Project Checklist Semester 2

Original Hypotheses   State your beliefs prior to beginning the study.  What do you think the results will be?  Search for numerous existing parameters (Percents, Averages, Differences of 2 groups…) that someone has done quality research on.  Appx 15 points

* Cite 3-5 references.
* Include printed full articles that show: Who conducted the research, How they collected data, When was this?, Who published the findings?, and Page numbers.
* Highlight the parameters you found in the article.

Sampling Information   Discuss your method of data collection.  How did you obtain the sample(s)?  Are they truly random?  What population is represented by your sample?  Can you apply your statistical research to a much wider population?  Why?   Include your raw data in your report.  When you surveyed, how did you gather responses (bag, box, bucket, barrel)?  Be sure to gather both Quantitative and Qualitative/Categorical data including 2+ rating scales and 2+ ratio level questions on your well constructed survey! ~~Appx 20 points~~

Organize your data   Several (at least 4) types of descriptive statistical graphs should be used here. ~~Appx 10 points~~

~~Discuss center, shape, spread.  Compute the mean, median, mode, 10% trimmed mean, IQR, standard deviation, and CV.  What do these numbers mean?  Construct and analyze 2+ box plots and stem plots, looking for outliers, gaps, and overall distribution shape. Remember, analyze on the graphs.  Additionally, pause/think deeply and make quality conjectures here.~~

Construct 3+ scatterplots with Bivariate, Quantitative data. Appx 25 points

* Analyze each, including the LSRL (show how you got the equation, interpret the y-int and slope).
* Provide the correlation coefficient & coefficient of determination. Explained. Unexplained. Conjectures?

Hypothesis Testing

Compute 4+ different types of confidence intervals and 6+ different types of significance tests.  Appx 50 points

* Restate your hypotheses in terms of a null and alternate.  Identify assumptions made and check for conditions.
* Test your hypotheses, showing each step, a graph illustrating the critical region, test score and the p-value.
* When choosing appropriate alpha levels, explain why.
* Truly wrestle with Type 1, 2 errors and power. Also, occasionally allow the p-value to speak by itself.
* State why you chose the appropriate tests.
* Include numerical data and formulas with each test, even if you use technology to compute the Test Score.
* If you do Chi-Square tests, include the contingency table or data table.
* If you do a test of rho/beta, include the scatter plot and paired data points.
* Besides simply accepting/failing to accept the original hypotheses, conclude in words.

Conclusion  Share findings for the entire project. Include reflections of the overall experience. Appx 10 points

Please note, this project should represent what you learned over the entire course.  It should be much more than simply a problem similar to those found in chapter 9 or 10 of our textbook. Class Presentations begin in May!