CS130 Assignment #3
Date assigned: Monday, October 26, 2009
Date due: Monday, November 2, 2009
Points: 50

Create a Word document **PUNuetIDAnswers.doc** using your PUNetID that will contain answers to each of the following questions in order when applicable. Your answer document and any other files created are to be placed in a folder called **PUNetIDSolution3** once again using your PUNetID.

<u>Problem #1</u>

Using the sample data set entitled "TreeData.txt" found in the CS130 Public folder and SPSS create a dataset called **TreeData.sav** and report in the Word document PUNetIDAnswers.doc the answers to each of the following questions. When asked for, place a graph into your document with the appropriate explanation.

1) List each variable in the dataset TreeData.sav. Further, list the <u>type</u> and <u>measure</u> that each variable should be and briefly explain why. You will not get full credit if you select the wrong type or the wrong measure. Answer this question under a heading of **Problem #1 - Question 1**.

2) What is the mean, median, mode, and standard deviation for each of the variables: (a) Trunk Girth and (b) Weight. Paste in your answers to this question under a heading of **Problem #1 - Question 2**.

3) Construct a <u>single</u> bar chart that shows the Mean Weight of each root category. Paste in the answer to this question under a heading of **Problem #1 - Question 3**.

4) Using SPSS, perform the correct linear regression on weight and trunk girth. Make sure you properly identify the Dependent and Independent variable. Paste in <u>only</u> the **Coefficients** table. Answer this question under a heading of **Problem #1 - Question 4**.

5) Which variable is independent? Why? Give a detailed explanation for full credit. Answer this question under a heading of **Problem #1 - Question 5**.

6) Which variable is dependent? Why? Give a detailed explanation for full credit. Answer this question under a heading of **Problem #1 - Question 6**.

Note1: Make sure all of your graphs are properly and accurately labeled.

Note2: The Word document answers are to be in the exact order as specified above. As an example, do not put Step #6 results ahead of Step #2 results in the Word document.

<u>**Problem #2**</u>

The URL http://www.worldometers.info contains world statistics that are updated in real time. I would like you to create a model of the Current World Population that will allow you to predict what the population will be in 2050.

1) First I would like you to gather 10 minutes of current world population information from the Web site. In order to do this, capture a screen shot of the current world population every 60 seconds. In Windows, simply hit the print screen button which copies the screen to the clipboard and then paste the clipboard into a Word document. After 10 minutes, you will have 10 screen shots in a Word document. Take the Current World Population data and create an SPSS dataset called **WorldPopulationData.sav**.

2) Create a Scatterplot of the data you collected in 1). Paste this Scatterplot into the Word document under the heading **Problem#2-Question1**.

3) Looking at the data, you will see what regression model to use to get an equation to use in predicting future populations. Do the regression and paste the results in your word document under the heading **Problem#2 –Question2**.

4) Write down under the heading **Problem#2-Question3** your equation and R^2 values for the regression model used. The R^2 value will be almost 1 if not 1.

5) Predict what the world population will be in the year 2050. Just use a round number of 40 years from now. Show all work for full credit and make sure your prediction gives the world population in 2050 rounded to three decimal places. Place all work under the heading **Problem#2-Question4**.

6) Finally, find a Web site that also predicts the population in the year 2050. Place the URL of the Web site and their prediction under the heading **Problem#2-Question5**.

Submitting your work:

To submit your work, copy your <u>single folder</u> **PUNetIDAssign3** (for me that's ryandjAssign3) containing (**PUNuetIDAnswers.doc**, **TreeData.sav**, **WorldPopulationData.sav**) into the **CS130 Drop** folder on Turing. You must submit your work by the time specified above for your assignment to be considered on time. Reread the syllabus for the late policy. The official time can be found http://time.gov/timezone.cgi?Pacific/d/-8/java.

Grading:

Grading will be based on:
1) Correctness of your results
2) Completeness of your results
3) Professional look and correctness of your Word document answers.

Be sure to come see me early with any questions! Also, make sure you reread the Academic Dishonesty policy from the course syllabus. This is NOT a group project.