AP STATISTICS

Data due: **Sunday, September 21** by 11:59pm (via email)

Project due: **Tuesday, September 30** (in class)

Yes, you are being asked to embark on a project before you have learned much about statistics. We will build our knowledge of representations and types of data and elementary (*i.e.* simple) statistical analysis as we go along.

Here's the hard part: **Be curious!** Select (or—even better—collect!) a data set that is relevant and/or interesting to you or the world. Data originality is a plus (and will improve your grade), but you can research and use collected data.

1) Through observation, experimentation or survey, compile a list of sample data.
   - Obtain at least **20** quantitative values, and try to collect data from an interesting or meaningful population. Compile the data into a clear and organized **Microsoft Excel** spreadsheet.
   - Label your file ***"Lastname, FirstInitial Project1Data.xls"*** (failure to do this will result in minus 5% of your grade). E-mail this spreadsheet of data to me **no later than 11:59pm** on **Sunday, September 21, 2014 (onbriones@gmail.com)**.

2) Generate a statistical report. In it, cover all the following points in detail.
   NOTE: A report should not be formatted as just phrase answers to all of these parts below. It should have an introduction and a conclusion just like any other report.
   a) Describe the nature of the data. What do the values represent? What is the population? What are the units to the data? Was there a reason for using this specific unit of measure?
   b) How did you collect your data? Describe the means in which you gathered the information. If you used a source, cite it. Why did you collect this type of data? What was your motivation?
   c) Find the following and include a written description as to how you did so:
   sample size, 5-number summary, mean, median, range, standard deviation, variance, IQR
   d) Determine if there are any outliers in your quantitative data–show your work.
   e) Construct a histogram, boxplot (show outliers as excluded points), and stemplot that is meaningful.
   f) Now, add **100** to each number in your data. Find the information in (c) and (e) again. How do the mean, median, and standard deviation compare to the first calculation?
   g) Next, increase the numbers in your original data by **50%**. Find the information in (c) and (e) again. How do the mean, median, and standard deviation compare to the first calculation?
   h) Assume that your original data is a normal distribution (though it's probably not), then find the following:
      - Find the percent that is greater than 5 units above your mean.
      - Find the percent that is between 3 units below your mean and 2 units above your mean.
      - Find the number of units required for the top 10%.

3) Make a conclusion about your data based on this very simplistic statistical analysis and make it a solid ending to your statistical report. You can make whatever kind of conclusion you would like as long as it is supported by the data and analysis that you have generated and is meaningful to your data.

NOTE:

This statistical report must be typed, font size 12, Times Roman, margin 1", and you must show any and all work you perform in order to make the requested calculations above.

AP Stats Project #1: Data *Name & Partner* _____

Project Data _____/10 points	**Data Submission**	**5** on-time/format correct	**2.5** on-time/bad format	**0** submitted late
	Description of Data	**1** present and valid	**0.5** present but lacking	**0** not present
	Description of Collection	**2** present and valid	**1** present but lacking	**0** not present
	Data Originality	**2** collected own data	**1** used cited data	**0** used un-cited data

Statistical Analysis and Computations _____/30 points	**Sample Size** original	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	add 100	**0.5** essentially correct		**0** missing/incorrect
	increase by 50%	**0.5** essentially correct		**0** missing/incorrect
	5 Num Summary original	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	add 100	**0.5** essentially correct		**0** missing/incorrect
	increase by 50%	**0.5** essentially correct		**0** missing/incorrect
	Mean original	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	add 100	**0.5** essentially correct		**0** missing/incorrect
	increase by 50%	**0.5** essentially correct		**0** missing/incorrect
	Median original	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	add 100	**0.5** essentially correct		**0** missing/incorrect
	increase by 50%	**0.5** essentially correct		**0** missing/incorrect
	Range original	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	add 100	**0.5** essentially correct		**0** missing/incorrect
	increase by 50%	**0.5** essentially correct		**0** missing/incorrect
	Standard Dev. original	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	add 100	**0.5** essentially correct		**0** missing/incorrect
	increase by 50%	**0.5** essentially correct		**0** missing/incorrect
	Variance original	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	add 100	**0.5** essentially correct		**0** missing/incorrect
	increase by 50%	**0.5** essentially correct		**0** missing/incorrect
	IQR original	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	add 100	**0.5** essentially correct		**0** missing/incorrect
	increase by 50%	**0.5** essentially correct		**0** missing/incorrect
	Outliers original	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	add 100	**0.5** essentially correct		**0** missing/incorrect
	increase by 50%	**0.5** essentially correct		**0** missing/incorrect
	Histogram original	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	add 100	**0.5** essentially correct		**0** missing/incorrect
	increase by 50%	**0.5** essentially correct		**0** missing/incorrect
	Boxplot original	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	add 100	**0.5** essentially correct		**0** missing/incorrect
	increase by 50%	**0.5** essentially correct		**0** missing/incorrect
	Stemplot original	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	add 100	**0.5** essentially correct		**0** missing/incorrect
	increase by 50%	**0.5** essentially correct		**0** missing/incorrect
	**Influence of … ** add 100	**1.5** essentially correct	**0.5** partially correct	**0** missing/incorrect
	increase by 50%	**1.5** essentially correct		**0** missing/incorrect
	Norm Distribution part 1	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	part 2	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect
	part 3	**1** essentially correct	**0.5** partially correct	**0** missing/incorrect

Report _____/10 points	**Introduction**	**2** present and valid	**1** present but lacking	**0** not present
	Conclusion	**3** present and valid	**1.5** present but lacking	**0** not present
	Quality/Presentation	**5** "knock your socks off"	**4** meets expectations	**1** below expectations

Project Evaluation: _____ (rubric total) – _____ (late fee(20% per day)) = _____/ 50 (points earned)