Assignment 8

Open the file Sort & filter

(Note: the bracketed figures at the end of each task indicate which records should be at the top and bottom of the list if the sort is correct, and for Q4 onwards may also indicate the number of records that should be obtained)

1. The StudentList sheet lists marks for module exams. To help with this exercise, students also donate a sum of money to a homeless charity. The list of students is currently sorted in Student Number order. Try the following sorts:

   a. Sort by Final Mark, highest mark first. (10014,10002)

   b. Re-sort by amount donated, lowest amount first. (10029,10034)

   c. Re-sort the list alphabetically by Surname and Forename (so that those with the same surname are sorted by forename). (10009,10029)

   d. Return the list to its original sort order, by Student Number. (10001,10036)

2. Filter to display the following – *clear the filter after each one*:

   a) Students who are studying Chocolate as their module subject (8)

   b) 3rd year students who have scored a mark of 60 or more (5)

   c) 2nd and 3rd year students who have donated less than £10 (13)

   d) People with surnames starting with *Sm* (eg Smith, Smythe, Smithers etc) (3)

3. Use a combination of sort and filter to generate a list of Year 1 students with final marks in descending order. (12, 10003, 10002)

4. Produce a list of all students taking the Chocolate module, sorted alphabetically by surname and forename. (8, 10014,10029)

5. Use sorting and filtering to produce a list of students in second and third years who donated at least £5, sorted with the highest donation at the top (20, 10034, 10035).

6. Generate a list of year 2 and 3 students (in full alphabetical order) where the Final Mark is *not* in the range 40-70 inclusive. (8, 10014, 10029)

Note: You will see that cell K1 counts the number of records in the list. You can't do this with a simple COUNT function as this does not take into account filtering. To allow for filtering, we've used the SUBTOTAL function instead.

Collaborative Sort and Filter with Filter Views

The methods in the exercises above would change the view of data for all concurrent users in a Google Sheet. Google Sheets therefore includes extra features and functions so that more than one person can work on the same data set at the same time.

This exercise can only be done using Google Sheets as the feature is not available in Excel.

To get the most of the first part of this exercise, find a friend, share your copy of Sort & filter, and work together in this file. If you don't have any friends to hand, open the file in another browser window so you have it open twice. You can then pretend you have a friend!

1. Work on the StudentList tab. First, one of you should apply a simple sort or filter, as above, so you can see how this affects the view for both of you. Not very helpful - remove any filters.

2. Now both of you should create new *filter views:*

   a) Person 1 - Show all the first years taking the Cake module, with marks sorted in order, highest first. Save the filter view as *1st years - Cake*.
   b) Person 2 - Show all students taking the Pies module, in alphabetical order. Save the filter view as *All years - Pies*.

3. Both of you now switch out of the filter view and check the new views have been saved in Data > Filter views… 4.

Check it's working correctly:

   a) Person 1 - View person 2's filter view.

   b) Person 2 - Check the source data list is unaffected.

   c) Person 1 - exit filter view.

   d) Now swap roles and repeat.

Collaborative Sort and Filter with Data Functions

This exercise can only be done using Google Sheets or Excel for Microsoft

This approach uses data functions to do the sort and filter on another sheet, leaving the source data intact (you don't need a 'friend' for this part).

Still in your copy of Sort & filter:

1. Switch to the Sort tab:
   In cell A2 (leaving space for a header row), enter the SORT function so as to list the data sorted by exam mark, highest first. You will find that if the data range argument includes the header row, this will be shown in the sorted list, so the range will have to start at row 2.

2. Try some further sorts using the sort function:

   a) Sorted by surname and forename, in alphabetical order.

   b) Sorted by module, then by years.

3. Switch to the Filter tab:
In cell A2, enter the FILTER function so only students in year 3 are shown. The header row should not appear as it will never contain the correct criteria, however you will find that columns containing both text and numbers behave oddly when numerical criteria are used.

4. Try some further filters using the filter function:

   a) Show only students in year 1 who have passed.

   b) Show only students taking the Stews module who have a mark less than 40.