



Data Menu Magic

Excel has great features under the Data Menu that help you work with your data more efficiently and effectively. Unfortunately, these features are sometimes forgotten or unknown. It has been suggested that staff should be familiar with these features in Excel when you want to manipulate data downloaded from PeopleSoft. For this session we'll go through the Subtotals, Validation, and Group and Outline features. This session is geared more for the intermediate Excel user but beginners are welcome.

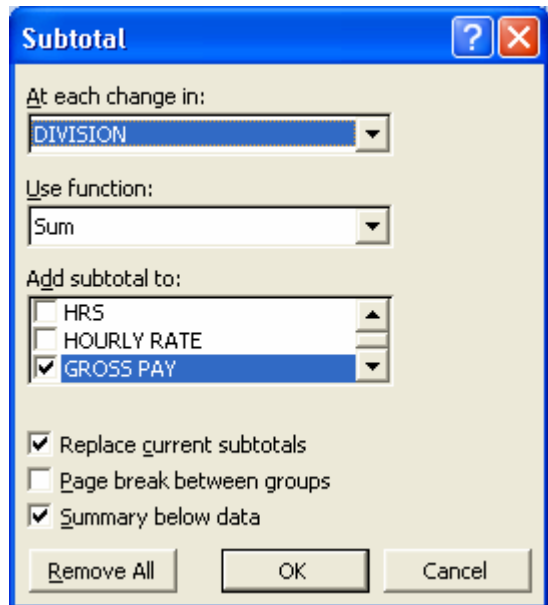
Subtotals

MS Excel can summarize data in a list automatically by using the *Subtotals* command. The *Subtotals* command can be used not only for sums but for counts, averages, minimums and maximums. When you apply this command, Excel performs three things:

- It automatically inserts a new row for the Subtotal for each group of data in the list.
- Builds a formula in the new row(s) for the column to be subtotaled
- Inserts a Grand Total line at the bottom of the list.

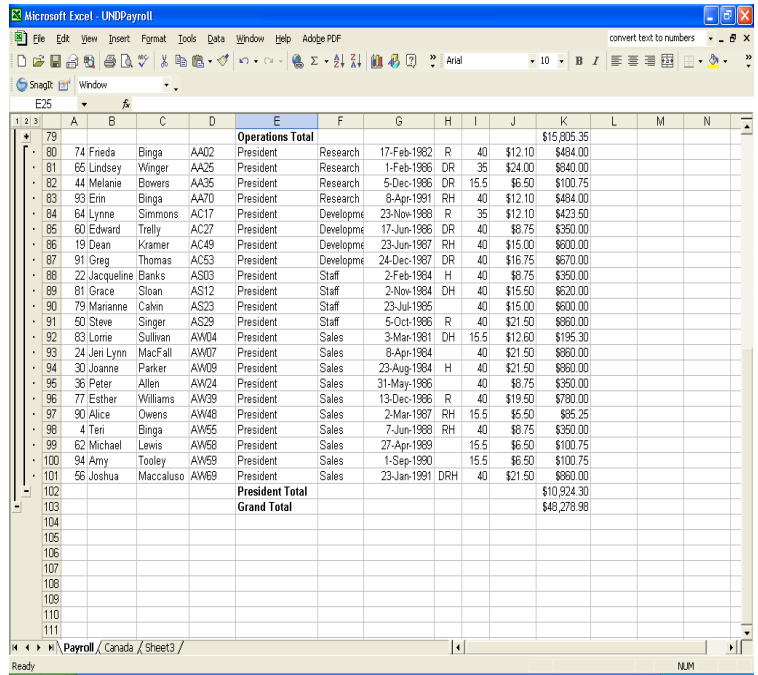
To Create a Subtotal

- Sort the database by the column or field you want to create a subtotal for.
- Make sure the active cell is in the list.
- Select from the [Menu Bar, Data > Subtotals](#). The Subtotals dialog box pops up.
- Click the *At each change in* dropdown arrow, select the column that contains the field or group you want to subtotal
- Click the *Use function* dropdown arrow, select the function you want to use
- In the *Add subtotal to* section, select the column(s) that you want to subtotal. You can subtotal more than one column but you have to use the same function.
- If needed, you may change the settings for
 - *Replace current subtotals*: If you have subtotaled this list before you can replace what you did previously with new current totals.
 - *Page break between groups*: If you want to print each of the subtotals along with its set of data on a separate page.



o *Summary below data*: If you want your summary row at the bottom of the database

- Click Ok
- Excel automatically applies Outline buttons for you to display or hide the detailed rows of each subtotal group. If you click on number 1 (first level), only the Grand Total shows. The data in the list is hidden. If you click on the number 2 (second level), only the subtotals and grand totals show. If you click on the number 3 (third level), the entire list is displayed.
- You can also use the plus (+) and the minus (-) signs to show different details of your list.
- To remove the subtotals, make sure your active cell is within the list, select **Data > Subtotals > Remove All**

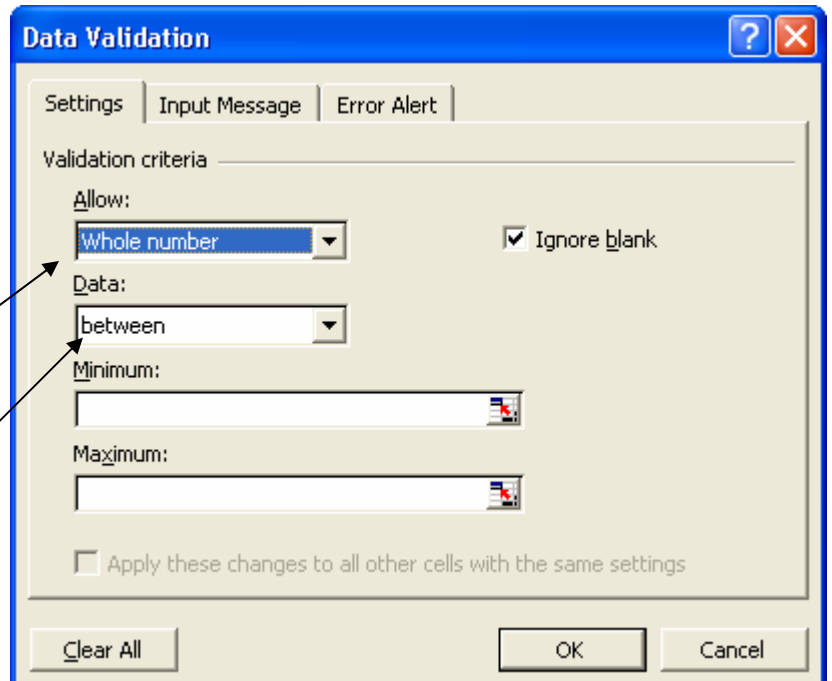


Data Validation

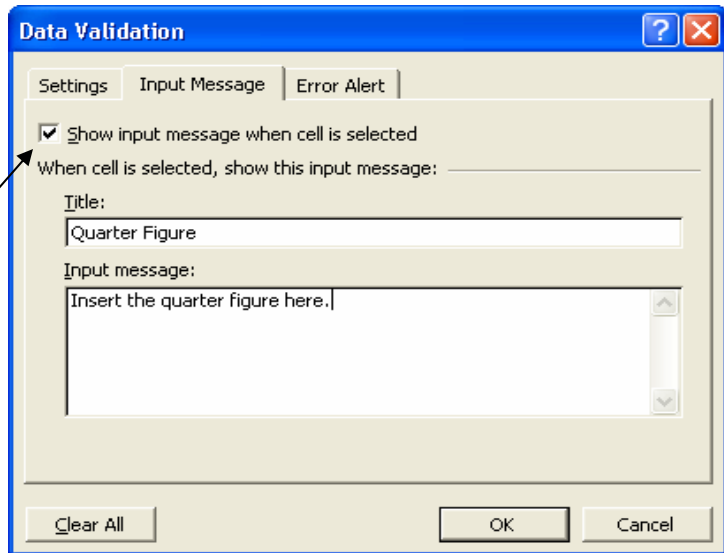
To make sure that the correct data is entered into a cell or range you can use the *data validation* feature to restrict the data by using a set of rules. These rules can include the type of data (numbers, dates, time or text) or a range of values (example, number between 1 and 100). If someone entered the wrong data, Excel can display an error message and a message that displays what should be entered.

To Create a Validation Rule

- Select the range you want to apply the rule to
- Select from the **Menu Bar, Data > Validation**. The Data Validation dialog box pops up. This is where you will set up your criteria.
- From the *Allow* list box, select the type of data to be allowed in the cell.
- Select the condition in the *Data* list box.
- In the *Minimum* and *Maximum* list boxes select the range.



- If you **uncheck** the Ignore blank box it will require you to make an entry in the cell.
- Select the **Input Message Tab**, complete the Title and Input message area
- If you do not want your Input Message to show, uncheck “Show input....”



- Select the **Error Alert Tab**
- Enter the Title and the Error Message
- Choose an error style



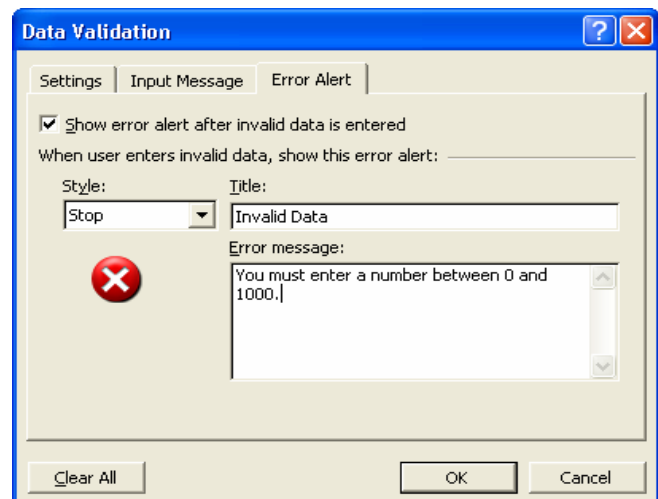
Stop will not allow invalid data to be entered. This message isn't intended as a security measure.



Information will allow invalid data to be entered



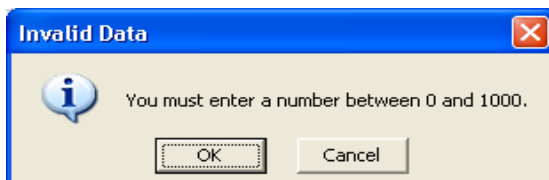
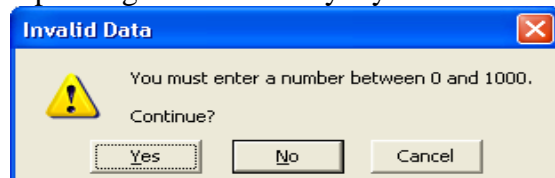
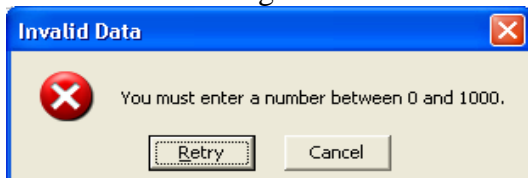
Warning will also allow invalid data to be entered.



- Click Ok

To Test

- Enter a number that does not fit the criteria
- You should get either of these messages depending on the error style you selected.



To identify cells with invalid data

Turn on your Formula Auditing Toolbar by go to View > Formula Auditing. Once your Formula Auditing Toolbar is on, click Circle Invalid Data.



To remove data validation

Select the range; go to Data > Validation > Clear All button.

Grouping and Outlining: Auto Outline

This feature in Excel is great to use when you have a worksheet that has large amounts of data. When you apply this feature, it adds outline symbols that you can use to display or hide rows and columns of data. An outline can have up to eight detail levels based on the hierarchy of the formulas in your worksheet.

The highest level shows the *least* amount of detail and the lowest level shows the most amount of detail. In order to use this feature your worksheets should have the following structure:

- Subtotals should be in the same row or column as the detail they summarize. **Do not** offset subtotals and totals.

	A	B	C
1		Jan	
2	Sales		
3			
4	<i>Fiction</i>	100	
5	<i>Nonfiction</i>	150	
6	<i>Children's Literature</i>	100	
7	Total Books		\$350

- Summary columns need to have a specific orientation relative to detail columns. For example Column B,C and D have specific detail followed by Column E which is the summary column. You can have the summary column first then the detailed but you can't have a mix of the two.

	A	B	C	D	E
1		Jan	Feb	Mar	Qtr 1 Total
2	Sales				
3					
4	<i>Mens</i>	100	150	150	\$400
5	<i>Women's</i>	150	200	250	\$600
6	<i>Children's</i>	100	175	200	\$475
7	Total Shoes	\$350	\$525	\$600	\$1,475
8					
9					
10	<i>Men's</i>	300	350	275	\$925
11	<i>Women's</i>	325	325	250	\$900
12	<i>Children</i>	250	300	275	\$825
13	Total Clothing	\$875	\$975	\$800	\$2,650
14					
15	Total Sales	\$1,225	\$1,500	\$1,400	\$4,125

To Create an Auto Outline

- Select a range to outline or click anywhere in the worksheet data
- Choose [Data](#) > [Group and Outline](#) > [Auto Outline](#)
- Excel will analyze the formula hierarchy and add outline symbols outside the column and row areas. You can expand and collapse the levels of detail by using the minus (-) or plus (+) symbols. (If the outline symbols don't appear, go to [Tools](#) > [Options](#) and on the [View](#) tab enable the [Outline Symbols](#) check box)

		B	C	D	E	F	G	H	I
	A	Jan	Feb	Mar	Qtr 1 Total	Apr	May	June	Qtr 2 Total
1									
2	Sales								
3									
4	<i>Mens</i>	100	150	150	\$400	200	175	200	\$575
5	<i>Women's</i>	150	200	250	\$600	250	200	175	\$625
6	<i>Children's</i>	100	175	200	\$475	200	225	150	\$575
7	Total Shoes	\$350	\$525	\$600	\$1,475	\$650	\$600	\$525	\$1,775
8									
9									
10	<i>Men's</i>	300	350	275	\$925	300	325	300	\$925
11	<i>Women's</i>	325	325	250	\$900	250	200	250	\$700
12	<i>Children</i>	250	300	275	\$825	200	250	225	\$675
13	Total Clothing	\$875	\$975	\$800	\$2,650	\$750	\$775	\$775	\$2,300
14									
15	Total Sales	\$1,225	\$1,500	\$1,400	\$4,125	\$1,400	\$1,375	\$1,300	\$4,075

- The outline symbols do not print.
- To turn off the outline go to [Data](#) > [Group and Outline](#) > [Clear Outline](#)