Excel 4

Filters and Pivot Tables

Office 2000 Version

CAL People and Computer Training
University of California, Berkeley

For more information about the CAL PACT program, to sign up for courses, or to download course documentation, please visit our website at: **http://calpact.berkeley.edu/**

Last Revised August 2001

Use this space for notes

Introduction

Excel 4 is a course created for CAL PACT participants to learn more about the features of Microsoft Excel. The course covers intermediate/advanced material and applies to the Windows computer platform. This document serves as a future reference for you as you continue to gain experience on your own. Some topics may not be covered in as much detail during class as they are in this document. Documentation is available for previous versions of Excel on the CAL PACT website: **http://calpact.berkeley.edu**

Note

All of the features taught in this course operate using an Excel list format. The list format is not a special feature in Excel, it is the way that data entries are organized on screen. When working with data, a header row should be created along the top row with all of the data elements in the rows below. There should be no empty cells within the list. If a data entry is the same, repeat the entry in the cell below.

Skills you need for this course

- How to use the mouse
- Familiarity with the Windows computing environment
- Mastery of the material from the previous CAL PACT Excel sessions

Skills and concepts you will learn in this course

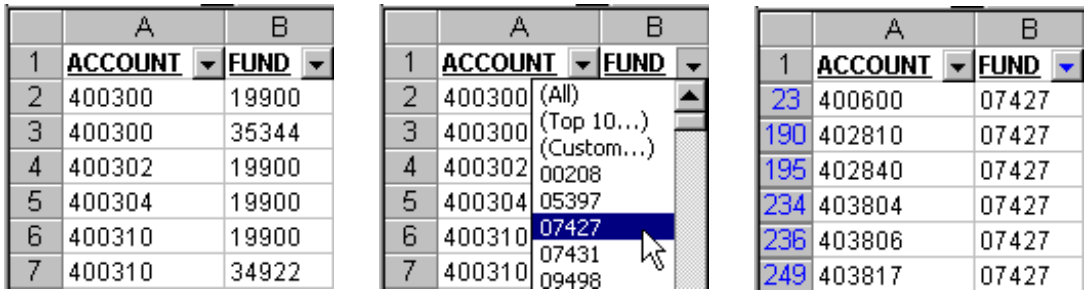
- Creating spreadsheet filters
- Summarizing data
- Creating and working with Pivot Tables

Conventions used in this document

Menus and menu commands are separated by a vertical bar (**|**). In the document they will appear as **Menu|Command**. An example of this is: “Select **File|New...**.”

Filtering

Filtering is a useful feature to quickly display a subset of data from a list. By setting criteria for filtering, Excel automatically hides rows that do not match the criteria. The example below demonstrates the filtering capability created by using the AutoFilter. The criteria "07427" was selected for the "Fund" column. Rows that do not match the criteria are automatically hidden. Excel allows for two methods of filtering — the **AutoFilter** and the **Advanced Filter**.



	A	B
1	ACCOUNT	FUND
2	400300	19900
3	400300	35344
4	400302	19900
5	400304	19900
6	400310	19900
7	400310	34922

	A	B
1	ACCOUNT	FUND
2	400300	(All)
3	400300	(Top 10...)
4	400302	(Custom...)
5	400304	00208
6	400310	05397
7	400310	07427
		07431
		09498

	A	B
1	ACCOUNT	FUND
23	400600	07427
190	402810	07427
195	402840	07427
234	403804	07427
236	403806	07427
249	403817	07427

AutoFiltering

The AutoFilter is the easiest method to use in setting up a filter. When an AutoFilter is created, a drop-down list becomes available on the right side of the selected cells in the row as shown in the screenshots above. By clicking on the arrow, the drop-down list displays every unique entry in the column along with a few special options. Selecting one of the items in the drop-down list causes Excel to hide all of the rows that do not match that criteria. Multiple filters can be performed by selecting criteria from different drop-down lists. Excel will continue to filter the data *in the order that the criteria are selected*. When a filter is applied, the arrow appears in blue. The row headers also appear in blue.

Reminder

Note that setting a filter only filters the data *below* that row.

To create an AutoFilter

1. Select any cell within a list to have Excel automatically create the filter controls in the row it thinks is best. Using the proper list format, Excel will use the header row. Select multiple adjacent cells to have Excel create the filter lists in those columns only. Select a cell and the cell below it to create the filter lists only for that one column.
2. Select **Data|Filter|AutoFilter**.

Note

Even though the filter list may not be applied to every column in a row, any filtering affects the entire row.

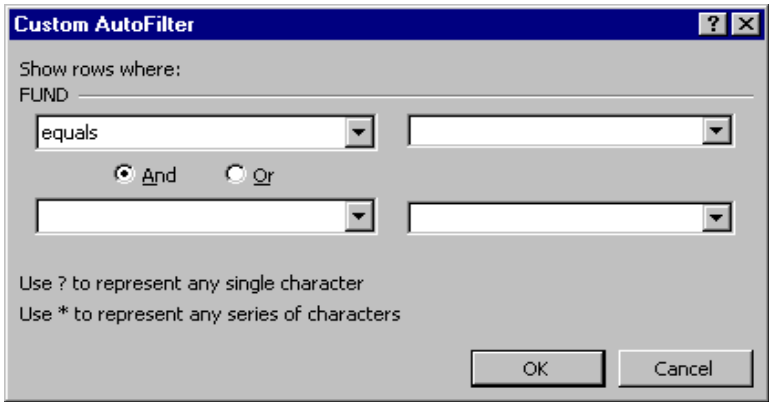
To remove an AutoFilter

Select **Data|Filter|AutoFilter**. The AutoFilter command is a toggle switch. Select the command to turn it off and on.

Working with the Criteria

Filtering data is as easy as selecting criteria from the drop-down list. When a criterion is selected, the resulting subset of data can be further filtered by selecting criteria from a different drop-down list. Note that a drop-down list displays only the unique data entries from the rows that are visible. To reverse a filtered list, choose the criterion **(All)** from the list.

In special cases, a custom criterion is needed to display rows that match multiple values or a range of values. The normal method of selecting criteria only allows for filtering by one unique item in each column. To set custom criteria, choose **(Custom...)** from the drop-down list. The **Custom AutoFilter** dialog window appears:



Note

Wildcard characters (? and *) will ***only*** work for text. Even if numbers are formatted as text, wildcards will *not* work.

In the first drop down menu, select the comparison for the first criterion and type or select the value in the field on the right. This sets the first criterion. To set a second criterion, select the comparison and type or select the value for the second row field. Wildcard characters (? and *) can be set for the value fields on the right to specify any character or phrase. Use “?” to specify any single character and “*” to specify any series of characters.

Between the two rows are radio buttons for **And** and **Or**. Choose one or the other depending on how you want Excel to filter the data:

If the filter must match **both** criteria, select **And**.

If the filter must match **either** criteria, select **Or**.

Advanced Filter...

The Advanced Filter option is a tool used to filter lists using complex criteria. Using the AutoFilter, it is only possible to filter one column by two different criteria through the **(Custom...)** item. In the Advanced Filter, the filtering criteria is more robust, although a little more work is required. There are no drop-down lists from which to choose the criteria. Instead, a criteria range must be typed in a sheet. For example, in the graphic below, a filter has been applied to the data. The criteria range lies in the cell range A1:D3 while the filtered data lies in the cell range A5:C24. The criteria range is typed on the same sheet in this example.

	A	B	C	D
1	**ACCOUNT**	**FUND**	**AMOUNT**	**AMOUNT**
2	400392		> 10	<=40
3		35344		
4				
5	**ACCOUNT**	**FUND**	**AMOUNT**	
7	400300	35344	**3.2**	
20	400392	34125	**19.1**	
22	400392	35832	**10.5**	
23	400392	36633	**36.5**	
24	400392	60700	**19.4**	

The Criteria Range

Tip

To avoid mistakes, copy and paste the labels from the header row.

The criteria range is most commonly typed in the same sheet as the filtered list, but it can be located on any sheet or workbook. To begin the criteria, enter the criteria labels to filter on. In the example above, the labels are Account, Fund, and Amount. The format of the cells is not important, but the text is. Underneath the labels, the criteria are entered.

Criteria that fall in the same row finds records that meet all the criteria in that row. This is similar to the **And** option for the **(Custom...)** AutoFilter.

Criteria that fall in different rows finds records that meet the criteria of any row. This is similar to the “or” option for the **(Custom...)** AutoFilter.

When a column label is repeated, the returned records must meet more than one criterion for the repeated column label. This is used to match ranges of values.

Comparison Criteria

Text Criteria

Entering a text criteria will only return records that begin with that criteria exactly. You must use wildcards to filter strings of text. To specify exact text, enter:

="=*text*"

where *text* is the text value.

*Wildcards (? *)*

Wildcards are supported in the advanced filter. Use the ? to specify any single character and the * to specify any phrase.

Quantity Comparisons (=, >, <, <=, >=, <>)

To specify quantity comparisons, use the operators below. Begin the criteria with the operator followed by the value. For example, >1000 specifies all rows where the values are greater than 1000.

=	Equal to
>	Greater than
<	Less than
>=	Greater than or equal to
<=	Less than or equal to
<>	Not equal to

Setting the Advanced Filter

To start the advanced filter select **Data|Filter|Advanced Filter**. In the fields for list range and criteria range enter the cell range or click once in the field and select the range on the sheet. Excel automatically enters the cell range. The checkbox for **Unique records only** will cause Excel to hide duplicate records.

Removing an Advanced Filter

To remove an Advanced Filter select **Data|Filter|Show All**.

Using the Copy To Function

When the Advanced Filter is selected, the option **Copy to another location** is available. Selecting this option will cause Excel to copy and paste the rows that match the criteria range. The list is not filtered in this case. The returned data is merely copied. To use this option select the radio button. In the **Copy to** field select one cell or a range of cells.

If only one cell is selected, Excel copies all of the returned data.

If an empty cell range is selected, Excel copies all of the returned data into the cell range. If the returned data is larger than the cell range, Excel asks whether or not to continue pasting the data.

Note

The "Copy to another location" option will only copy to the active worksheet.

Tip

Cut, copy, paste, sorting, charting, and printing can be applied to a filtered list. Only the visible data will be affected or used.

If the cell range contains the criteria labels, Excel copies only those columns of the returned data. Using the previous example, entering the column label “Account” in the copy to field copies only the account data and ignores the other fields. This is a useful function to isolate a particular column from an Advanced Filter.

Summarizing Data

Automatically summarizing data is a useful feature in Excel. With this feature, Excel automatically calculates subtotals, grand totals, and inserts the proper labels, rows, and grouping. The example below displays the subtotal command. Notice that the subtotals were created for the item “Account”. Each time the account changes, a new subtotal row is created for the “Amount” column.

5	ACCOUNT	FUND	AMOUNT
6	400300	19900	**18.9**
7	400300	35344	**3.2**
8	400302	19900	**13.4**
9	400304	19900	**0.8**

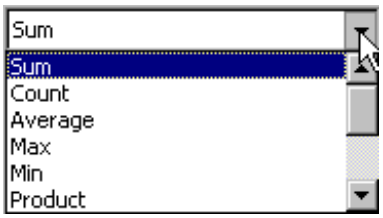
5	ACCOUNT	FUND	AMOUNT
6	400300	19900	**18.9**
7	400300	35344	**3.2**
8	**400300 Total**		**22.0**
9	400302	19900	**13.4**
10	**400302 Total**		**13.4**
11	400304	19900	**0.8**
12	**400304 Total**		**0.8**

Using the Subtotals Command

In order to use the **Data|Subtotals** command, the sheet must be properly formatted. Sort the rows in the order that the items will be grouped together including the proper labels for each column. The data must have column labels or the **Subtotals** command will not function properly. In the example above notice that the account numbers were sorted together. After the sheet has been organized, use the following steps:

1. Select a cell within the list where the subtotals command will be applied. An alternate method is to select the entire cell range including the data labels. Remember that Excel will automatically determine the cell range if the data list is properly organized. Skipping one line between separate data lists is an easy way to help Excel correctly determine the range.
2. Select **Data|Subtotals...** and the **Subtotal** dialog window appears.

3. In the first field labeled **At each change in:** select the desired item to create subtotals for. Remember that the list should be properly sorted for this item.
4. In the field titled **Use function:** select the proper function to use. Even though this is a subtotal feature, the **Sum** function is not the only choice. Excel provides a variety of functions. When the row labels are inserted in the sheet, Excel displays the function name as a reminder. A list of the functions is shown below.



5. In the field titled **Add subtotals to:** click on the box to toggle on the check sign for each column that Excel should calculate.
6. The check boxes at the bottom set some minor options for the command. Checking off the box titled **Replace Current Subtotals** allows Excel to apply multiple subtotals to the same data list when multiple functions are used. To use this feature, use the **Subtotal** command with the first function then apply the subtotal command again. Checking off the box titled **Page break between groups** causes Excel to insert a page break after each grouping. Checking off the box titled **Summary below data** causes Excel to place the subtotal and grand total row below each grouping. Although this may be easy, it is often better to see the grand total on a large list when it is at the top. Scrolling to the bottom of the list may be inconvenient.

Reminder ✓

Using a filtered list to calculate subtotals is not the same as hiding a row using the **Format|Row|Hide** command. Excel still uses the hidden data when creating the subtotals.

Subtotaling a Filtered List

A filtered list can be subtotaled using the same steps outlined above. However, there is one important difference when the **Subtotals** command is applied to the filtered list. Applying the **Subtotals** command will only incorporate the data that is visible on the screen.

Removing Subtotals

To remove subtotals use one of the following three methods:

1. Use the **Undo** command to remove a subtotal that was just inserted.
2. Create another Subtotal to replace the existing subtotals in a list. Remember to check off the option titled **Replace subtotals**.
3. Select **Data|Subtotals...** and click on the **Remove All** button to remove all subtotals in a list.

Advanced Summarizing

Advanced summarizing is used to calculate totals based on data which meet certain criteria. These totals are created using Excel functions so they are not bound to display in any specified location. The functions can be entered in any worksheet location.

Shortcut

You can use the Paste Function f_x to enter the SUMIF values.

Summing Values for a Single Criteria

To sum values which match a single criteria, enter the following function in the cell where the result will appear:

=SUMIF(*range,criteria,sum_range*)

range is the cell range to evaluate against the criteria
criteria is the criteria to use for evaluation (enclose in “quotes”)
sum_range is the cell range to use for summing

Look at the example in the screenshot below to get a better understanding of the proper use. In the example, the data is shown in columns A and B. In cell C2, the function “=SUMIF(A2:A7,”<400310",B2:B7)” is entered. The function is set with the following values:

A2:A7 is the *range*
“<400310” is the *criteria*
B2:B7 is the *sum_range*

	ACCOUNT	AMOUNT	Adv. Total
2	400300	18.9	=SUMIF(A2:A7,"=400310",B2:B7)
3	400300	3.2	
4	400302	13.4	
5	400304	0.8	
6	400310	38.7	
7	400310	21.1	

Excel looks at the cells from A2:A15 to find the rows that have an “ACCOUNT” equal to 400310. For the rows that meet the criteria, the associated cells in the range B6:B7 will be used in the summing.

Counting Values for a Single Criteria

To count the number of cells that meet a criteria, enter the following function in the cell where the results will appear:

=COUNTIF(*range,criteria*)

range is the cell range to evaluate against the criteria
criteria is the criteria to use for evaluation

Summarizing Using Complex Criteria

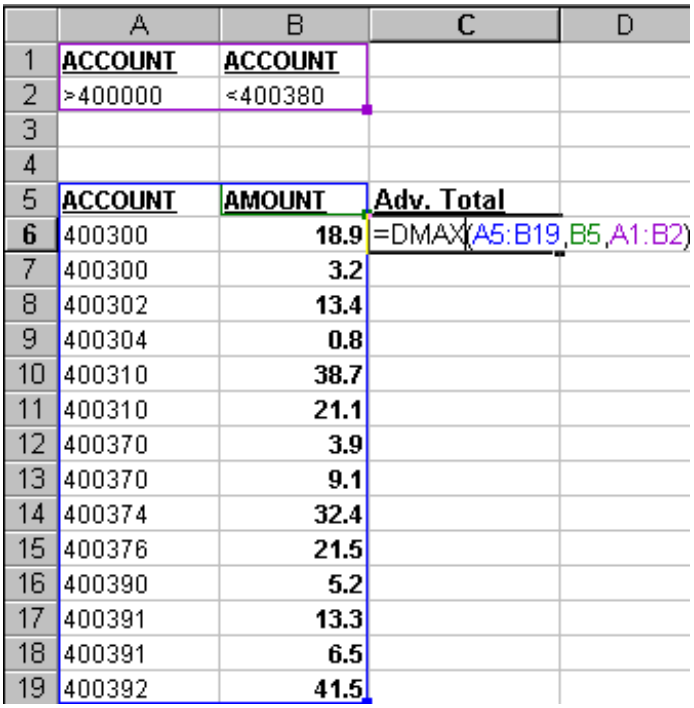
Summarizing values against multiple or complex criteria is performed by utilizing the database functions and a criteria range, which was covered earlier in the *Filtering* section. The format for using the database functions is:

Dfunction(*database*,*field*,*criteria)*

Dfunction is the database function to use
database is the cell range which contains the list
field is the column to use in the calculation
criteria contains the reference for the criteria range

The example below shows a sample of one of the database functions. The formula =DMAX(A5:B19,B5,A1:B2) is entered in cell C6 using the database function DMAX (returns the maximum value). The cell range A5:B19 contains the list to evaluate against the criteria. The reference B5 indicates on which column to perform the calculations. Finally, A1:B2 references the criteria range. Here, the formula will return the maximum value for the accounts that are between 450000 and 400380.

Creating the criteria range was previously covered in the section on *Filtering*. For a full listing of the database functions, use the **Function Wizard** and access the **Database** function category.



	A	B	C	D
1	**ACCOUNT**	**ACCOUNT**		
2	>400000	<400380		
3				
4				
5	**ACCOUNT**	**AMOUNT**	**Adv. Total**	
6	400300	**18.9**	=DMAX(A5:B19,B5,A1:B2)	
7	400300	**3.2**		
8	400302	**13.4**		
9	400304	**0.8**		
10	400310	**38.7**		
11	400310	**21.1**		
12	400370	**3.9**		
13	400370	**9.1**		
14	400374	**32.4**		
15	400376	**21.5**		
16	400390	**5.2**		
17	400391	**13.3**		
18	400391	**6.5**		
19	400392	**41.5**		

Pivot Tables

Pivot tables are interactive worksheet tables that quickly summarize large amounts of data using chosen formats and calculation methods. They serve as quick methods to display and analyze the summary data. The rows and column headers in the table can be rotated around the core data to provide different views of the source data. As source data changes, the pivot table updates to reflect the new data.

The power of the pivot table arises from its versatility. Subtotals and grand totals are automatically added to the table, the level and type of detail can be quickly and easily changed, and report data and charts can be created directly from the pivot table.

The examples below were created by changing the column and row header. With this one change, the data is viewed in a completely different format.

Setting Up a Worksheet for Pivot Tables

In order for Excel to create a pivot table, the worksheet must be properly formatted in a list format. This list format consists of data organized in columns with column labels at the top of the list. Excel will not create pivot tables unless the sheet is organized in this format.

A7 = Instruction

	A	B	C	D	E	F
1	**From Schedules 1-B**					
2	**Dollars in Millions**					
3	**Expenditures by Fund Type**					
4						
5						
6	**Category**	**Fund**	**1988-89**	**1989-90**	**1990-91**	**1991-92**
7	Instruction	General	188.7	199.2	214.9	195.7
8	Instruction	Designat	18.9	21.5	19.4	28.7
9	Instruction	Restricte	15.4	16.5	13.6	15.7
10	Research	General	35.4	36.5	38.6	38.1
11	Research	Designat	3.2	5.2	3.9	3.9
12	Research	Restricte	119.4	132.6	146.1	157.0
13	Public Service	General	2.6	2.9	3.6	2.3
14	Public Service	Designat	13.4	13.3	12.5	14.2

The Pivot Table Wizard

The easiest way to create a pivot table is through the Pivot Table Wizard. Begin by selecting the cell range or a cell within the list.

Step 1

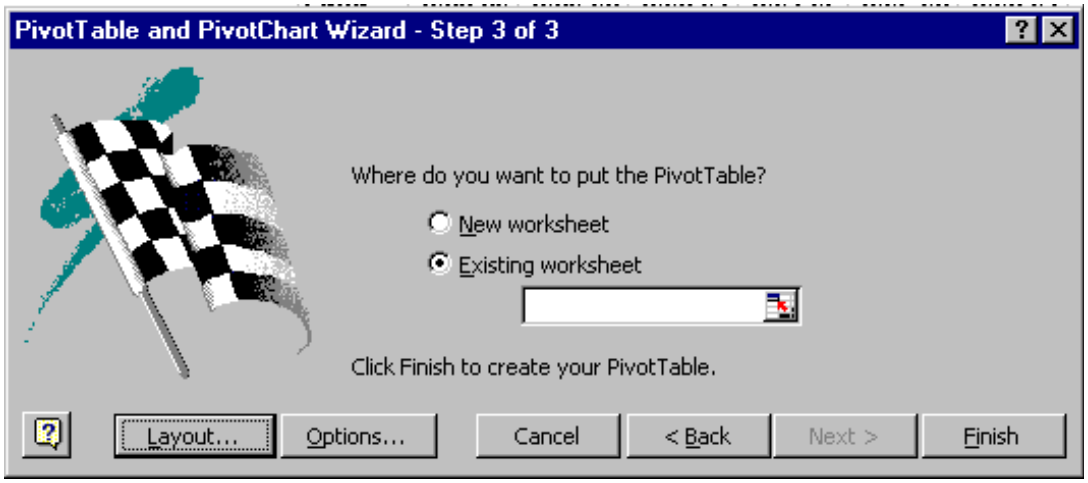
Select **Data|PivotTable and PivotChart Report...**. The following screen appears. This screen specifies the data source to analyze. Pick the data source and click **Next >** to continue to Step 2 of the Pivot Table Wizard.

Step 2

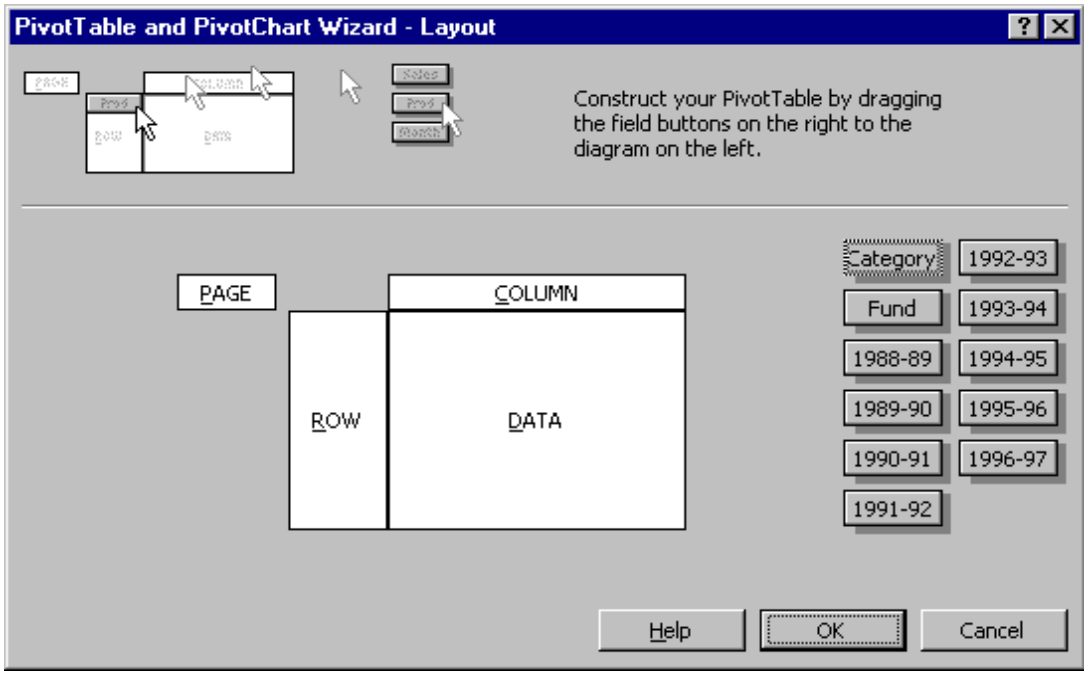
This step is used to specify the location of the data. The dialog window that appears is dependent on the data type chosen in Step 1. In the fields that appear, enter the proper cell references or select the cell references on the sheet in the **Range:** field. If a cell range was selected before the wizard was started, Excel may already have the correct cell range entered.

Step 3

After specifying the type and location of the data, you must choose where you would like to put the Pivot Table.



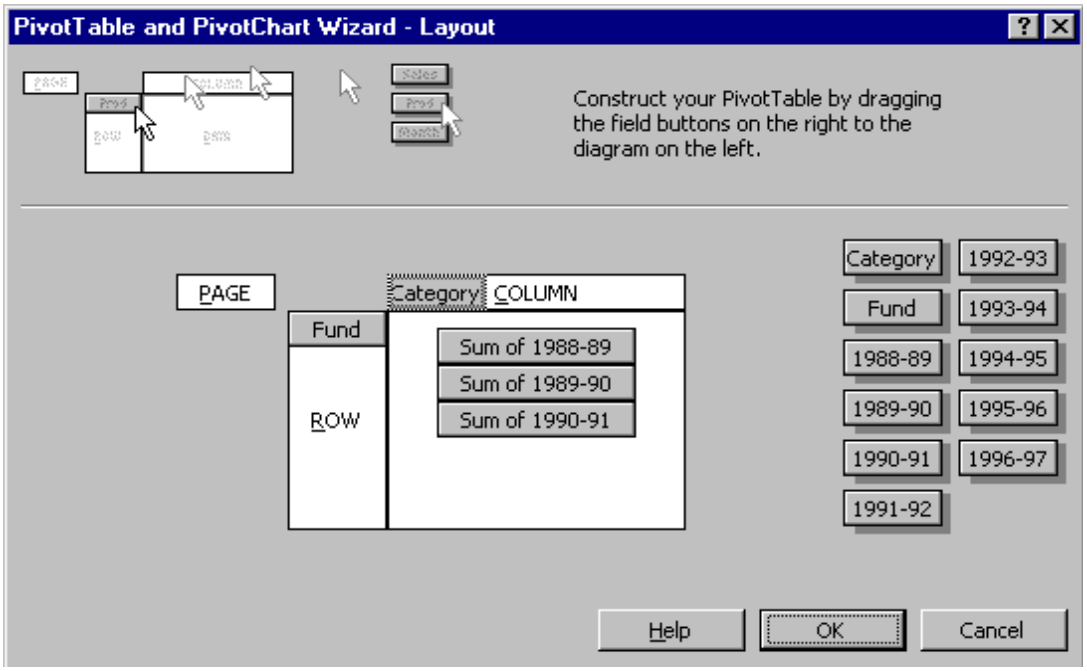
Excel processes the column labels in the data lists and prepares to construct the pivot table. Click on **Layout...** and a screen similar to the following will appear.



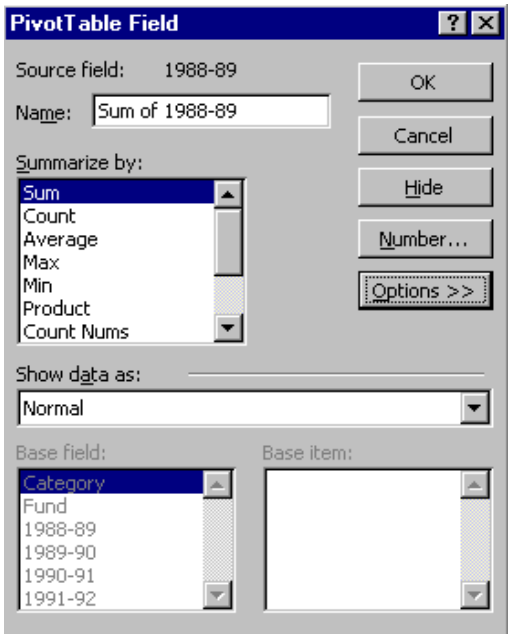
Along the right side of the window are the column labels identified in the data source. Depending on the data, the labels will differ. The center of the window contains the set up area for the pivot table. This area is divided into four regions: ***page***, ***column***, ***row***, and ***data***. Click and drag a label to the desired region to specify the details shown in the pivot table. More details can be shown by dragging multiple labels to an area. If there is a large amount of data, labels dragged onto the page area will allow only certain data to be viewed in the table, similar to filtering lists. To remove a field from the pivot table area, click and drag the label outside of

the pivot table area.

Below is an example.



This setup specifies the **Fund** in the ***row*** area, the **Category** in the ***column*** area, and the **fiscal years** in the ***data*** area. The items in the data area of the pivot table are summarized using one of Excel's functions. By default, the sum function is chosen. To change the function used, double click the label in the data area and the window to the right will appear. In the screenshot, the **Options >>** button has also been selected. In addition to the summarizing function, this window also controls the display for the label. The **Normal** option is the default. Make the desired changes from the available list.



Click **Finish** to create the table.

Note

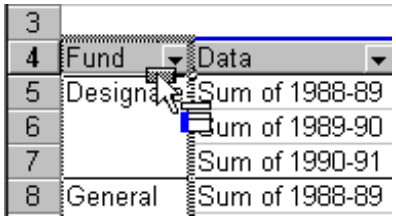
Any part of the set up used in this step can be easily changed after the table is created.

Changing Pivot Table Layouts

When a pivot table is created, the row and column labels specify how the data is displayed. The easiest way to alter the data display is through clicking and dragging the labels. This is used to adjust the field order and location. Each time a change is performed, Excel will automatically reorganize or recalculate the data.

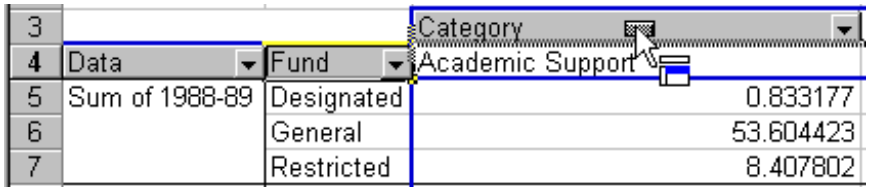
Changing Field Order Within a Column or Row

Click and drag the label into the desired heading area. As the mouse is moved, notice that the mouse pointer changes. As the pointer is dragged to different areas, a grey bar displays on the sheet to indicate the location that the pointer has moved to. In the example below, the column items are being reorganized by moving the “Fund” label after the “Data” label.



Moving Fields Between Rows and Columns

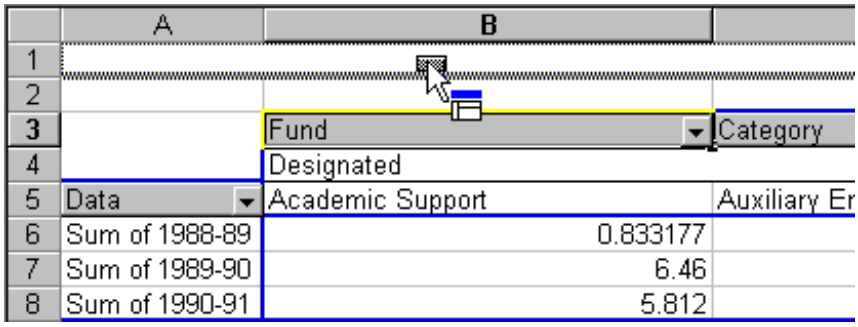
Change the fields using the same principle as changing the order within a column/ row. Click and drag the label to change from the row to the column or from the column to the row. In the example below, the “Fund” is being changed to a row label.



Moving Fields Between Page and Columns/Rows

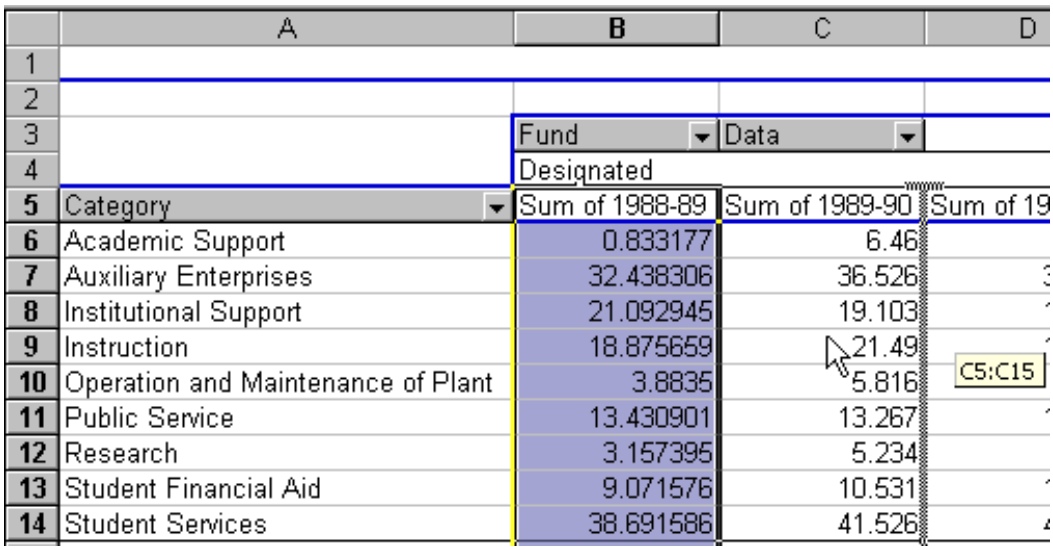
Moving the first column label is the easiest way to change a field to a page label. Although it is possible to directly move the other column labels and any row labels, the easiest method is to change a field to column orientation before moving to a page label. To create a page label, click and drag the column label upward. In the example below, the “Fund” is being moved to a page label. Notice that a different mouse cursor appears.

Click and drag the page label to change it back to a row or column label.



Changing the Item Order

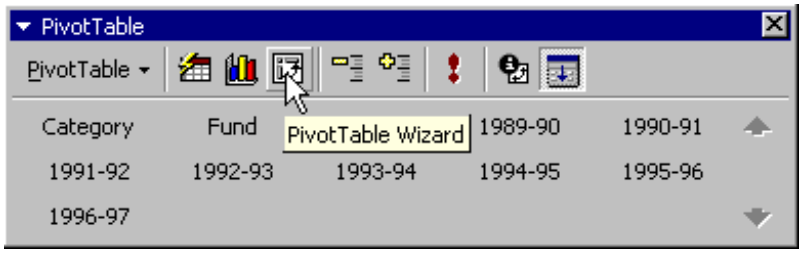
The item order can be altered to change how the items appear next to each other. Begin by single clicking the item to move. Notice that the entire column of data is selected. Move the mouse pointer to the border of the selected area. The mouse pointer will change from the white plus sign to an arrow. Click and drag the field to the desired location. In the example below, the “Sum of 1988-89” is being moved so that it appears after the “Sum of 1989-90.”



Adding and Removing Fields

Adding and removing fields is easily accomplished by a variety of different methods. These include using the Pivot Table toolbar, the menu bar, and the right mouse button.

The first method to add or remove fields is through the Pivot Table Wizard. Select any area within the pivot table and select the pivot table wizard. This can be done by using the button in the toolbar, selecting **Data|PivotTable and PivotChart Report...**, or right clicking on one of the labels and selecting **Wizard...**. This will open a window to **Step 3** of the wizard. Choose the desired format and click **Finish** to recreate the pivot table in the same location.



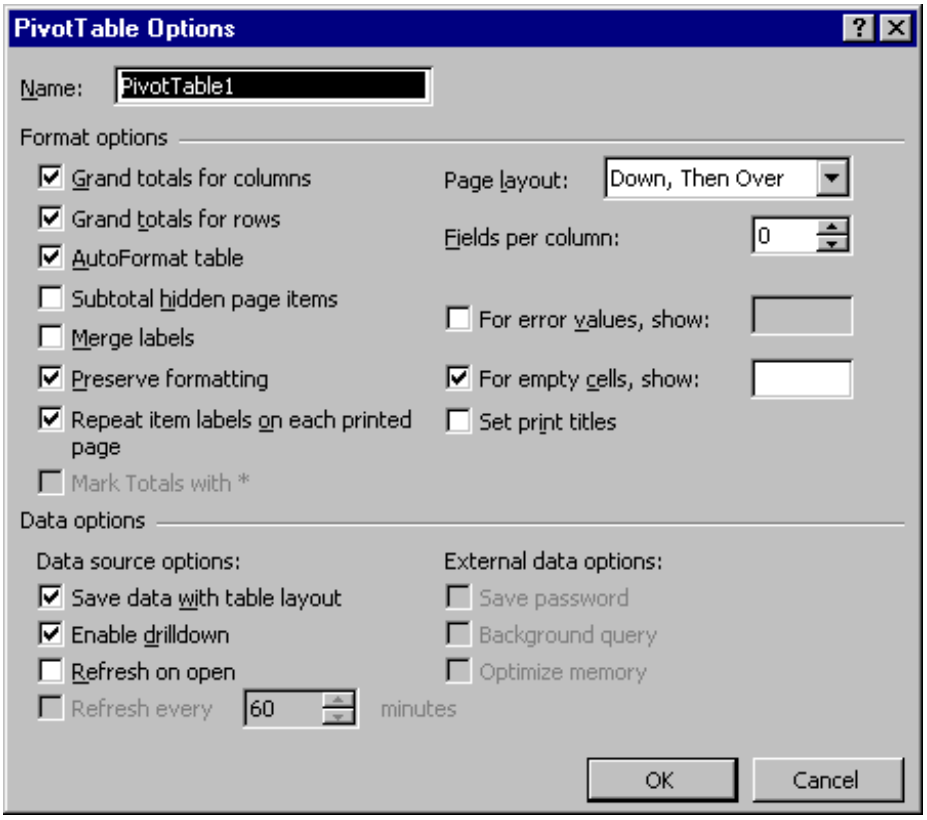
The second method to remove fields is through the right mouse button. To remove a field, right click on the label to remove and select **Delete** from the context menu. ***Note:*** The **Insert** command in the context menu is not used to insert fields.

Changing GrandTotals and SubTotals

Excel calculates grand totals and subtotals by default. Grand totals provide total values for the rows, columns, and table. Subtotals are provided whenever there are multiple column fields or row fields. When the totals are calculated, the source data for the pivot table is used. Grand totals use the same summary function that is chosen for the data area of the pivot table. Subtotals are defaulted to use the SUM function, but a different function can be chosen.

Hiding and Showing the Grand Total

To hide or show the grand totals, use the option screen for the pivot table. When using the Pivot Table wizard, click on the **Options >>** button in Step 3. If the pivot table has already been created, right click anywhere inside the pivot table and select **Options** from the context menu. From the window that appears, use the checkboxes to show or hide the grand totals for the rows and columns. If the check box is clear, the grand total will not display.



Hiding, Showing, and Changing the Subtotals

To change the options for the subtotals, double click the desired label field and a window similar to the following will appear. Remember that Excel defaults to calculating subtotals for each field label. If there are multiple fields, each field must be individually changed.

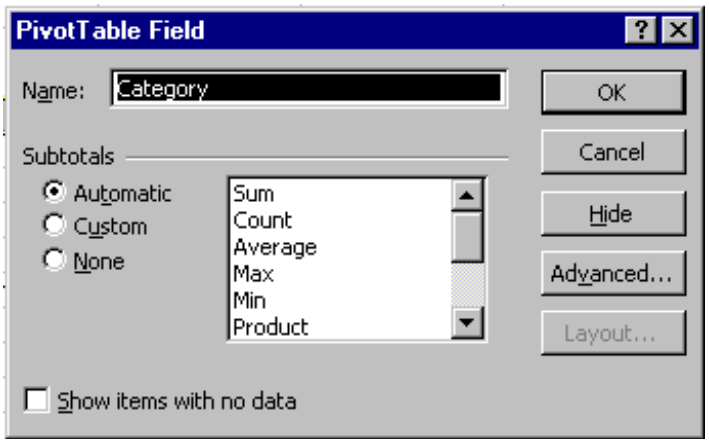
In the **Subtotals** region, the function list displays all of the available functions. Select a function in the list to change how the subtotals are calculated. Select the radio button **None** to hide the subtotals for the field.

Hiding and Showing Field Items

To hide and show field items, double click the desired field label to open the window shown above in the previous section. In the **Hide Items:** box, click on each field to hide. When an item is hidden, the item name will be highlighted. Select the field again to show the field.

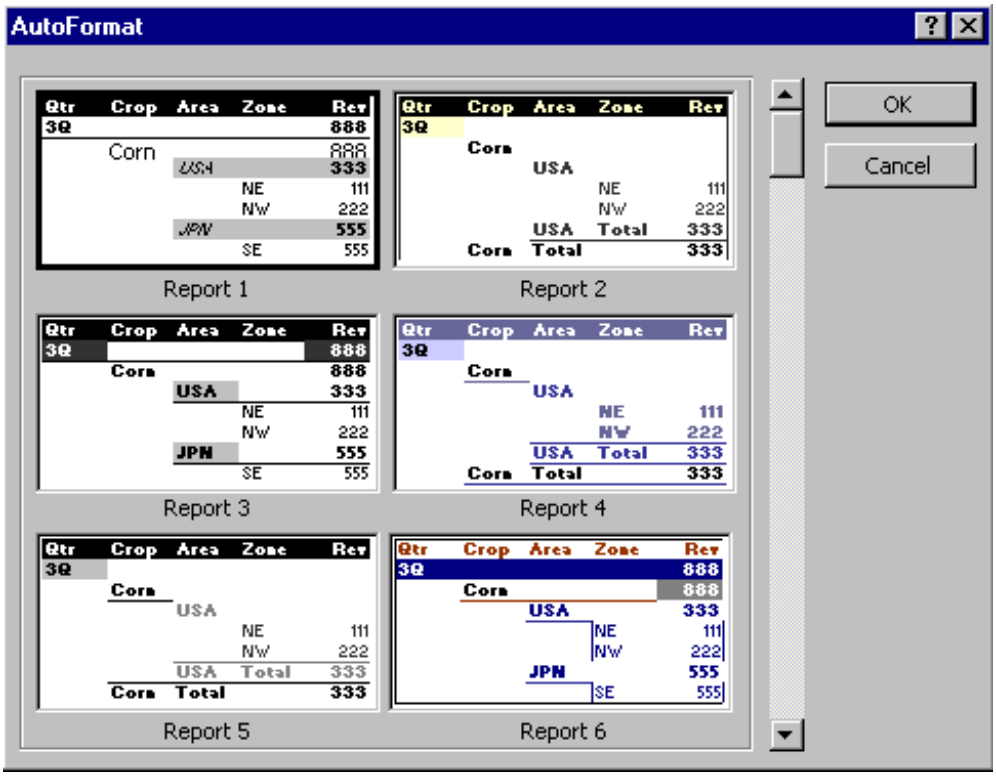
Renaming a Field Label or Item

To rename a field label, double click the field label to open the Pivot Table Field window shown below by double-clickin on the field name. Type in the desired name in the **Name:** box. To rename an Item, select the item and type the new name. Any changes only affect the pivot table display; the source data is not changed.



Formatting a Pivot Table

Data in a pivot table is treated with a special format because it is constantly recalculated and reformatted each time the layout changes. Because of this the pivot table should ***not*** be manually formatted. Each time the layout changes, the formatting may disappear. The best way to format the pivot table is to use an AutoFormat. Select any cell within the pivot table and select **Format|AutoFormat**. From the AutoFormat dialog window that appears, select the desired format.



Changing the Number Format

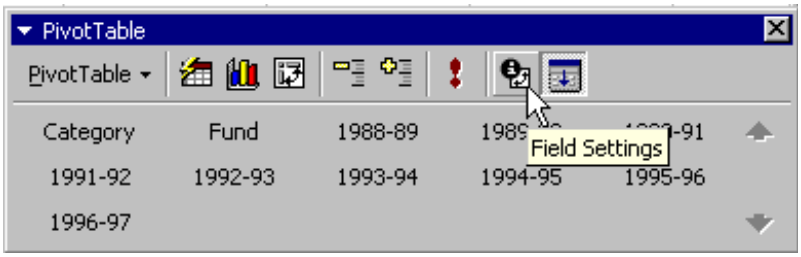
To change the number format in the pivot table, select the desired cells. Right click within the selected region and choose **Format Cells...** from the context menu or choose **Format|Cells...** in the menu bar.

Changing the Summary Function and Calculation Type

When the data area is calculated and displayed in a pivot table, Excel uses the SUM function as the default function, displaying the data as it normally would. These options can be easily changed to provide a different summary of the data.

The Summary Function

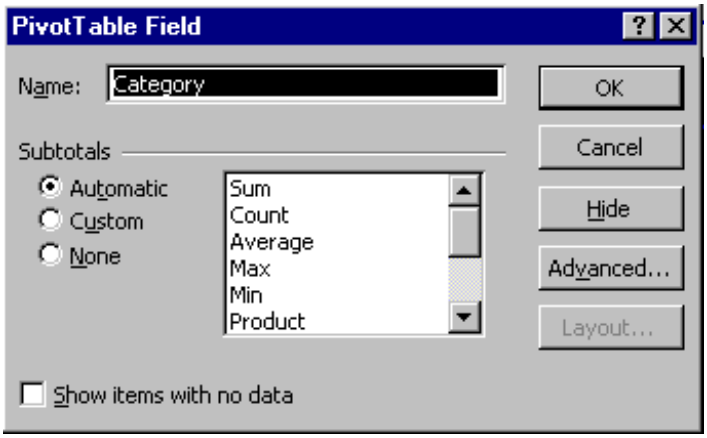
To change the summary function that is used, select a cell containing the data field to change. Open the **Pivot Table Field** window by right clicking on the cell and choosing **Field Settings...** or by selecting the toolbar button.



Note

This is an additional method for changing the name of the field.

Select the desired summary function to use from the following window.

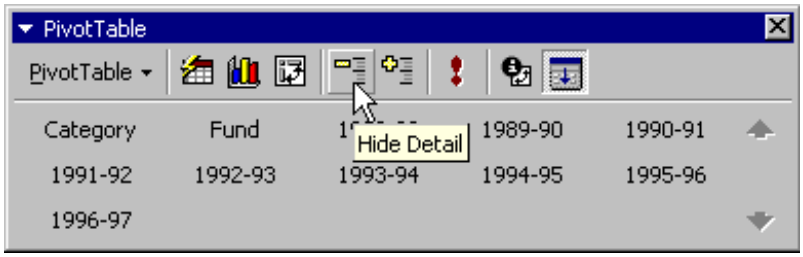


Showing and Hiding Details

When a pivot table contains more than one row or column field, the item details can be hidden to show only the summary data.

Hiding Detail Rows or Columns

To hide the details, double click the item in an outer row or column. Another method is to select the item in the outer row or column and use the toolbar button to hide details.



In the example below, double clicking on “Academic Support” hides the Fund Type details.

	Category	1988-89	Data
5	Academic Support	0.8	Sum of 1989-90
6			Sum of 1988-89
7			Sum of 1990-91
8		8.4	Sum of 1989-90
9			Sum of 1988-89
10			Sum of 1990-91
11		53.6	Sum of 1989-90
12			Sum of 1988-89
13			Sum of 1990-91

	Category	1988-89
5	Academic Support	
6		
7		

Showing Detail Rows or Columns

To show the details, double click the summary item or select the item and use the toolbar button to show details.

Hiding and Showing Details for All Rows and Columns

To hide or show all details click on the outer row or column label to select all of the items. Then use the toolbar buttons to show or hide the details. This is a time saving feature to avoid repeating the command for each individual item.

Displaying the Source Data

To quickly display the source data for a cell in the data area, double click the cell. All of the original data values used to calculate the cell will be displayed in a new worksheet.

Sorting

Simple Sorting by Label

To sort the pivot table by the label, select the label and use the toolbar buttons for sorting ascending or descending.

Simple Sorting by Values in the Data Area

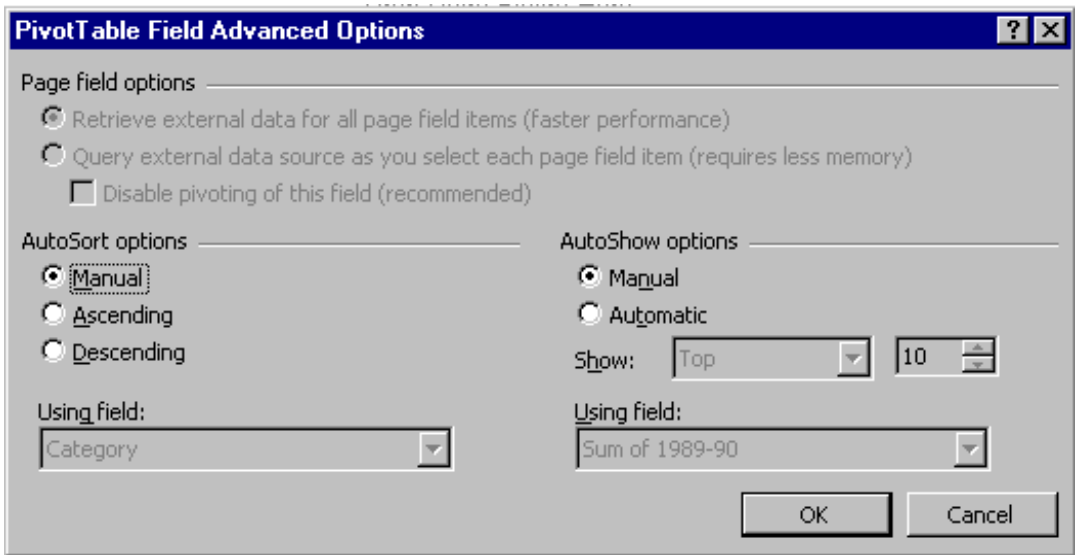
To sort by the data area, select the desired cell column in the data area and use the toolbar buttons. Notice that the entire data area has been sorted, not just the individual column. This is because the data in each of the rows are linked. Excel must move the entire row. In the example below, notice that sorting the year 1988-1989 for Academic Support reorganizes all of the Fund Types in each Fund.

3			Data
4	Category	Fund	Sum of 1989-90
5	Academic Support	Designated	6.46
6		General	55.324
7		Restricted	10.649
8	Academic Support Total		72.433
9	Auxiliary Enterprises	Designated	36.526
10		General	0
11		Restricted	1.119
12	Auxiliary Enterprises Total		37.645

3			Data
4	Category	Fund	Sum of 1989-90
5	Academic Support	Designated	6.46
6		Restricted	10.649
7		General	55.324
8	Academic Support Total		72.433
9	Auxiliary Enterprises	Designated	36.526
10		Restricted	1.119
11		General	0
12	Auxiliary Enterprises Total		37.645

Changing the Autosort

In the previous example, sorting by the values automatically reordered the fund type within each Fund. If the pivot table needed to be sorted by the 1988-1989 column for each fund, the Autosort must be changed. Autosort allows for one field to be sorted by a different field. To do this, right click on the field label which needs to be sorted and select **Field...** from the context menu. In the example, the Fund Type will be sorted by the 1988-1989 field. From the **Pivot Table Field** window, select the **Advanced...** button to open the PivotTable field Advanced Options window.



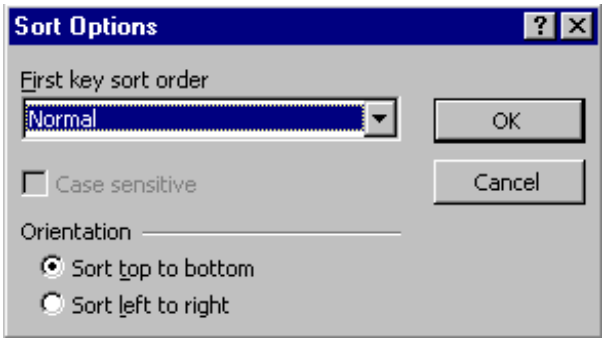
In the **AutoSort options box** select the order for sorting. When a sort order is selected, the **Using field:** region will display a drop down list of the available fields. Select the desired field by which to sort. In the example, the Fund Type will be sorted ascending using the 1988-1989 field. The before and after screen shots are shown below. (Notice that the fund type within each fund is sorted by Column C.)

3			Data
4	Category	Fund	Sum of 1989-90
5	Academic Support	Designated	6.46
6		Restricted	10.649
7		General	55.324
8	Academic Support Total		72.433
9	Auxiliary Enterprises	Designated	36.526
10		Restricted	1.119
11		General	0
12	Auxiliary Enterprises Total		37.645

3			Data
4	Category	Fund	Sum of 1989-90
5	Public Service	General	2.937
6		Restricted	11.179
7		Designated	13.267
8	Public Service Total		27.383
9	Auxiliary Enterprises	General	0
10		Restricted	1.119
11		Designated	36.526
12	Auxiliary Enterprises Total		37.645

Sorting by a Custom List

In certain situations, a list contains items (like months) which are sorted chronologically rather than alphabetically. Instead of using a simple sort, a custom sort must be performed. Begin by selecting the cells or field label to sort. Instead of using the toolbar sorting buttons, choose **Data|Sort...** and select the **Options...** button. In the window, click the down arrow and select the custom list.



The End!

We hope this series of Excel classes have expanded your knowledge and offered you some fun tricks to maneuver your way through Microsoft Excel. Just remember -- practice makes perfect! Review the concepts and skills we've covered in class and you'll be on your way to being the local "Excel Expert" in no time!