MTH 346 Statistics for Scientists Project I Spring 2025

This project is to be done in groups of 2. Gather data or information related to any topic or issue of interest to you and write a report.

The information or data gathering process:
(a) i) What did you gather your data on? ii) Describe the data gathering process. iii) Did you encounter any problems during the data gathering process? iv) What is the subject of your investigation? v) Why is your study relevant?

b) Use Minitab, R, SPSS, SAS, Python, Maple, or any statistical package, possibly in addition to Excel (but Excel should not be your main package of choice), to obtain measures of central tendency, measures of variation and position, boxplots, stem-and-leaf plots, dotplots, histograms, quantile plots, etc. Generate any other graphs and make illustrations of any relevant concepts referred to in the text. Make sure to give a brief overview of the package used.

c) Perform an analysis of the data by observing the computer print-outs. For example, what does the boxplot or the stem-and-leaf plot of the data reveal? Are there any mild or extreme outliers? If there are outliers, how did they arise and what explanations do you have for their presence? Is the data skewed or symmetric? What do the confidence intervals reveal? Is the data unimodal, bimodal, does the data show normality, etc.? What other conclusions can you draw? Are there any correlations in your data that you can measure? Are there hypotheses that you could test? Do you obtain any p-values and what do the p-values suggest? Can you measure goodness-of-fit? Can you perform ordinary regression or multiple regression? etc.

d) How does your work with the data reinforce the subject matter of this course?

e) Do you have any other comments or conclusions related to your data?

Notes
a) **Please use relevant and appropriate factual data to make your illustrations.**
b) **Your report should be typed double-spaced and should be presented along with your computer print-outs.**
c) **Please mention all sources used in your report.**
d) **In addition to grading based on mathematical and statistical clarity of the project report, grading would also address grammatical errors, erroneous constructions of sentences, spelling errors, and general mistakes that occur in English writing.**
e) **Describe the role played by your partner(s) in this project.**

Due in Blackboard: Friday, May 16, 2025