Analyzing a subset of data

Data for analysis

	Α	В	С	D	E	
1	Departmen	Year	Quarter	Sales Volu	Sales Reve	enue
2	A01	2003	1	100,000	1,000,000	
3	A01	2003	2	110,000	1,100,000	
4	A01	2003	3	95,000	1,045,000	
5	A01	2003	4	120,000	1,140,000	
6	A01	2004	1	122,000	1,159,000	
7	A01	2004	2	121,500	1,154,250	
8	A01	2004	3	124,500	1,151,625	
9	A01	2004	4	125,500	1,160,875	<i></i>
10	A02	2003	1	40,000	800,000	
11	A02	2003	2	41,200	824,000	
12	A02	2003	3	42,400	848,000	
13	A02	2003	4	43,700	874,000	
14	A02	2004	1	46,300	879,700	
15	A02	2004	2	48,200	915,800	
16	A02	2004	3	50,100	951,900	
17	A02	2004	4	52,100	989,900	
			Figure 1			

Analysis example

In this case study, we will create a solution for the following two questions. For the department specified in a particular cell and the year specified in another cell, what are the annual sales volume and the annual sales revenue?

Using array formulas

Using named ranges

Using filter and the SUBTOTAL function

Creating a condensed list with formulas

Add flags to the original data

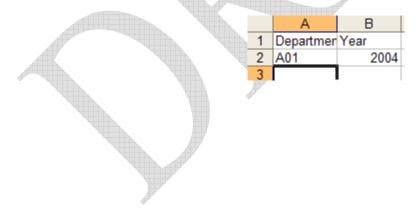
Using MS Query

This is an unfortunately oft-overlooked capability that is also very powerful. It automatically adjusts to new data in the dataset and is the only simple way of automatically updating the result when the analysis *criteria* change.

For an introduction on using MS Query with Excel worksheets, see: Building and using a relational database in Excel (with a little help from MS Query) <u>http://www.tushar-mehta.com/excel/newsgroups/rdbms_in_excel/index.html</u>

The reader should be familiar with that material.

Prepare for a parameterized query by specifying the Excel cells that will contain the values for the query. In a new worksheet, named *MS Query filter*, enter:



Create a parameterized query

Once the basic MS Query design is complete, the window should look like:

Aicrosoft Query
File Edit View Format Table Criteria Records Window Help
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Query from Excel Files
^{'Original data\$'} * Department Quarter Sales Dollars Sales Units Year
Department Year Quarter Sales Units Sales Dollars

To specify parameters (also called criteria) for this query, first make the criteria visible by checking **View** | **Criteria**. Then, add all the criteria with **Criteria** | **Add Criteria**... From the Field drop-down select *Department*, from the **Operator** drop-down select *Equals* and in the Value field enter *[Enter dept]*. **The pair of square brackets is very important.** It tells MS Query that the criteria will be provided when the query is run.

		Tester, Act	
Add C	Criteria		
And	C Or		Add
Total:	-		Close
Field:	Department	•	
Operator:	equals	•	
Value:	[Enter dept]		Values

■ Query	fron	n Ex	cel F	iles		
^{'Original d} * Department Quarter Sales Dolla Sales Units Year	rs					
Criteria Field: Value: or:	Departm [Enter d			'ear Enter year]		
	<					
Departm	ent Y	ear (Quarter	Sales Units	Sales Dollars	
I Record	l:	► H			Ť	
			Figu	re 2		

Add conditions for both Department and Year. The result should look like:

To return to Excel, select **File** | **Return data to Microsoft Office Excel**. MS Query will ask for the values for the department and the year. For the time being provide any valid value such as A01 and 2003. Note that what was entered within the square brackets while creating the criteria is now shown by MS Query as a 'guide.'

Enter Parameter Value	X
HS Enter dept	
OK Cancel	

Link the parameter values to Excel cells and automate query processing

Once back in Excel, the Import Data dialog box will look like:

Import Data	
Where do you want to put the data? Existing worksheet: 	OK Cancel
○ <u>N</u> ew worksheet	
Create a PivotTable report	
P <u>r</u> operties Para <u>m</u> eters	. Edit <u>Q</u> uery

Click on the **Parameters...** button. In the resulting dialog box, select the first criterion, *Enter dept*. Then, select the **Get the value from the following cell:** option. In the **field underneath it**, specify the cell (it will be easier to just click in the cell) and to automate the process, check the **Refresh automatically when cell value changes**. Similarly, provide the necessary information for the other parameter *Enter year*.

		A	В	С	D	E	F	G	H		J
	1	Departmen	Year								
		A01	2003	Param	leters						X
	3										
	4					I	How paramete	er value is obt	ained:		
	5			Enter dep			O Prompt f	for value using	g the followin	g string:	
	6			Enter yea	r						
	7							C 1 C 1			
	8							following valu	le:		
	9						A02				
	10						O Get the	value from th	e following ce	dl:	
~	11						='MS O	uery filter'!\$A	\$2		
	12										
	13							sh automatic			
	14					<u>×</u>					
	15										
	16								ОК		ancel
	17								1		

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	A	B	С	D	E	F	G	H		J
1	Departmer									
2	A01	2003	Paran	neters						
3										
4						How paramete	er value is obt	tained:		
5			Enter dep		~	O Prompt f	for value usin	ig the followin	ng string:	
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12						-110 Q	aci y niteci : qu	· 4-1		
13						Refre	sh automatic	ally when cell	l value change	es
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15										
16						N		OK		ancel
17						μţ				

Figure 3

Back in the Import Data dialog box, specify where the MS Query result should go.

	E	F	G	Н		J	K
		Im	port Da	ta			
			re do you war xisting worksł	nt to put the dat neet:	ta?	Can	
		_	='MS Query	filter'!\$E\$1	1		_
		0	lew workshee	t			
			Create a Pivot	Tak report			_
			Pro	perties	Para <u>m</u> eters	Edit Que	ery
				Figure 4			
The result	will look l	ike:	1 and a second s				

	A	В	С	D	E	F	G	Н	1
1	Departme	r Year			Department	Year	Quarter	Sales Volume	Sales Revenue
2	A02	2003			A02	2003	1	40,000	800,000
3					A02	2003	2	41,200	824,000
- 4					A02	2003	3	42,400	848,000
- 5					A02	2003	4	43,700	874,000
6	Figure 5								

The beauty of this approach is that as one changes the value in A2 or B2, Excel will automatically re-query the database!

This limited subset of the original data can be used as necessary, including for a PivotTable. An obvious question that comes to mind is why not use a PivotTable directly? After all, a PivotTable also allows one to specify an external data source. The answer is simple. A PivotTable linked to a MS Query cannot contain parameters that are specified at query run-time.

An alert

Do note that opening a workbook that contains a MS Query with automatic refresh capability results in a Query Refresh dialog box. Obviously, one should select *Enable automatic refresh*.

	Victorial Victorials.
Query Refresh	
G:\Work\publishing\XL_VBA Case Studies\limited sulket.xls	
This workbook contains queries to external data that refree	
Queries are used to import external data into Excel, but ha confidential information or write information back to a data	
If you trust the source of this workbook, you can enable a automatic query refresh, you can later refresh queries mar safe.	
Enable automatic refresh	Disable automatic refresh
AT	