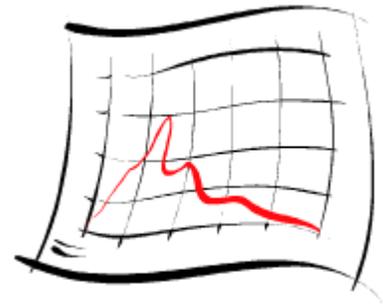# Using Microsoft Excel

Working with Lists

Excel has a lot of features that make it perfect for working with large lists and manipulating columns of data. Using Excel you can sort lists, filter lists and subtotal lists. You can also import lists from other sources and have the information converted in to Excel rows and columns.

David Letterman's
TOP TEN REJECTED DISNEY MOVIE TITLES

10	"101 Snoop Doggy Doggs"
9	"Beauty and the Baldwin Brother"
8	"Minnie's Battle with Helium Addiction"
7	"Newt!: The Musical"
6	"Old Yeller Hops the White House Fence"
5	"Barry White and the Seven Dwarfs"
4	"Mickey the Dismissed Juror"
3	"Fievel Visits a Gay Disco"
2	"The Parent Trap '95, Starring Lyle and Erik Menendez"
1	"Swiss Family Buttafuoco"

Australian Demographic Statistics Population

Preliminary Data	*Population at end Sep qtr 2003*	*Change over previous year*	
	'000	*'000*	*%*
New South Wales	6699.3	54.1	0.8
Victoria	4933.6	64.6	1.3
Queensland	3817	86.1	2.3
South Australia	1529.4	9	0.6
Western Australia	1959.7	29.5	1.5
Tasmania	478.4	5.2	1.1
Northern Territory	198.6	0.3	0.2
Australian Capital Territory	322.6	1	0.3
Australia	19938.6	249.8	1.3

Selecting Lists

Any area containing no blank rows or columns will be recognised by Excel as a list. When you want to manipulate a list, Excel will assume that the list continues until a blank row or column is found. For that reason it is usually not necessary to select an entire list. It is normally sufficient to select a single cell and let Excel determine the boundaries of the list, since it will usually find the whole list fine - as long as the list contains no blank rows or columns. In fact, you are usually better off if you don't try to manually select the list since you may accidentally miss some of it.

In the following exercise, we will see how well Excel can detect a region.

Exercise 1.   Selecting a Region

1) Open your *Grades* file.

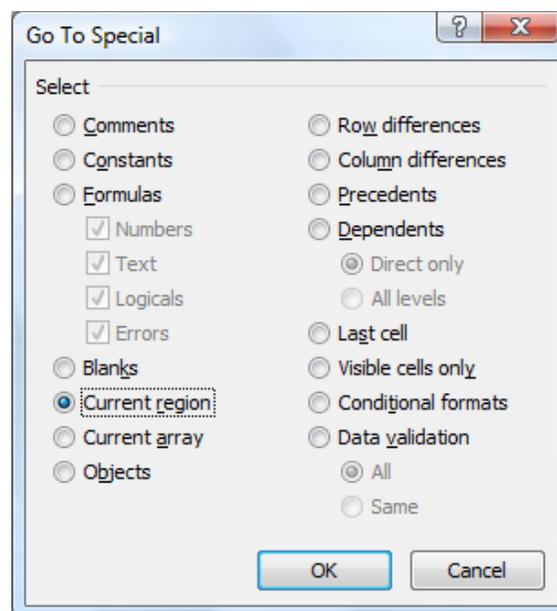2) Click on a cell anywhere inside the main table (for example **D10**).

Because there are no blank rows or columns within this table, Excel will recognise it as being one region.

3) Make sure you have the **Home** tab showing on the **Ribbon** bar.

4) Click the **Find & Select** icon (it is on the far right end).

5) When the menu appears select **Go To Special**.

6) Have a look at the different options that are available (you may find some of them useful later).

7) Select the **Current region** option and click **OK**. The whole table should now be selected.

When you are working with lists, Excel will automatically select the surrounding region in a similar way.

Term 1	Term 2	Term 3	Term 4	Year Total
15	12	14	17	58
18	14	17	16	65
23	22	19	21	85
8	11	7	6	32
19	19	18	14	70
13	12	10	12	47
16	22	20	19	77

Go To Special

Select
- Comments
- Constants
- Formulas
  - ☑ Numbers
  - ☑ Text
  - ☑ Logicals
  - ☑ Errors
- Blanks
- ● Current region
- Current array
- Objects
- Row differences
- Column differences
- Precedents
- Dependents
  - ◉ Direct only
  - All levels
- Last cell
- Visible cells only
- Conditional formats
- Data validation
  - ◉ All
  - Same

[OK]   [Cancel]

Tip   When you need to select a region you can also use the keyboard shortcut – **[Ctrl][*]** (or **[Ctrl][Shift][8]**). Try it now!

Manipulating Lists

Exercise 2. Sort a list using toolbar icons

1) Open the file *Music Charts.xlsx*.

This list contains five columns. Each column contains a heading.

Excel will assume that the first row in the list contains column headings and will not move them during the sorting process.

ARIA Charts - End Of Year Charts - Top 100 Singles 2010

Position	Title	Artist	Co.	Cat. No.
1	Love The Way You Lie	Eminem Feat. Rihanna	INR/UMA	US-UM7-10-15397
2	Omg	Usher Feat. will.i.am	LAF/SME	88697693952
3	Dynamite	Taio Cruz	ISL/UMA	2746580
4	Hey, Soul Sister	Train	COL/SME	88697575092
5	California Gurls	Katy Perry Feat. Snoop Dogg	CAP/EMI	6410085
6	Fireflies	Owl City	UMA	2723245
7	Only Girl (In The World)	Rihanna	DEF/UMA	2752674
8	Just The Way You Are	Bruno Mars	ELEK/WAR	US-AT2-10-01269
9	Teenage Dream	Katy Perry	CAP/EMI	9087415
10	Dj Got Us Fallin' In Love	Usher Feat. Pitbull	LAF/SME	88697761062
11	Airplanes	B.o.B Feat. Hayley Williams	ATL/WAR	US-AT2-10-00477
12	Tik Tok	Ke$ha	RCA/SME	88697619042

2) The first step in sorting the list is to click on a cell inside the column we want to sort by. In this instance, we want to sort the list in order of artists so click on a cell anywhere in the Artist column (column **C**).
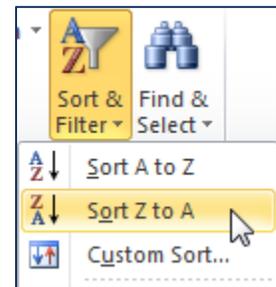
3) Click the **Sort & Filter** icon at the right end of the **Ribbon**.

4) A list will appear letting you choose how to sort the list. Click on the **Sort A to Z** option to sort the list in alphabetical order, using the currently selected column.

5) Click the icon again and this time, select the **Sort Z to A** option to sort the list in the opposite order.

6) Click in the **Position** column (column **A**).

7) Click the **Sort & Filter** icon and then select ⬇ Sort Smallest to Largest so that the list will once again be sorted by position from top to bottom.
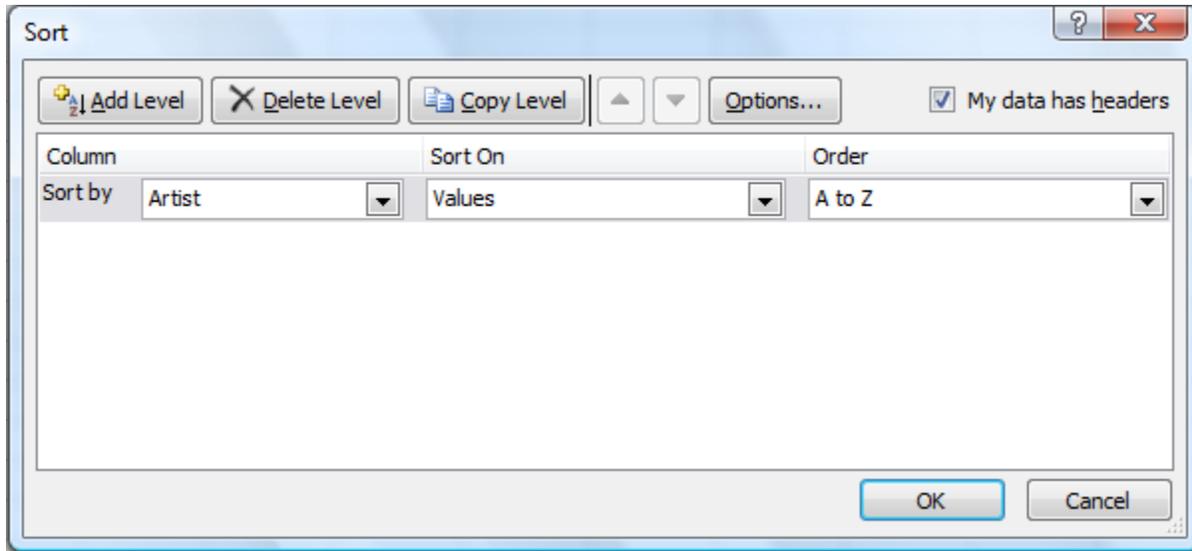
Note	If Excel can't determine the range of your table, you may need to select it first and then press [Tab] until a cell in the sorting column is highlighted.

Exercise 3.   Sorting a list using the sort options

Excel provides additional options for sorting a list that aren't available on the **Ribbon**.

1) Click anywhere inside the Music Charts list.

2) Click the Sort & Filter icon and then select ⇅ | C̲ustom Sort...

3) Make sure the **My Data has h̲eaders** option is selected.

4) Make sure the other options are set similar to the example above. I.e. Excel should be sorting the Artist column, using cell values from A to Z.
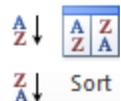
We will add a second sorting level so that Excel knows what to do with songs by the same artist.

5) Click the **Add Level** button.

6) Change the options so they look like the example below.

7) Click **OK** to complete the sort. It should now be sorted, first by **Artist**, then by **Title**.

Tip	On the **Ribbon** Bar's **Data** tab, you will find additional icons for sorting your list. Test them out with your current table.

Exercise 4.   Filtering a List

Filtering a list allows you to temporarily hide rows in the list so that only certain information will be visible when the list is viewed of printed. For example, you may want to filter the list so that only the top 10 songs are showing, or filter the list so that only songs by a certain artist are showing.

Like sorting, when filtering a list, Excel will automatically select a region so it is only necessary to select a single cell within the list.
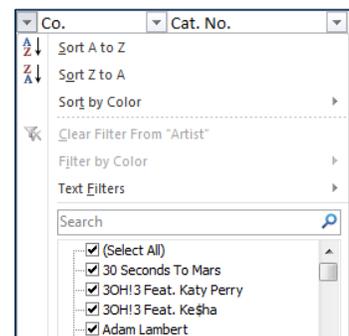
1) Select a cell inside your Music Charts list.

2) Click the **Sort & Filter** icon.

3) When the list appears, click ▼= Filter

Some arrows will appear next to each column heading. These arrows can be used to filter the list. Earlier when you were working with your Grades spreadsheet, you may have noticed filter arrows appear automatically when you applied a table AutoFormat.
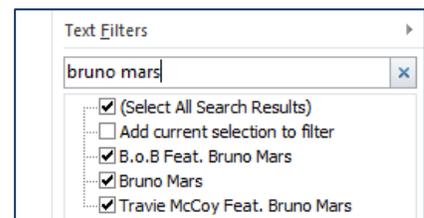
Positio ▼	Title	Artist	Co.	Cat. No.
85	Closer To The Edge	30 Seconds To Mars	VIR/EMI	US-VI2-09-00433
83	Starstrukk	3OH!3 Feat. Katy Perry	ATL/WAR	US-AT2-09-02549

4) Click the arrow to the right of the Artist heading. A list of sort options, followed by a list of the artists will appear.

Note   Filtering more than one column at a time will reduce the number of results you will get.
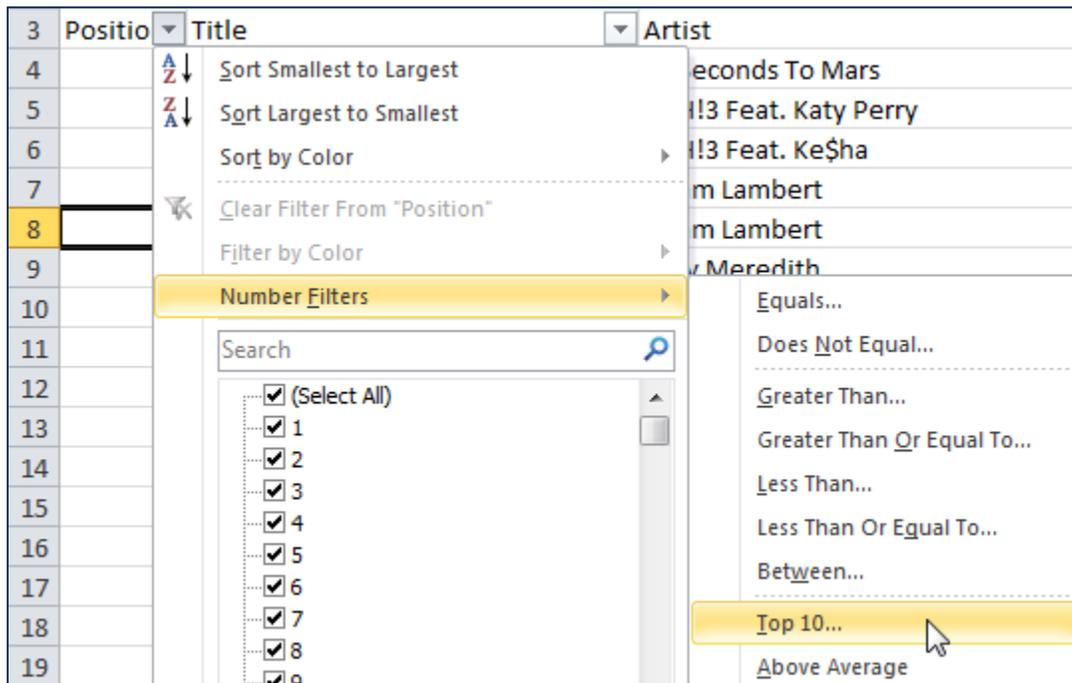
5) Type *Bruno Mars* in the **Text Filters** box. The list below will decrease to only show artists that include what you've typed.

6) Click **OK** to apply the filter. The table will now only show rows where the **Artist** includes *Bruno Mars*. All other rows will be hidden.

7) Click the arrow next to **Artist** again.

8) From the list select ▼ Clear Filter From "Artist". The full list will be displayed again.
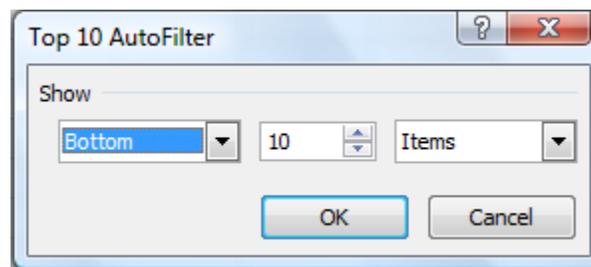
9) Click the arrow next to **Position**.

10) Select **Number Filters** and then select **Top 10** as shown below.

If we left the options set to top 10 we would have the highest numbers. I.e. 91 to 100. We actually want the *lowest* numbers.

11) Change the **Top** option to **Bottom** as shown below.

12) Click **OK** to complete the filter. Note that although it is only showing the 10 songs that have the lowest position number, they will still be sorted in whatever order you last sorted in.

13) Select the **Data** tab from the **Ribbon**.

14) Click the **Filter** icon. The filter and the arrows next to the column headings will be removed.

Exercise 5.   Subtotals

Excel can automatically create totals and subtotals for information in your list. This is best done if the list is already sorted by the column you want it grouped by. E.g. in our music charts table, we will use subtotals to count the number of songs for each artist so make sure your list is still sorted in order of artist.

1) Click anywhere within the list. Remember Excel can automatically select the boundaries of the region if you select a single cell within the region.

2) Make sure the list is still sorted in order of artist.

3) Select the **Data** tab from the **Ribbon**.

4) Click the **Subtotal** icon.

Subtotal

5) Change **At each change in** to **Artist**.

6) Leave **Count** for **Use function**.

7) Make sure **Artist** is the only column ticked under **Add subtotal to**.

8) Click **OK** to add the subtotals.

1 2 3		A	B	C	D	E
	1	ARIA Charts - End Of Year Charts - Top 100 Singles 2010				
	2					
	3	Position	Title	Artist	Co.	Cat. No.
	4	85	Closer To The Edge	30 Seconds To Mars	VIR/EMI	US-VI2-09-00433
	5		**30 Seconds To Mars Count**	1		
	6	83	Starstrukk	3OH!3 Feat. Katy Perry	ATL/WAR	US-AT2-09-02549
	7		**3OH!3 Feat. Katy Perry Count**	1		
	8	76	My First Kiss	3OH!3 Feat. Ke$ha	ATL/WAR	US-AT2-10-00648
	9		**3OH!3 Feat. Ke$ha Count**	1		
	10	36	If I Had You	Adam Lambert	RCA/SME	88697746492
	11	40	Whataya Want From Me	Adam Lambert	RCA/SME	88697657192
	12		**Adam Lambert Count**	2		
	13	92	Lying	Amy Meredith	SME	88697722802

In addition to adding subtotals, the rows have also been grouped by artist. When grouping levels have been added to a spreadsheet, you will see grouping selector buttons added to the left of the sheet. This sheet has three grouping levels as shown by the three numbers.

9) Click the number 2 button. The list will be filtered so you see the subtotals without the individual songs.

1 2 3		A	B	C	
	1	**ARIA Charts - End Of Year Charts - Top 100 Singles**			
	2				
	3	Position	Title	Artist	Co.
+	5		**30 Seconds To Mars Count**		1
+	7		**3OH!3 Feat. Katy Perry Count**		1
+	9		**3OH!3 Feat. Ke$ha Count**		1
+	12		**Adam Lambert Count**		2
+	14		**Amy Meredith Count**		1

10) Click the number 1 button and you will only see the grand total.

11) Click the number 3 button and you will see all records and totals.

Next to each subtotal you will also see a – sign (shown to the right).

	92		**Katy Perry Feat. Snoop Dogg Count**	
·	93	41	Blah Blah Blah	Ke$ha
·	94	45	Take It Off	Ke$ha
·	95	12	Tik Tok	Ke$ha
·	96	25	We R Who We R	Ke$ha
·	97	51	Your Love Is My Drug	Ke$ha
	98		**Ke$ha Count**	
·	99	65	I Made It (Cash Money Heroes)	Kevin Rud
	100		**Kevin Rudolf Feat. Birdman, Jay Sear**	
·	101	50	Alejandro	Lady Gaga
·	102	26	Bad Romance	Lady Gaga
	103		**Lady Gaga Count**	

12) Click on a – sign and the songs next to it will be hidden with only the subtotal remaining. The – sign will become a + sign.
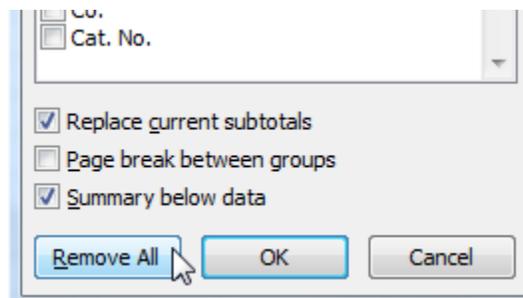
13) Click the + sign to show the songs again.

When you no longer want the subtotals you can remove them from the subtotals options.

14) Click the **Subtotal** icon on the **Ribbon**.
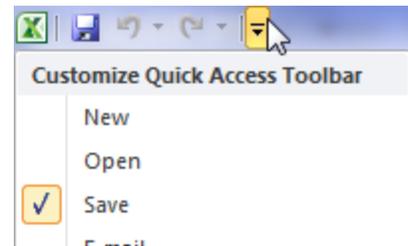
15) Click the **Remove All** button.

Exercise 6.   Using a form for data entry

Creating and editing a list involves a lot of typing. Some people are quite comfortable working with large amounts of information in a list layout. Others, however, find it a lot easier to work with the information with the help of a form. Excel can automatically create a data entry form based on the column headings in the list. This can be useful if you are editing a table with a large number of columns, as this can be a little easier to manage in a form.
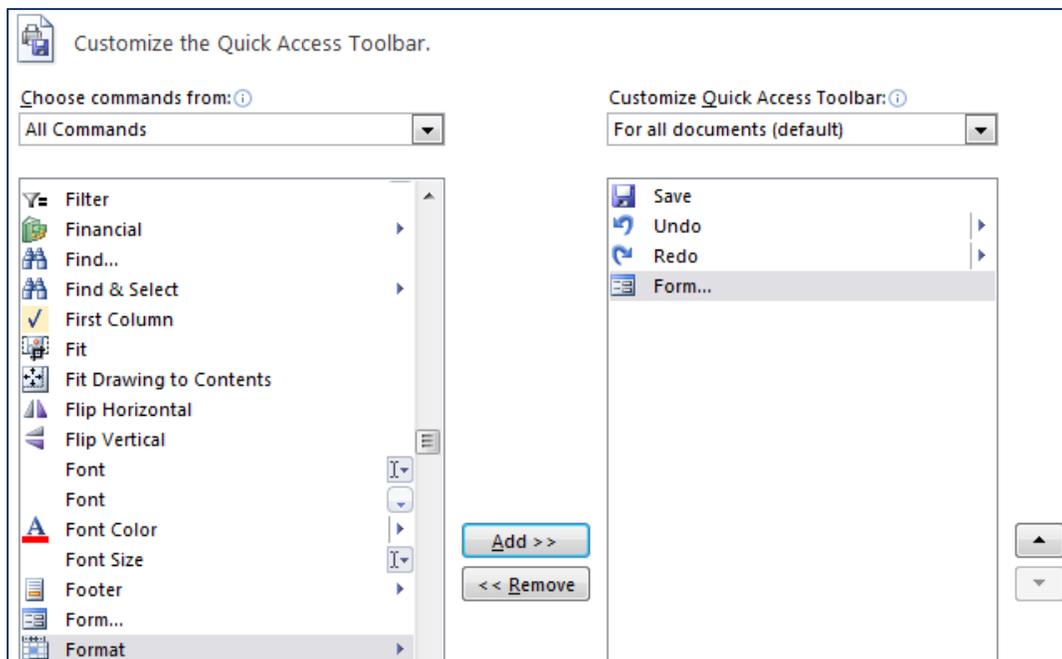
Note   As with many functions to do with lists, it is important to ensure there are no blank rows or columns in your list when using a data entry form.

The Excel ribbon bar does not contain an icon to display a data entry form, but you can easily add on to your quick access toolbar.

1) Click the arrow at the end of the **Quick Access Toolbar** (in the top left of the Excel window). A list of common commands will appear. Each of these can be added or removed from the quick access bar buy turning them on or off.

2) Select **More Commands** from the bottom of the list.

3) Under **Choose commands from**, select *All Commands*.

4) A list of Excel's commands will appear in the list. Select ☰ Form... in the list.

5) Click **Add** to add the form button to the quick access bar.

6) Click **OK** to close the **Options** dialog.

A Form icon should now appear on the **Quick Access Toolbar**.

7) Select a cell somewhere within the list and click the **Form** icon.

A form appears that allows you to view the information from the list one record at a time. To move to the next record, click **Find Next**, press your ↓ key or click the on the scrollbar. You can also press the **[Page Down]** key to move 10 records at a time. To move to the previous record, click **Find Prev**, press your ↑ key or click the on the scrollbar. You can also press the **[Page Up]** key to move 10 records at a time.

8) Move through the records to find the song *Airplanes* by *B.o.B Feat. Hayley Williams*.

9) Change the artist name to *B.O.B. Featuring Hayley Williams*.

10) Click on **Close** and this change will be made on the sheet.

11) Click on the Form icon again.

12) Click **Criteria**. This allows you to use filters within the form.

13) In the **Artist** field, type *david*.

14) Browse through the records. Only songs by artists with *David* in the name will show.

15) Click Criteria again.

16) Click **Clear** to clear the criteria.

17) Browse through the records and they will all be showing again.

18) Click **New**.

19) Add the details for a new song (you can make it up).

20) Click **Close** and the song will be added to the bottom of the list, using the formatting from the list.

21) Save and close the file.