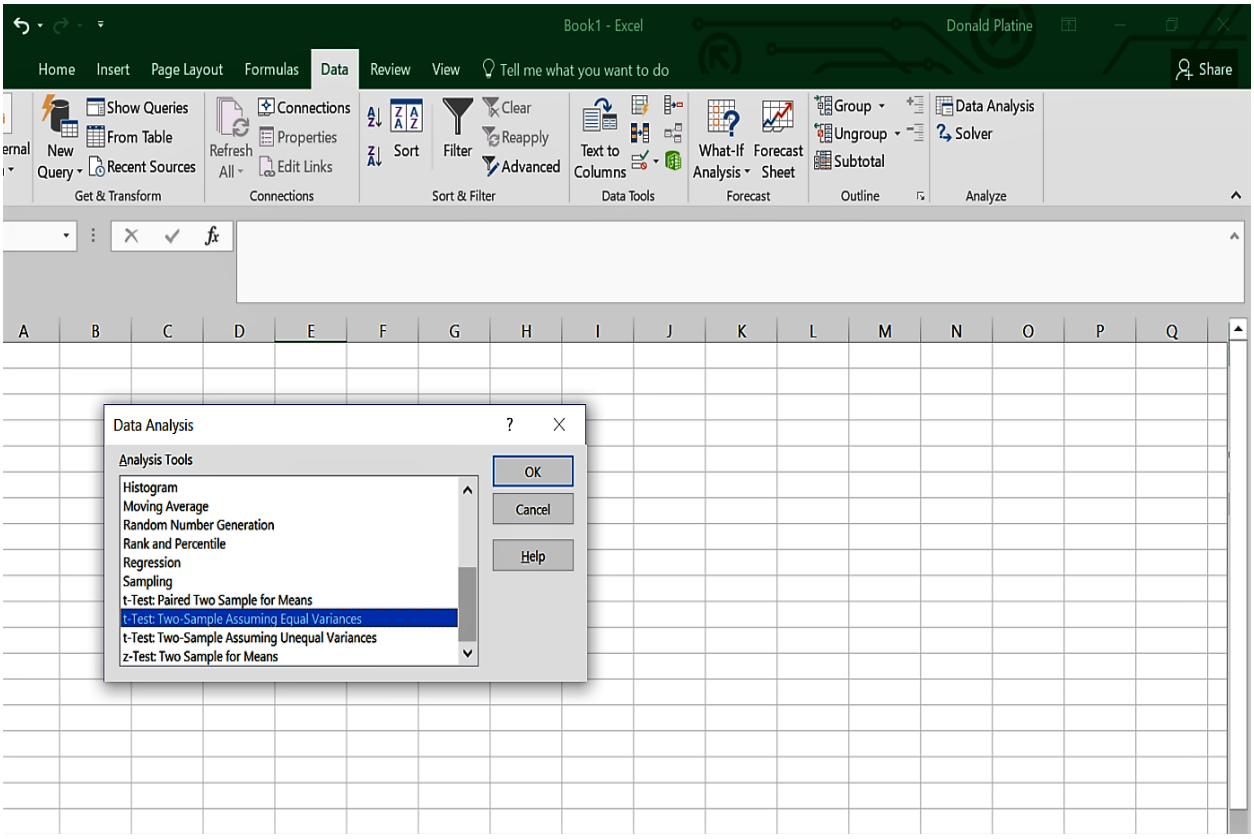
Week 2 Excel Tips

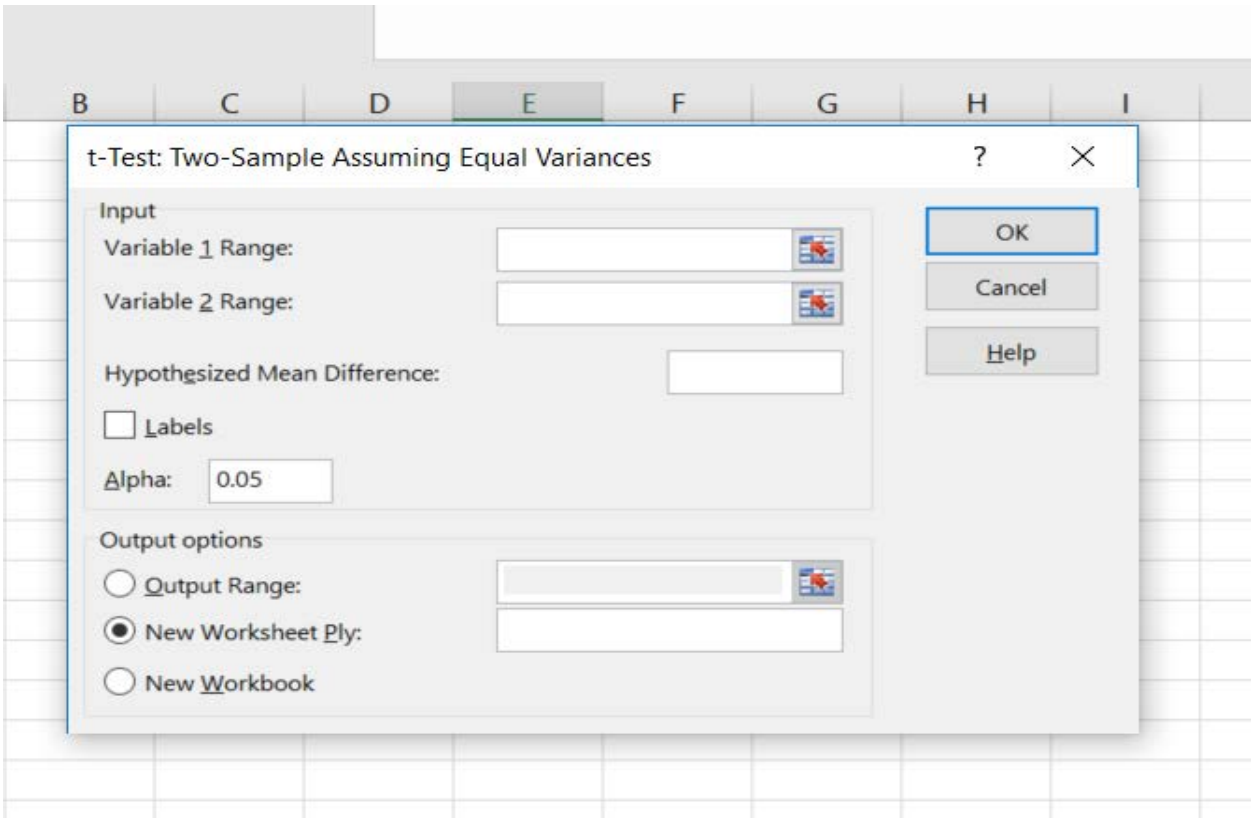
This week we are looking at the t-test for mean differences and the F-test for variance differences.

T-Test

Two-Sample T. The first test we looked at was the two sample t-test assuming equal variances. This is selected from the Data tab in the top ribbon. Selecting the Data Analysis tab at the right side of the tool ribbon will give us the box shown in this screen shot.



After selecting the technique, we want, in this case the T-Test: Two-Sample assuming equal variance, we get the following box.



Entering the data into this input window is fairly straightforward. The one critical issue is that the variables must be entered in the same order as they appear in the hypothesis statements. Since we list the males first in the statements, the male data would be placed in the variable 1 range box. Before entering the data, make sure this input box is not covering up your data columns. If it is, put the cursor in the top white area (where it says T-Test…, hold down the left mouse button and pull the box to the right to uncover the data, then release the button.

The simplest method of entering the data into any input box is to put the cursor in the box and click the left button – a vertical line should appear in the box. Then simply move the cursor to the appropriate data column (generally include the data label) and highlight the range by using the left button and dragging the cursor to the end of the data. The data range should appear in the appropriate data entry box. If desired, you can simply type the range in a box, such as B1:B26.

The next step is to click on the Labels box if you have included a data label in the data input range (recommended). The alpha value is already at the 0.05 level we are using in the class, so does not need to be changed in the alpha section. The final set-up set is to click the button in front of Output range, and then enter a cell number in the box – either typed or using the colored box at the end. Click OK, and the results show up.

Here is a video on setting up and performing the two sample t-test:
https://www.youtube.com/watch?v=JFq0Ad2PqxM

Here are a couple of videos on setting up and performing a paired t-test:

https://www.youtube.com/watch?v=RHBIQ2reACM (A short example of using Excel's paired t-test function)

https://www.youtube.com/watch?v=8ebXz-SoR_E (a longer example showing setting up the hypothesis and doing the t-test "longhand" rather than with the Excel function)