Excel Practical 1: basics of calculation and graphics with Excel

Part 1: summarizing data

Tasks:

1. Load in the data file data_sets.xlsx provided to you as part of the course material
2. For each data set in turn:
   a. Identify which are the variables and which are the observations
   b. Use the `COUNT` function to get the sample size
   c. Have a think about what the parameters could be for the questions of interest (see class 1 slides 3 to 5), think about what statistics we might use to estimate these parameters
   d. Use the `AVERAGE`, `MEDIAN`, and `QUARTILE.INC` functions to get the mean, median, and quartiles (note for this function use 1 or 3 to get the first and third quartiles) of the variables
   e. Create a copy of the data and try playing around with some of the values to make them more extreme. Note the effect on the mean, median and quartiles
   f. Use the `MAX`, `MIN`, `STDEV.S`, and `QUARTILE.INC` functions to get the range, standard deviations, and interquartile range of the variables
   g. Repeat step e above but this time look at the effect on the estimates from step f

Part 2: plotting data

Leave data set 1 for the moment as we will cover histograms in practical 2

1. Start with data set 2. Create an X-Y (scatter plot) with expression on the horizontal axis and breeding value on the vertical axis. Make sure to labels the axes (you can even add a trend line by right-clicking on the points)

2. With data set 3, see if you can create a stock plot which shows the variability between runs, replicates, or fortifications. You might have to do a little bit of playing around with the data. Again make sure to use colours, grid lines, axis labels, etc, to make the plot as clear as possible