Module 1 In-Class Assignment

This document contains instructions for completing the in-class assignment. All your work should be done in the accompanying Excel workbook, which is the file you should turn in. You should not turn in this document – it will not be graded!

In completing this week's in-class assignment, you will:

- *Construct a line graph from a small, two-variable dataset using Excel;*
- *Learn to use Pivot Tables in Excel to tally data into a table of counts and percentages;*
- *Construct a pie chart using Excel.*

1. Constructing a line graph

Suppose you are keeping track of the total number of employees working at your company over a six-month period in the Excel spreadsheet titled "Line Graph":

Month	# of Employees
1	1
2	1
3	5
4	8
5	9
6	10

Your job is to construct a line graph to visually display how your employee numbers are changing over time. To do this:

- Go to the Excel sheet titled "Line Graph" and highlight the table.
- Click on "Insert", then on "XY (Scatter)", and finally on "Scatter with Straight Lines and Markers".
- Rejoice!

For the rest of the assignment, you'll work in the sheet titled "Data".

Open the sheet titled "Data" in the Excel workbook. The data that you see was collected from a study in which 109 respondents, all of whom had clinical depression, were separated into three groups, and each group was either treated with one of two active drugs (Zoloft or Prozac), or no drug at all (Placebo). For each patient (a *row* in the dataset), the several variables (one for each *column*) are recorded.

Here is a summary of all recorded variables:

a. ***Hospital****:* The respondent's hospital, represented by a code for each of the five hospitals (1, 2, 3, 4, or 5);

b. ***Treatment****:* The treatment received by the respondent (Zoloft, Prozac, or Placebo);
c. ***Outcome****:* Whether or not a recurrence of depression occurred during the respondent's treatment (Yes or No);
d. ***Time****:* The length of time of the respondent's participation in the study (number of days)
e. ***D-Time****:* The length of time that the respondent was depressed before treatment (number of days);
f. ***Age****:* The age of the respondent in years (at the time when the patient entered the study);
g. ***Sex****:* The respondent's sex assigned at birth.

2. Use a pivot table to figure out how many respondents each hospital has

Examining the leftmost column of the table in the "Data" sheet, you'll see that there are five hospitals that treat the 109 respondents. It might be useful to summarize exactly how these 109 people are spread out among these five hospitals. If you want to make some kind of summary about your data, it is probably the case that it can be done with a pivot table!

Follow these steps to create a pivot table that will display the counts of respondents at each hospital:

- Click on the cell A1 (with the variable label "Hospt").
- In the Insert menu, select "Pivot Table".
- For the option "Choose where to place the Pivot Table", select the option "Existing Worksheet"
- Mouse over to the cell I3, and click on it. You should see that the textbox associated to the option "Existing Worksheet" is now filled with something like "*Data!I3*".
- Click "OK".
- You should now see a (pretty dull-looking) Pivot Table appear, together a new sidebar menu titled "PivotTable Fields".
- In the new sidebar menu, check the box next to "Hospt".
- Drag the "Hospt" item to the box titled "Rows" (if it's already there, leave it there!).
- Make sure that the "Values" box says "Count of Hospt" (if it says "Sum of Hospt", you have to change it!).
- You should now see the counts for each hospital in the "Total" column of your pivot table!

3. **Show the proportion (as percentages) of respondents in each hospital**

   Being able to count things is great, but it is often useful to get a *sense of scale*. To numerically describe what proportion of patients are each hospital, one often expresses counts (like the ones that you worked out in the previous step) as percentages of the total (in this example, our total is 109 respondents).

   With Excel pivot tables, this is a quick adjustment:
   - Double-click on the cell containing the "Count of Hospt" label to bring up the "Value Field Settings" pop-up menu.
   - On the tab, "Show Values as", use the drop-down menu to select "% of Grand Total" and click "OK".

4. **Make a pie chart (this exercise is intentionally a little less descriptive than the previous exercises — try to figure out the changes you want to make by trial and error!)**
   You should:
   - Highlight the pivot table
   - Under the "Insert" tab of the navigation bar, under "Charts", click on the "Pie Chart" option
   - You should now see a pie chart!
   - Be sure to make aesthetic changes to your pie chart to make it as descriptive as possible (this is **extremely** important!). Here are some things you might consider messing with:
     - Font/font size/font color
     - Colors in your pie chart
     - The legend (is it better with or without one?)
     - Changing your chart title to be very descriptive
     - Adding data labels to each piece of the pie — where should these labels be placed? Should the labels be amended to be even more descriptive?
   - Your pie chart will be evaluated based on how effective it is at communicating what it should be communicating (remember, someone who has *never* seen the data *or* heard of this study should be able to get a pretty good sense of what the pie chart is trying to say). *Bonus points if it looks extra pretty!*