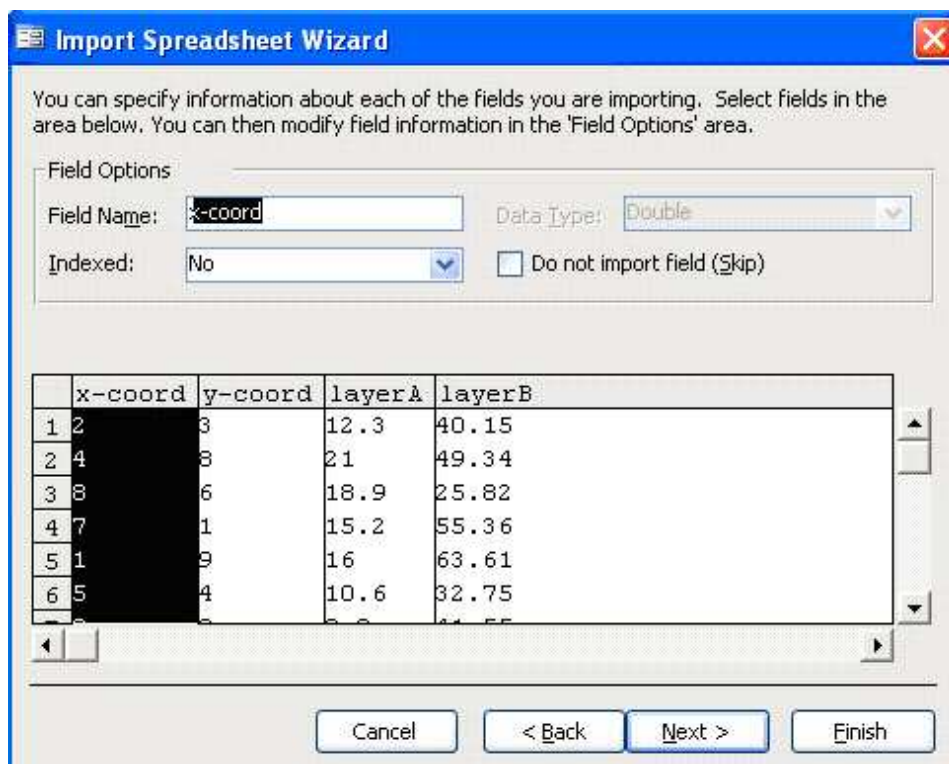
Click on 'Next'. You will get the following wizard.



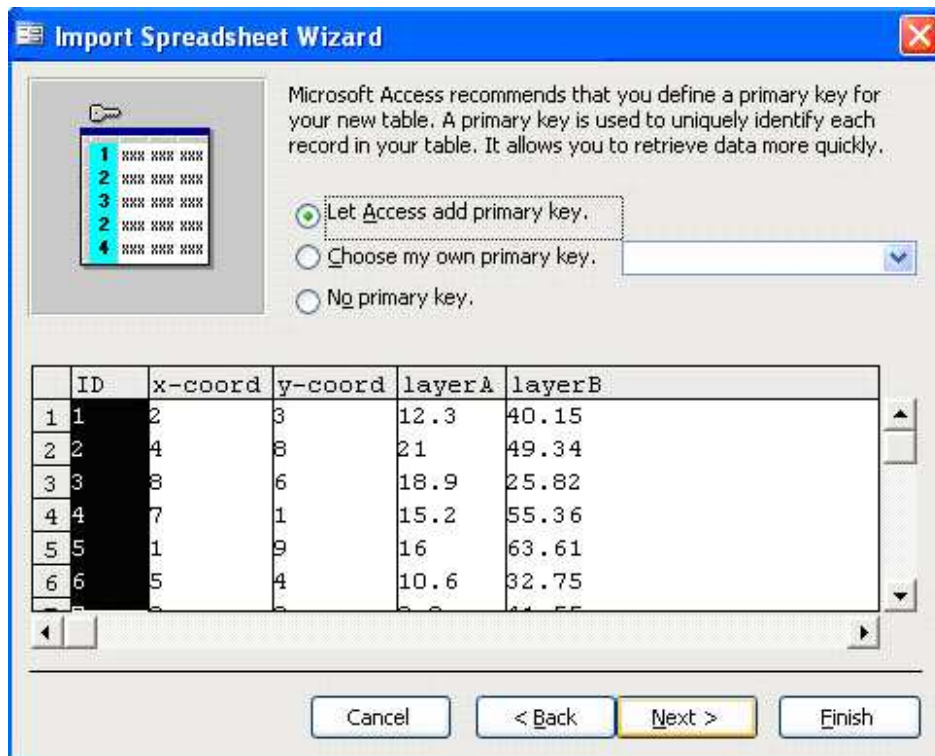
Click 'Next'. Let's say you would like to store your data 'In a New Table'.



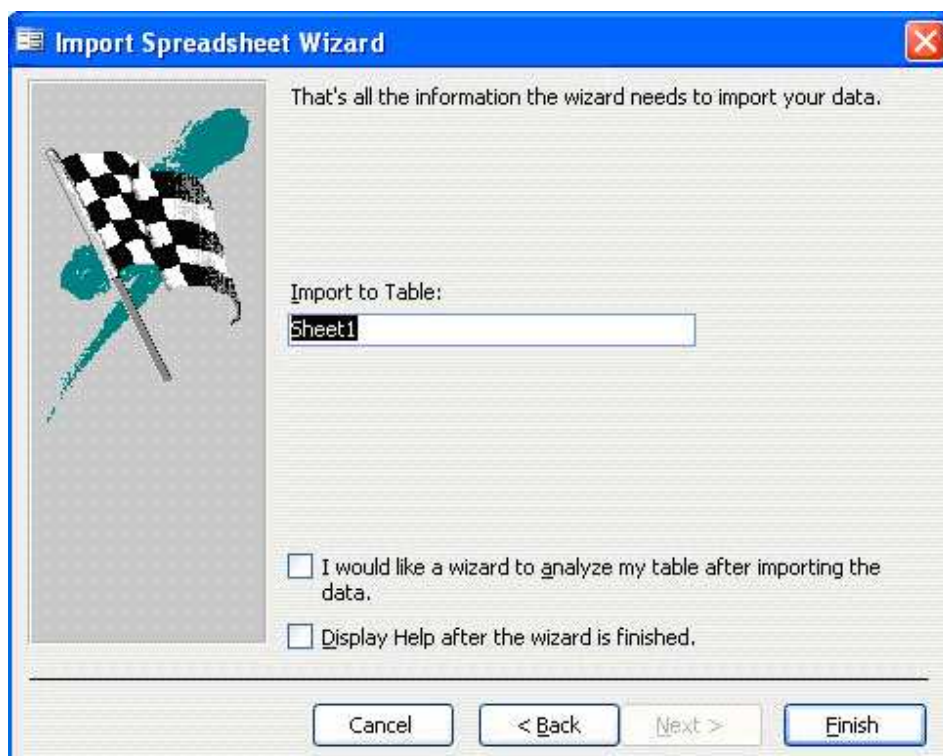
Click 'Next'. Now the following wizard appears. Here you can click on each column and name them differently if you want. You can choose the Data Type as well (here it's inactive). **So before click 'Next', click on each column and choose names and data type accordingly.** When satisfied, click on 'Next'.



Now you will be in the following wizard. Here you will see in the first column you have 'ID' numbers for your data.



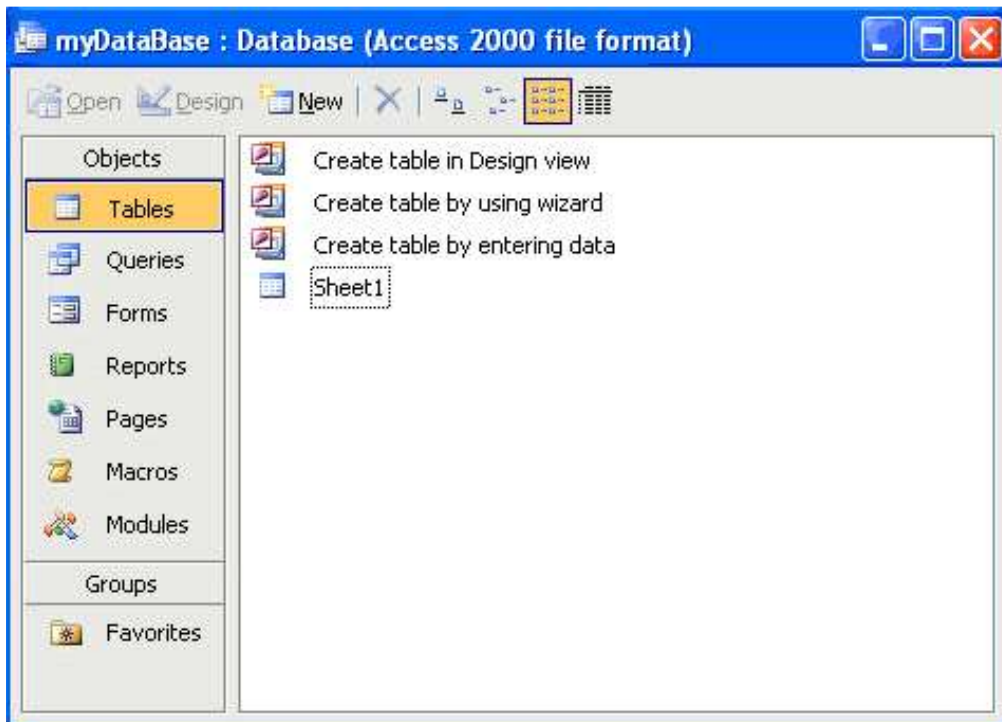
Click 'Next'. Here you can choose any name for the newly created table. We remain on 'Sheet1'..



Now click on 'Finish'. You will get a small message. Click 'OK'.



Now you have your first Access Database as table named 'Sheet1'.



Now click on 'Sheet1' and view your first table in Access.

Sheet1 : Table						
	ID	x-coord	y-coord	layerA	layerB	
▶	1	2	3	12.3	40.15	
	2	4	8	21	49.34	
	3	8	6	18.9	25.82	
	4	7	1	15.2	55.36	
	5	1	9	16	63.61	
	6	5	4	10.6	32.75	
	7	9	8	9.8	41.55	
	8	6	7	11	36.21	
	9	10	1	14.5	44.94	
*	(AutoNumber)					

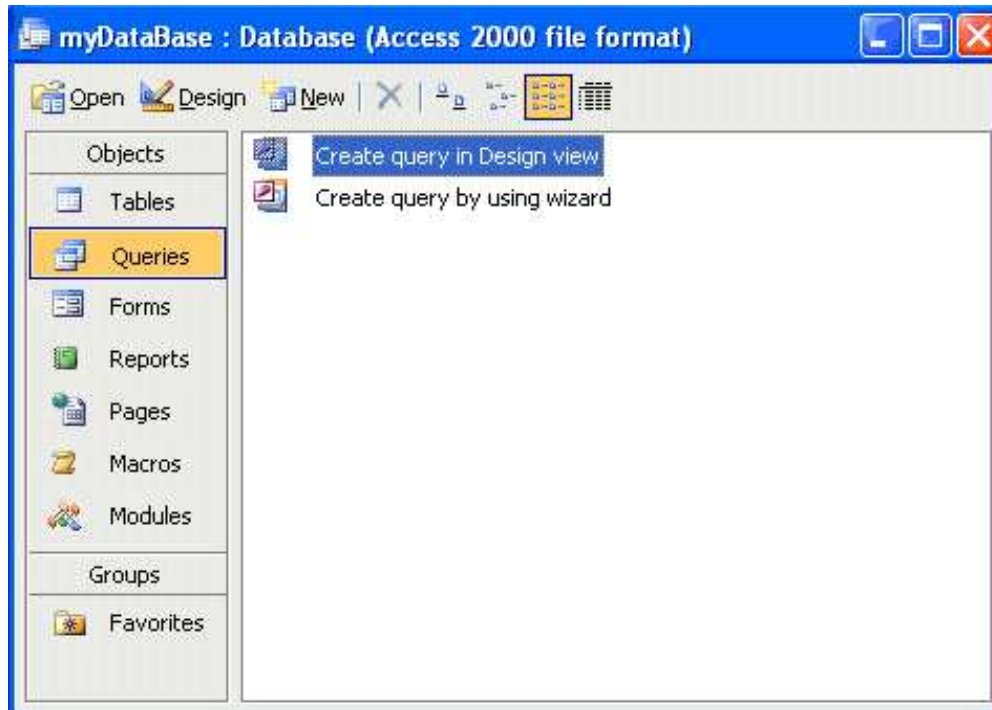
So far your first Access Table is now ready. Great!!!

Let's make a query:

Now you have your database and you would like to make some queries on it (let's say).

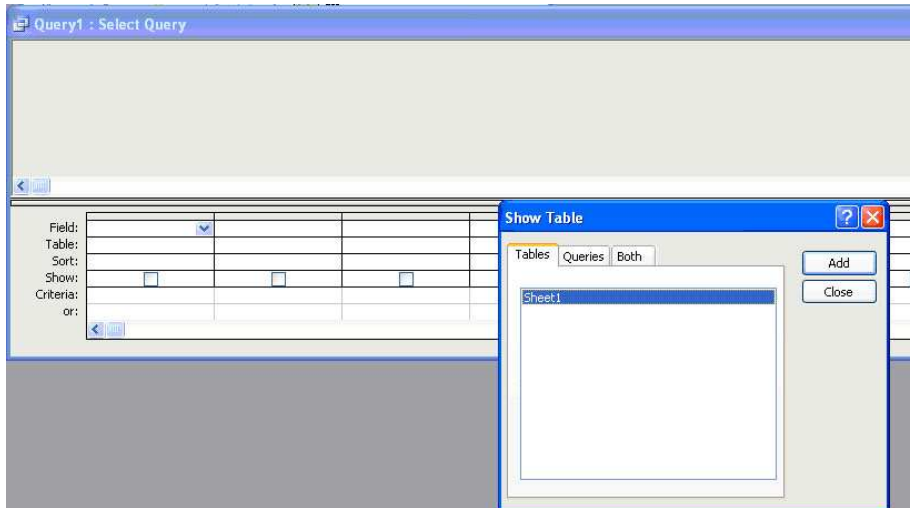
Let's say that you want to calculate the layer differences to get the thickness. So, Layer differences (i.e. thickness) = layerB – layerA.

Click on 'Queries', and then double click on 'Create query in Design view'.

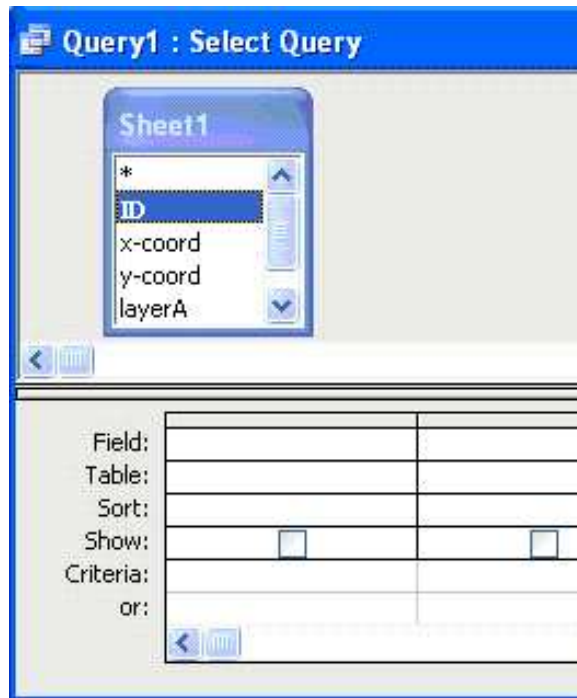


The following window will open. You will see 'Sheet1' is already on the window named 'Show Table'. You can double click on 'Sheet1' or simply click on 'Add' to add your table on the query wizard. Close the 'Show Table' window.

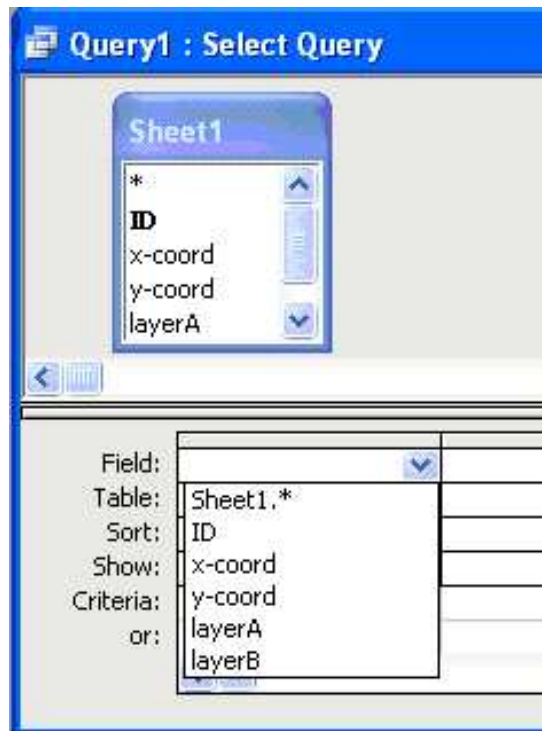
You could have many sheets and you can add them all to perform queries.



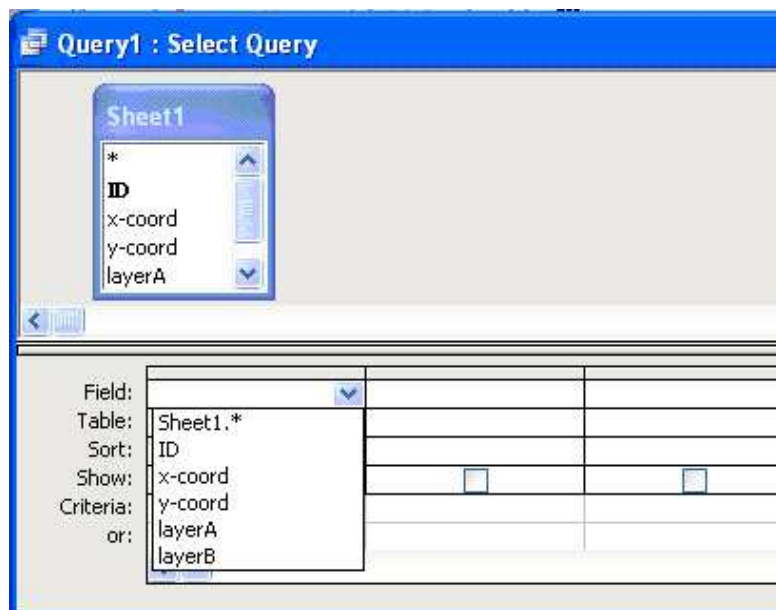
Now you will be in the following window. Here you can see all your table attributes like ID, x-coord, y-coord, layerA and layerB.



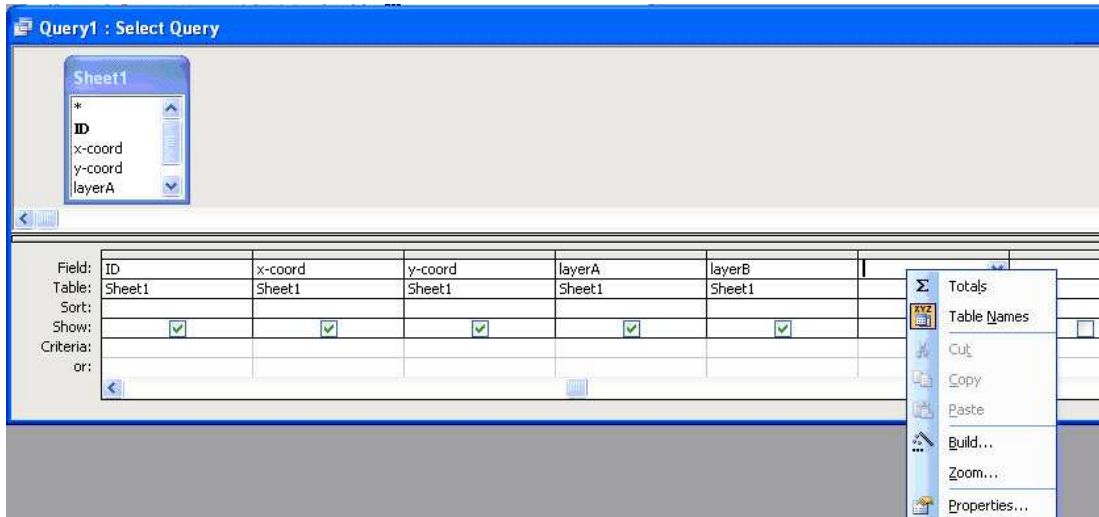
Now come to the first cell on the first column and first row of the query window. Click the blue dropdown arrow.



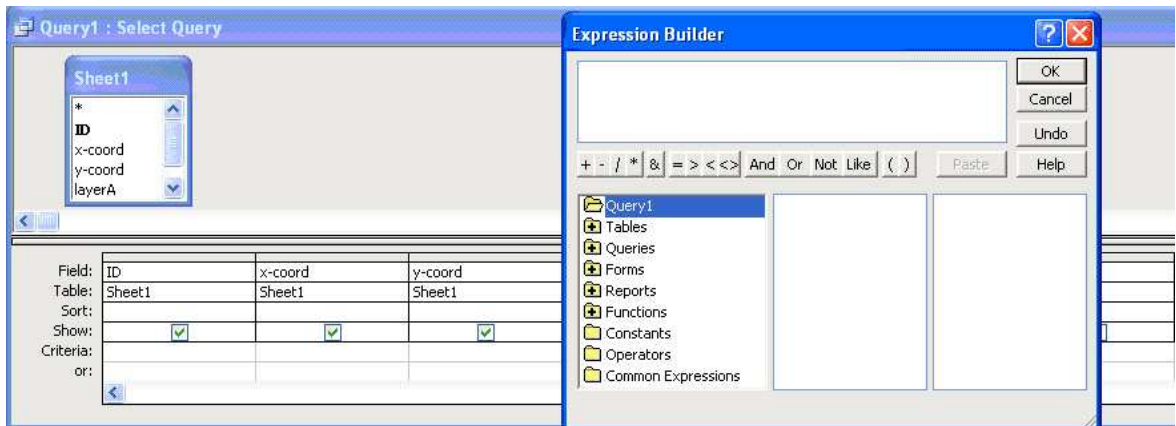
Select 'ID' from the dropdown list.



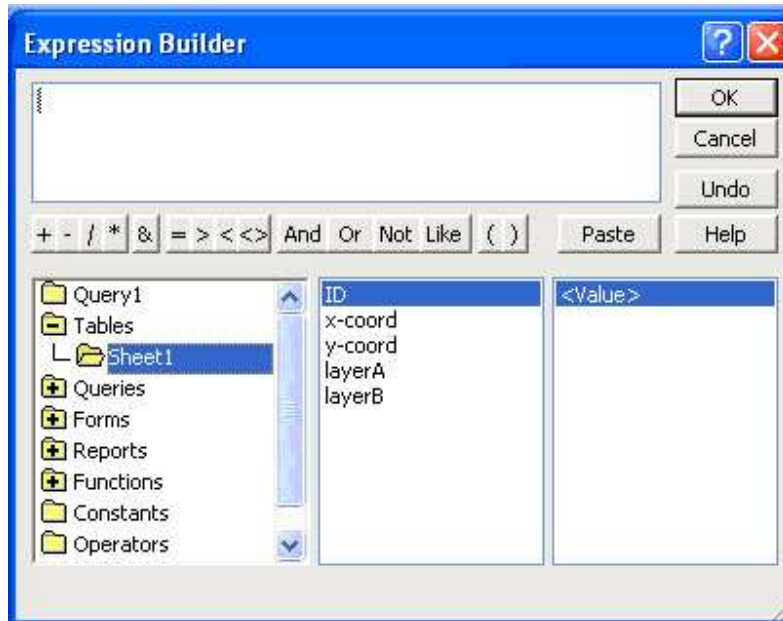
The same way go to the next cells and select x-xoord, y-coord, layerA and layerB on each cell (on the first row). It will look like the following window. **Now click on the 6th cell and press the right mouse button.** You will get a small window with some functions. **Click on 'Build'** to build your query.



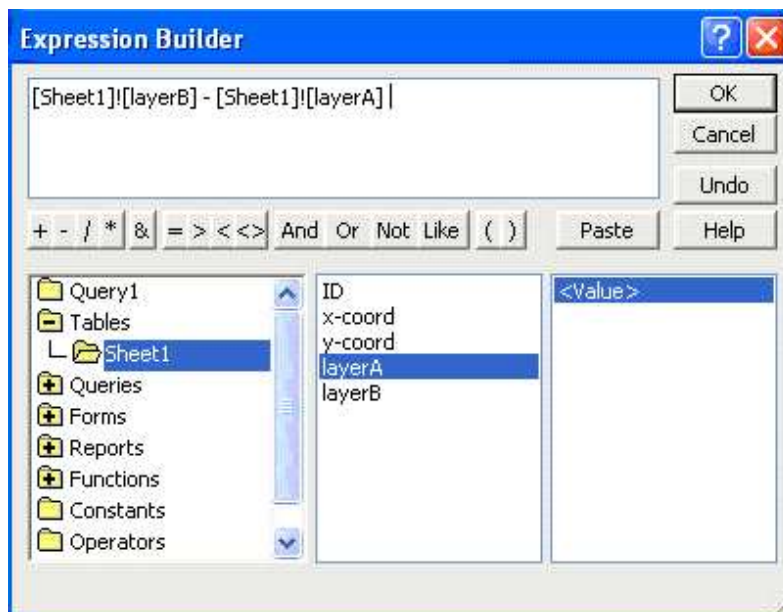
The window titled 'Expression Builder' will open.



Double click on 'Tables', your 'Sheet1' will open. Click on 'Sheet1'. Again you will have your all table attributes there.

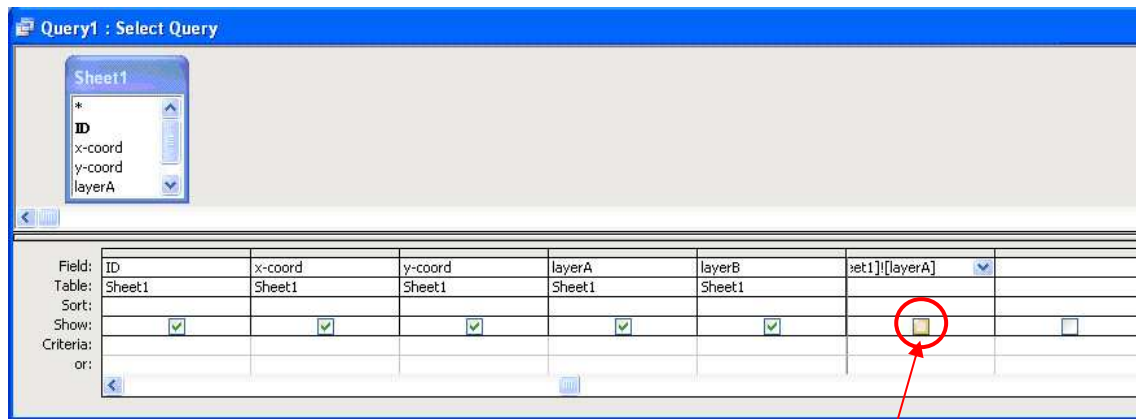


Now double click on 'layerB', select the minus sign (-), then double click on 'layerA'. Your Expression Builder should now look like this. Click OK to close your builder window.



Now you will be on the Query Window again.

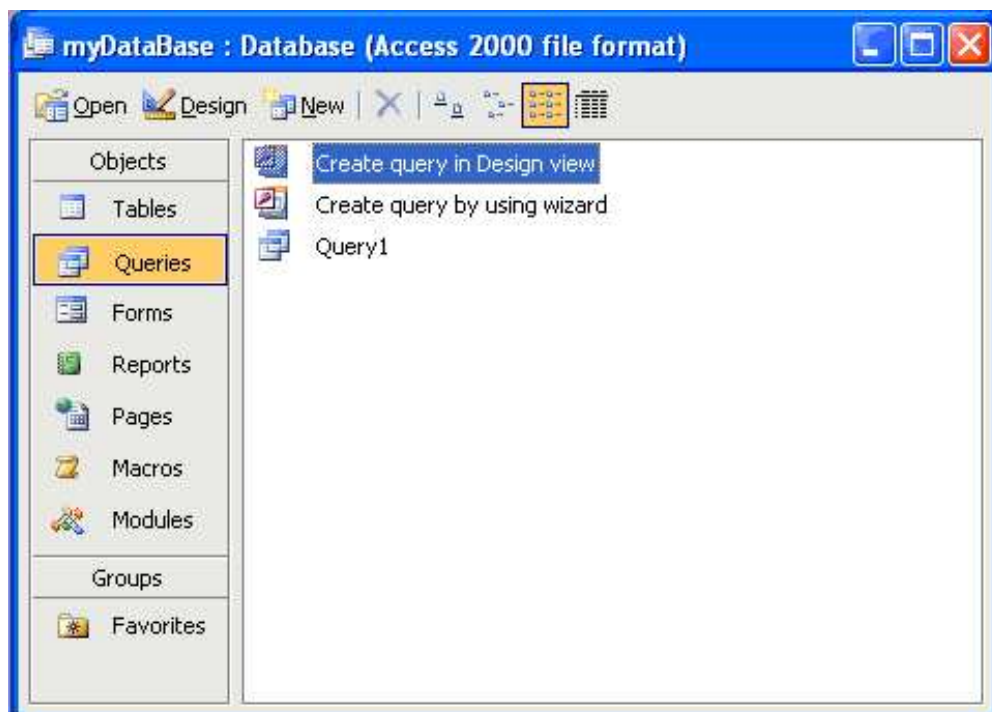
Important: Don't forget to click on the small check box in this new cell.



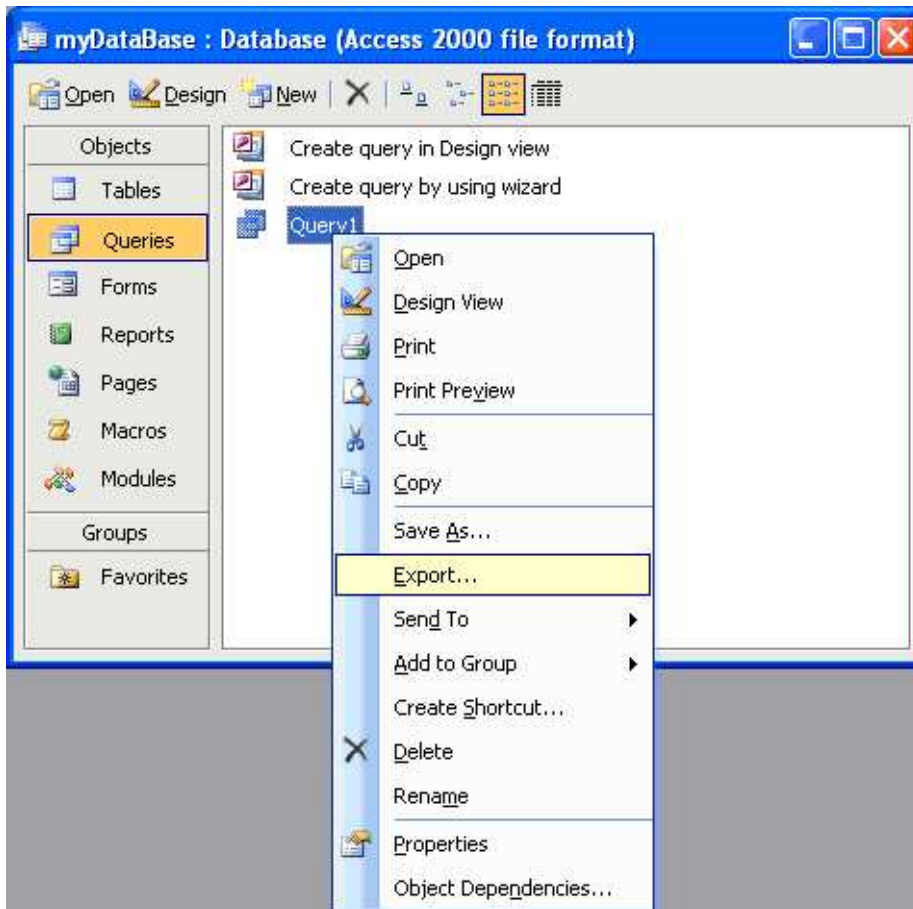
Don't forget to 'tick' this small check box. Most probably you have click twice. It's little bit tricky :-).

Now go to 'File' and 'Save as' to save your query. Here you can choose any name. We remain on 'Query1'. Close your query window. You will be back on the database window. Here you are on the query object. Look on the left under 'Objects' you have many objects like 'Tables', 'Queries', 'Forms', 'Reports' etc.

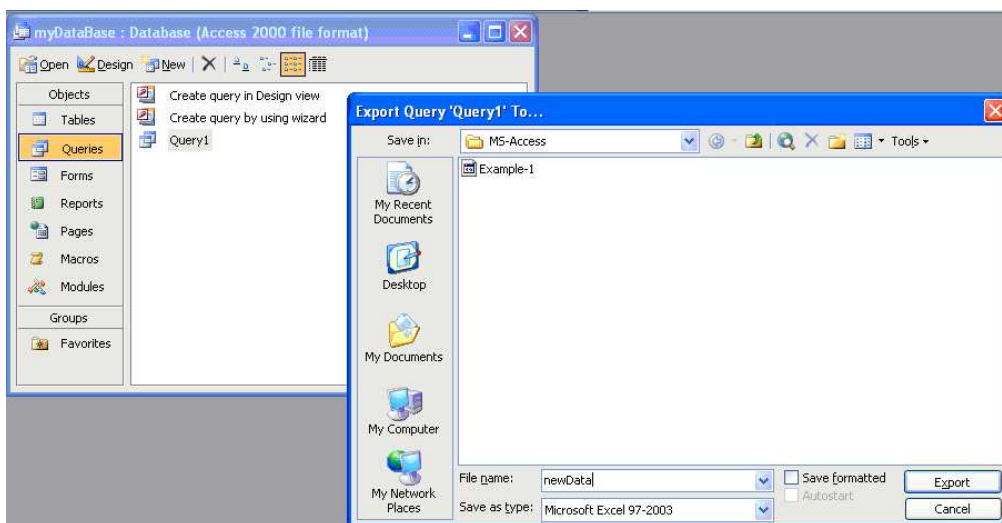
You can double click on 'Query1' to open the query you just performed.



Now let's say that you want to export your table to Excel for any of your specific interest. Click 'Query1' then click right mouse button. Here you will see 'Export' option.



Now you can export your query in any excel form like .xls or .dbf files based on your requirements.



Now open your exported file in Excel. Here column K is showing you the calculated differences.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Expr1000	Expr1001	Expr1002	Expr1003	Expr1004	ID	x-coord	y-coord	layerA	layerB	Expr1	
2	1	2	3	12.3	40.15		1	2	3	12.3	40.15	27.85
3	2	4	8	21	49.34		2	4	8	21	49.34	28.34
4	3	8	6	18.9	25.82		3	8	6	18.9	25.82	6.92
5	4	7	1	15.2	55.36		4	7	1	15.2	55.36	40.16
6	5	1	9	16	63.61		5	1	9	16	63.61	47.61
7	6	5	4	10.6	32.75		6	5	4	10.6	32.75	22.15
8	7	9	8	9.8	41.55		7	9	8	9.8	41.55	31.75
9	8	6	7	11	36.21		8	6	7	11	36.21	25.21
10	9	10	1	14.5	44.94		9	10	1	14.5	44.94	30.44
11												
12												
13												

So, now you are ready with your first query. Your performance is ‘very good’ :-).

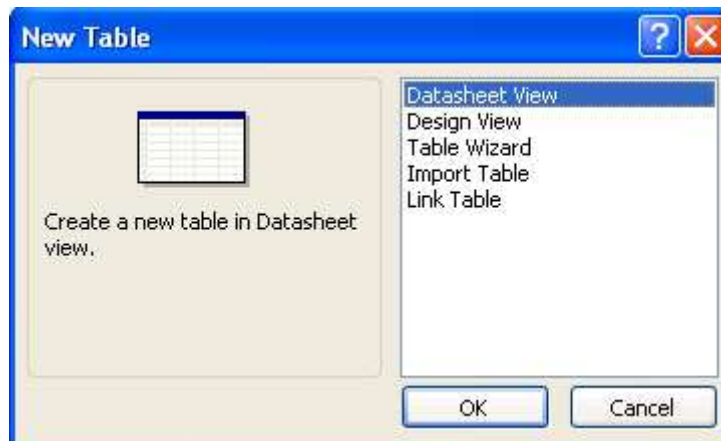
Additional:

However, here we performed queries only on one table. **If you need to perform queries on several tables, then from the ‘Insert’ menu you can add them.**

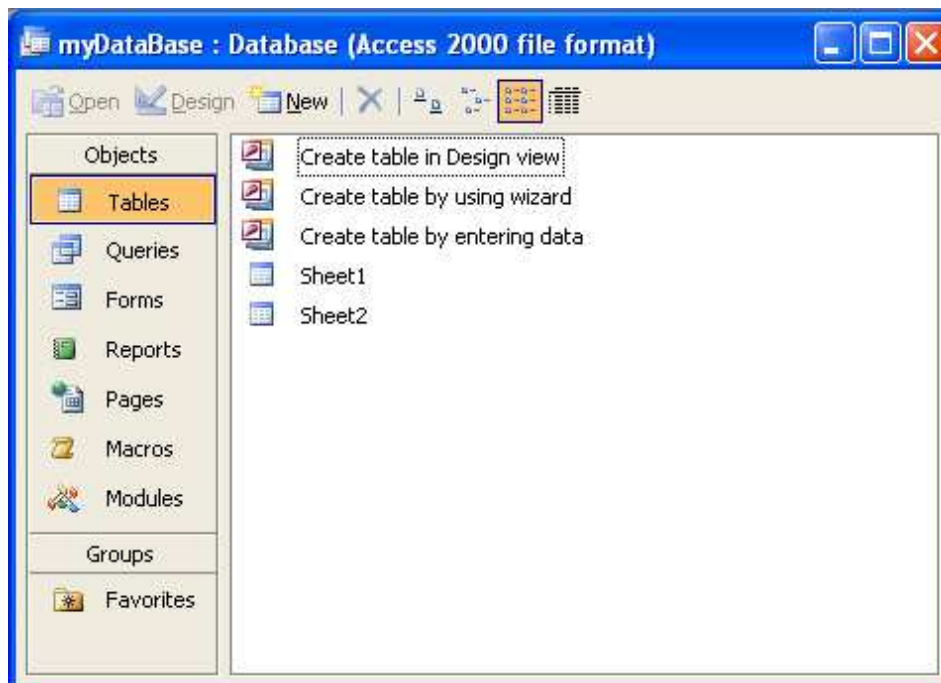
Click on ‘Insert’. The following options will open.



Click on ‘Table’. The following window will open. Click on ‘Import Table’ to import tables from any other database.



Here let's say you have imported another table from any other database. Here the table name is 'Sheet2'.



Now you can perform queries on both tables.

Now you know how to create a database in MS Access and how to perform queries on them (doesn't matter how many tables you have).

Great!!! Hope you will now enjoy working with Microsoft Access.

Acknowledgement: Special thanks to Mr. Tobias Bieling, Institute of Geosciences, Martin-Luther University Halle, for his kind attention and time.