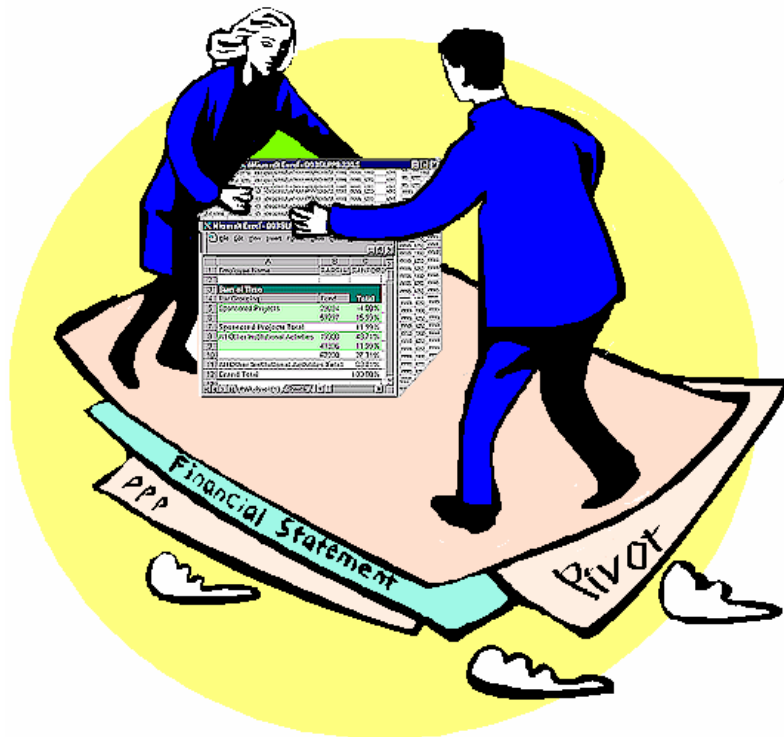


EXCEL PIVOT TABLE



David Geffen School of Medicine, UCLA
Dean's Office
Oct 2002

Table of Contents

Part I – Creating a Pivot Table

Excel Database.....	3
What is a Pivot Table.....	3
Creating Pivot Tables (Step-by-Step)	5
Setting up the Layout Area.....	6
Graphing Your Report.....	8
Editing your Graph.....	9

Part II – Customizing a Pivot Table

Redesigning the Pivot Table Report.....	10
Including an Additional Data Field	11
Using the “Page” Option.....	12
Displaying Pages on Separate Worksheets.....	13
Representing Your Dollar Amounts as Percentages of a Column or a Row.....	15
Displaying the Detail Data Behind a Summarized Amount.....	17
Sorting a Pivot Table Report.....	17
Collapsing and Expanding a Pivot Table.....	18
Hiding a Row or Column Item.....	19
Suppressing Subtotals.....	20
“Copy – Paste Special – Value” a Pivot Table Report.....	22
Changing Field Button Labels	24

Part III – Miscellaneous Excel Features and Tricks

Sorting.....	25
Subtotaling.....	26
Filtering.....	30
Auto Formatting	34
Sum Without Formulas.....	35
Print a Title on Multiple Pages.....	36
Get a List of All Worksheets in Your Workbook	36
Viewing All Formulas.....	37
Using “Form” to facilitate Viewing and Editing Excel Database.....	38
Wrap Text.....	38
Print Column Letters and Row Numbers.....	39

Part I - Creating a Pivot Table

Excel Database

In Microsoft Excel, you can easily use a list as a database. A list is a labeled series of rows that contain similar data. For example, a list can be a listing of clients and their phone numbers, or a list of ledger or payroll entries. You can think of a list as a simple database, where rows are *records* and columns are *fields*. When you perform database tasks, such as sorting, subtotaling or filtering data, Microsoft Excel automatically recognizes the list as a database and uses the following list elements to organize the data.

- The columns in the list are the fields in the database.
- The column labels in the list are the field names in the database.
- Each row in the list is a record in the database.

Using Excel as a database makes it a far more powerful tool than just using it as a spreadsheet. In order to benefit from Excel's neat database capabilities, you need to properly set up the information on your spreadsheet as a database, as described above. If you don't, you will not be able to perform database tasks. For example, make sure the column labels of your database are consecutive and you don't skip any columns and end up with columns with no column labels within your database. Similarly make sure you don't have totally blank rows within your database. If you do, this would break up your database and the database tasks you perform will only apply to a part of your database, resulting in erroneous reports. It is OK to have some blank cells in a row but it is not OK to have a row that has no information in any of its cells.

When you work with large amounts of data, scrolling up, down, right and left will only create frustration for you and will never give you any useful information. By using Excel database functions, literally, in a matter of seconds you can turn a large quantity of raw data into a meaningful, good looking, useful report. It is easier than you might imagine.

You can always start with a list and add fields to it. All it takes is to type in a column label in a column adjacent to your database (without skipping any columns) and enter your additional information in that column. Or you may insert a column in your database and use it as the additional field by typing a column heading.

The main Excel database tasks are sorting, subtotaling, filtering and the most powerful of all is pivot tables. All these features are covered in this manual.

What is a Pivot Table

A pivot table is an interactive worksheet table that quickly summarizes large amounts of data using calculation methods you choose. It is called a pivot table because you can rotate its row and column headings around the core data area to give you different views of the source data. As the source data changes, you can update a pivot table. If you change data in the source list or table, by adding new rows (records) or columns (fields), there are ways to update (or refresh) the pivot table. However, the safest way seems to be deleting the sheet which contains your pivot table and start over by creating a new pivot table, which usually takes only a few seconds.

Note: There is no limit, other than available memory, to the number of pivot tables that can be defined in the same workbook-or even on the same worksheet.

The following table is a sample report which shows summarized expense for three fiscal years by type of expense. In a matter of seconds hundreds of rows of detail data get summarized as shown below using the power of pivot tables.

Microsoft Excel - pivtempl.xls

File Edit View Insert Format Tools Data Window Help

125%

Formula Bar: B8 = 11589.5

	A	B	C	D	E	F	G	H
1	Sum of Expense	FY						
2	Sub-Obj Title	96-97	97-98	98-99	Grand Total			
3	CONSULTANTS/PROFESSIONAL SVCS-NON UNIV	133,913	201,931	122,220	458,064			
4	MEMBERSHIPS, BUSINESS AND PROFESSIONAL	40,200	40,800	42,025	123,025			
5	TELEPHONE EQUIPMENT	26,243	27,268	29,263	82,774			
6	TRAVEL - FOREIGN	18,239	40,394	10,938	69,571			
7	PROFESSIONAL SERVICES/UNIVERSITY	68,821			68,821			
8	TELEPHONE TOLLS	11,590	9,312	12,325	33,226			
9	RELOCATION EXPENSE			16,403	16,403			
10	MAINT/SVC AGREEMENT-COPYING EQUIPMENT	4,331	7,551	3,778	15,661			
11	TRAVEL - OUT-OF-STATE	2,755	12,751		15,506			
12	INVENTORIAL EQUIPMENT-COPYING EQUIPMENT	13,858			13,858			
13	HONORARIA-NON UNIV EMPLOYEES	5,000		7,527	12,527			
14	INSURANCE/GENERAL AND AUTO		8,299	3,986	12,285			
15	MAINT/SVC AGREEMENT-OFFICE EQUIPMENT	3,163	3,670	1,942	8,775			
16	TELEPHONE-OTHER	1,854	1,601	1,960	5,416			
17	TELEPHONE-LOCAL MESSAGE UNITS	1,889	1,718	1,532	5,139			
18	INSURANCE/EMPLOYMENT PRACTICES			3,986	3,986			
19	FOOD & BEVERAGE, BUSINESS CONFER & MTGS	2,297	355		2,652			
20	TELEPHONE INSTALLATION	661	481	1,192	2,334			
21	EXPENSE TRANSFER-C & G FUND OVERDRAFT	2,055	2		2,057			
22	OUTGOING MAIL CHARGES	1,335	690	25	2,050			
23	TELEPHONE-ZUM UNITS	486	500	345	1,331			
24	TRAVEL - IN-STATE	1,030			1,030			
25	MESSENGER/COURIER			292	292			
26	PARKING	4	119		122			

Sheet2 / CLOSED-Multi-All-19900(1) / travel w fund type 106 /

Ready

Start Microsoft Excel - pivt... Microsoft Word - pivot.doc 10:10 PM

You can even make the report look nice as follows, using “Autoformat” which is also explained in this manual on page 34:

Microsoft Excel - pivtempl.xls

File Edit View Insert Format Tools Data Window Help

125%

Formula Bar: D7 = 7526.80

	A	B	C	D	E	F	G	H
1	Sum of Expense	FY						
2	Sub-Obj Title	96-97	97-98	98-99	Grand Total			
3	CONSULTANTS/PROFESSIONAL SVCS-NON UNIV	133,913	201,931	122,220	458,064			
4	COPYING SERVICES	0		83	83			
5	EXPENSE TRANSFER-C & G FUND OVERDRAFT	2,055	2		2,057			
6	FOOD & BEVERAGE, BUSINESS CONFER & MTGS	2,297	355		2,652			
7	HONORARIA-NON UNIV EMPLOYEES	5,000		7,527	12,527			
8	INSURANCE/EMPLOYMENT PRACTICES			3,986	3,986			
9	INSURANCE/GENERAL AND AUTO		8,299	3,986	12,285			
10	INVENTORIAL EQUIPMENT-COPYING EQUIPMENT	13,858			13,858			
11	MAINT/SVC AGREEMENT-COPYING EQUIPMENT	4,331	7,551	3,778	15,661			
12	MAINT/SVC AGREEMENT-OFFICE EQUIPMENT	3,163	3,670	1,942	8,775			
13	MEMBERSHIPS, BUSINESS AND PROFESSIONAL	40,200	40,800	42,025	123,025			
14	MESSENGER/COURIER			292	292			
15	OFFICE SUPPLIES			9	9			
16	OUTGOING MAIL CHARGES	1,335	690	25	2,050			
17	PARKING	4	119		122			
18	PROFESSIONAL SERVICES/UNIVERSITY	68,821			68,821			
19	RELOCATION EXPENSE			16,403	16,403			
20	TELEPHONE EQUIPMENT	26,243	27,268	29,263	82,774			
21	TELEPHONE INSTALLATION	661	481	1,192	2,334			
22	TELEPHONE TOLLS	11,590	9,312	12,325	33,226			
23	TELEPHONE-LOCAL MESSAGE UNITS	1,889	1,718	1,532	5,139			
24	TELEPHONE-OTHER	1,854	1,601	1,960	5,416			
25	TELEPHONE-ZUM UNITS	486	500	345	1,331			
26	TRAVEL - FOREIGN	18,239	40,394	10,938	69,571			

Sheet2 / CLOSED-Multi-All-19900(1) / travel w fund type 106 /

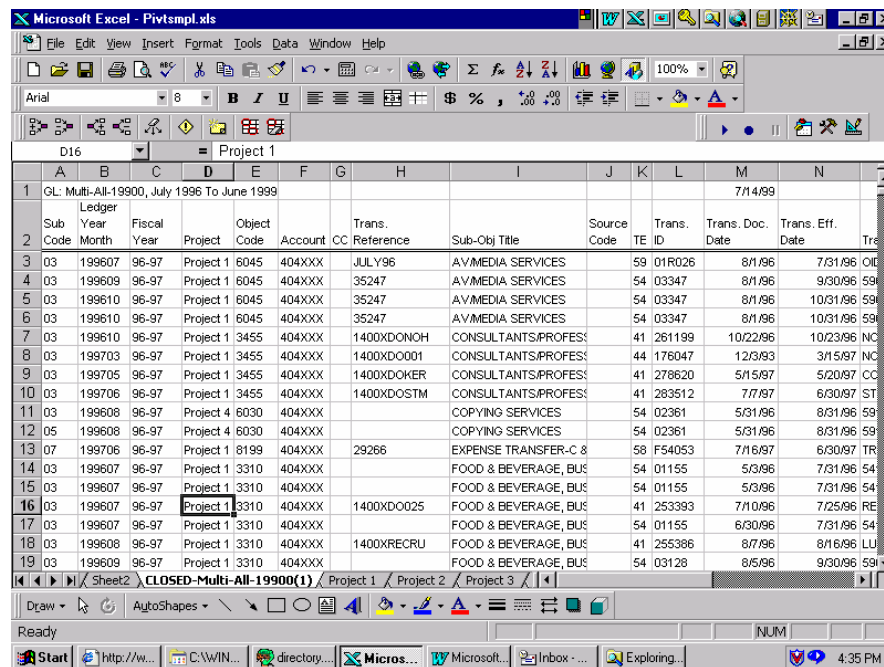
Ready

Start Microsoft Excel - pivt... Microsoft Word - pivot.doc 10:35 PM

Creating Pivot Tables (Step-by-Step)

Before You Start

Make sure you pick one cell in the body of your database, meaning any cell below the column labels where there is data. Excel will recognize the boundaries of your database.



PivotTable Wizard Step 1 of 3

On the menu bar click on “Data”, then click on “Pivot Table and PivotChart Report”, select the first option which is “Microsoft Excel list or Database” and click on “Next”.

PivotTable Wizard Step 2 of 3

Since your cell pointer was in the body of the database, Excel automatically knows the range of your database. Here, just click Next.

PivotTable Wizard Step 3 of 3

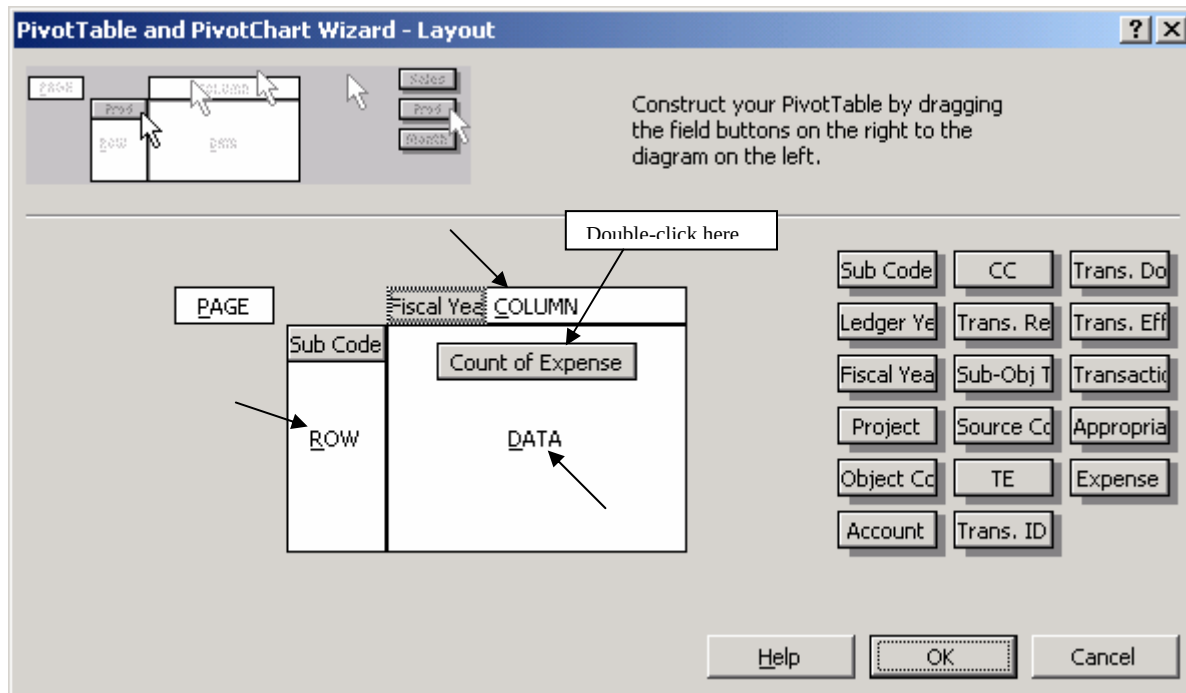
Click on “Layout” which is button to the left. Here is the heart of the pivot table where you get to design your report. Every field of your database appears as a button to the right. Simply drag the field(s) that you want your data summarized by to the “Row” and/or “Column” areas. Hit “OK” and then hit “Finish”. Keep in mind that the following are just examples. You can just as easily summarize your reports by other fields that are of more interest to you.

Note: If you have created filters using the Filter command on the Data menu in your Excel list, Pivot table will ignore it. So it’s better to remove the filters before creating a pivot table.

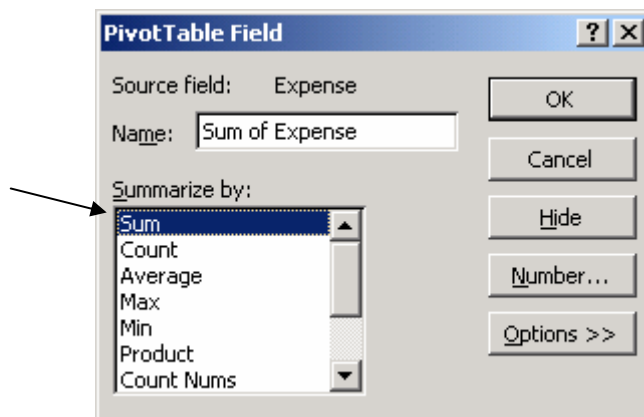
Also, Excel automatically includes grand totals and subtotals in the pivot table, so remove any subtotals from your list by choosing “Data” from the menu bar, then “Subtotals” and click on “Remove All”. Otherwise, pivot table will not allow you to proceed through the final step and you will get an error message.

Setting up the Layout Area

Drag the field “Sub Code” (on the right side of screen) to the ROW area (left side of screen). Then drag the “Fiscal Year” field to the COLUMN area. Then drag the numeric field “Expense” from the right side of the screen to the “DATA” area.



Remember that the DATA area contains the fields you want summarized. If instead of “Sum” it defaults to “Count”, double click on “Count of Expense” and choose “Sum” as shown below and click “OK”.



When done, click “OK”. Here is the result of your pivot table.

Microsoft Excel - pivtbl.xls

File Edit View Insert Format Tools Data Window Help

77670.95

	A	B	C	D	E	F	G	H	I
1	Sum of Expense	Fiscal Year							
2	Sub Code	96-97	97-98	98-99	Grand Total				
3	03	305,190	295,474	241,665	842,329				
4	04	13,858	0	0	13,858				
5	05	11,365	53,668	12,638	77,671				
6	07	9,310	8,299	5,528	23,137				
7	Grand Total	339,723	357,442	259,831	956,995				
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

Double-click here to rename the sheet.

Sheet2 / CLOSED-Multi-All-19900(1) / travel w fund type 106

Ready Sum=100,808

Microsoft Excel - pivtbl... Microsoft Word - pivot.doc

The pivot table is created on a new sheet in the workbook.

You can rename the sheet that contains the pivot table by double clicking on the sheet tab name and typing your new meaningful sheet name.

When you create a pivot table, the Pivot Table toolbar will appear on your screen and it looks like this:



If you don't see this toolbar then you can choose the Toolbar command from the View menu and choose PivotTable.

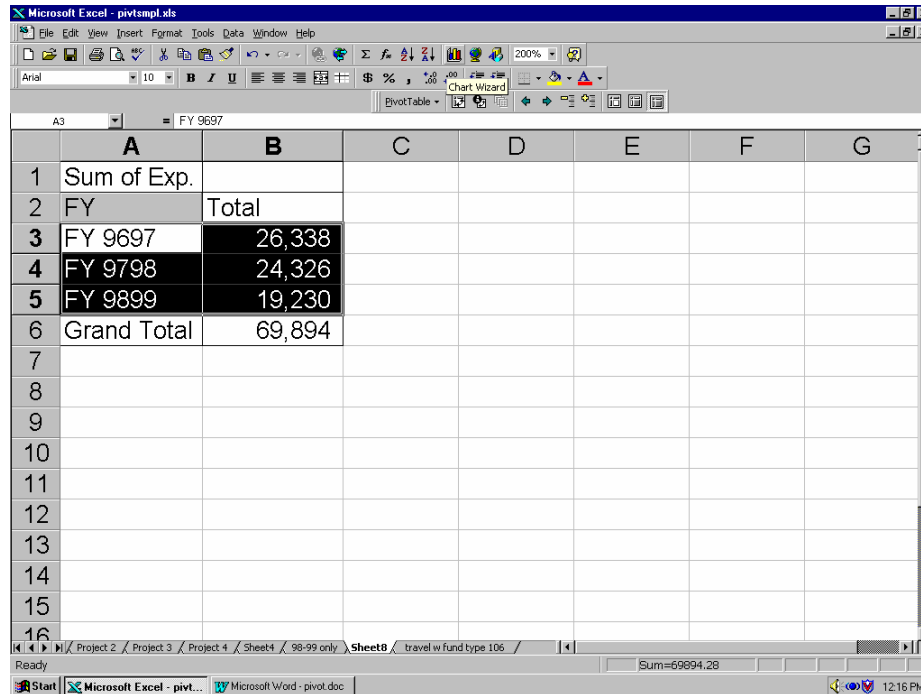
The best way to learn about pivot tables is through experimenting. Try positioning each field which is represented by buttons as a row category, column category, and page – the pivot table will reveal different information about the underlying data with each layout.

Graphing Your Report

You can easily define a graph from your report. Let's say we want to graph total travel expenses for a department over three fiscal years. After extracting the data and creating the pivot table, take the following steps.

Step 1

First, you need to select the cells for the graph. Select cells A3 to B5. Don't include the totals in the chart. Also, don't start from A2 or you won't be able to select the cells.

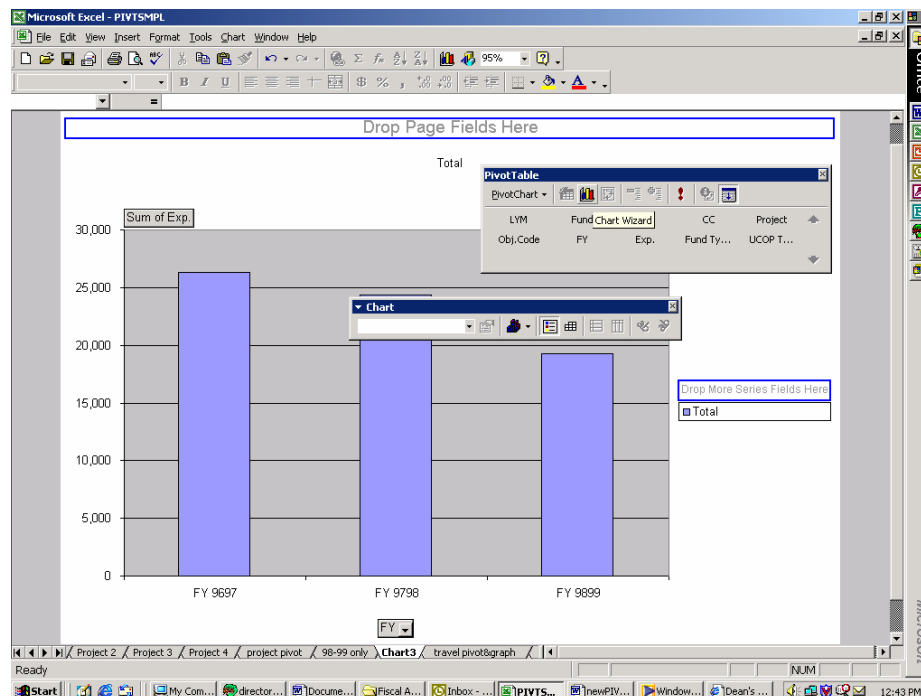


The screenshot shows a Microsoft Excel window with a PivotTable. The PivotTable is located in the range A3:B5. The data is as follows:

	A	B
1	Sum of Exp.	
2	FY	Total
3	FY 9697	26,338
4	FY 9798	24,326
5	FY 9899	19,230
6	Grand Total	69,894

After you select the cells for the graph, look for the "Chart Wizard" button on the pivot table toolbar. Click once on

this button. . You will see the following.

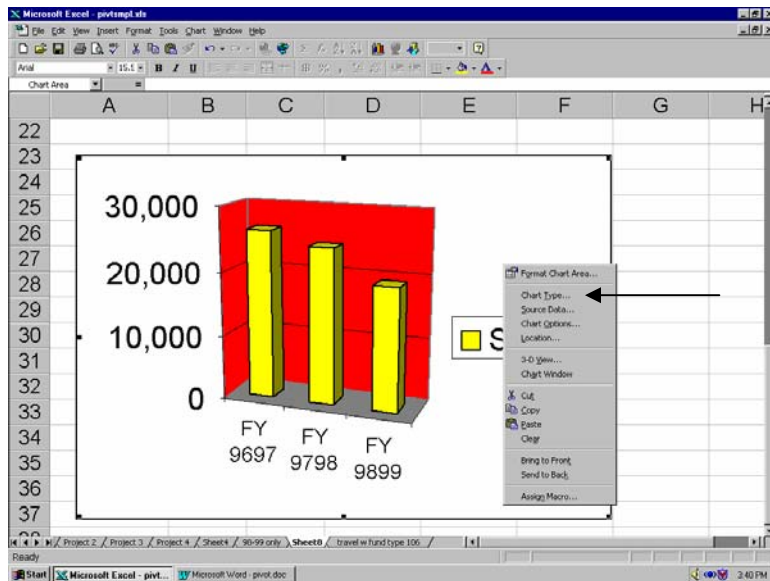


Editing your Graph

If you wish to edit your graph, first single click on the graph to get into the graph edit mode. If you want to change the color of the bar, double-click on the bar you want to change.

If you want to change the color of the background, double-click on the background and you can change the color. After you make your changes, click once outside the graph to exit graph edit.

If you want to change the graph type to a pie or a line graph, first single click to get into the graph edit mode then while your cursor is on a blank section of the chart, single click the right mouse button (shortcut) and click on “Chart Type”, select your desired chart type and click “OK” or use the chart toolbar to make changes.



Part II - CUSTOMIZING A PIVOT TABLE

Creating a pivot table is only the first step in making it work for you. You can choose how a pivot table is organized, formatted and calculated. You can also easily customize the portion of the source data it displays.

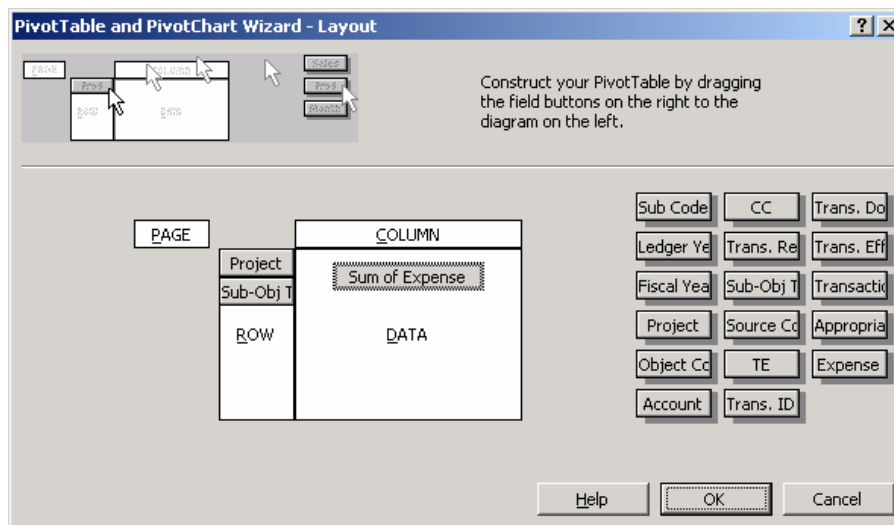
Redesigning the Pivot Table Report

To add detail to existing data in a pivot table, add a row or column field. To display smaller subsets of data, use page fields. To redesign the report i.e., add a row, column, or page field, select a cell in the pivot table, and then



click on the first button on the left of this toolbar, then click on the “Layout” button to the left of the pop up screen to go back to the drawing board or layout screen.

Try this with the first example that you tried out earlier. Drag the “Sub” and “Fiscal Year” fields off of the layout screen and set up the new screen to look like this...

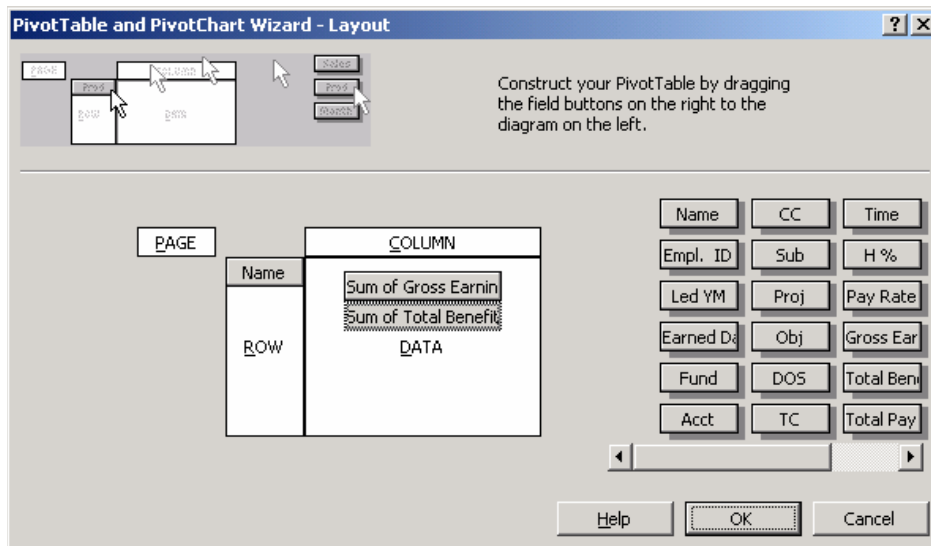


This will sum the expenses by “Sub-Object Title” for each “Project”
When done, click on “OK”. You will get this report.

Project	Sub-Obj Title	Total
Project 1	HONORARIA-NON UNIV EMPLOYEES	3,763
	INSURANCE-GENERAL AND AUTO	270
	MAINT/SVC AGREEMENT-COPYING EQUIPMENT	1,319
	MAINT/SVC AGREEMENT-OFFICE EQUIPMENT	363
	MEMBERSHIPS, BUSINESS AND PROFESSIONAL	42,025
	MESSENGER/COURIER	292
	OFFICE SUPPLIES	9
	OUTGOING MAIL CHARGES	25
	RELOCATION EXPENSE	16,403
	SPACE RENTAL/LEASE ON-CAMPUS	0
	SUPPLIES & EXPENSE-UNDESIGNATED BALANCES	(9,344)
	TELEPHONE EQUIPMENT	6,512
	TELEPHONE TOLLS	6,512
Project 1 Total		61,646
Project 2	HONORARIA-NON UNIV EMPLOYEES	3,763
	INSURANCE/EMPLOYMENT PRACTICES	1
	INSURANCE-GENERAL AND AUTO	191
	MAINT/SVC AGREEMENT-COPYING EQUIPMENT	0
	TELEPHONE EQUIPMENT	30,607
	TELEPHONE INSTALLATION	1,192
	TELEPHONE TOLLS	6,812
	TELEPHONE/LOCAL MESSAGE UNITS	1,532
	TELEPHONE-OTHER	1,900
	TELEPHONE-ZUM UNITS	345
	TRAVEL - FOREIGN	10,038
Project 2 Total		64,352
Project 3	CONSULTANTS/PROFESSIONAL SVCS-NON UNIV	2,170
	MAINT/SVC AGREEMENT-COPYING EQUIPMENT	2,459
	MAINT/SVC AGREEMENT-OFFICE EQUIPMENT	1,579
Project 3 Total		6,208

Including an Additional Data Field

You can summarize more than one data field from the source list or table in a pivot table. For example, if your source list has two numeric fields, such as gross salaries and employee benefits, you can display summary data for both of them. Lay out the pivot table design with both numeric fields in the “Data” area as follows and click OK,



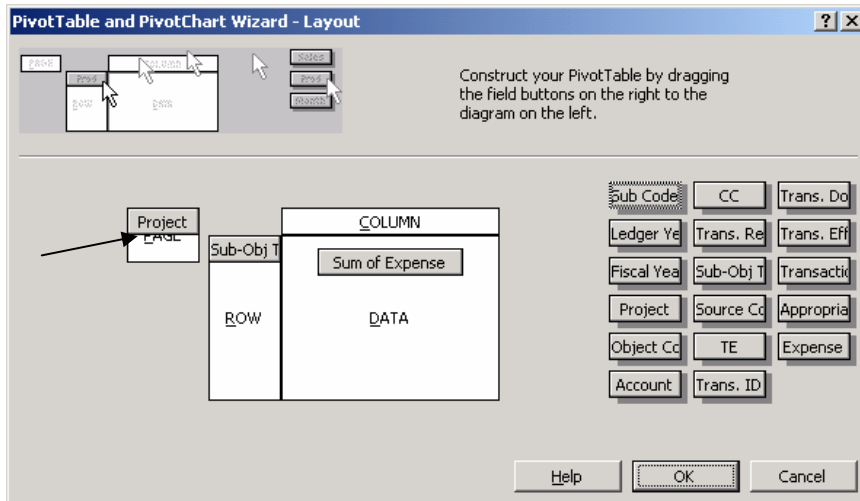
And you will get this:

	A	B	C	D	E	F
1	Name	Data	Total			
2	CHOXXXXX	Sum of Gross Earnings	3,761			
3		Sum of Total Benefits	476			
4	CHUNG,WXXXX	Sum of Gross Earnings	11,526			
5		Sum of Total Benefits	2,588			
6	CHXXXXXXXXXXXXX	Sum of Gross Earnings	6,732			
7		Sum of Total Benefits	1,765			
8	DE LA XXX	Sum of Gross Earnings	1,804			
9		Sum of Total Benefits	33			
10	DORMXXXX	Sum of Gross Earnings	3,426			
11		Sum of Total Benefits	31			
12	ELXXXXXXXXXXXXX	Sum of Gross Earnings	54,775			
13		Sum of Total Benefits	2,507			
14	ENGXXXXX	Sum of Gross Earnings	799			
15		Sum of Total Benefits	25			
16	FARXXXXXXXXXX	Sum of Gross Earnings	10,180			
17		Sum of Total Benefits	1,751			
18	GAXXXX	Sum of Gross Earnings	4,652			
19		Sum of Total Benefits	92			
20	GORNXXXXXXXXXXXXX	Sum of Gross Earnings	16,495			

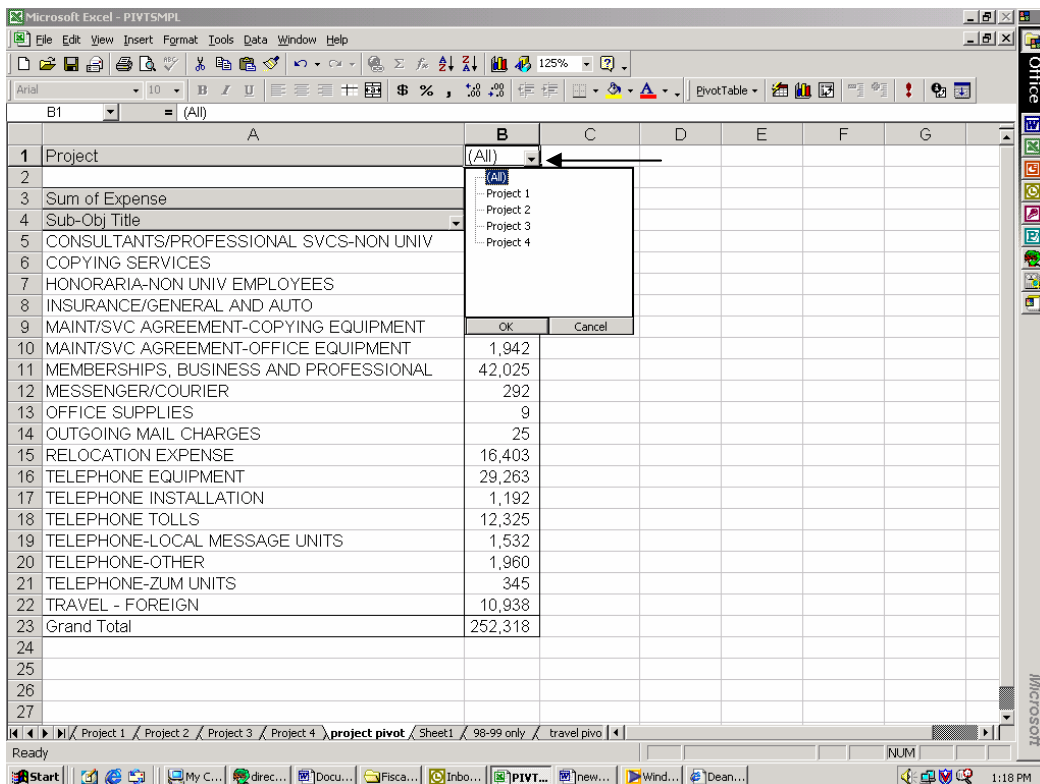
Using the “Page” Option

The “Page” option in the layout screen lets you look at one item at a time. You can really use this feature as a filter. Unlike items in row and column fields, the items and associated data for a page field are displayed one at a time on the worksheet.

Once again, go back to the layout screen as shown above and set up this pivot table. This again will sum the expenses by “Sub-Object Summary” for all projects. We will use the “Page” option to look at one project at a time. To do this, drag the “Project” field from the right side to the “Page” button on the left side as shown below. When done, click on the “OK” button.



Notice cell B1 on your finished report where the word “All” is. This means you are looking at All the projects. Click on the down arrow next to all and you will see a list of the different projects to pick from and hit “OK”.



The figure below shows just the project2 expenses. Notice how the numbers have changed from the previous report.
Select some other projects, again click on cell B1 to choose another project and watch the numbers change.

The screenshot shows a Microsoft Excel window with a PivotTable. The PivotTable is set to show data for 'Project 2'. The data is organized with 'Project' as the row label and 'Sum of Expense' as the value. The table includes a 'Grand Total' of 64,331.

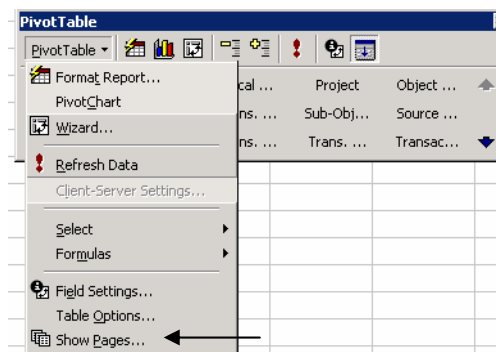
Project	Sum of Expense
HONORARIA-NON UNIV EMPLOYEES	3,763
INSURANCE/GENERAL AND AUTO	181
MAINT/SVC AGREEMENT-COPYING EQUIPMENT	0
TELEPHONE EQUIPMENT	38,607
TELEPHONE INSTALLATION	1,192
TELEPHONE TOLLS	5,812
TELEPHONE-LOCAL MESSAGE UNITS	1,532
TELEPHONE-OTHER	1,960
TELEPHONE-ZUM UNITS	345
TRAVEL - FOREIGN	10,938
Grand Total	64,331

Keep in mind you can have more than one field in the “Page” area. The more page fields you have, the more filtered the data is on a page. For example, a pivot table with the single page field “Project” shows total expenses for only one project at a time. Adding the page field Sub-Object Title filters the data even more by displaying total expense data only for the selected sub-object title for the selected project.

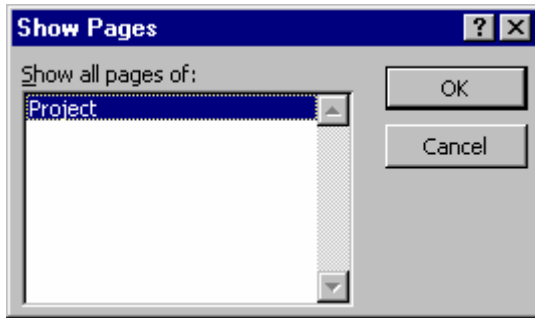
Displaying Pages on Separate Worksheets

Now, suppose you want to print separate reports for different projects or save them as separate reports. First, use the page button arrow to switch back to “All”. Then follow these steps:

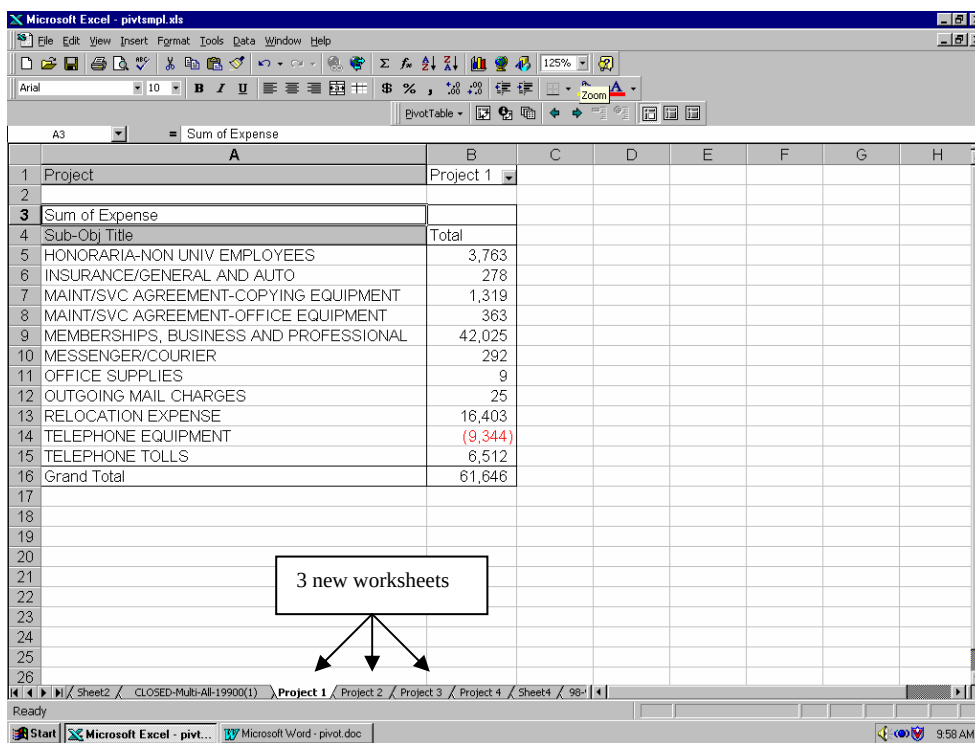
1. Select a cell anywhere inside the pivot table.
2. Click the “Show Pages” tool on the Pivot Toolbar.



Depending on your layout, there can be more than one page field. The “Show Pages” dialog box is displayed, letting you select which field will determine the page breaks.



3. Select Project from the list, and click OK. The following figure shows the result.



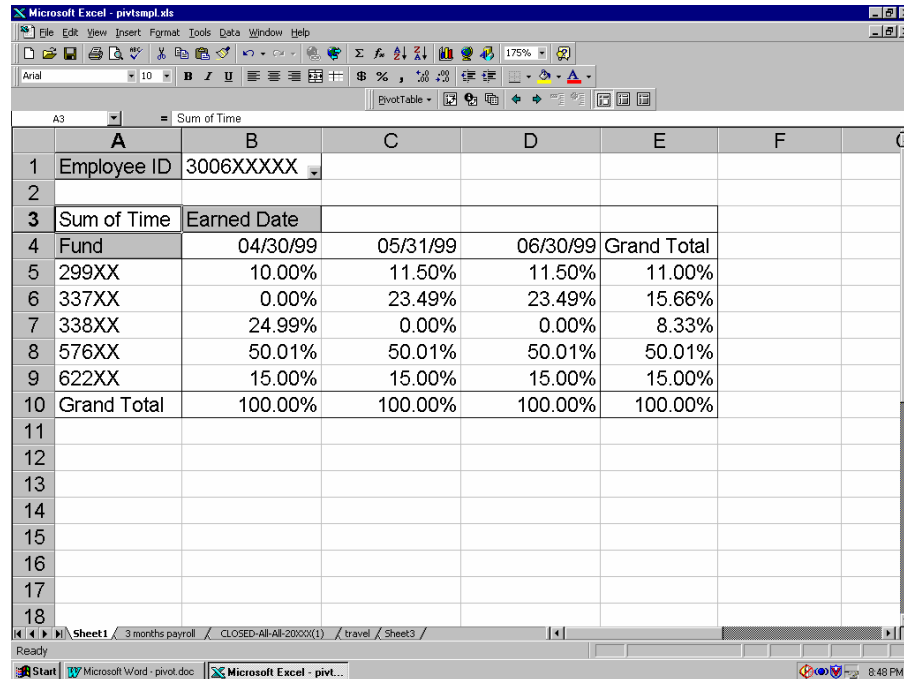
Notice that three new worksheets have been inserted into the workbook – one for each project.

Grouping Your Data

Grouping is another feature in pivot tables that you might find useful at times. The grouping feature is not addressed in this manual.

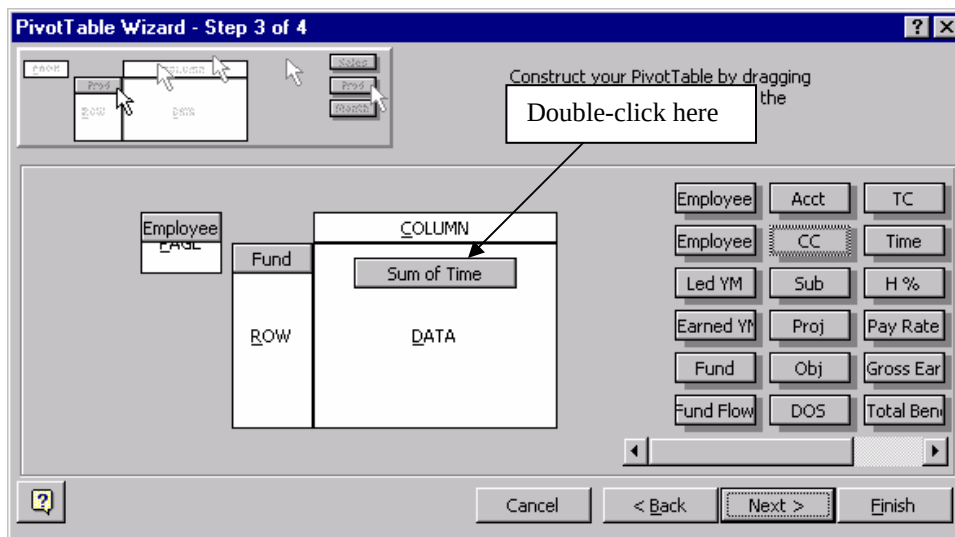
Representing Your Dollar Amounts as Percentages of a Column or a Row

Each cell in the following example is shown as a percentage of the column.

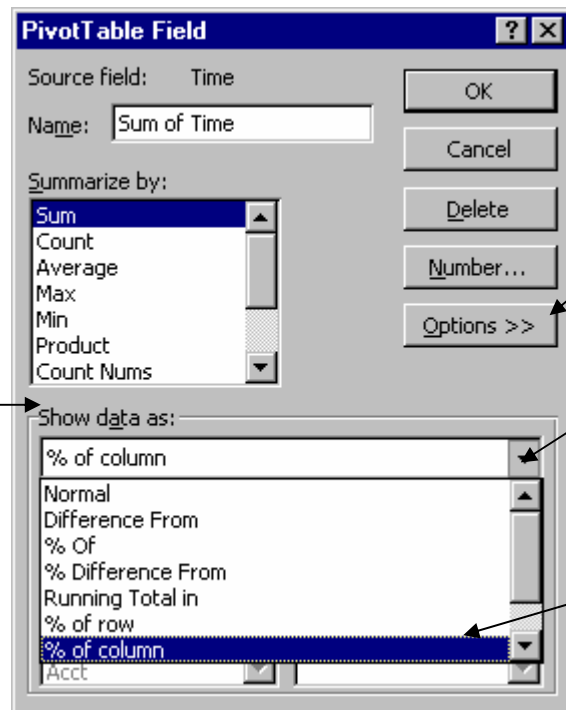


	A	B	C	D	E	F
1	Employee ID	3006XXXXX				
2						
3	Sum of Time	Earned Date				
4	Fund	04/30/99	05/31/99	06/30/99	Grand Total	
5	299XX	10.00%	11.50%	11.50%	11.00%	
6	337XX	0.00%	23.49%	23.49%	15.66%	
7	338XX	24.99%	0.00%	0.00%	8.33%	
8	576XX	50.01%	50.01%	50.01%	50.01%	
9	622XX	15.00%	15.00%	15.00%	15.00%	
10	Grand Total	100.00%	100.00%	100.00%	100.00%	
11						
12						
13						
14						
15						
16						
17						
18						

The following steps will show you how to create such a report. Let's say you are working with detail payroll data for 3 months. Issue the Pivot Table command from the Data menu to get to the layout screen as shown below.



Double-click on the “Sum of Time” to create a custom calculation. Once you see the top section of the screen below, click on “Options”. Then click on the arrow next to the “Show data as” box and set that option as “% of column”.



Click “OK”, then “OK” and you will get the report that we just saw with percentages in all columns. However, at first it will be for the whole department. Click on the arrow next to Cell B1 to pick one employee at a time.

Custom calculations for PivotTable data fields

The following functions are available for custom calculations in data fields. If you want to create a formula to work with PivotTable data, you can create a calculated field or a calculated item.

<u>Function</u>	<u>Result</u>
Difference From	Displays all the data in the data area as the difference from the value for the specified Base field and Base item. The base field and base item provide the data used in the custom calculation.
% Of	Displays all the data in the data area as a percentage of the value for the specified Base field and Base item. The base field and base item provide the data used in the custom calculation.
% Difference From	Displays all the data in the data area as the difference from the value for the specified Base field and Base item, but displays the difference as a percentage of the base data. The base field and base item provide the data used in the custom calculation.
Running Total In	Displays the data for successive items as a running total. You must select the field for which you want to show the items in a running total.
% of row	Displays the data in each row as a percentage of the total for each row.
% of column	Displays all the data in each column as a percentage of the total for each column.
% of total	Displays the data in the data area as a percentage of the grand total of all the data in the PivotTable.
Index	Displays the data by using the following calculation: $((\text{value in cell}) \times (\text{Grand Total of Grand Totals})) / ((\text{Grand Row Total}) \times (\text{Grand Column Total}))$

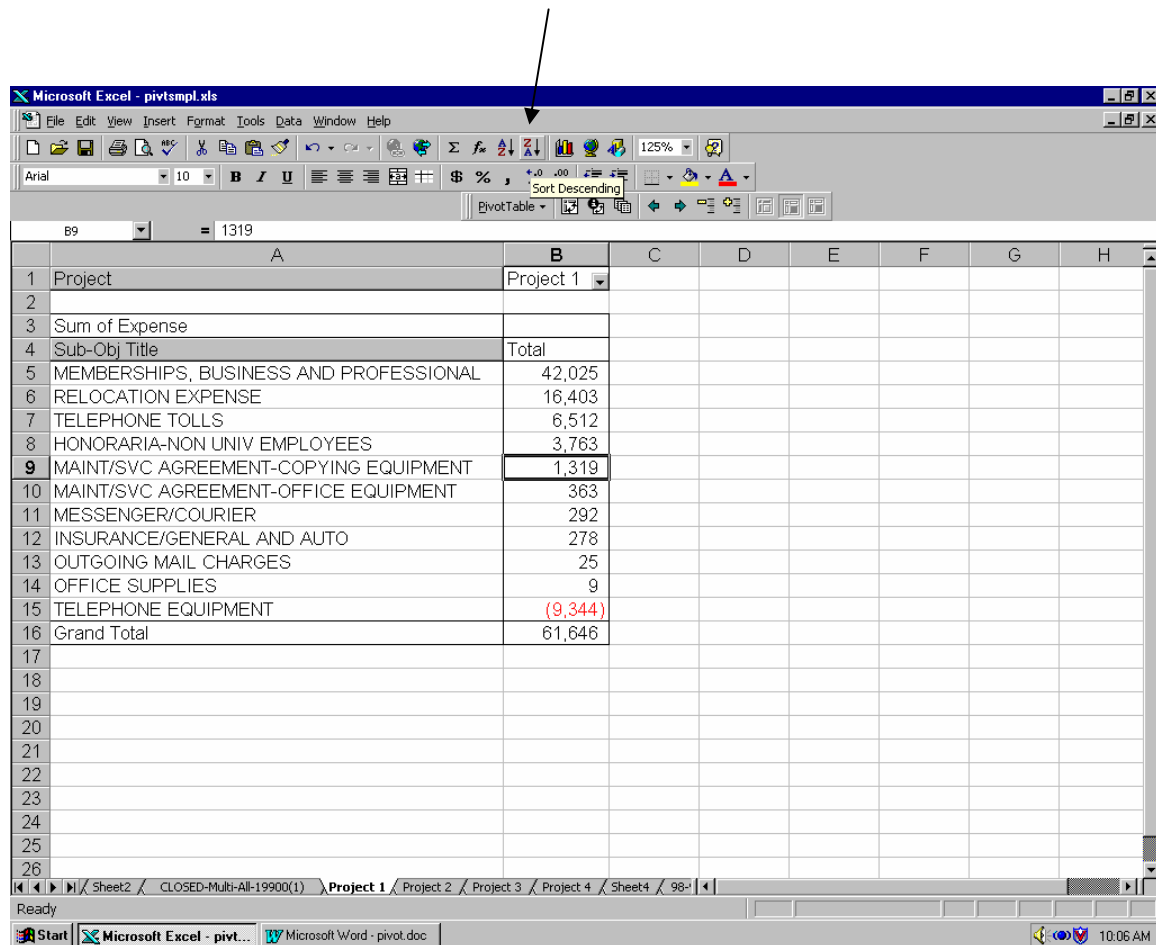
Displaying The Detail Data Behind A Summarized Amount

When viewing summary data in a pivot table, you may observe a number that requires explanation. You can easily display the source rows or records used to calculate the value of a cell in the data area. Simply double-click the cell that requires explanation. Excel will show you the rows from the database used in the calculation. Also notice that Excel creates a new sheet in the workbook. You may delete this sheet after you look up the detail information, if you don't need it any more.

Sorting a Pivot Table Report

You can sort a Pivot Table as shown below. To try this out, in the earlier example of expenses by "Project", pick one cell in the Expense column of the pivot table that shows expenses of project 1 and click the Descending Sort

button  and you will see sub-object title with the highest amount of expense listed on the first line.



The screenshot shows the Microsoft Excel interface with a PivotTable. The PivotTable is titled "Project 1" and is sorted by "Project 1". The "Sum of Expense" for Project 1 is 1,319. The "Sub-Obj Title" column lists various expenses, with "MAINT/SVC AGREEMENT-COPYING EQUIPMENT" having the highest expense of 1,319. The "Grand Total" is 61,646. The "Sort Descending" button is highlighted in the toolbar.

Project	Sum of Expense	Sub-Obj Title
Project 1	1,319	MAINT/SVC AGREEMENT-COPYING EQUIPMENT
		MAINT/SVC AGREEMENT-OFFICE EQUIPMENT
		MESSSENGER/COURIER
		INSURANCE/GENERAL AND AUTO
		OUTGOING MAIL CHARGES
		OFFICE SUPPLIES
		TELEPHONE EQUIPMENT
		Grand Total

If for some reason you need to sort in reverse alphabetical order of type of expense, pick a cell in the "Sub-Object Title" column and click on the  icon.

Collapsing and Expanding a Pivot Table

Sometimes, within a pivot table, you may want to view more or less detail. When there are more than one row or column categories, the level of detail can be easily expanded and collapsed. Consider the following pivot table. You have the “Project” and “Sub-Object Title” fields in the “Row” section and “Sum of Expense” in the Data area.

Project	Sub-Obj Title	Total
Project 1	MEMBERSHIPS, BUSINESS AND PROFESSIONAL	42,025
Project 1	RELOCATION EXPENSE	16,403
Project 1	TELEPHONE TOLLS	6,512
Project 1	HONORARIA-NON UNIV EMPLOYEES	3,763
Project 1	MAINT/SVC AGREEMENT-COPYING EQUIPMENT	1,319
Project 1	MAINT/SVC AGREEMENT-OFFICE EQUIPMENT	363
Project 1	MESSANGER/COURIER	292
Project 1	INSURANCE/GENERAL AND AUTO	278
Project 1	OUTGOING MAIL CHARGES	25
Project 1	OFFICE SUPPLIES	9
Project 1	TELEPHONE EQUIPMENT	(9,344)
Project 1 Total		61,646
Project 2	TELEPHONE TOLLS	5,812
Project 2	HONORARIA-NON UNIV EMPLOYEES	3,763
Project 2	MAINT/SVC AGREEMENT-COPYING EQUIPMENT	0
Project 2	INSURANCE/GENERAL AND AUTO	181
Project 2	TELEPHONE EQUIPMENT	38,607
Project 2	TELEPHONE INSTALLATION	1,192
Project 2	TELEPHONE-LOCAL MESSAGE UNITS	1,532
Project 2	TELEPHONE-OTHER	1,960
Project 2	TELEPHONE-ZUM UNITS	345
Project 2	TRAVEL - FOREIGN	10,938
Project 2 Total		64,331
Project 3	MAINT/SVC AGREEMENT-COPYING EQUIPMENT	2,459
Project 3	MAINT/SVC AGREEMENT-OFFICE EQUIPMENT	1,579
Project 3	CONSULTANTS/PROFESSIONAL SVCS-NON UNIV	2,170
Project 3 Total		6,208
Project 4	CONSULTANTS/PROFESSIONAL SVCS-NON UNIV	120,050
Project 4	COPYING SERVICES	83
Project 4 Total		120,133
Grand Total		252,318

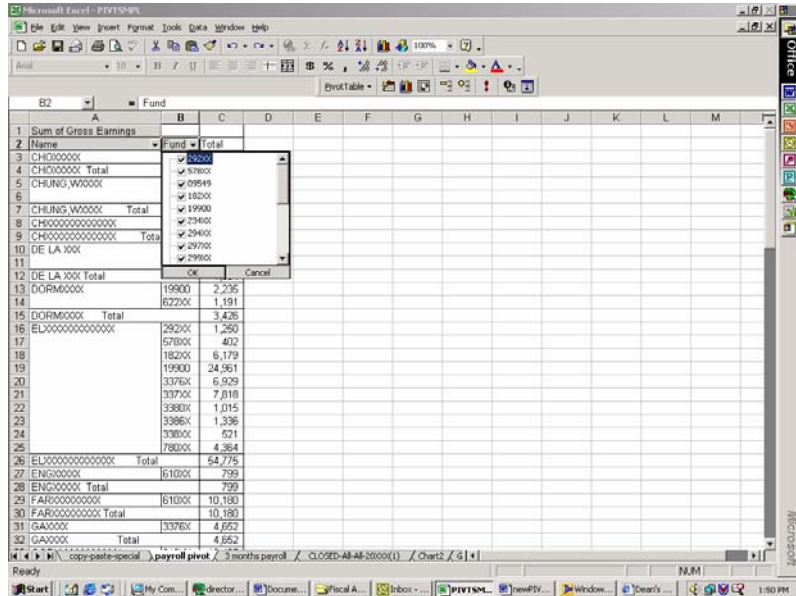
If you don’t want to see the detail sub-object amounts that make up the total of project 1, double-click on the label “project 1”, cell A5, to collapse the pivot table. The following figure shows the pivot table after cell A5 has been double-clicked .

Project	Sub-Obj Title	Total
Project 1		61,646
Project 2	TELEPHONE TOLLS	5,812
Project 2	HONORARIA-NON UNIV EMPLOYEES	3,763
Project 2	MAINT/SVC AGREEMENT-COPYING EQUIPMENT	0
Project 2	INSURANCE/GENERAL AND AUTO	181
Project 2	TELEPHONE EQUIPMENT	38,607
Project 2	TELEPHONE INSTALLATION	1,192
Project 2	TELEPHONE-LOCAL MESSAGE UNITS	1,532
Project 2	TELEPHONE-OTHER	1,960
Project 2	TELEPHONE-ZUM UNITS	345
Project 2	TRAVEL - FOREIGN	10,938
Project 2 Total		64,331
Project 3	MAINT/SVC AGREEMENT-COPYING EQUIPMENT	2,459
Project 3	MAINT/SVC AGREEMENT-OFFICE EQUIPMENT	1,579
Project 3	CONSULTANTS/PROFESSIONAL SVCS-NON UNIV	2,170
Project 3 Total		6,208
Project 4	CONSULTANTS/PROFESSIONAL SVCS-NON UNIV	120,050
Project 4	COPYING SERVICES	83
Project 4 Total		120,133
Grand Total		252,318

By double-clicking A5 again, the sub-object rows of Project 1 will show up again.

Hiding a Row or Column Item

To remove data from a single row or column in a pivot table, hide the associated item. For example, let's say you have pulled down payroll data for your department and you create a pivot table report showing gross earnings by fund for each person as shown below. You realize you don't want funds 19900 and 182XX to be included in your report. Click on the arrow next to the heading of the "Fund" field in your pivot table report. Uncheck the funds you don't want included and hit OK.



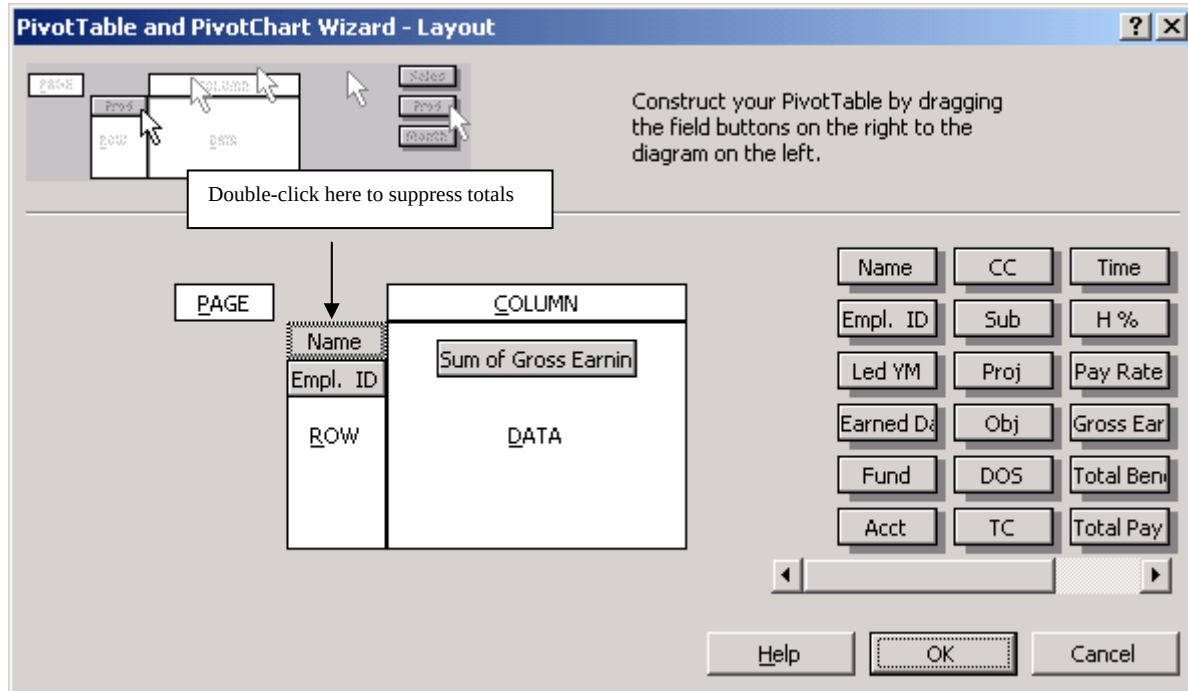
Your new report will not include funds 182XX and 19900. To include them again, click on the arrow next to fund heading again and check funds 182XX and 19900.

Caution: if you redesign your report and don't include the "Fund" field in your report, even though you have indicated to hide 2 funds, the instruction to hide will be ignored and they will be included in your total amounts.

Suppressing Subtotals

Sometimes you may want your summarized report to have two descriptive fields for a particular numeric field. For example, you may want to summarize your payroll data by person and see employee name, as well as employee number and total gross salary.

If you layout your pivot table as follows:

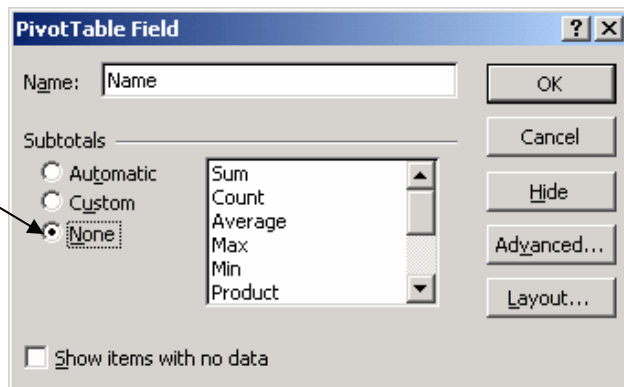


Your report will look like this:

Sum of Gross Earnings							
	A	B	C	D	E	F	G
1	Sum of Gross Earnings						
2	Name	Empl. ID	Total				
3	CHOXXXXX	3006XXXXX	3,761				
4	CHOXXXXX Total		3,761				
5	CHUNG,WXXXX	400581XXX	11,526				
6	CHUNG,WXXXX Total		11,526				
7	CHXXXXXXXXXXXXX	20287XXXX	6,732				
8	CHXXXXXXXXXXXXX Total		6,732				
9	DE LA XXX	90255XXXX	1,804				
10	DE LA XXX Total		1,804				
11	DORMXXXX	80253XXXX	3,426				
12	DORMXXXX Total		3,426				
13	ELXXXXXXXXXXXXX	0012XXXXX	54,775				
14	ELXXXXXXXXXXXXX Total		54,775				
15	ENGXXXXX	20024XXXX	799				
16	ENGXXXXX Total		799				
17	FARXXXXXXXXXX	70262XXXX	10,180				
18	FARXXXXXXXXXX Total		10,180				
19	GAXXXX	502729XXX	4,652				
20	GAXXXX Total		4,652				
21	GORNXXXXXXXXXXXX	50030XXXX	16,495				

NOT GOOD!!!!

The reason we don't like this report, is that it gives subtotals by "Employee Name" as well as by "Employee ID" and we only need one. We don't want the lines that say "Total" next to the employee name. In other words, we want to suppress subtotals by Employee Name. To accomplish this, double click on the button that says "Name". Once you see the following screen,



click on "None" for "Subtotals". Click OK and you will get the following report:

	A	B	C	D	E	F	G
1	Sum of Gross Earnings						
2	Name	Empl. ID	Total				
3	CHOXXXXX	3006XXXXX	3,761				
4	CHUNG,WXXXX	400581XXX	11,526				
5	CHXXXXXXXXXXXX	20287XXXX	6,732				
6	DE LA XXX	90255XXXX	1,804				
7	DORMXXXX	80253XXXX	3,426				
8	ELXXXXXXXXXXXX	0012XXXXX	54,775				
9	ENGXXXXX	20024XXXX	799				
10	FARXXXXXXXXXX	70262XXXX	10,180				
11	GAXXXX	502729XXX	4,652				
12	GORNXXXXXXXXXXXX	50030XXXX	16,495				
13	GRAXXX	802XXXX74	3,147				
14	HADJXXXXX	70XXX8943	288				
15	HAGXXXXX	7001XXXX9	18,920				
16	JOHXXXX	600XXXX68	16,875				
17	KIXXXXXXXXXXXXX	702634XXX	808				
18	LANETH L	501472XXX	53,125				
19	LANXXXX	60029XXXX	32,819				
20	LAXXXXX	002XXX566	12,967				

MUCH BETTER!!

“Copy – Paste Special – Value” a Pivot Table Report

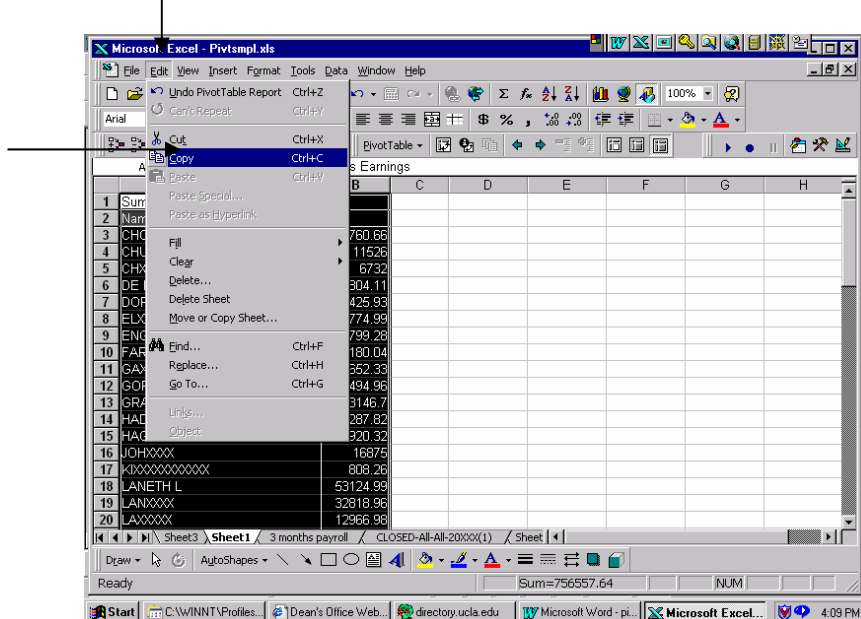
Since a pivot table maintains a link to the source data, you cannot directly edit the data area of a pivot table. To convert a pivot table to a worksheet range that you can edit, copy the pivot table using the Copy command on the Edit menu (or the shortcut right mouse button). Then paste it into a new location using the Paste Special command on the Edit menu (or the shortcut right mouse button). Select the Values option button in the Paste Special dialog box and click “OK”.

You can use this feature to use a large amount of raw data, build a pivot table, perform “copy-paste special-value” on it and basically create a new simpler database with summarized data and now use this database as source for a further summarized and rolled up pivot table report.

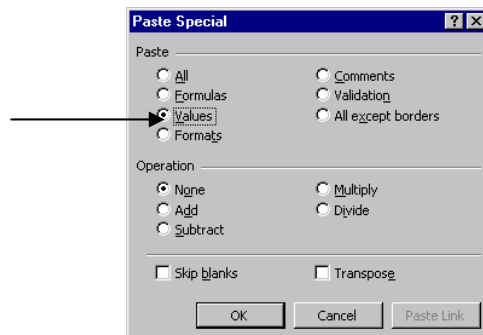
An example to help illustrate this concept is as follows:

We have pulled down payroll report for our entire department for 3 months. We simply need to know the average benefit rate for each employee for this time period. To calculate that, we need to divide total benefit amount by total gross earnings by employee to get the average benefit rate.

First run a pivot report by employee for gross earnings only. Click on A1 to select the entire pivot table report. On the menu bar click on “Edit”, then “Copy”.



Go to a new sheet, select A1. On the menu bar click on “Edit”, then select “Paste Special”. In the “Paste Special Dialog Box”, click on “Values”, then click “OK”.



You will simply get a list of employees and their total gross salary, without it being a pivot table any more. Now go back to redesign your pivot table report. Remove “Sum of Gross Earnings” and drag “Total Benefits” to the “Data” area. Perform the same “copy-paste special-value” as just described. However, instead of pasting in cell A1, paste special in cell C1. After formatting the numbers, this is what it will look like:

1	Sum of Gross Earnings	Total	Sum of Total Benefits	Name	Total			
2	CHOXXXXX	3,761	CHOXXXXX	476				
3	CHUNG, WXXXX	11,526	CHUNG, WXXXX	2,588				
4	CHXXXXXXXXXXXX	6,732	CHXXXXXXXXXXXX	1,765				
5	DE LA XXX	1,804	DE LA XXX	33				
6	DORMXXXX	3,426	DORMXXXX	31				
7	ELXXXXXXXXXXXX	54,775	ELXXXXXXXXXXXX	2,507				
8	ENGXXXXX	799	ENGXXXXX	25				
9	FARXXXXXXXXXX	10,180	FARXXXXXXXXXX	1,751				
10	GAXXXX	4,652	GAXXXX	92				
11	GORNXXXXXXXXXX	16,495	GORNXXXXXXXXXX	4,342				
12	GRAXXX	3,147	GRAXXX	15				
13	HADJXXXXX	268	HADJXXXXX	43				
14	HAGXXXXX	18,920	HAGXXXXX	3,947				
15	JOHXXXXX	16,875	JOHXXXXX	4,671				
16	KIXXXXXXXXXXX	808	KIXXXXXXXXXXX	12				
17	LANETH L	53,125	LANETH L	8,466				
18	LANXXXX	32,819	LANXXXX	5,846				
19	LAXXXXX	12,967	LAXXXXX	2,845				

Adjust the headings to say “Total Salary” and “Total Benefits”. After verifying that the names are properly lined up, delete column “C” because you already have the names in column “A”. (Delete the last line of your data which indicates the Grand Total). Now you can add a formula in the last column, dividing total benefits by total gross. REMEMBER to give this new column a heading, i.e. “Benefit rate”, so that it becomes an integral part of your newly created database. Format this last column to percentages. You now have a new database showing average of actual benefit rates of all your employees based on three months of payroll data!

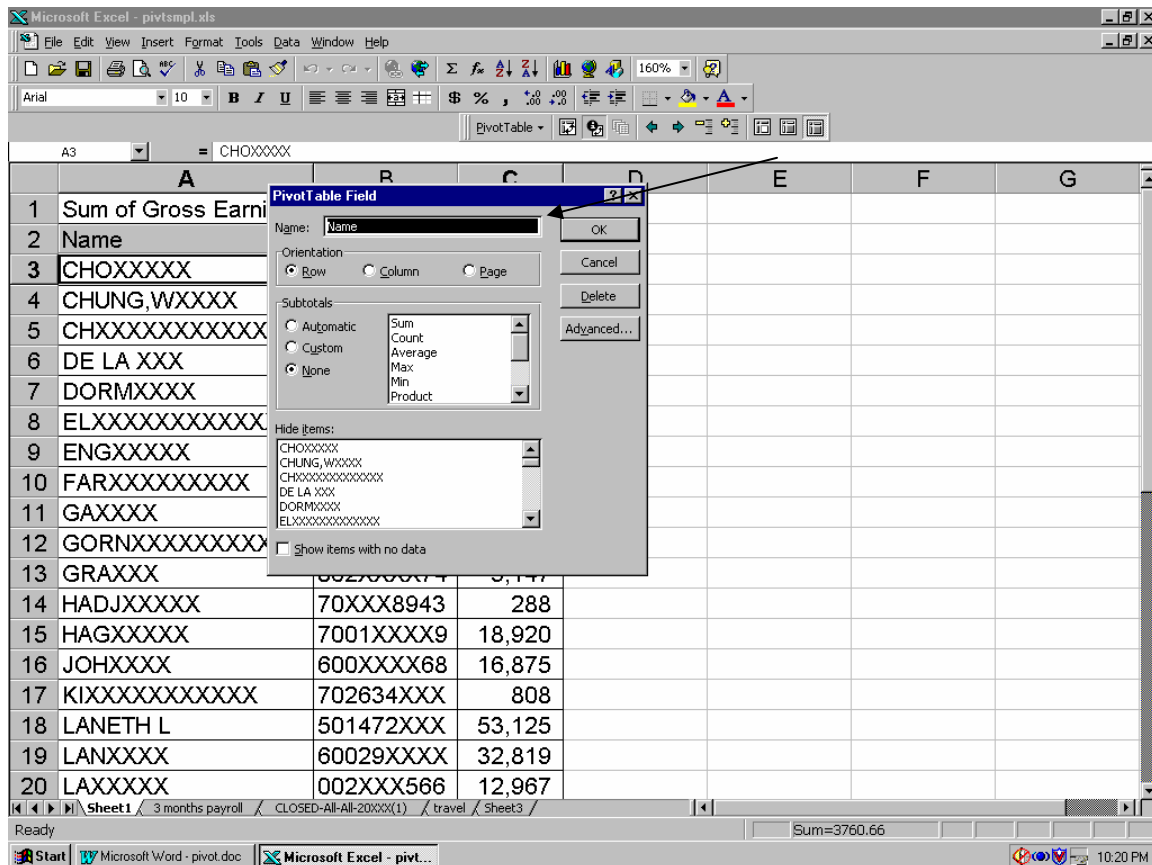
1	Name	Total Salary	Total Benefits	Benefit Rate					
2	CHOXXXXX	3,761	476	12.7%					
3	CHUNG, WXXXX	11,526	2,588	22.5%					
4	CHXXXXXXXXXXXX	6,732	1,765	26.2%					
5	DE LA XXX	1,804	33	1.8%					
6	DORMXXXX	3,426	31	0.9%					
7	ELXXXXXXXXXXXX	54,775	2,507	4.6%					
8	ENGXXXXX	799	25	3.2%					
9	FARXXXXXXXXXX	10,180	1,751	17.2%					
10	GAXXXX	4,652	92	2.0%					
11	GORNXXXXXXXXXX	16,495	4,342	26.3%					
12	GRAXXX	3,147	15	0.5%					
13	HADJXXXXX	268	43	14.9%					
14	HAGXXXXX	18,920	3,947	20.9%					
15	JOHXXXXX	16,875	4,671	27.7%					
16	KIXXXXXXXXXXX	808	12	1.5%					
17	LANETH L	53,125	8,466	15.9%					
18	LANXXXX	32,819	5,846	17.8%					

Changing Field Button Labels

The text that is used on the field buttons is determined by the field names in your database. These names may not be very friendly, so you may want to change them – without changing the source database.

Pick a cell in the column for which you want to rename the heading. Click the “Pivot Table Field” button on the

Pivot Table Toolbar . Change the name in the Pivot Table field dialog box.



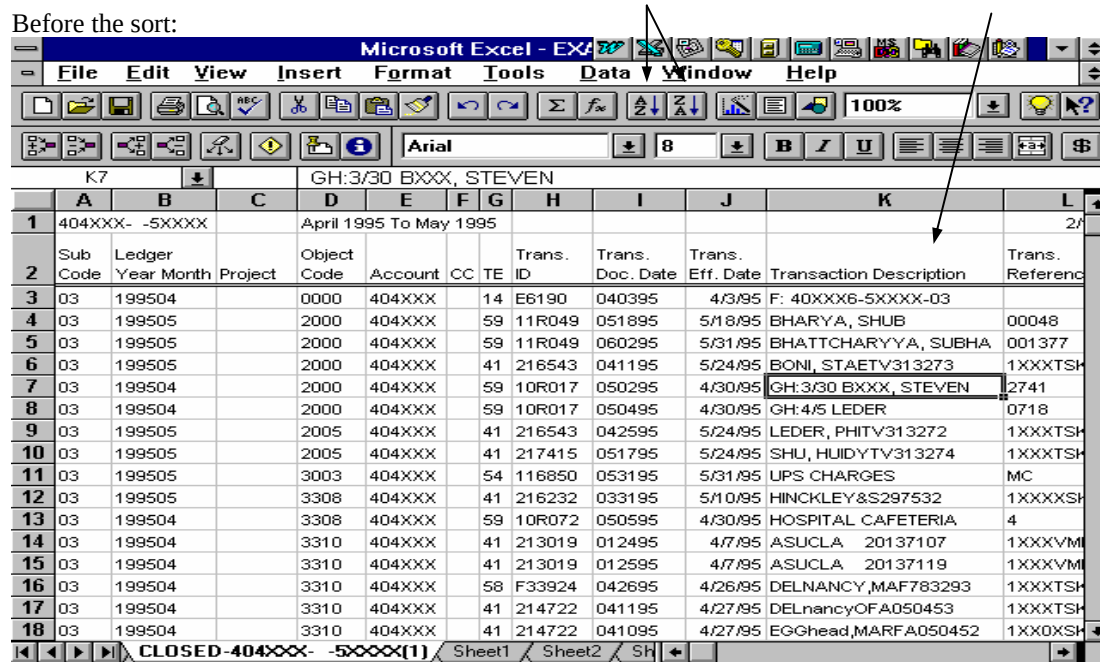
Or click the field button in your pivot table report– the button text displays on the formula bar. Use the formula bar to edit the text, just as you would edit the contents of a cell. (Or, double-click the field button in your pivot table, and change the Name in the Pivot Table Field dialog box).

Miscellaneous Excel Features and Tricks

Sorting

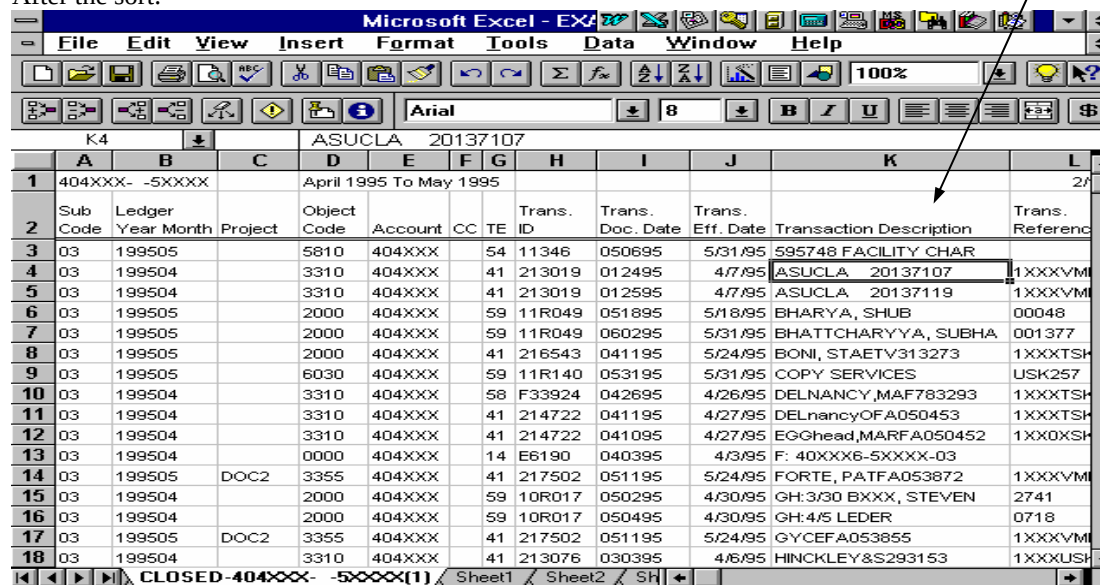
Let's say you have a detail report of your expenses. To sort your entire list, just select a single cell in the column that you want to sort on and choose the Sort Ascending  button or Sort Descending  button on the toolbar. You can also use the sort command in the Data menu. The following shows an ascending sort based on "Transaction Description".

Before the sort:



	A	B	C	D	E	F	G	H	I	J	K	L
1	404XXX-	-5XXXX		April 1995 To May 1995								2/
2	Sub Code	Ledger Year Month	Project	Object Code	Account	CC	TE	Trans. ID	Trans. Doc. Date	Trans. Eff. Date	Transaction Description	Trans. Reference
3	03	199504		0000	404XXX	14	E6190	040395	4/3/95	F: 40XXX6-5XXXX-03		
4	03	199505		2000	404XXX	59	11R049	051895	5/18/95	BHARYA, SHUB		00048
5	03	199505		2000	404XXX	59	11R049	060295	5/31/95	BHATTCHARYYA, SUBHA		001377
6	03	199505		2000	404XXX	41	216543	041195	5/24/95	BONI, STAETV313273		1XXXTSH
7	03	199504		2000	404XXX	59	10R017	050295	4/30/95	GH:3/30 BXXX, STEVEN		2741
8	03	199504		2000	404XXX	59	10R017	050495	4/30/95	GH:4/5 LEDER		0718
9	03	199505		2005	404XXX	41	216543	042595	5/24/95	LEDER, PHITV313272		1XXXTSH
10	03	199505		2005	404XXX	41	217415	051795	5/24/95	SHU, HUIDYTV313274		1XXXTSH
11	03	199505		3003	404XXX	54	116850	053195	5/31/95	UPS CHARGES		MC
12	03	199505		3308	404XXX	41	216232	033195	5/10/95	HINCKLEY&S297532		1XXXXSH
13	03	199504		3308	404XXX	59	10R072	050595	4/30/95	HOSPITAL CAFETERIA		4
14	03	199504		3310	404XXX	41	213019	012495	4/7/95	ASUCLA 20137107		1XXXVM
15	03	199504		3310	404XXX	41	213019	012595	4/7/95	ASUCLA 20137119		1XXXVM
16	03	199504		3310	404XXX	58	F33924	042695	4/26/95	DELNANCY,MAF783293		1XXXTSH
17	03	199504		3310	404XXX	41	214722	041195	4/27/95	DELnancyOFA050453		1XXXTSH
18	03	199504		3310	404XXX	41	214722	041095	4/27/95	EGGhead,MARFA050452		1XXOXSH

After the sort:

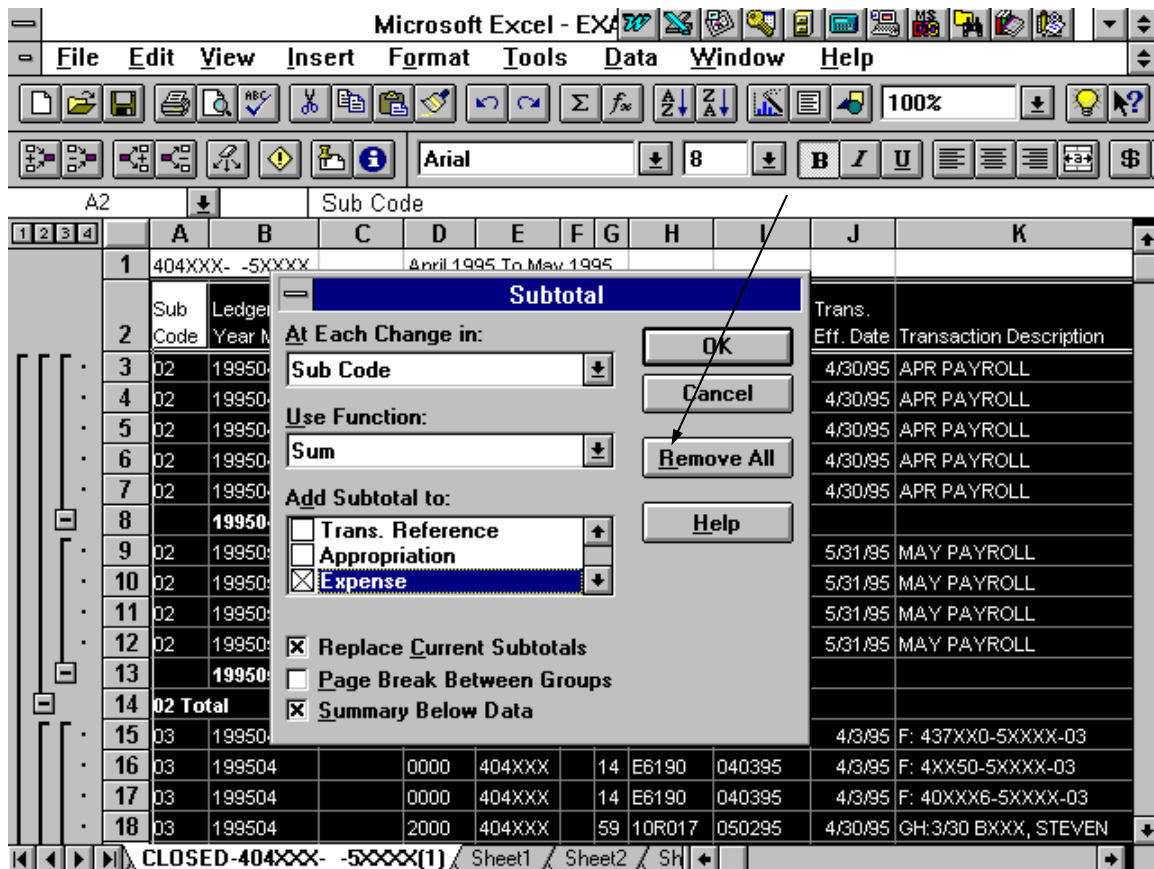


	A	B	C	D	E	F	G	H	I	J	K	L
1	404XXX-	-5XXXX		April 1995 To May 1995								2/
2	Sub Code	Ledger Year Month	Project	Object Code	Account	CC	TE	Trans. ID	Trans. Doc. Date	Trans. Eff. Date	Transaction Description	Trans. Reference
3	03	199505		5810	404XXX	54	11346	050695	5/31/95	595748 FACILITY CHAR		
4	03	199504		3310	404XXX	41	213019	012495	4/7/95	ASUCLA 20137107		1XXXVM
5	03	199504		3310	404XXX	41	213019	012595	4/7/95	ASUCLA 20137119		1XXXVM
6	03	199505		2000	404XXX	59	11R049	051895	5/18/95	BHARYA, SHUB		00048
7	03	199505		2000	404XXX	59	11R049	060295	5/31/95	BHATTCHARYYA, SUBHA		001377
8	03	199505		2000	404XXX	41	216543	041195	5/24/95	BONI, STAETV313273		1XXXTSH
9	03	199505		6030	404XXX	59	11R140	053195	5/31/95	COPY SERVICES		USK257
10	03	199504		3310	404XXX	58	F33924	042695	4/26/95	DELNANCY,MAF783293		1XXXTSH
11	03	199504		3310	404XXX	41	214722	041195	4/27/95	DELnancyOFA050453		1XXXTSH
12	03	199504		3310	404XXX	41	214722	041095	4/27/95	EGGhead,MARFA050452		1XXOXSH
13	03	199504		0000	404XXX	14	E6190	040395	4/3/95	F: 40XXX6-5XXXX-03		
14	03	199505	DOC2	3355	404XXX	41	217502	051195	5/24/95	FORTE, PATFA053872		1XXXVM
15	03	199504		2000	404XXX	59	10R017	050295	4/30/95	GH:3/30 BXXX, STEVEN		2741
16	03	199504		2000	404XXX	59	10R017	050495	4/30/95	GH:4/5 LEDER		0718
17	03	199505	DOC2	3355	404XXX	41	217502	051195	5/24/95	GYCEFA053855		1XXXVM
18	03	199504		3310	404XXX	41	213076	030395	4/6/95	HINCKLEY&S293153		1XXXUSH

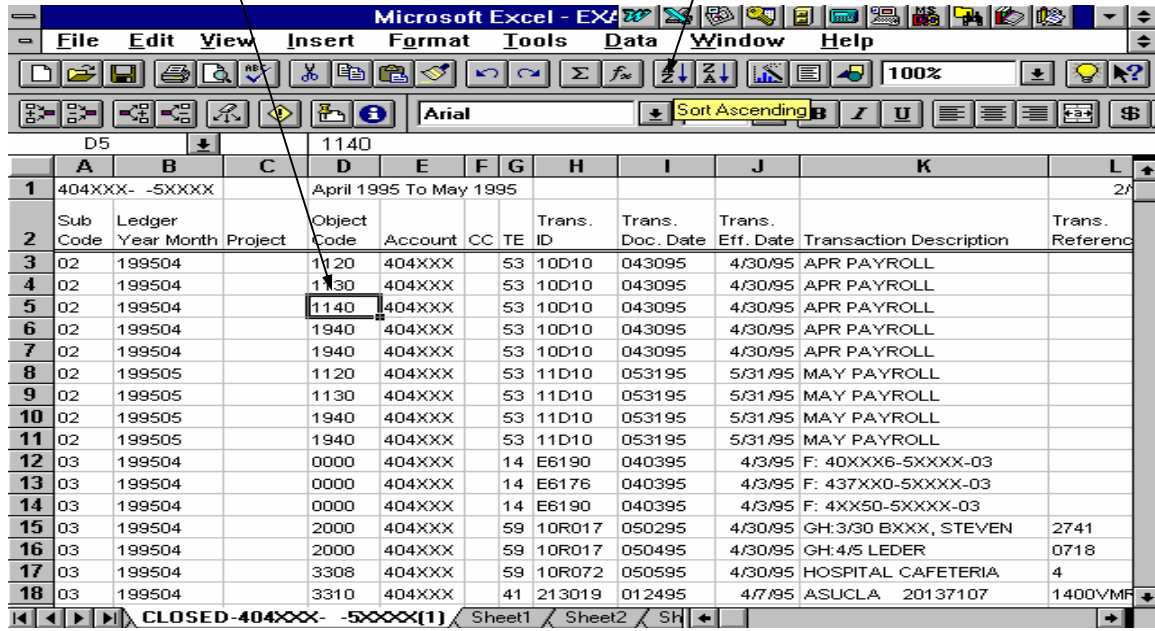
Subtotaling

Inserting subtotals is a quick way to summarize data in an Excel list or database. You do not need to enter a formula on the worksheet to use subtotals, Excel does the work for you. To set up subtotals, first make sure there are no pre-existing subtotals in your spreadsheets. If there are, remove existing subtotals by choosing “Data” from the menu

bar, then choose “subtotals” and click on the  button.

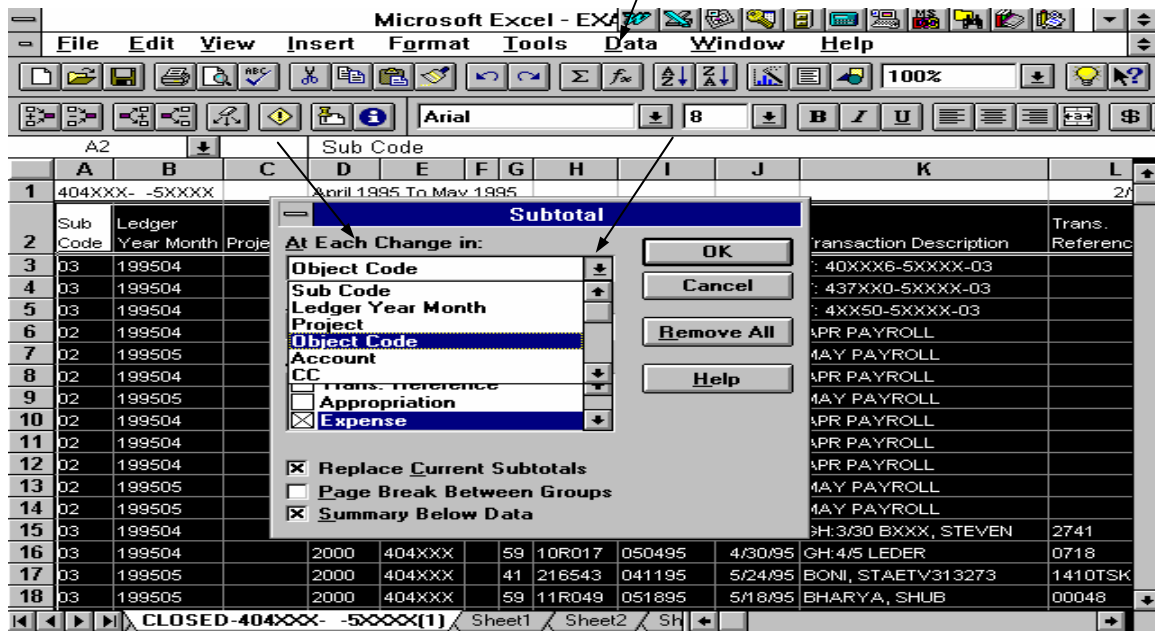


The following picture shows a detail report with no subtotals. Before subtotaling, you must sort (explained previously in this section) your data on the field for which you want subtotals. In this example you want to subtotal appropriations and expenses based on object codes. Therefore you need to sort on “**object code**” before you try the subtotals. Select any cell in the object code column and click on ascending sort  button.



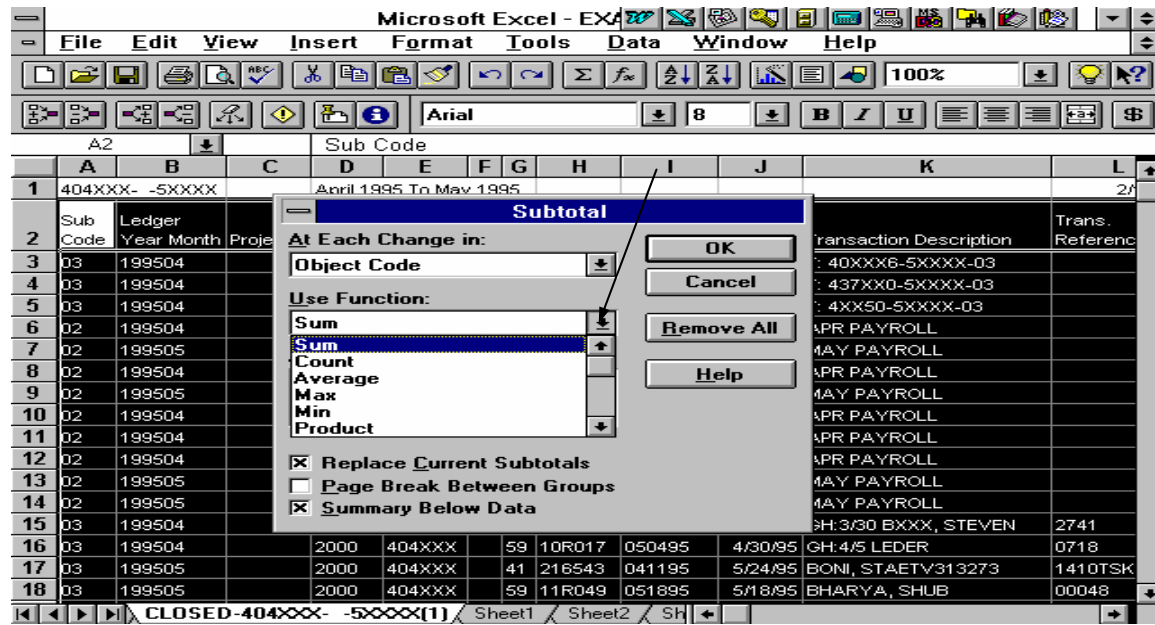
	A	B	C	D	E	F	G	H	I	J	K	L
	Sub Code	Ledger Year Month	Project	Object Code	Account	CC	TE	Trans. ID	Trans. Doc. Date	Trans. Eff. Date	Transaction Description	Trans. Reference
1	404XXX-	-5XXXX		April 1995 To May 1995								2/
2	02	199504		1120	404XXX	53	10D10	043095	4/30/95	4/30/95	APR PAYROLL	
3	02	199504		1130	404XXX	53	10D10	043095	4/30/95	4/30/95	APR PAYROLL	
4	02	199504		1140	404XXX	53	10D10	043095	4/30/95	4/30/95	APR PAYROLL	
5	02	199504		1940	404XXX	53	10D10	043095	4/30/95	4/30/95	APR PAYROLL	
6	02	199505		1120	404XXX	53	11D10	053195	5/31/95	5/31/95	MAY PAYROLL	
7	02	199505		1130	404XXX	53	11D10	053195	5/31/95	5/31/95	MAY PAYROLL	
8	02	199505		1940	404XXX	53	11D10	053195	5/31/95	5/31/95	MAY PAYROLL	
9	02	199505		1940	404XXX	53	11D10	053195	5/31/95	5/31/95	MAY PAYROLL	
10	03	199504		0000	404XXX	14	E6190	040395	4/3/95	4/3/95	F: 40XXX6-5XXXX-03	
11	03	199504		0000	404XXX	14	E6176	040395	4/3/95	4/3/95	F: 437XX0-5XXXX-03	
12	03	199504		0000	404XXX	14	E6190	040395	4/3/95	4/3/95	F: 4XX50-5XXXX-03	
13	03	199504		2000	404XXX	59	10R017	050295	4/30/95	4/30/95	GH:3/30 BXXX, STEVEN	2741
14	03	199504		2000	404XXX	59	10R017	050495	4/30/95	4/30/95	GH:4/5 LEDER	0718
15	03	199504		3308	404XXX	59	10R072	050595	4/30/95	4/30/95	HOSPITAL CAFETERIA	4
16	03	199504		3310	404XXX	41	213019	012495	4/7/95	4/7/95	ASUCLA 20137107	1400VMF

After sorting, you are ready to subtotal. To begin, choose the “Data” option from the Main Menu and “Subtotals” from the sub-menu. A screen will be presented to you in which you are prompted to respond to: “At each change in”. If you click on the  button, you will see a list of all the fields in your spreadsheet. Since you want to subtotal on object code, choose “Object Code”.

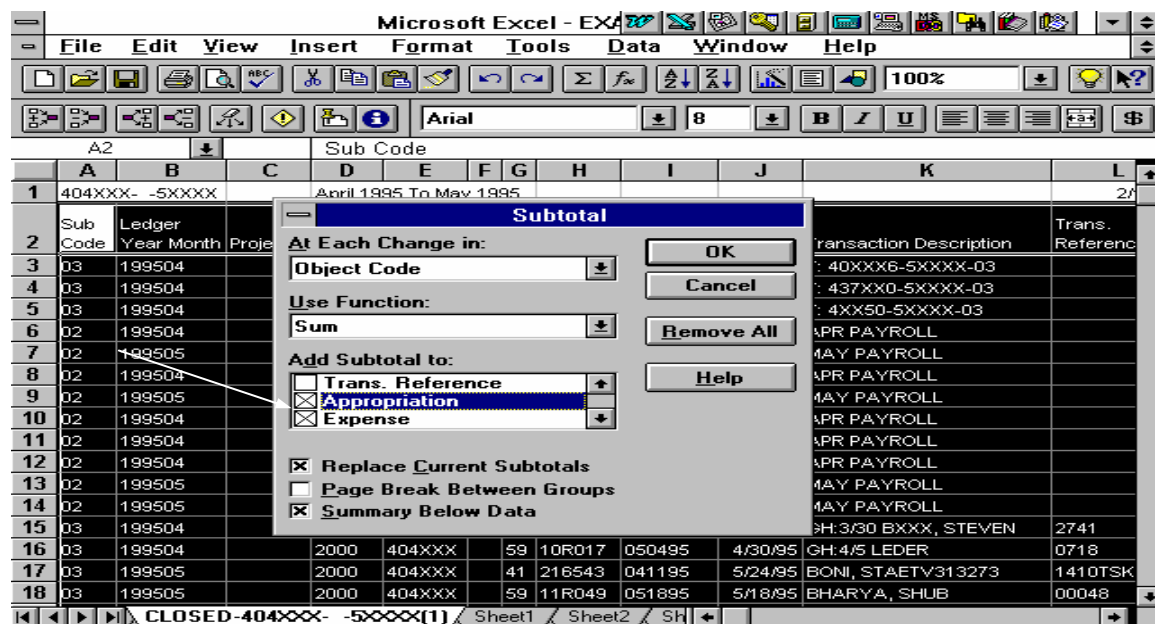


	A	B	C	D	E	F	G	H	I	J	K	L
	Sub Code	Ledger Year Month	Project	Object Code	Account	CC	TE	Trans. ID	Trans. Doc. Date	Trans. Eff. Date	Transaction Description	Trans. Reference
1	404XXX-	-5XXXX		April 1995 To May 1995								2/
2	03	199504										
3	03	199504										
4	03	199504										
5	03	199504										
6	02	199504										
7	02	199505										
8	02	199504										
9	02	199505										
10	02	199504										
11	02	199504										
12	02	199504										
13	02	199505										
14	02	199505										
15	03	199504										
16	03	199504		2000	404XXX	59	10R017	050495	4/30/95	4/30/95	GH:3/30 BXXX, STEVEN	2741
17	03	199505		2000	404XXX	41	216543	041195	5/24/95	5/24/95	BONI, STAETV313273	1410TSK
18	03	199505		2000	404XXX	59	11R049	051895	5/18/95	5/18/95	BHARYA, SHUB	00048

At the “Use Function” function prompt, click on the  button to see all the possible choices. For this example, since you want to see Summary totals, choose “Sum”. You could also count the number of entries in a group (“Count”), find the lowest value in a group (“Min”), view the average in a group (“Average”), etc...



The next prompt asks: “Add Subtotal to:”. You can choose any field(s) in your spreadsheet. Usually, we want to “sum” fields that contain dollar amounts. Therefore click on the boxes next to Appropriation and Expense. When complete, click the  button.



Here is the result of your report subtotaled by Object Code:

Sub Code	Ledger Year Month	Project	Object Code	Account	CC	TE	Trans. ID	Trans. Doc. Date	Trans. Eff. Date	Transaction Description	Trans. Reference	Appropriation	Expense
03	199504		0000	404XXX			E6190	040395	4/3/95	F: 40XXX6-SXXXX-03		\$1.71	
03	199504		0000	404XXX			E6176	040395	4/3/95	F: 437XX0-SXXXX-03		\$50.46	
03	199504		0000	404XXX			E6190	040395	4/3/95	F: 4XXX50-SXXXX-03		\$8.00	
			0000 Total									\$60.17	\$0.00
02	199504		1940	404XXX			10D10	043095	4/30/95	APR PAYROLL			\$309.40
02	199505		1940	404XXX			11D10	053195	5/31/95	MAY PAYROLL			(\$158.92)
			1940 Total									\$0.00	\$150.48
03	199504		2000	404XXX			10R017	050295	4/30/95	GH:3/30 BXXX, STEVEN	2741		\$242.75
03	199504		2000	404XXX			10R017	050495	4/30/95	GH:4/5 LEDER	0718		\$74.00
03	199505		2000	404XXX			11R049	060295	5/31/95	BXXXXXX,XXXX	001377		\$79.00
			2000 Total									\$0.00	\$395.75
03	199505		2005	404XXX			216543	042595	5/24/95	LXXXX,XXXXX313272	1400TSK325		\$1,202.00
03	199505		2005	404XXX			217415	051795	5/24/95	SXXXX,XXXXXXV313274	1400TSK328		\$184.00
			2005 Total									\$0.00	\$1,386.00
03	199505	Proj2	3003	404XXX			116850	053195	5/31/95	UPS CHARGES	MC04		\$15.00
			3003 Total									\$0.00	\$15.00
03	199504		3308	404XXX			10R072	050595	4/30/95	HOSPITAL CAFETERIA	4		\$701.00
03	199505		3308	404XXX			11346	050695	5/31/95	SXXXX FACILITY CHAR			\$187.00
03	199505		3308	404XXX			216232	033195	5/10/95	HXXXXX &S297532	1400XSK159		\$9.50
			3308 Total									\$0.00	\$897.50
03	199504		3310	404XXX			213019	012495	4/7/95	ASUCLA 20137107	1400VMR794		\$110.96
03	199505		3310	404XXX			215369	022295	5/2/95	ASUCLA 20124006	1400X0SK29		\$12.72
03	199505		3310	404XXX			217165	042895	5/20/95	HXXXXX &S301916	1400XSK159		\$12.00

Notice the solid lines and buttons that appear to the left. These symbols are indicative of the structure of subtotals. Try clicking on the first button. The button turns into a button and the individual lines that make up the first subtotal, get rolled up and you only see the line that has the subtotal. To unquish, click on the button.

Now on the buttons click on the button with number 2 on it. This provides a “roll-up” for all of the object codes (or any other field that you had subtotals for). In order to view your subtotaled field adjacent to the summary values, highlight the column to the right of your subtotaled column by clicking on the letter at the top of that column. Freeze it (Window option from menu bar, Freeze Panes option from sub-menu). Scroll to the right by using the arrow button at the bottom of your screen and you will get the following:

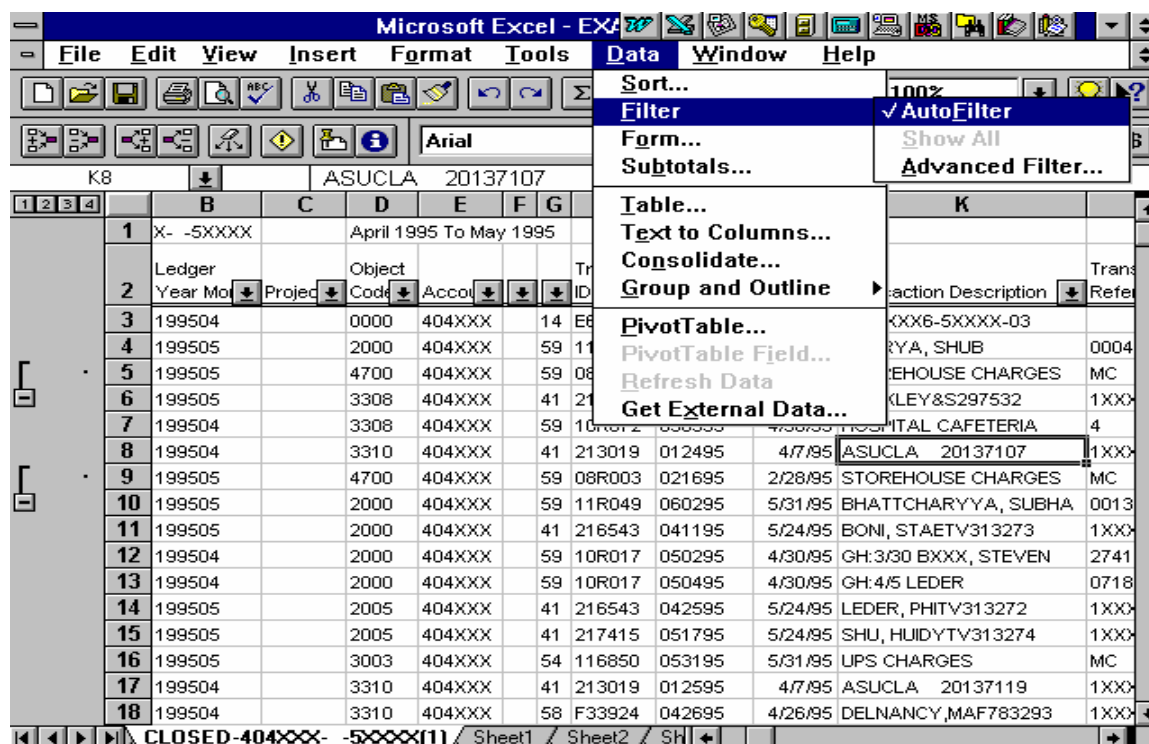
Sub Code	Ledger Year Month	Project	Object Code	Account	Expense
0000					\$0.00
1940					\$150.48
2000					\$395.75
2005					\$1,386.00
3003					\$15.00
3308					\$897.50
3310					\$135.68
3310					\$162.50
3310					\$222.00
4001					\$105.80
4002					\$12.35
4004					\$0.53
4070					\$117.96
4700					\$369.34
5810					\$60.00
6000					\$33.60
6030					\$53.50
6045					\$87.00
8992					\$17.80
Grand Total					\$4,222.79

To go back to all detail, on the button, click on the button with the number 3 on it. To unfreeze panes, from the menu bar choose “Window” and then “Unfreeze Panes”.

Filtering

Filtering is a way of narrowing down information that you see on your screen, based on criteria which you specify, without actually deleting the information. This is useful if, after running a report including broad criteria, you can focus in on a subset of that report. For example, you can filter your Detail Reports on criteria such as narrowing down the entries to only include those with a specific Object Code or those which fall in a specified range of Object Codes. Another example would be to view only transactions on a certain Sub Code. For this lesson, you can continue using the report that you generated earlier and experimented the sorting feature.

To turn filtering on, choose the Data option from the main menu, Filter from the sub-menu and AutoFilter from the sub-sub-menu. After filtering is turned on,  buttons will appear at the top of each field which will facilitate filtering of the data for the desired information.:



Now, at this point, you have not actually “filtered” anything; you have only enabled yourself to do so. In order to actually “filter” anything, you must specify your criteria. For example, if you want to filter for all storehouse charges (or any other “Transaction Description” that appears in your report), click on the  button next to the “Transaction Description” column header. You will get a list of all the existing possible transaction descriptions: choose “STOREHOUSE” or your own selected Transaction Description from the list.

NOTE: When filtering, the row numbers of the filtered data will appear in blue. Also, the  button next to the column header which you filtered will appear in blue. This is to make you aware that you are looking at “filtered” data and which “filter” is active.

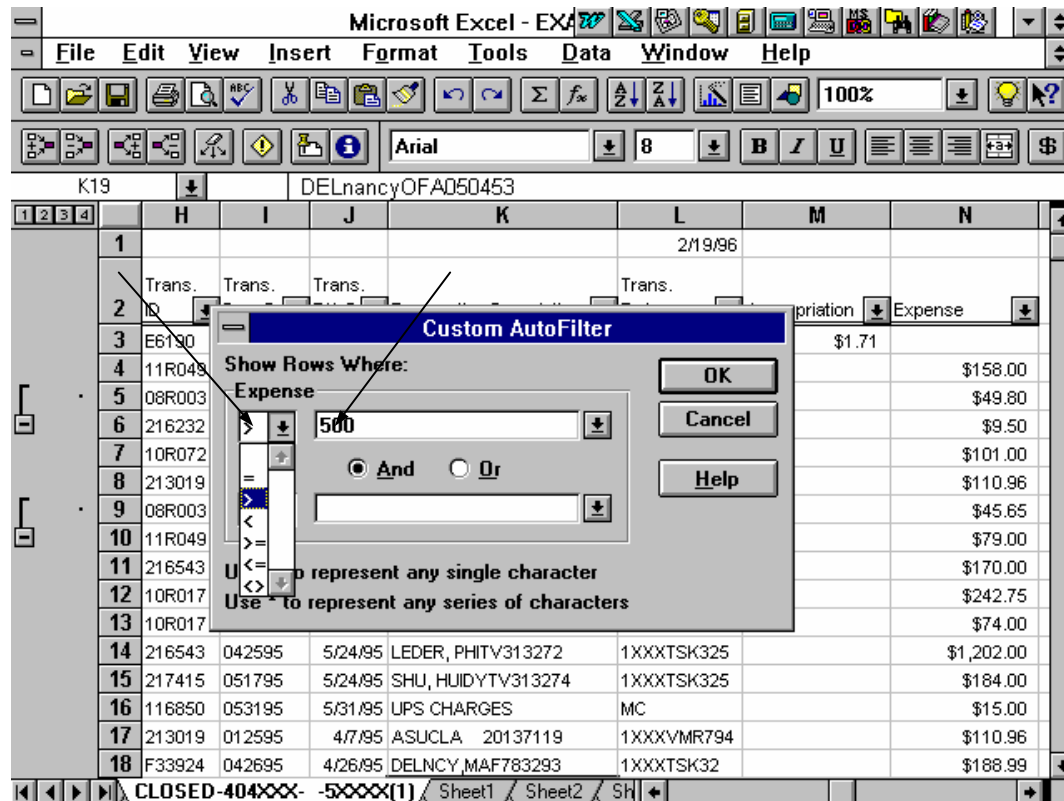
Microsoft Excel - EXAMPLE												
File Edit View Insert Format Tools Data Window Help												
Arial 8 B I U \$ % , .00 .00 100%												
B9 199504												
	A	B	C	D	E	F	G	H	I	J	K	
1	404XXX- -5XXXX			April 1995 To May 1995								
2	Sub Code	Ledger Year Month	Projec	Object Code	Accou			Trans.	Trans. Doc. Da	Trans. Eff. Da	Transaction Description	Trans. Referen
3	03	199504		0000	404XXX	14	E6190	040395	4/3/95		REGISTRAR'S OFFICE	
4	03	199504		0000	404XXX	14	E6176	040395	4/3/95		STOREHOUSE CHARGES	
5	03	199504		0000	404XXX	14	E6190	040395	4/3/95		TELEPHONE EQUIPMENT	
6	03	199504		2000	404XXX	59	10R017	050295	4/30/95		TELEPHONE TOLLS	2741
7	03	199504		2000	404XXX	59	10R017	050495	4/30/95		TELEPHONE-LOCAL M.U.	0718
8	03	199504		3308	404XXX	59	10R072	050595	4/30/95		TELEPHONE-ZUM UNITS	4
9	03	199504		3310	404XXX	41	213019	012495	4/7/95		ASUCLA 20137107	1400V
10	03	199504		4000	404XXX	53	10640	043095	4/30/95		TELEPHONE EQUIPMENT	
11	03	199504		4001	404XXX	53	10640	043095	4/30/95		TELEPHONE TOLLS	
12	03	199504		4002	404XXX	53	10640	043095	4/30/95		TELEPHONE-LOCAL M.U.	
13	03	199504		4004	404XXX	53	10640	043095	4/30/95		TELEPHONE-ZUM UNITS	
14	03	199504	Proj1	4070	404XXX	59	10R007	043095	4/30/95		OUTGOING MAIL CHARGE	

Here is the result of filtering on Transaction Description "Storehouse":

Microsoft Excel - EXA												
File Edit View Insert Format Tools Data Window Help												
Arial 8 B I U \$ % , .00 .00 100%												
L65 MCxx\												
	A	B	C	D	E	F	G	H	I	J	K	
1	404XXX- -5XXXX			April 1995 To May 1995								
2	Sub Code	Ledger Year Month	Projec	Object Code	Accou			Trans. ID	Trans. Doc. Da	Trans. Eff. Da	Transaction Description	
5	03	199505		4700	404XXX	59	08R003	021695	2/28/95		STOREHOUSE CHARGES	
9	03	199505		4700	404XXX	59	08R003	021695	2/28/95		STOREHOUSE CHARGES	
44	03	199505		4700	404XXX	59	11R003	050495	5/31/95		STOREHOUSE CHARGES	
65	03	199505		4700	404XXX	59	08R003	022895	2/28/95		STOREHOUSE CHARGES	
66	03	199505		4700	404XXX	59	08R003	022395	2/28/95		STOREHOUSE CHARGES	
67	03	199505		4700	404XXX	59	08R003	022395	2/28/95		STOREHOUSE CHARGES	
68												
69												
70												
71												
72												
73												
74												
75												
76												
77												

Before trying the following filtering examples, go back to the entire dataset by clicking on the "Data" option of the menu bar, then "Filter", then "Show All" which is at the very top of the drop down list.

Another example of filtering: if you want to filter for expense amounts exceeding, for example, \$500, click on the  button next to the “Expense” column header and choose “(Custom...)” from the list. You are presented with a Custom AutoFilter screen in which you can specify if you want to filter on values greater-than (>), less-than or equal-to (<=), equal-to (=), etc... a certain amount you specify. For this example, click on the  button next to the “=” sign and choose “>” in the top-left box, type “500” in the box as indicated below and click on the  button. As a result you will see all expenses exceeding \$500. You can add further and/or conditions as noted in the custom auto filter dialog box.



Here is the result of filtering expenses greater than \$500:

	H	I	J	K	L	M	N
1					2/19/96		
2	Trans. ID	Trans. Doc. Ds	Trans. Eff. Ds	Transaction Description	Trans. Reference	Appropriation	Expense
14	216543	042595	5/24/95	LEDER, PHITV313272	1XXXTSK325		\$1,202.00
65	08R003	022895	2/28/95	STOREHOUSE CHARGES	MCxx\		\$1,143.12
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
81							

Another useful feature in filtering is the use “contains” instead of “=”, for instances where you only know part of a field. For example, if you want to filter for all your “Fisher” payments, regardless of invoice number, etc., click on the button next to “Transaction Description” heading, choose “(Custom...)”. Then click on the button next to the “=” sign and choose “contains”. Type the word “Fisher” in the box next to it and click on the button. As a result you will see all expenses containing the word “Fisher” anywhere in the Transaction Description.

You can keep narrowing down the result by combining filters. For example after getting all Fisher expenses using the filter on Transaction Description field, you can get Fisher expenses that exceed \$500 by using the Expense filter in addition to the filter on Transaction Description.

To undo the filtering and go back to the entire data-set, from the menu bar choose “Data”, “Filter” and “Show All”. To remove the arrows, choose “Data”, “Filter” and “Autofilter”.

Auto formatting

Let's say you have used the "Data" – "Subtotal" feature of Excel to build subtotals in your spreadsheet and it looks something like this:

The labels for subtotal lines are bolded and easy to read. However the subtotal amounts don't get automatically bolded and it are not very easy to distinguish subtotals from individual line items.

Microsoft Excel - Pivtsmpl.xls

File Edit View Insert Format Tools Data Window Help

100%

Arial 8 B I U

N63

	H	I	J	K	L	M	N	O	P	Q
1					7/12/99					
2	Sub-Obj Title	Source Code	TE	ID	Trans. Doc. Date	Trans. Eff. Date	Transaction Description	Appropriation	Expense	
51	ANNUITANT HEALTH INS		53	11D10	5/31/99	5/31/99	MAY PAYROLL		\$53.26	
52	ANNUITANT HEALTH INS		53	12D10	6/30/99	6/30/99	JUN PAYROLL		\$53.26	
53	ANNUITANT HEALTH INS CONTR-STAFF CASUAL			Total					\$161.08	
54	ART/PHOTO SERVICES		59	11R014	6/3/99	5/31/99	OID PHOTO		\$69.75	
55	ART/PHOTO SERVICES		41	340742	6/8/99	6/26/99	SETONC74817		\$1,015.70	
56	ART/PHOTO SERVICES			Total					\$1,085.45	
57	AV/MEDIA SERVICES		59	11R028	6/3/99	5/31/99	OID A/V MAINTENANCE		\$76.50	
58	AV/MEDIA SERVICES			Total					\$76.50	
59	BOOKS & MAPS FOR DEPT		41	334535	11/18/98	4/13/99	ASSNAMERCO309181		\$270.63	
60	BOOKS & MAPS FOR DEPT		41	337589	5/14/99	5/21/99	ASUCLA 63692		\$43.30	
61	BOOKS & MAPS FOR DEPT		41	337050	5/13/99	5/17/99	HON,CA1400V9E360		\$114.73	
62	BOOKS & MAPS FOR DEPT		41	336290	4/1/99	6/1/99	HRTBR29280780		\$429.25	
63	BOOKS & MAPS FOR DEPT USE			Total					\$857.91	
64	COMP SOFTWARE LICEN		59	12R100	6/8/99	6/8/99	OAC/SPSS		\$100.00	
65	COMP SOFTWARE LICENSE/RENTAL FEES			Total					\$100.00	
66	COMPUTING SUPPLIES OI		41	335510	4/6/99	4/29/99	NATLCOMPSY8029759		\$156.00	
67	COMPUTING SUPPLIES OI		41	334020	3/6/99	4/12/99	INSIGHT 4875452		\$263.99	

Sheet3 / Sheet1 / 3 months payroll / CLOSED-All-All-20XXX(1) / Sheet2

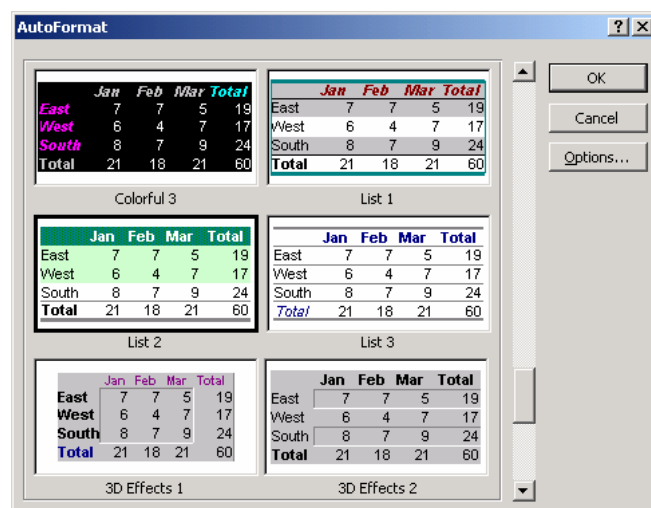
Draw AutoShapes

Ready

NUM

Start http://www.de... C:\WINNT\Pr... directory.ucla... Microsoft E... Microsoft Wor... 2:48 PM

You can auto format the entire spreadsheet with a couple of keystrokes. First pick any cell within the body of your database. Then, choose "Format" from the menu bar, then "AutoFormat". You can then select your favorite autoformat, i.e. "List 2"



and you will get the following. Notice how much easier it is to see the subtotal lines. To remove the auto format, repeat “Format”, “Autoformat” and choose “None” at the bottom of the list.

Sub-Obj Title	Source Code	TE ID	Trans. Date	Trans. Doc. Date	Transaction Description	Appropriation	Expense
51 ANNUITANT HEALTH	53	11D10	5/31/99	5/31/99	MAY PAYROLL		\$53.26
52 ANNUITANT HEALTH	53	12D10	6/30/99	6/30/99	JUN PAYROLL		\$53.26
53 ANNUITANT HEALTH INS CONTR-STAFF CASUAL					Total		\$161.08
54 ART/PHOTO SERV	59	11R014	6/3/99	5/31/99	OID PHOTO		\$69.75
55 ART/PHOTO SERV	41	340742	6/8/99	6/26/99	SETONC74817		\$1,015.70
56 ART/PHOTO SERVICES					Total		\$1,085.45
57 AV/MEDIA SERVICE	59	11R028	6/3/99	5/31/99	OID A/V MAINTENANCE		\$76.50
58 AV/MEDIA SERVICES					Total		\$76.50
59 BOOKS & MAPS FC	41	334535	11/18/98	4/13/99	ASSNAMERCO309181		\$270.63
60 BOOKS & MAPS FC	41	337589	5/14/99	5/21/99	ASUCLA 63692		\$43.30
61 BOOKS & MAPS FC	41	337050	5/13/99	5/17/99	HON,CA1400V9E360		\$114.73
62 BOOKS & MAPS FC	41	338290	4/1/99	6/1/99	HRTBR29280780		\$429.25
63 BOOKS & MAPS FOR DEPT USE					Total		\$857.91
64 COMP SOFTWARE	59	12R100	6/8/99	6/8/99	OAC/SPSS		\$100.00
65 COMP SOFTWARE LICENSE/RENTAL FEES					Total		\$100.00
66 COMPUTING SUPPL	41	335510	4/6/99	4/29/99	NATLCOMPSY8029759		\$156.00
67 COMPUTING SUPPL	41	334020	3/6/99	4/12/99	INSIGHT 4875452		\$263.99

You can use this same feature for auto formatting Pivot tables. Just pick a cell in the body of your pivot table report and auto format as described above.

If you manipulate the data after “Autoformatting”, the report gets pretty messy. Just autoformat again once you are done manipulating the data.

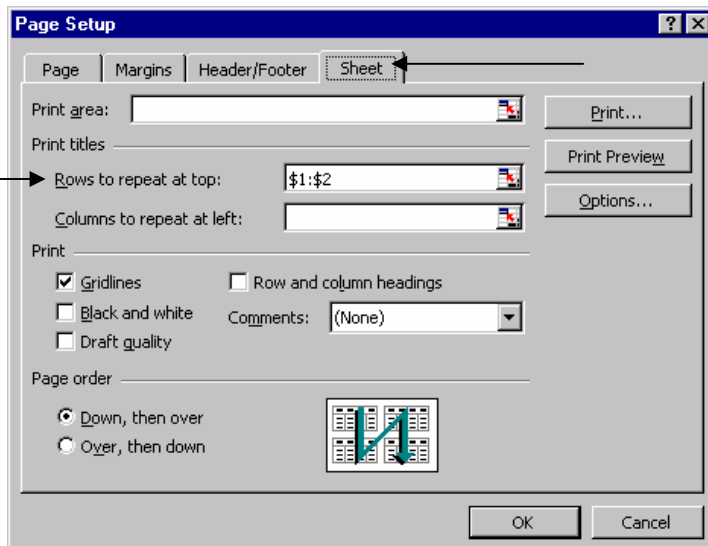
Sum Without Formulas

If you need to quickly look up the total of several dollar amounts in non consecutive cells in a spreadsheet, hold down the “Control” button on your keyboard, click on the cells you want totaled and look at the bottom of your screen for the total of those cells!

Sub-Obj Title	Source Code	TE ID	Trans. Date	Trans. Doc. Date	Transaction Description	Appropriation	Expense
49	53	10D10	4/30/99	4/30/99	APR PAYROLL		\$3.72
50	53	10D10	4/30/99	4/30/99	APR PAYROLL		\$50.84
51	53	11D10	5/31/99	5/31/99	MAY PAYROLL		\$53.26
52	53	12D10	6/30/99	6/30/99	JUN PAYROLL		\$53.26
53 INS CONTR-STAFF CASUAL					Total		\$161.08
54	59	11R014	6/3/99	5/31/99	OID PHOTO		\$69.75
55	41	340742	6/8/99	6/26/99	SETONC74817		\$1,015.70
56 CES					Total		\$1,085.45
57	59	11R028	6/3/99	5/31/99	OID A/V MAINTENANCE		\$76.50
58 S					Total		\$76.50
59	41	334535	11/18/98	4/13/99	ASSNAMERCO309181		\$270.63
60	41	337589	5/14/99	5/21/99	ASUCLA 63692		\$43.30
61	41	337050	5/13/99	5/17/99	HON,CA1400V9E360		\$114.73
62	41	338290	4/1/99	6/1/99	HRTBR29280780		\$429.25
63 R DEPT USE					Total		\$857.91
64	59	12R100	6/8/99	6/8/99	OAC/SPSS		\$100.00
65 LICENSE/RENTAL FEES					Total		\$100.00
66	41	335510	4/6/99	4/29/99	NATLCOMPSY8029759		\$156.00
67	41	334020	3/6/99	4/12/99	INSIGHT 4875452		\$263.99

Print a Title on Multiple Pages

Let's say you have a large spreadsheet that has many rows and the heading and title of columns appear only at the top of your spreadsheet. If you print this spreadsheet, pages 2 through the end will not show the headings. In order to print the headings on all pages, on the menu bar, click on "File", "Page Setup", in the "Page Setup" dialog box,

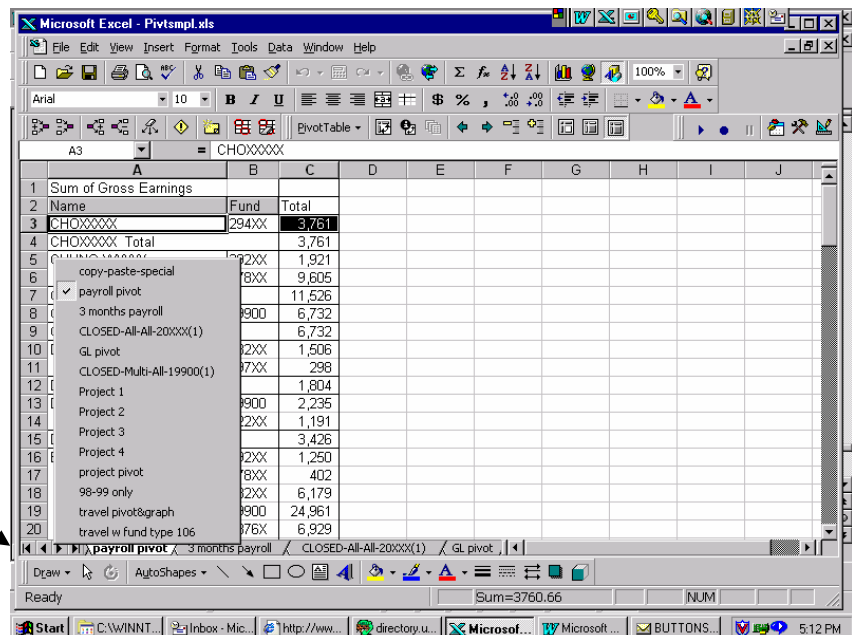


click on the "Sheet" tab and click in the box "Rows to Repeat at Top". At this point Excel will allow you to click on your spreadsheet and indicate the row(s) you want repeated at the top. Highlight the row(s) and click "OK". Before printing, you can do "Print Preview" to make sure all the rows you need are repeated on all pages.

Get a List of All Worksheets in Your Workbook

When you use many worksheets in the same workbook or file, always give meaningful names to your sheets to help you quickly find the sheet you want to switch to. To facilitate finding the sheet you want, place your cursor in the bottom left corner of your spreadsheet, over the area where these buttons  appear. Click on the right mouse button. You will see a listing of your sheets. Also, you might find it easier to switch between sheets by selecting off of this list, instead of clicking on the tabs of the sheets.

With the mouse pointer over this area, click the right mouse button to get a list of your sheets.



Viewing All Formulas

If you need to see the formulas built in a spreadsheet rather than the result of the formulas, hold down the “Ctrl” button on your keyboard and hit the “~” button on your keyboard at the upper left corner. You will be able to see all the formulas.

Microsoft Excel - Newrpt.xls

File Edit View Insert Format Tools Data Window Help

100%

A1 = ENCUMBRANCES

	E	F	G	H
1				
2				
3				
4	TO BE			
5	LINKED TO			
6	QDB-SUM			
7	6			
8	<u>Sub</u>	<u>Description</u>		<u>Future</u> <u>Exp. / Adj.</u>
9				
10	00	Academic		=G46
11	01	Staff-01		=G60
12	02	Staff-02		=G79
13	06	EBs		=H46+H60+H79
14	03	Supplies		=G109
15	04	Equip		=G118
16	05	Travel		=G122
17	07	Special		=G137
18	08	Unallocated		=G152
19	09	Recharge		=G167
20	SubTotal			=SUM(H10:H19)

Ready

NUM

4:13 PM

If you want to go back to results of formulas instead of the formulas themselves, hold “Ctrl” down and click “~” again.

Using “Form” to facilitate Viewing and Editing Excel Database

Once you set up your Excel Database as described in the first page of this handout, to facilitate viewing and editing your records, pick a cell in your database, click on “Data” on the menu bar, then click on “Form” and the following screen will pop up which might sometimes be easier to work with. The buttons that appear to the right of the screen are self-explanatory.

The screenshot shows a form titled "3 months payroll" with a status bar indicating "15 of 308" records. The form contains various input fields for employee and payroll data, and a column of action buttons on the right.

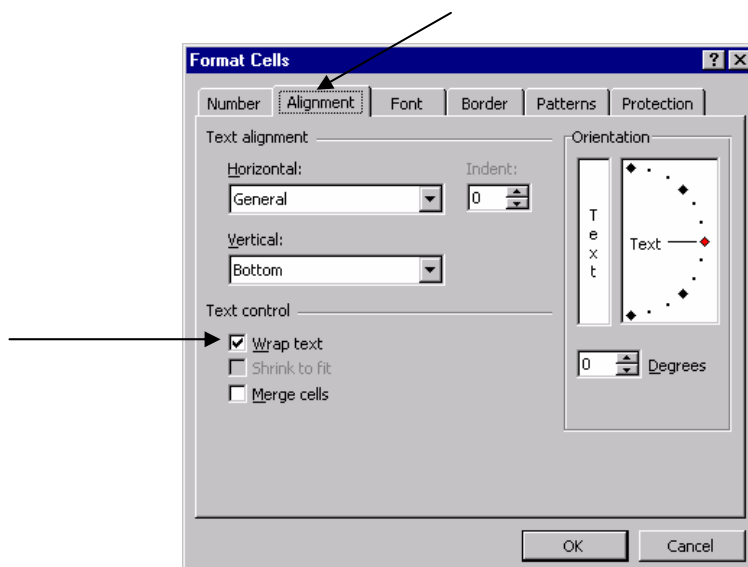
Field	Value
Name:	DE LA XXX
Empl. ID:	90255XXXX
Led Yr:	199905
Earned Date:	5/15/1999
Fund:	182XX
Acct:	441XXX
CC:	RE
Sub:	02
Proj:	
Obj:	1130
DOS:	REG
TC:	4774
Time:	24
H %:	H
Pay Rate:	9.94
Gross Earnings:	238.56
Total Benefits:	3.24
Total Pay:	241.8
Trf Ind:	Y

Buttons on the right: New, Delete, Restore, Find Prev, Find Next, Criteria, Close.

Wrap Text

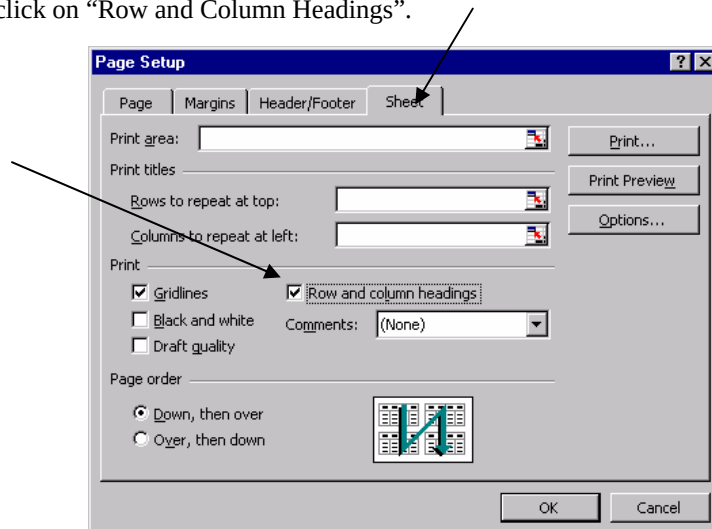
If the content of an Excel Cell is quite large, instead of extreme widening of your column or breaking your text into several cells, use the “Wrap Text” feature as follows:

Select the cell(s) that contain large text (i.e. column heading), go to “Format”, “Cells”, either by clicking on “Format” on the menu bar or by clicking on the shortcut right mouse button, while your cursor is on the selected cell(s) and click on “Format Cells”. Select the “Alignment” tab, click on “Wrap Text” and click OK. Sometimes you may need to increase the row height.



Print Column Letters and Row Numbers

Sometimes, you might need to see column letters and row numbers in your printout. This comes in handy especially when you want to communicate or document the formulas built into a spreadsheet. In the example below, first we turned the numbers into formulas using the feature described earlier in this handout. Then in order to see column letters and row numbers in the printout, we chose “File” on the menu bar, then “Page Setup”, then select the “Sheet” tab and click on “Row and Column Headings”.



Print Preview will show the result.

