

## Math 1040 StatCrunch Exercise 1

The purpose of this exercise is to introduce you to the StatCrunch software that is available with your textbook and MyStatLab program. You will learn how to access data sets in your book as well as input your own data and create graphical displays of this data.

Log in to MyStatLab, click on the “Tools for Success” button on the left-hand side, then click on the link for StatCrunch. The program opens in a new window where you may edit your data.

First try loading data from an existing file. From the list of chapters at the left side of your screen choose Chapter 2 and the dataset 2\_2\_33.txt. This file contains the values from problem number 33 in section 2.2, “Average Income”. Per capita disposable income for the 50 states and the District of Columbia are recorded for the year 2006. Note that nearly every dataset in the textbook is accessible through this program, either on the left-hand side, or by using the pull-down data menu.

Start by sorting the data. At the top of your spreadsheet display, click on “Data”, “Sort columns”, and the column you want to sort (“Income”) by clicking on it. The program default is to sort in ascending order, but you can choose descending on this screen. For now, leave the box “un-checked” and click “Sort Columns”. This will add a new column to the spreadsheet window with the sorted data. Rename this column “Sorted Incomes” by clicking up in the column title. You will need to delete the current title before renaming it.

To create a histogram for disposable income, click on “Graphics” on the tool bar at the top of your screen. Click on “Histogram”. Choose the column you would like a histogram for (“Income”), use the computer defaults and click on “Create Graph!”. You should now have a histogram. Notice that the computer selected the class limits and the class width. Try changing them by clicking “Options”, “Edit”, and then selecting the “Next>” button. Try changing the class width (“Binwidth”) to 8000 or to 3000. Just click on “Create Graph!” again to see how your changes look. Notice that even though the data values are the same, the histogram looks different when you change the number of classes. Play with the other options in the histogram window using the “<Back” and “Next>” buttons in the edit menu. What happens if you change from a frequency histogram to a relative frequency histogram? Once you know how the options work, pick a class width and class start that you like, use the built-in histogram options to add **labels** to both axes and give the histogram a **title** that includes **your name**. Copy the histogram into the document file that you will submit (Word is a good choice). Save this document. You will be adding to it!

Clear the current data by clicking on “Edit” on the toolbar at the top of your spreadsheet. Then click on “Columns”, and “Delete”. Choose the columns you wish to delete (“Income” and “Sorted Income”) by clicking on them and then choose delete.

Now try entering your own data. Click in the first cell of the spreadsheet and type “22” and then “enter”. Continue in this manner and enter the following data set (note that you have already entered the first value).

**22, 27, 31, 31, 39, 45, 46, 48, 50, 53**

See if you remember how to rename the column and change it’s name to “My Data”. To create a stem-and-leaf plot for this data, click on “Graphics”, then “Stem and Leaf”, and then on the column for which you wish to create the plot (“My Data”). Click “Create Graph!” to see your plot. Copy this stem-and-leaf plot into the document file that contains your histogram. Be sure that both graphs fit on a single page. Save your document. You will be adding one more graph before it’s ready to turn in!

Test your memory to see if you remember how to delete the numbers in the “My Data” column and then load the data from question number 29 in section 2.1 of your textbook. You can always look back at the previous instructions if you don’t remember!

You should now have a column called “Language” that contains the qualitative data representing the languages being studied by a sample of 30 college students. To create a pie-chart for this data, click on “Graphics” then choose “Pie Chart” and “with data”. Choose the “Language” column and “Create Graph!”. You may not like the default choice of colors, so click on “Options” and “Edit”. Click “Next>” until you come to a menu with “Color Scheme” and try a different look. Just click on “Create Graph!” to see your results. Using the built-in options, give this pie chart a title and copy it into your document along with your histogram and stem-and-leaf plot. All three graphics should fit on a single page.

Print your document with your three graphs and turn it in by the posted due date.