Year 12 : Visual Basic Tutorial.

ADO - Adding SQL statements.

SQL stands for Structured Query Language. It is a language used to select or update data in a database.

You need to become familiar with the structure of SQL SELECT statements.

Here is an example :

SELECT PatientID, Surname, Forename FROM [Patients] WHERE Surname = 'Jones' ORDER BY Surname

This will filter out all the Patients with surname 'Jones', and sort the results in alphabetical order of Surname.

..but don't panic - there is a Query Builder wizard that will do this for you!

You will also look at a really useful object for displaying data - the DataGridView.

[1] Open the Hospital application from the previous chapter.

Delete all the Labels and TextBoxes... you are going to replace it with a DataGridView.

From the Data Sources window, drag the Patients Table onto the form. A DataGridView will appear, but you may need to adjust its size.

🖶 Hospital Database 📃 🗆 🗶					
🛿 🖣 🖣 1 of 11 📄 🔰 🕂 🚰 🗙 🛃					
	PatientID	Surname	Forename	WardID 🔺	
►	P1	Smith	Tommy	W3	
	P2	Jones	Larry	W2	
	P3	Davies	Paul	W3	
	P4	Sanders	Jenny	W1	
	P5	Watson	Wendy	W1	
	P6	James	Jimmy	W3	
	P7	Jenkins	Ann	W2	

Run the program and all the data records should be displayed in a grid.

The DataGridView is a very powerful tool for displaying data and can be formatted in many ways - worth having a good look at this for your coursework!

HANDS ON

STUDY THIS [2] Let's filter the data now. Suppose we only wanted to view the Patients in Ward W1, and we would like them displayed in alphabetical order of surname.

In the Designer view, click on the DataGridView and then in the [Data] menu, select [Add Query]. This dialog box should appear...

Search Criteria Builder	? ×				
Choose an existing query or enter a new query below. A ToolStrip will be added to the form to run the query. To edit an existing query or use stored procedures use the Configure command on the TableAdapter in the DataSet Designer.					
Select <u>d</u> ata source table:					
hospitalDataSet.Patients					
Select a <u>p</u> arameterized query to load data:					
New guery name: FillBy					
C Existing query name:					
Query Text:					
SELECT PatientID, Surname, Forename, WardID FROM Patients					
	-				
र	Þ				
Sample: SELECT ColumnName1, ColumnName2 FROM Query Bu	uilder				
TableName WHERE ColumnName1 = ?					
OK Ca	ancel				

The default Query for the Patients Table Adapter is displayed.

You could enter your SQL statement in the Query Text box, but let's use the Query Builder...

The data source table is displayed and should not be changed - we are displaying data from the Patients table.

In the Query builder...

- set the Sort Type for the [Surname] field to be 'Ascending',
- set the Filter for the [WardID] field to be 'W1'

You will see the SQL text change automatically in the text box at the bottom.

ery Bu	ilder Potients All Columns) PatientD Surname Forename	- 21					
	WardID	7					
							•
	Column	Alias	Table	Output	Sort Type	Sort Order	Filter
ł.	Surname		Patients	2	Ascending	1	
	Forename		Patients				
	WardID		Patients	1			= 'W1'
i.	1				L		1.00
ELECT ROM /HERE RDER	PatientID, Surna Patients (WardID = 'W1') BY Surname	me, Forenan	ne, WardID				
4	0 of 0	► ►[►					
Execu	te Query					QK	⊆ancel

Click [OK]. The SQL text will be automatically transferred.

You just need to give the new query a name - 'Ward_1'

Search Criteria Builder	? ×
Choose an existing query or enter a new query below. A ToolStrip will be added the form to run the query. To edit an existing query or use stored procedures us the Configure command on the TableAdapter in the DataSet Designer.	to se
Select <u>d</u> ata source table:	
hospitalDataSet.Patients	
Select a parameterized query to load data:	
New guery name: Ward 1	
C Existing query name:	
SELECT PatientID, Surname, Forename, WardID	
FROM Patients WHERE (WardID = 'W1') ORDER BY Surname	
T.	T
Select ColumnName1, ColumnName2 FROM Select ColumnName1, ColumnName2 FROM TableName WHERE ColumnName1 = ?	er
OK Cano	el

Make sure your screen looks like the one above .. and click [OK]

VB will add a new Toolbar to your program with a Button on it for the Query.

[3] Run the program and click the button and you should see the Patients in Ward W1 displayed in alphabetical order of surname.

🔡 Hospital Database 📃 🗆 🗶						
🚺 🖣 📔 of 4 🕨 🔰 🕂 🕁						
Ward_1						
	PatientID	Surname	Forename	WardID		
•	P8	King	Pauline	W1		
	P4	Sanders	Jenny	W1		
	P10	Simons	Jack	W1		
	P5	Watson	Wendy	W1		
*						

Important Note : If you need to edit this query, go to the Dataset Designer, and use the Configure option on the Query.