

Module 3 In-Class Activity Instructions

This week's activity will consist of just three exercises. The dataset we'll use will look familiar – it is the depression study data from Module 1.

When you are done, you only need to turn in the Excel workbook (you don't need to turn in this Word document).

Note: These instructions were created for Microsoft 365's downloaded version of Excel for the Windows operating system. There might be some discrepancies for other versions. Reach out to your instructor for further assistance, if needed.

Exercise 1

For the column "D-Time", create a frequency table in your Excel workbook. We did something similar in Week 1, but here is the procedure once again, to refresh your memory:

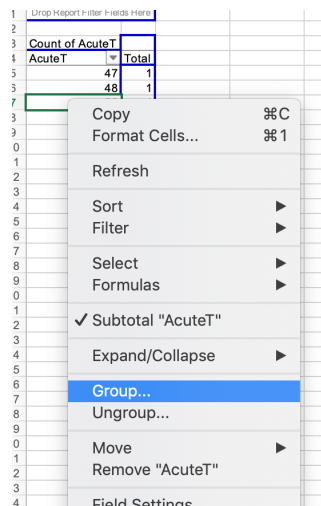
- Select cell A6 (the very top-left cell of the table).
- Go to Insert -> Pivot Table, and indicate that you want the Pivot Table to be placed in the existing sheet (specifically, in the pink highlighted cell I13).
- Under Pivot Table Fields, drag the "D-Time" field to the bottom-left box labeled "Rows".
- Drag the "D-Time" field again, this time to the bottom-right box labeled "Values". You should make sure it says "Count of D-Time" (and not "Sum of D-Time") by clicking on the "i" symbol and selecting "Count" in the pop-up window.
- Rejoice!

Exercise 2

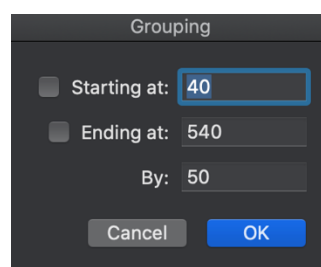
The Pivot Table you made in Exercise 1 is a little chaotic – there are just way too many rows to gain any kind of meaningful insight. We'd therefore like to group the data and transform what we made in Exercise 1 into a frequency table with bins — instead of reflecting the frequencies of each unique value, we'll reflect the frequencies of values falling within a certain range (these ranges are also known as “bins”).

Here's how we'll do this:

- Right-click any cell in the left column of your Pivot Table, and choose “Group...”



- You should see a dialogue box pop-up:



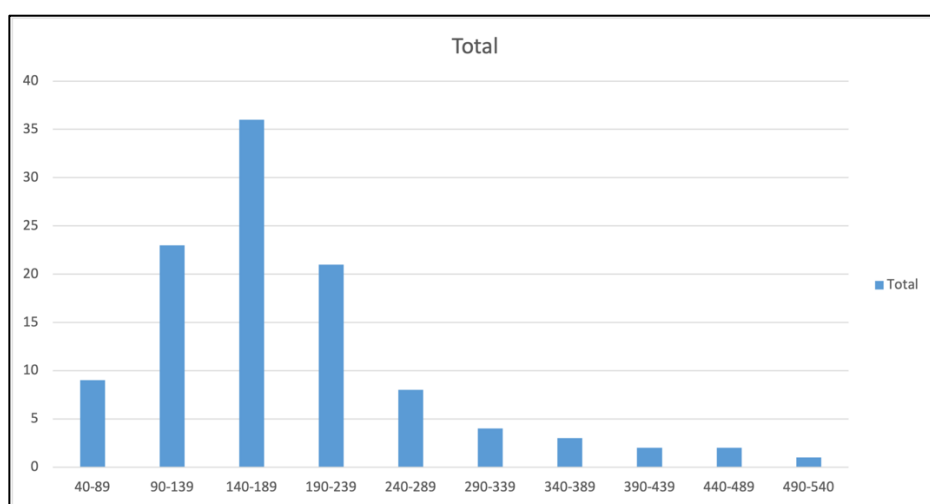
- Observe that the D-Time values range from the minimum of 47 to the maximum of 512. It's common to have bins have equal width, and so we will choose “Starting at” to be 40” and “Ending at” to be 540, while choosing “By” to be 50. This will give us ten bins with an equal width of 50 each, with start and end points relatively near to the minimum and maximum values of our data.
- Press “OK” — you should now see your frequency table is much more readable.

Exercise 3

The work you did in Exercise 2 sets you up really well to construct a **Histogram**, a powerful visual tool for describing quantitative data like our D-Time variable.

Here's how we'll construct it:

- Click on any cell in your Pivot Table.
- Then, click the "Insert tab", select the picture of the column bar graph to bring up the menu, and choose the 'Clustered Column' chart under "2-D Column". Excel will immediately create a Bar Chart for the grouped D-Time data. It should look something like this:



- We're not done! An important feature of a histogram is that there are no "gaps" between the bins (the blue bars). Let's close those gaps.
- Double-click on the bars in the chart so that they are all highlighted, which will open the "Format Data Series" window on the right of your screen.
- Click the tab with the 3 bars and change the "Gap width" to 0%.
- Click the tab with a paint can, select "Border options", choose "Solid line" and set the color to black.
- (Optional) Feel free to explore other aesthetic changes you can make (e.g. the bars don't have to be blue!).
- **Very important:** make your histogram descriptive by adding some chart elements via the "Add chart element" dropdown menu:
 - Change the default title to something meaningful
 - Add both horizontal and vertical axis labels
 - Add data labels
- Finally, admire your work and think about how you'd describe this picture: would you say this histogram is symmetric? Left-skewed? Right-skewed? Neither?

- *You don't have to write your answer to this question — just think about it!*