

Excel Practical 2: Using the Data Analysis package

Start by going to Tools > Data Analysis to have a look through the options, and explore the functionality.

Tasks:

1. Go the sheet with data set 1 in it and creating a set of bins (about 5 should be fine - see class 1 slides 29 and 30 if you've forgotten what these are), and put these in a line of cells. The bins should cover the range of the data. Now choose Tools > Data Analysis > Histogram, and input the data and the bins. Make sure to choose the 'Chart Output' option. Click OK and then tidy up the plot to your satisfaction
2. Now choose Tools > Data Analysis > Random Number Generation. Choose 1 variable and 10,000 random numbers. Pick the normal distribution option and leave the values as mean 0 and standard deviation 1. This will create 10,000 samples from a standard normal distribution. In class 2 we learnt that approximately 68.2% of samples from a standard normal will be between -1 and 1, and that 95.5% of samples will be between -2 and 2.
 - a. Think how you might verify this with your list of 10,000 samples.
 - b. Try repeating the exercise with 100 random samples, or 100,000 random samples and seeing how close you get to 68.2% and 95.5%
3. Go to data set 3. Use the function `Z.TEST` to see if the mean of run 1, fortification level 1, is equal to 0.91 or not across replicates. (Note that this function returns only the p-value). See if you can re-create this p-value by running the test by hand (i.e. not using `Z.TEST`) by following the instructions in Class 3 slides 21 and 22. It also helps to read the help files on the `Z.TEST` function (we want the two-tailed version of the p-value).