

COMPUTER TRAINING WORKSHOP

Intermediate Excel 2003

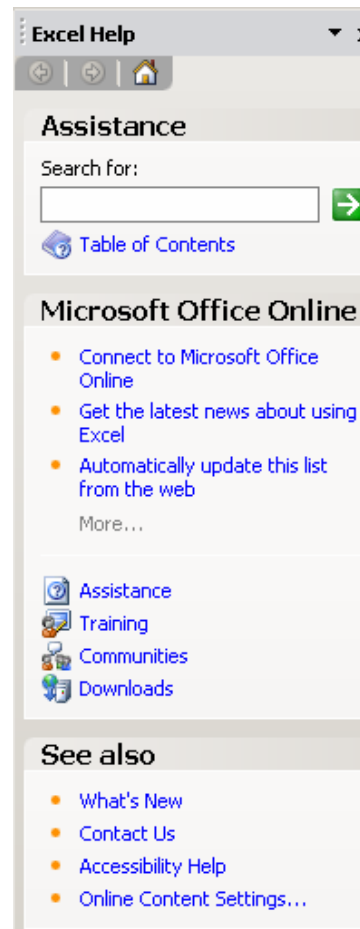
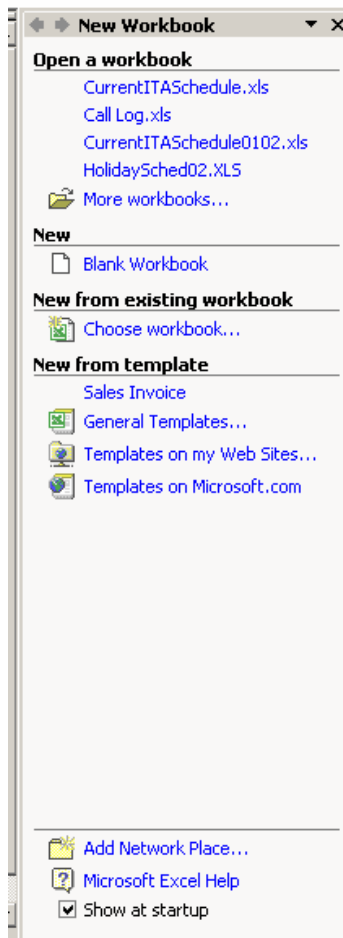
Presented By
Information Technology Services Support

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New Task Pane

A new task pane was added to Office XP and now improved in 2003 to allow for easy access to available tasks through Microsoft Office Online. The task pane can be found on the toolbar menu: View > Task Pane or go to Help>Microsoft Excel Help. The Table of Contents breaks down the topics in Excel 2003. The task pane can either stay in place or you may close the pane.



Ranges

A range can be selected in various ways. A continuous row of cells, an entire column, an entire row, non-adjacent cells and a range of any adjacent cells.

2	Susan	12555	16435	14556
---	-------	-------	-------	-------

C
February
16435
20887
16435
21455

B	C
Total Student	Classes
30	2
20	1
15	1
25	2
22	3
40	2

	A	B	C	D
1		January	February	March
2	Word	25	24	20
3	Excel	33	37	33
4	PowerPoint	43	48	45
5	Windows	40	42	30
6	Mac	27	32	29
7	FirstClass	38	42	28

	A	B	C	D
		Jan	Feb	March
	House	450.00	450.00	450.00
	PGE	100.00	105.00	95.00
	Water	25.00	25.00	25.00
	Cable	19.00	19.00	19.00
	Telephone	15.00	14.00	14.50
	Food	225.00	220.00	185.00
	Gas	45.00	42.00	48.00
	Misc.	150.00	120.00	85.00
	Total	1,029.00	995.00	921.50

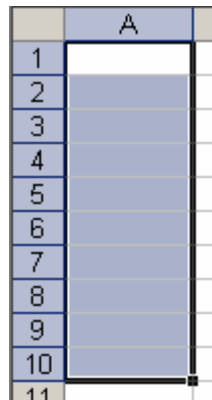
Selecting A Continuous Range With The Mouse

To select a range:

1. Click and hold the mouse button on the upper left cell where you want the range to start. Select a range a1 to d10.

	A
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

2. Drag and release the mouse to the lower right cell to be included in the range.



Naming Ranges

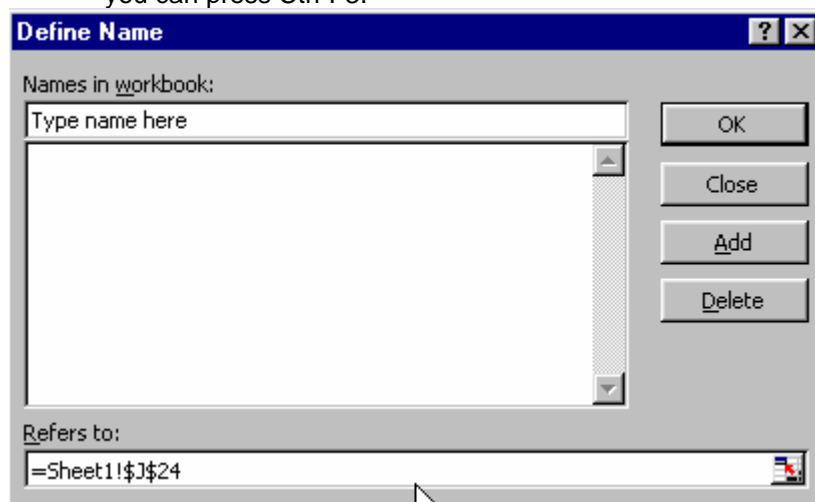
If your data does not have labels or if you have information stored on one worksheet that you want to use on other sheets, you can create a name that describes the cell or range. A descriptive name in a formula can make it easier to understand the purpose of the formula. For example, the formula `=SUM(FirstMonthSales)` might be easier to identify than `=SUM(B2:B9)`. In this example, the name `FirstMonthSales` represents the range `B2:B9` on the worksheet named `Sales`.

Defining ranges can be accomplished in one of two ways:

1. Manually, by typing in the range.
2. The range can be selected on the worksheet.

To manually enter the range name:

1. Type 2.00 in cells B2 through B9 on worksheet2
2. Highlight the range B2:B9 Select Insert/Name/Define from the menu bar or alternatively you can press Ctrl-F3.



3. Type in the range name "FirstMonthSales". To be acceptable, the name cannot have any spaces in it, must use only alphanumeric characters, and must start with at least one

- letter, even if the rest of the “name” is numeric.
4. Select OK.
 5. On worksheet2, in cell B11, type =sum(FirstMonthSales) and press Enter.
 6. The sum of cell B2 through B9 is now totaled in cell B11.

To Use a Range

1. Type the name anytime you would type a range. Instead of typing =Sum(B2:B9), for example, you can type the formula =Sum(FirstMonthSales).

To Delete a Range

1. Choose Insert>Name>Define to open the Define Name dialog box, select the range name that you want to delete from the list, and then click the Delete button.

To Locate a Range

1. Select F5
2. Select the Range Name and press OK. You will be taken to that range of cells.

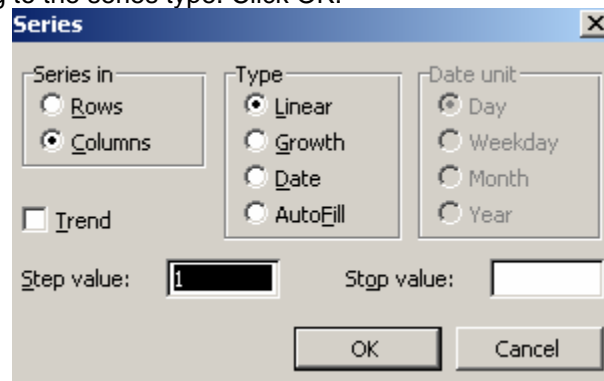
Filling Ranges

To fill a range:

1. Highlight the range to be filled and type in the value
2. Press Ctrl-Enter
3. The Range is now changed to the new value that you entered.

Creating a Series

1. In a new worksheet, select cell B2 and enter 2
2. Enter 4 in cell B3, 6 in cell B4 and 8 in cell B5
3. If you have a particular pattern in mind, fill in three or more numbers to define the pattern and select the entire range to be filled. Click and drag the Fill Hand until you choose the appropriate range. The cell information is entered.
4. Or,
5. Choose Edit/Fill/Series from the “Edit” menu.
6. When the “Series” dialog box appears (as shown in picture), change the appropriate boxes according to the series type. Click OK.



Functions

Excel Functions


Excel can be used as a very powerful tool for performing a wide variety of calculations and comparisons. In this lesson we will learn how to use the many functions excel has to offer. A formula expression in excel has the following structure: an equals sign (=) followed by one or more operands – which can be a value, a cell reference, a range, a range name, or a function name. This formula structure can be inputted manually or selected from a very complete list of pre-set formulas.

The picture below demonstrates the manual insertion of an excel function in the formula bar (=A2+B2), the resulting answer can be seen in cell: C2

1. Enter the following data on a new worksheet.

	A	B	Formula Bar
C2			=A2+B2
1	Column A	Column B	Answer (A+B)
2	1	9	10
3	2	8	
4	3	7	
5	4	6	
6	5	5	
7	6	4	
8	7	3	
9	8	2	
10	9	1	
11			

AutoSum


1. Click in the cell that should have the total.
2. Click on the Autosum toolbar button 
3. The range is highlighted. Press Enter and the total will populate.

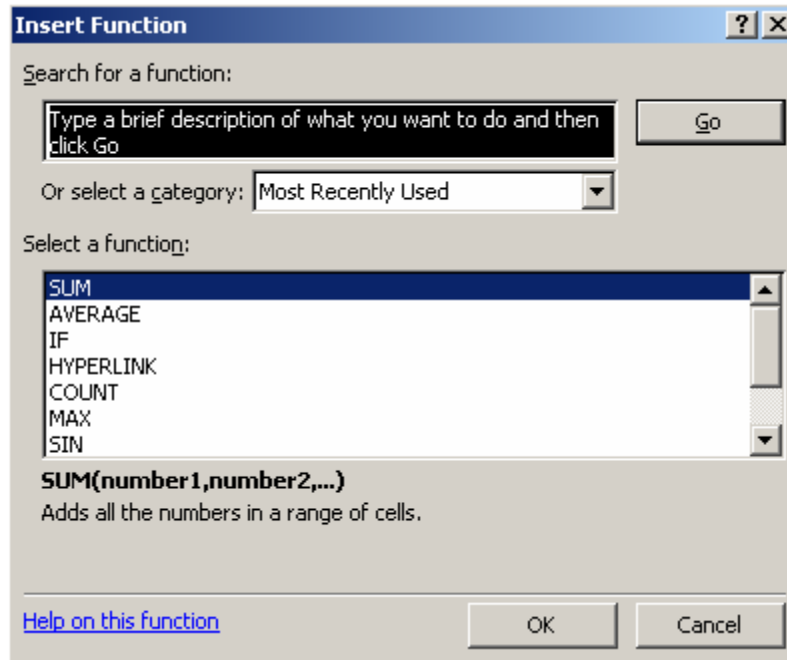
Total

1. Click in the cell that should have the total
2. Type =sum(beginning cell ID : ending cell ID) as shown below.

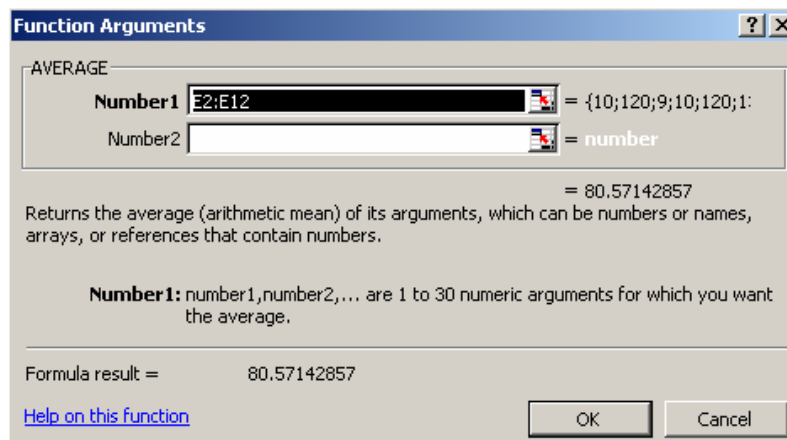
	A	B
1		Students
2	Word	10
3	Excel	15
4	PowerPoint	18
5	Windows	20
6	Mac OS	12
7		
8	Total	=sum(b2:b6)
9		

Average

1. Click in the cell that should have the average
2. Click the insert formula button 
3. Click on the function name, in this case, click average and select OK.



4. The average window will appear with the cells inserted. Click OK.



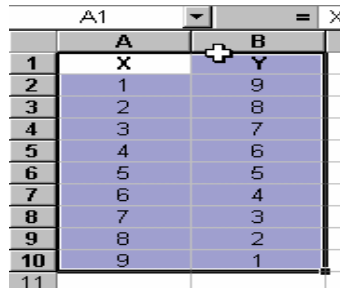
5. The formula is automatically entered into the highlighted cell and the data shown.

Charts

Creating Charts

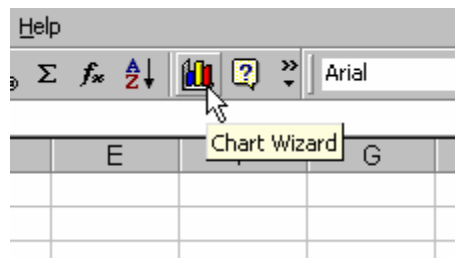
One of the more powerful functions of Excel is its ability to create charts. Using the chart wizard you can create a chart in minutes. Follow the steps below to learn how to create a chart.

1. Enter the data (below) to be included in the chart including labels for both columns.
2. Highlight the data including the labels as shown.

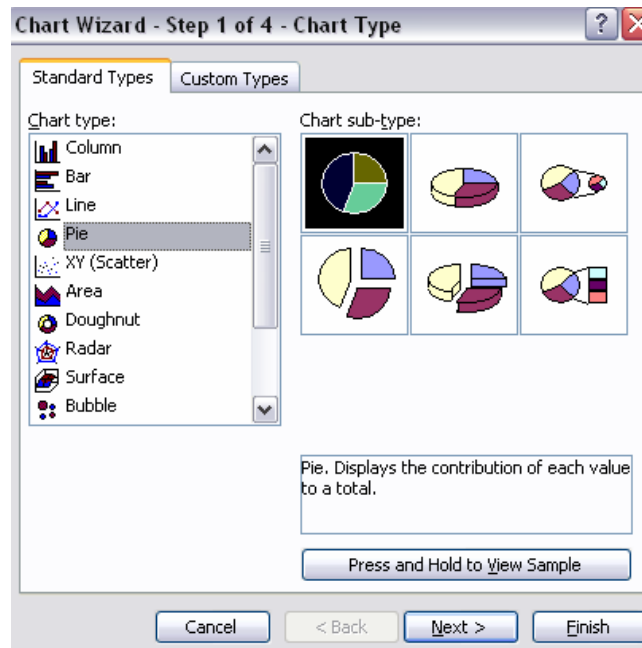


	A	B
1	X	Y
2	1	9
3	2	8
4	3	7
5	4	6
6	5	5
7	6	4
8	7	3
9	8	2
10	9	1

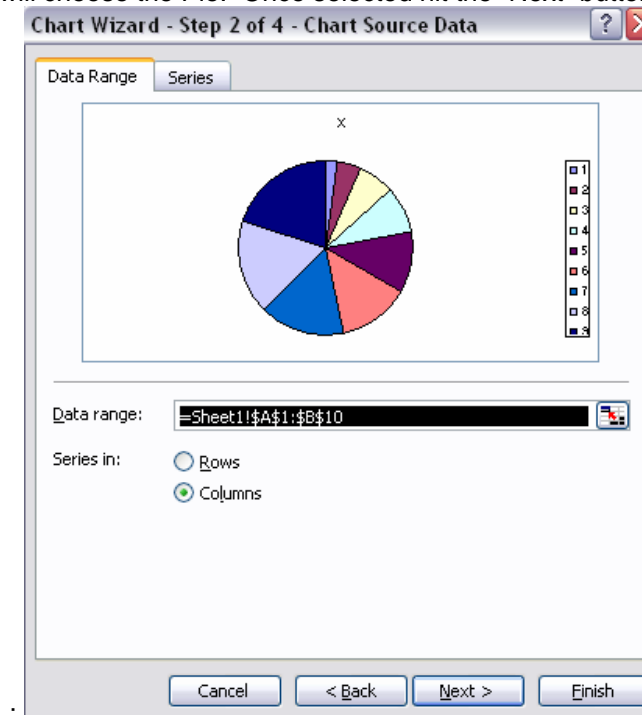
3. Once the appropriate cells have been highlighted, click on the chart wizard icon (alternatively the chart wizard can be reached by choosing Insert/Chart from the menu bar).



4. Once the chart wizard icon has been selected you should see this screen.



5. From this screen you can choose what type of chart you would like to create. For this demonstration we will choose the Pie. Once selected hit the "Next" button at the bottom.

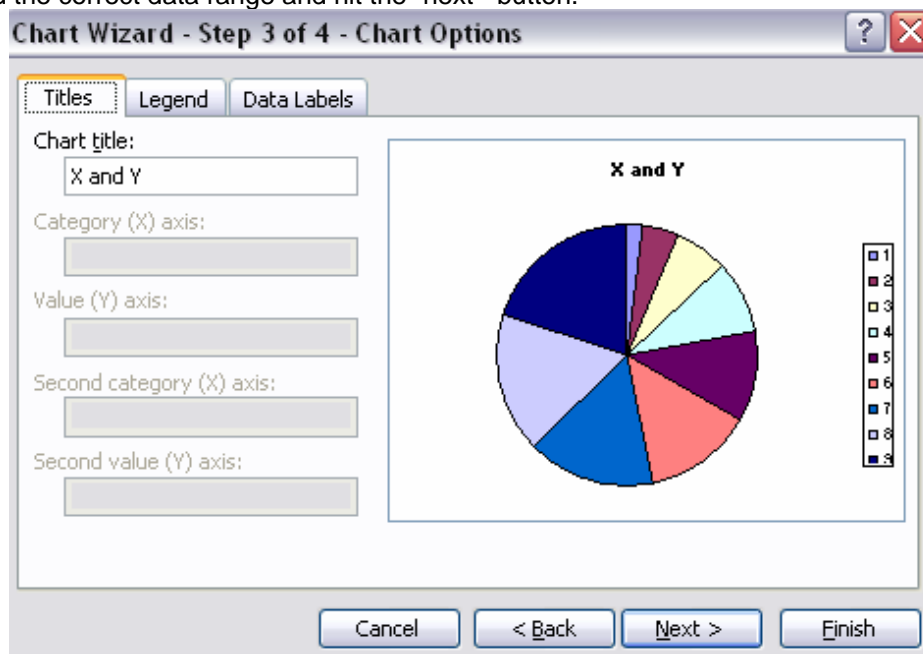


This is the Chart Source screen.

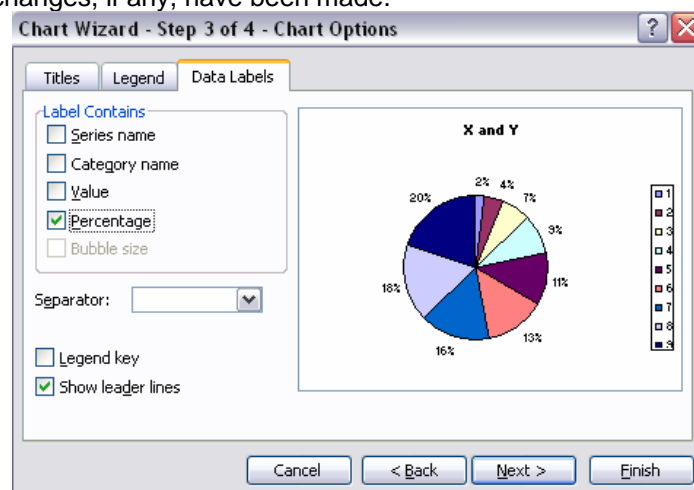
Assuming you have already selected your data, a data range (cells) can be input into the data range subject line. Alternatively you can return to your worksheet (without closing this

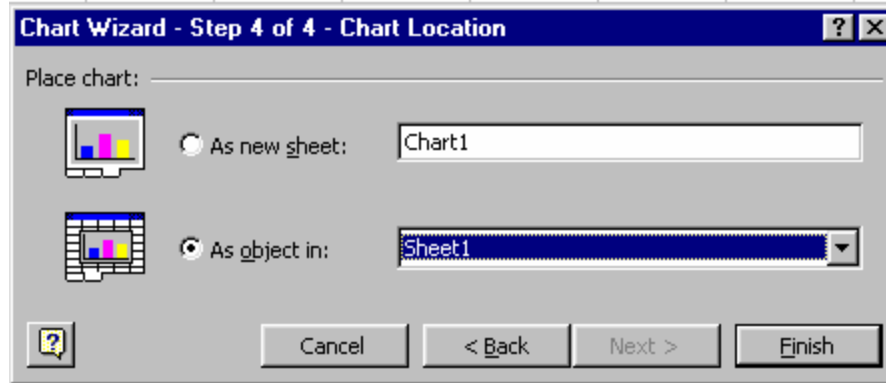
window) and highlight the appropriate cells, the cell range will then be inserted into the data range subject line automatically.

6. Add the correct data range and hit the “next” button.

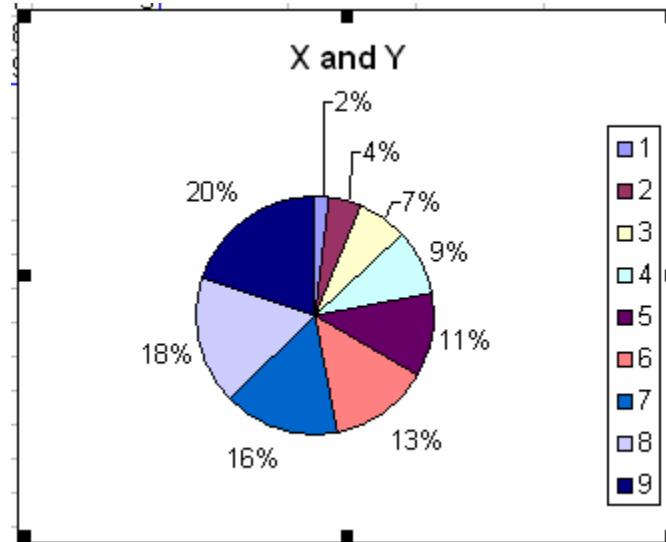


7. From this screen you can input Titles for the chart or axes. The axes can also be altered; gridlines and legends can be removed and added. Data labels can even be inserted into the graph, simply click on the appropriate tab to change the chart's appearance. Note: any changes made here are not final and can be changed at a later time. Click “next” once the changes, if any, have been made.

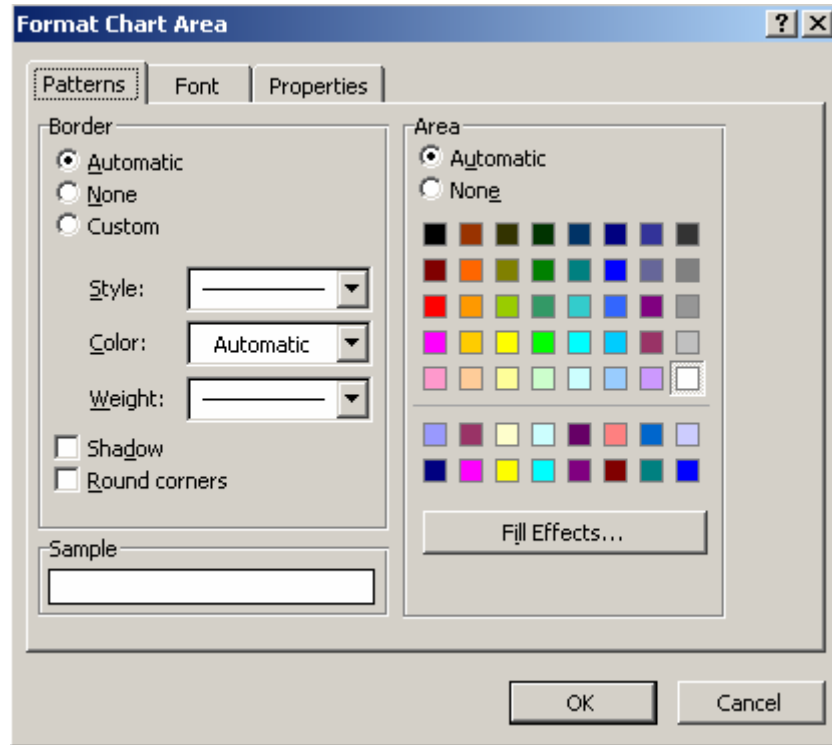




8. The chart location screen is the final step before you see the graph. Name the sheet. However, if you would like to place the graph on within the worksheet as an object, select As object in:.
9. Click on the "Finish" button to view your graph.



10. Your graph has now been made; however, changes can still be made. Placing the cursor at the corner of the graph and dragging it to any size that is needed, can enlarge the area of the graph.
11. Other changes can be made to the graph as well. By double clicking on any element of the chart (lines, labels, axes, etc.), you will invoke a format dialog box to change the format of that particular element. A sample format screen can be seen below.



Linking Workbooks

A formula that links workbooks refers to cells in more than one workbook. For example, if you have two workbooks that represent bills from two locations, you can write a formula that sums values from both workbooks. You can link worksheets in the same workbook as well.

Copying data from one program to another is easy enough, but what happens if you need to change the data? If you simply copy the data, you must track down every file to which you copied the data and update the data in each file. If you link the data, any changes that you make to the original version of the data (the source file) automatically apply to copies of the linked data in the destination files.

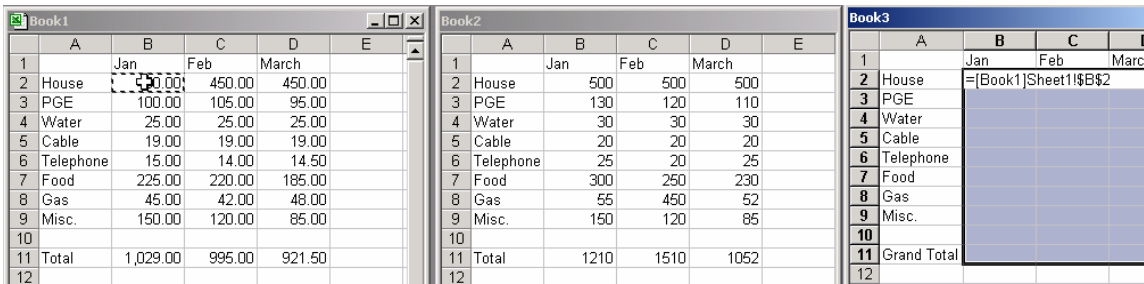
1. Open 3 new workbooks and change the view on your screen to show horizontal windows
2. In workbook1, type the bill information from the Extended Mode section (Pg 5)

A	B	C	D
	Jan	Feb	March
House	450.00	450.00	450.00
PGE	100.00	105.00	95.00
Water	25.00	25.00	25.00
Cable	19.00	19.00	19.00
Telephone	15.00	14.00	14.50
Food	225.00	220.00	185.00
Gas	45.00	42.00	48.00
Misc.	150.00	120.00	85.00
Total	1,029.00	995.00	921.50

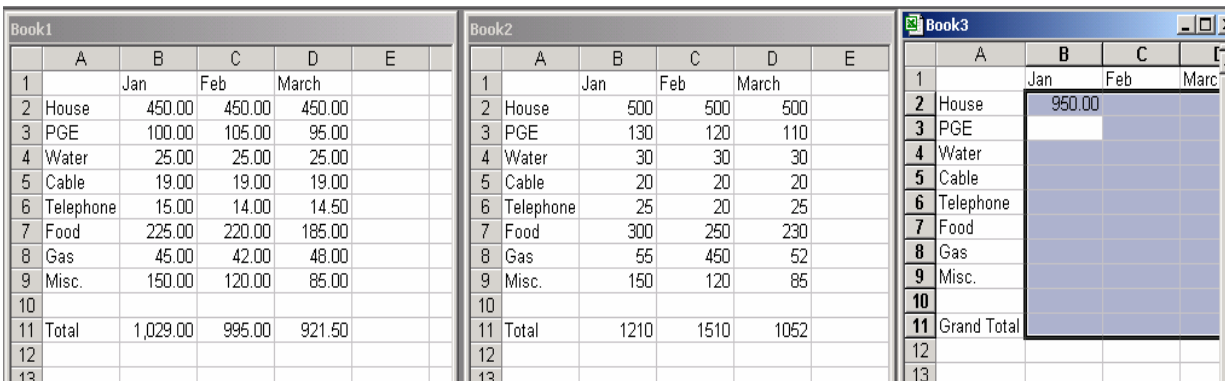
3. In workbook2, type new data as shown below

	A	B	C	D
1		Jan	Feb	March
2	House	500.00	500.00	500.00
3	PGE	130.00	120.00	110.00
4	Water	30.00	30.00	30.00
5	Cable	20.00	20.00	20.00
6	Telephone	25.00	20.00	25.00
7	Food	300.00	250.00	230.00
8	Gas	55.00	45.00	52.00
9	Misc.	150.00	120.00	85.00
10				
11	Total	1,210.00	1,105.00	

4. Workbook1 and 2 should look like the following:



5. In workbook3, highlight cell B2 and type =
6. Click on tab1 in workbook1 and highlight cell B2
7. You should now have the information shown above in workbook3. Type +
8. Click on tab1 in workbook2 and highlight cell B2
9. Press Enter.
10. The totals in cell B2 from workbook1 and 2 were added, and the result stored in cell B2 of workbook3.



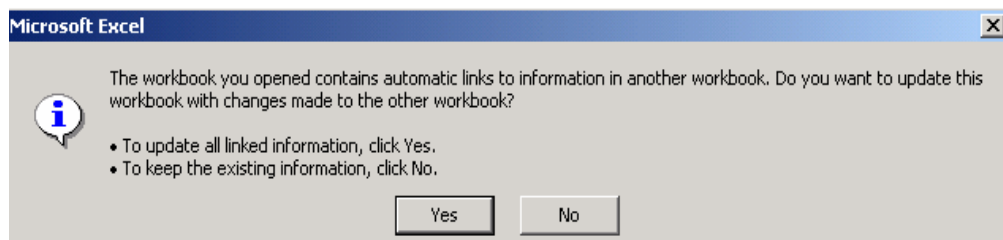
Repeat steps 5-10 using new cells. Results are shown below for the first column

Book1					Book2					Book3						
	A	B	C	D	E		A	B	C	D	E		A	B	C	D
1		Jan	Feb	March		1		Jan	Feb	March		1		Jan	Feb	Mar
2	House	450.00	450.00	450.00		2	House	500	500	500		2	House	950.00		
3	PGE	100.00	105.00	95.00		3	PGE	130	120	110		3	PGE	230.00		
4	Water	25.00	25.00	25.00		4	Water	30	30	30		4	Water	55.00		
5	Cable	19.00	19.00	19.00		5	Cable	20	20	20		5	Cable	39.00		
6	Telephone	15.00	14.00	14.50		6	Telephone	25	20	25		6	Telephone	40.00		
7	Food	225.00	220.00	185.00		7	Food	300	250	230		7	Food	525.00		
8	Gas	45.00	42.00	48.00		8	Gas	55	450	52		8	Gas	100.00		
9	Misc.	150.00	120.00	85.00		9	Misc.	150	120	85		9	Misc.	300.00		
10						10						10				
11	Total	1,029.00	995.00	921.50		11	Total	1210	1510	1052		11	Grand Total	2,239.00		
12						12						12				

1. Change the value in cell B2 of workbook1 to 500.00
2. Notice that the value in cell B2 of workbook3 has changed
3. Save your files as Book1, Book2 and Book3.
4. Close all the files

Book1					Book2					Book3						
	A	B	C	D	E		A	B	C	D	E		A	B	C	D
1		Jan	Feb	March		1		Jan	Feb	March		1		Jan	Feb	March
2	House	500.00	450.00	450.00		2	House	500	500	500		2	House	1,000.00		
3	PGE	100.00	105.00	95.00		3	PGE	130	120	110		3	PGE	230.00		
4	Water	25.00	25.00	25.00		4	Water	30	30	30		4	Water	55.00		
5	Cable	19.00	19.00	19.00		5	Cable	20	20	20		5	Cable	39.00		
6	Telephone	15.00	14.00	14.50		6	Telephone	25	20	25		6	Telephone	40.00		
7	Food	225.00	220.00	185.00		7	Food	300	250	230		7	Food	525.00		
8	Gas	45.00	42.00	48.00		8	Gas	55	450	52		8	Gas	100.00		
9	Misc.	150.00	120.00	85.00		9	Misc.	150	120	85		9	Misc.	300.00		
10						10						10				
11	Total	1,079.00	995.00	921.50		11	Total	1210	1510	1052		11	Grand Total	2,289.00		
12						12						12				
13						13						13				

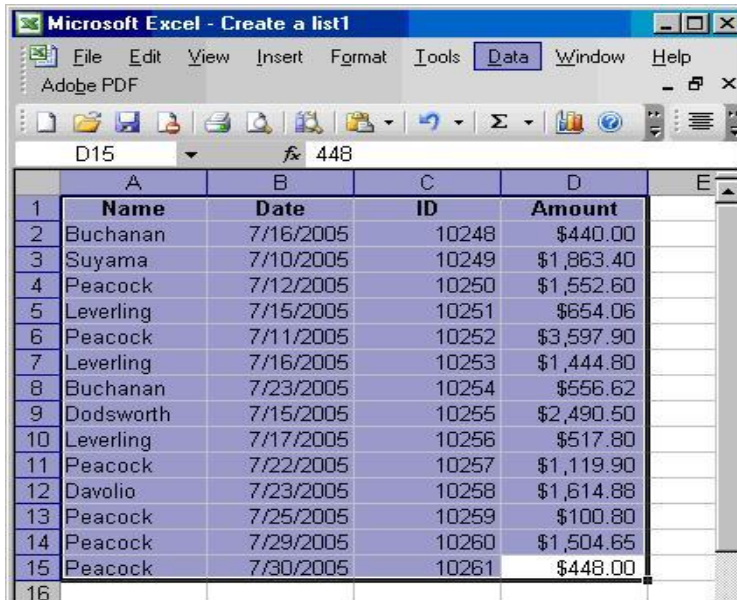
1. Open up Book1 and change the value in cell B2 to 150.00
2. Open up Book3. You will be prompted with the following message
3. Select yes. Notice that the value in workbook3 has been updated



Whenever you change the value in either workbook1 or 2, the value will be updated in workbook3. This is called "linked objects".

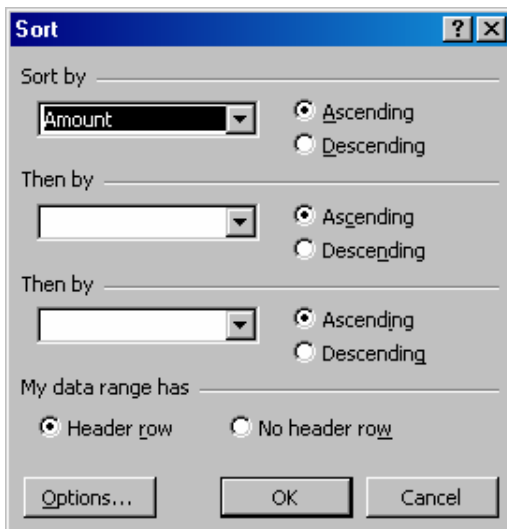
Sorting

Highlight the range you want to sort, on the **Data** menu, click **Sort...**



	A	B	C	D	E
1	Name	Date	ID	Amount	
2	Buchanan	7/16/2005	10248	\$440.00	
3	Suyama	7/10/2005	10249	\$1,863.40	
4	Peacock	7/12/2005	10250	\$1,552.60	
5	Leverling	7/15/2005	10251	\$654.06	
6	Peacock	7/11/2005	10252	\$3,597.90	
7	Leverling	7/16/2005	10253	\$1,444.80	
8	Buchanan	7/23/2005	10254	\$556.62	
9	Dodsworth	7/15/2005	10255	\$2,490.50	
10	Leverling	7/17/2005	10256	\$517.80	
11	Peacock	7/22/2005	10257	\$1,119.90	
12	Davolio	7/23/2005	10258	\$1,614.88	
13	Peacock	7/25/2005	10259	\$100.80	
14	Peacock	7/29/2005	10260	\$1,504.65	
15	Peacock	7/30/2005	10261	\$448.00	
16					

The Sort dialog box will appear. With the Sort By dropdown list select the field to sort by, then select either **A**scending, or **D**escending. If the data starts on the first line with a header row, the **Header row** will be selected by default, you can also select **No header row**. Click on **OK**.



Sort

Sort by Ascending Descending

Then by Ascending Descending

Then by Ascending Descending

My data range has Header row No header row

The list will now be sorted.

Use AutoFilter for simple criteria and to filter by selection

When you use the **AutoFilter** command, AutoFilter arrows appear to the right of the column labels in the filtered range.

	A	B
1	Salesperson	Region
2	Buchanan	South
3	Davolio	West
4	Suyama	
5	Suyama	
6	Dodsworth	
7	Davolio	
8	Davolio	
9	Suyama	
10	Davolio	
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21	Davolio	South
22	Davolio	East

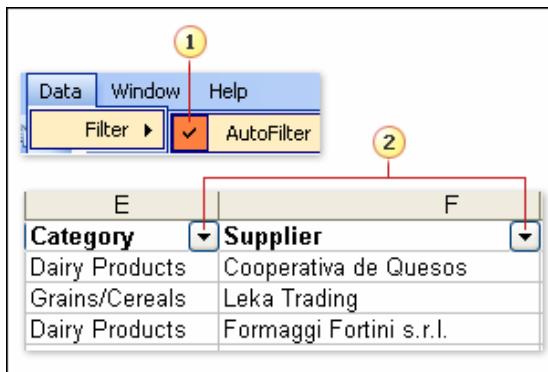
1 Unfiltered range

2 Filtered range

Microsoft Excel indicates the filtered items with blue.

You use custom AutoFilter to display rows that contain either one value or another. You can also use custom **AutoFilter** to display rows that meet more than one condition for a column; for example, you might display rows that contain values within a specific range (such as a value of Davolio).

Click any cell in the data you want to filter. On the **Data** menu, point to **Filter**, and then click **AutoFilter**.



AutoFilter arrows appear to the right of each column heading.

That's it. You're ready to filter.

To filter the data click on one of the drop down arrows in the column headings, and select one of the data elements on the list

You now have a filtered worksheet. Note that the other data in the worksheet isn't visible. It's still

there, but it's filtered out. Also the row numbers turn blue indicating only the sorted data is being shown.

Filtered product sales worksheet

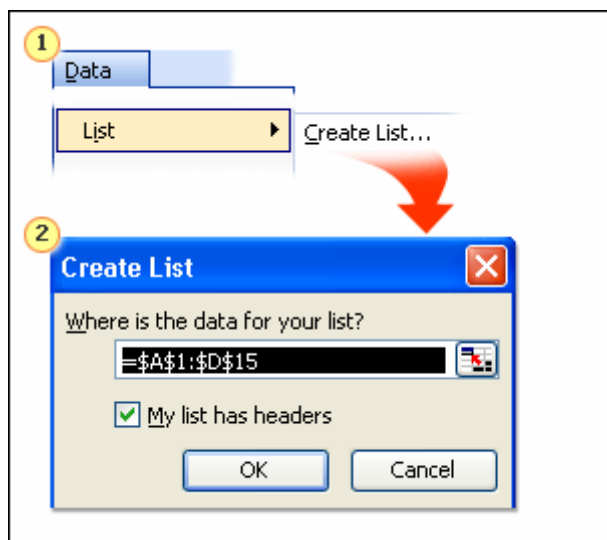
	A	B	C	D	E	F
1	Product	Custom	Otr 1	Otr 2	Otr 3	Otr 4
84	Chang	AROUT				\$228.00
85	Chang	CONSH	\$152.00			
86	Chang	FOLKO				\$95.00
87	Chang	HILAA			\$950.00	
88	Chang	LAMAI				\$270.75
89	Chang	LINOD	\$273.60			
90	Chang	OTTIK				\$760.00
91	Chang	QUICK	\$912.00			
92	Chang	RICAR			\$380.00	
93	Chang	SAVEA	\$581.40			\$484.50
94	Chang	VICTE				\$285.00
95	Chang	WANDK			\$541.50	
96	Chang	WHITC	\$516.80	\$228.00		
97	Chang	WOLZA			\$190.00	\$190.00

After you've filtered the data, you're only working with a subset of the original, full worksheet. Before you begin working on another filter, you need to return to the full worksheet. To return to the full worksheet:

1. In the **Product** column, click the arrow.
2. On the list, click **(All)**.

Lists

To have Excel see this data as a list, you would click any cell within the data, point to **List** on the **Data** menu, and then click **Create List**.



The **Create List** dialog box would appear, and you would click **OK**, confirming that your data has **headers** (column headings) and that the indicated data is what you want included in the list. You could also highlight a range of cells to use it for creating a list.

Note If your list does not have headers, Excel will create them for you. They'll say "Column1," "Column2," and so on.

Now the data is a list, and each column in the list has AutoFilter arrows at the top of the list in the header row.

	A	B	C
1	Name	Date	Amount
2	Buchanan	7/16/2005	\$440.00
3	Suyama	7/10/2005	\$1,863.40
4	Peacock	7/12/2005	\$1,552.60
5	Leverling	7/15/2005	\$654.06
6	Peacock	7/11/2005	\$3,597.90
7	Leverling	7/16/2005	\$1,444.80
8	*		

- 1 AutoFilter arrows are automatically added in the header row.
- 2 A dark blue border appears around the list.

The dark blue border around the list indicates the range of cells contained in your list. You can have more than one list on a worksheet when you use the **List** command.

The dark blue border would change to a light blue border, and the arrows at the top of the list would disappear, if you clicked outside the list.

Add a row or a column to the list

	A	B	C
1	Name	Date	Amount
2	Buchanan	7/16/2005	\$440.00
3	Suyama	7/10/2005	\$1,863.40
4	Peacock	7/12/2005	\$1,552.60
5	Leverling	7/15/2005	\$654.06
6	Peacock	7/11/2005	\$3,597.90
7	Leverling	7/16/2005	\$1,444.80
8	Callahan		
9	*		

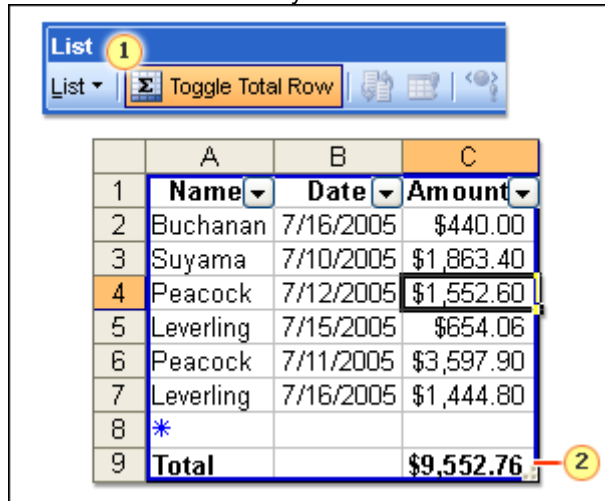
- 1 When another name, Callahan, is added to cell A8...
- 2 ...a new insert row is added in cell A9.

The row that contains an asterisk at the bottom is the insert row. As soon as you enter data to that row, another empty insert row is added to the list, so that you could continue to add data. If you clicked outside the list, the insert row and asterisk would disappear, and the list border would move up one row.

You could add a column to the list just by typing in the empty column to the right. The list would automatically expand to include that column.

Total values

There's also a List toolbar in Excel 2003 which includes the Toggle Total Row button. This button automatically totals the last column in the list.



1 Click the Toggle Total Row button on the List toolbar...

2 ...to add a Total row to the list.

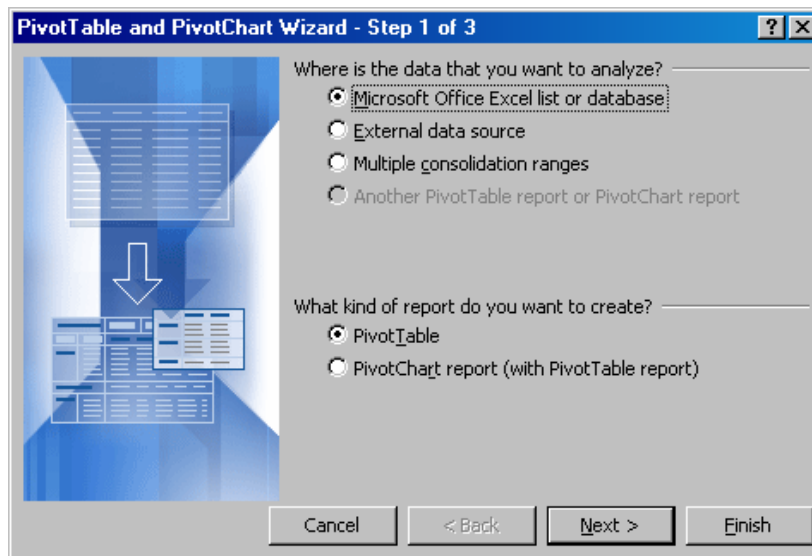
Pivot Tables

A PivotTable report can help you see the "big picture" by summarizing and analyzing your data. You can control how Excel summarizes the data—for example, by sum, average, or count—without entering a single formula.

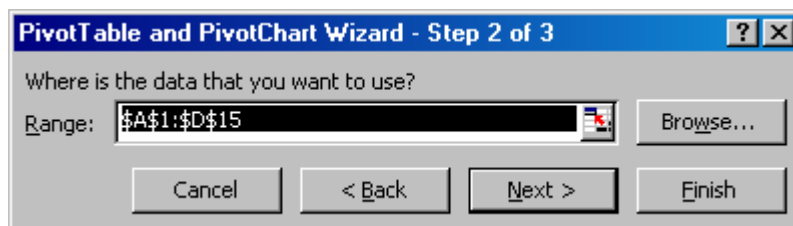
To create a Pivot Table:

Open the workbook where you want to create the PivotTable report. If you're basing the report on an Excel list or database, click a cell in the list or database.

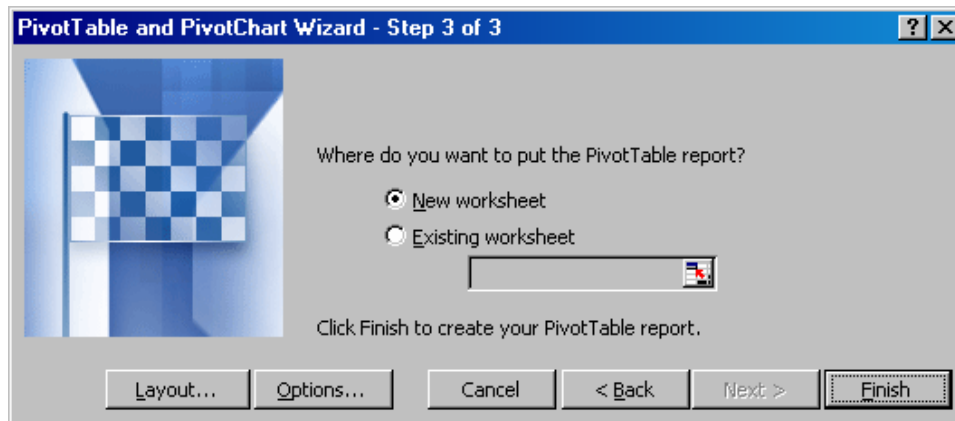
1. On the **Data** menu, click **PivotTable and PivotChart Report**.



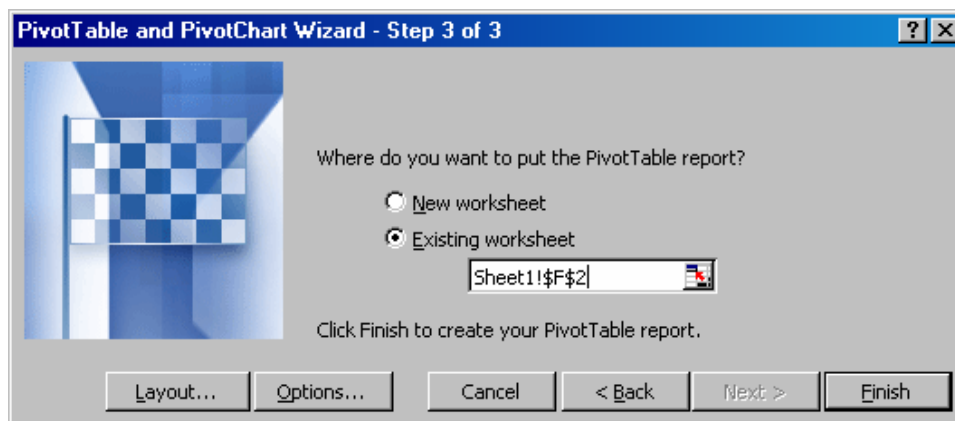
2. In Step 1 of 3 Click **PivotTable** under What kind of report do you want to create? Then Click **Next >**



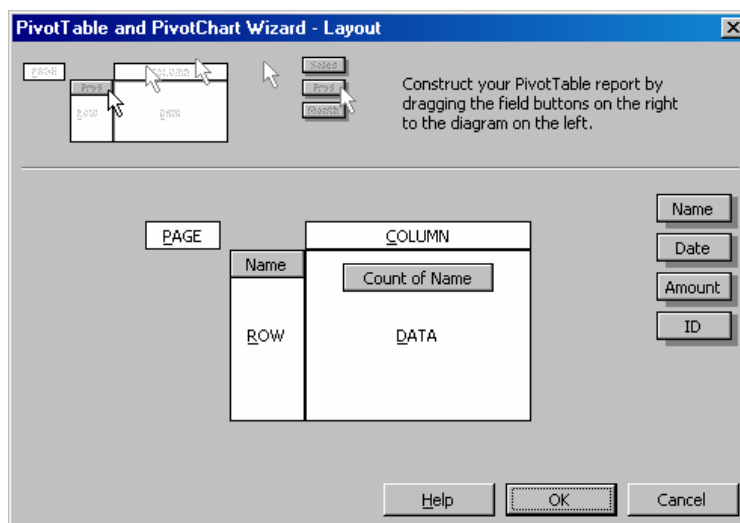
3. In step 2 of the wizard, follow the instructions for locating your data. The area of your spreadsheet will be highlighted with a broken line, and the range listed in the Range: box



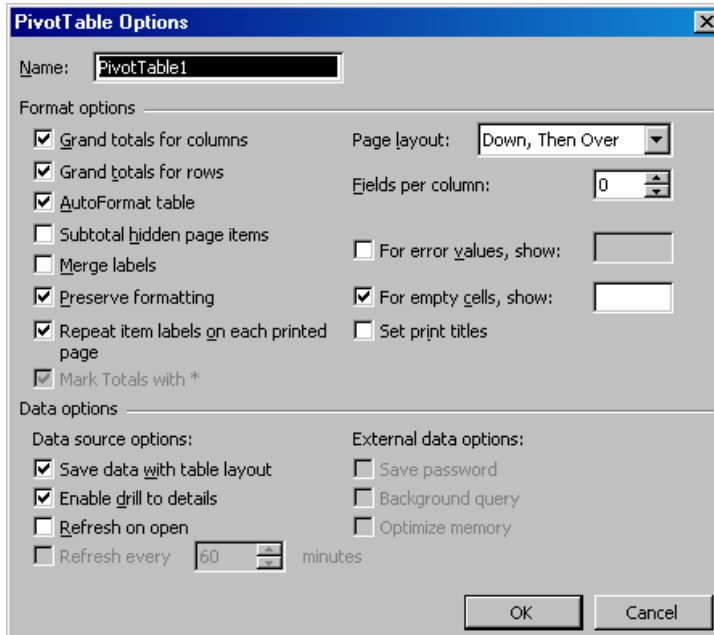
4. Select New worksheet to put your table on a new sheet, or Existing worksheet and point to a location to put the Pivot Table.



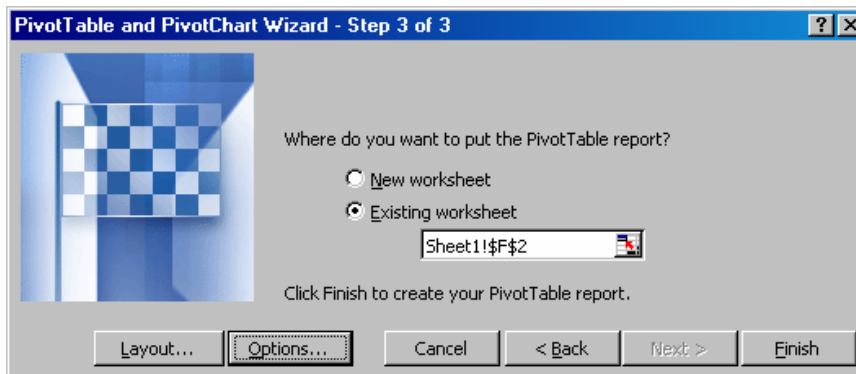
5. Select Layout.... Drag and drop the data you want in the table, then click OK



6. You can also select Options... and make option changes then select OK



7. Click finish



The Pivot table will be put in the location you selected. From the Pivot table you can create reports or charts and analyze your data