

## Filtering Data

Filtering hides items in a list based upon criteria that you specify so that only those items you wish to see remain in view. Filtering can be used alone or in conjunction with sorting. Excel offers both simple and advanced filtering tools.



Fig.1 Filtering via the Data tab.

	A	B	C	D	E	F
1	Year	Month	CountryFrom	CountryTo	Commodity	Tonné
2	2000	1	USA	United Kingdom	Wheat	16182
3	2005	2	USA	United Kingdom	Rice	11398
4	2002	6	Mexico	Portugal	Wheat	17497
5	2005	3	Canada	Netherlands	Soybeans	15627
6	2004	9	Brazil	Italy	Maize	10748
7	2000	12	Argentina	Germany	Maize	11875
8	2000	12	Mexico	Netherlands	Rice	11370
9	2006	5	Mexico	Netherlands	Barley	8325
10	2005	10	USA	Belgium	Barley	8834

Fig.2 Filter buttons appear at the top of each column.

To filter a block of data first select any cell within the data and click the **Filter** button on the **Data** tab of the ribbon (Fig.1) or choose **Sort & Filter > Filter** on the **Home** tab. This causes a small filter button to be applied to the top of each column of data (Fig.2). Excel creates a list of all the unique items in each column and displays the list when you click the filter button at the head of the column. Specify your filter criteria for each column that you wish to filter by choosing the appropriate items from the list. By default all list items are selected. You can either deselect the ones you don't want or deselect everything by unchecking **Select All** then choose just those that you require (Fig.3). In this example (Fig.4) the list has been filtered to show shipments from *Brazil* to the *Netherlands* in the year *2005* in ascending order of *Month*.

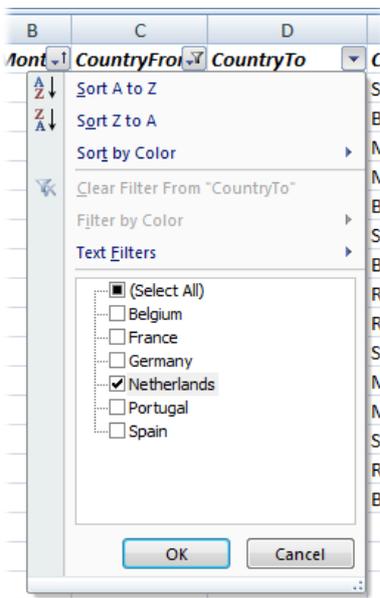


Fig.3 Define the filter criteria by choosing items from the list.

	A	B	C	D	E	F
1	Year	Month	CountryFrom	CountryTo	Commodity	Tonné
10	2005	1	Brazil	Netherlands	Barley	6506
96	2005	2	Brazil	Netherlands	Maize	12196
217	2005	5	Brazil	Netherlands	Soybeans	15974
245	2005	7	Brazil	Netherlands	Rice	8026
390	2005	11	Brazil	Netherlands	Maize	13966
406	2005	11	Brazil	Netherlands	Soybeans	15980
444	2005	12	Brazil	Netherlands	Rice	10294
502						
503						

Fig.4 The resulting filtered list.

The filters are progressively applied when you click **OK** to close each criteria list. The image on the face of each filter button indicates whether that column has been used to filter or sort the data. You can change the filter by clicking the appropriate button and redefining the criteria. Note that the row numbers for a filtered list are coloured blue and each row retains its original number. To remove the entire filter click the **Filter** button on the ribbon. To make a record of the filtered list

simply **Copy** and **Paste** in the usual way. When copying a filtered list you will see that Excel automatically makes a multiple selection of the visible rows so that only those rows you can see get copied and not the rows that are hidden by the filtering process.

*Text and Number Filters*

In addition to simply picking items from a list the filter tool allows you to filter a list of text or numbers by using an expression. In a text list, for example, you can choose to see items that *Begin With*, *End With* or *Contain* a particular string of text. This example (Fig. 5) uses the text filter to look for items in the *Lastname* column that begin with the letters "gre".

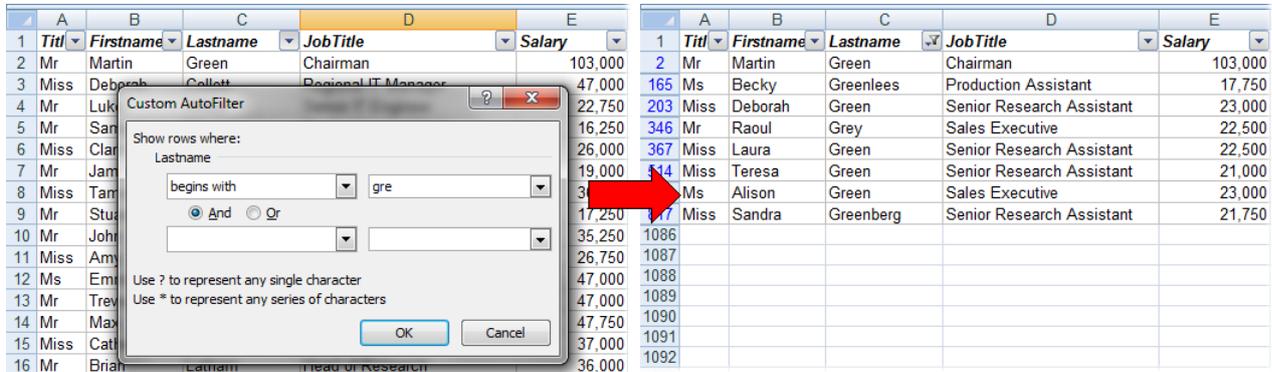


Fig. 5 Using a custom text filter.

The number filter options include the usual *Greater Than*, *Equal To* and *Less Than* options which can be paired to make more complex expressions but also include *Top 10* (or *Bottom 10* or any number of your choice) items or percent (Fig.6). Using this tool I can determine that my bottom ten shipments in terms of tonnage were all of *Rye* whilst the top ten shipments were all of *Wheat*.

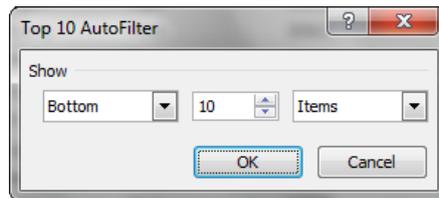


Fig.6 Number filters include Top 10.

*Totalling a Filtered List*

A useful feature of filtering in Excel is the ability to add a total to a column and have the total automatically update itself as the filter criteria are changed. This feature makes use of Excel's **SUBTOTAL** function which has the ability to ignore the values in hidden rows (unlike the **SUM** function which includes hidden rows in its calculation). You don't need to know how to use the **SUBTOTAL** function to do this. Select a cell at the bottom of a column of filtered data and click the **AutoSum** button on the **Formulas** tab of the ribbon. Excel automatically enters the correct **SUBTOTAL** function into the cell (Fig.7).

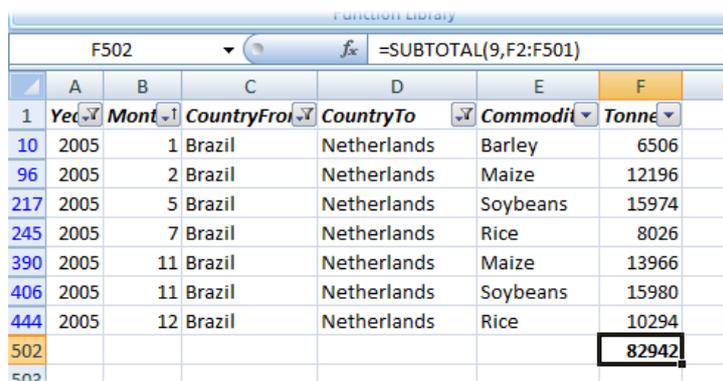


Fig.7 Adding a total to a filtered list.

### The Advanced Filter

The **Advanced Filter** offers a different way of filtering your data and is most useful if you want to make a copy of the filtered data without having to copy and paste as described previously. To use the **Advanced Filter** you must first create a range of cells that will define the filter criteria. This should comprise a row of cells containing the same column headings as the data to be filtered (you do not need to include all the headings, just the ones you want to filter by) underneath which is a row of cells into which you enter the criteria values (Fig.8).

	H	I	J	K	L	M
	<b>Year</b>	<b>Month</b>	<b>CountryFrom</b>	<b>CountryTo</b>	<b>Commodity</b>	
			Brazil	Netherlands	Maize	

Fig.8 The criteria range for the Advanced Filter.

To apply the filter select a cell within the data then click the **Advanced** button on the **Data** tab of the ribbon to open the **Advanced Filter** dialog. Excel automatically enters the co-ordinates of the list range into the dialog. In this example the list will be filtered to another location so that option has been chosen and the location of the criteria range specified (the criteria range is here on the same sheet but can be elsewhere if you prefer). Finally the location to which the filtered list is to be copied is entered (this must be on the same sheet as the original data). Both of these can be specified by clicking the **Select** button adjacent to the textbox on the dialog and selecting the appropriate cells to enter their co-ordinates into the textbox. When you click the **OK** button the filtered list is created at the location you specified (Fig.9).

	H	I	J	K	L	M
	<b>Year</b>	<b>Month</b>	<b>CountryFrom</b>	<b>CountryTo</b>	<b>Commodity</b>	
			Brazil	Netherlands	Maize	

	H	I	J	K	L	M
	<b>Year</b>	<b>Month</b>	<b>CountryFrom</b>	<b>CountryTo</b>	<b>Commodity</b>	<b>Tonnes</b>
			Brazil	Netherlands	Maize	
	2007	4	Brazil	Netherlands	Maize	13358
	2001	9	Brazil	Netherlands	Maize	12447
	2005	2	Brazil	Netherlands	Maize	12196
	2007	9	Brazil	Netherlands	Maize	12932
	2005	11	Brazil	Netherlands	Maize	13966

Fig.9 Filtering to an alternate location using Advanced Filter.