BUAN 5210 First Day Assignment
Professor Green Due Thursday, Sept 22

Data visualization is a fundamental skill because it is used in both data exploration and explanation, so it supports both data analysis and communication. Unfortunately, data visualization is largely ignored in most quantitative and communications courses, as well as business school curriculum. With this FDA I assume you are starting from scratch—that is you do not know the basic principles of design and are only vaguely familiar with software for data visualization. The purpose of this assignment is to start experimenting with data visualization and communication. The assignment provides minimal background information because you are supposed to learn and form questions from the data. You are to bring a hardcopy of the two part assignment described below to the first day of class.

Your Task: Your manager has acquired a data set containing information on advertising expenditures for *TV*, *Radio* and *Newspaper* (in $000) and store *Sales* (in $ millions) by *Market* (Urban, Suburban and Rural) from a competing firm. Your manager wants you to analyze the data and write up your findings supported with basic statistics and graphs. The write up should be in the form of a non-technical two-page memo because your findings will be reported to upper management.

Data: 1_FDA_AdData.csv
Software: Use whatever you are comfortable with—Excel, R (and Rstudio) or other program.

Memorandum Format: The standard analysis memo format is (2-page maximum):

1) An introductory paragraph briefly stating what you have learned
2) Your two most important findings, each supported by statistics and a visualization that are explained in non-technical terms
3) A brief couple of sentences discussing other less important findings with a few supporting statistics

Technical Appendix

4) It is important for your work to be reproducible by others. Provide a clear description of what you have done by documenting the steps of your analysis. This often includes your data source, the steps you took and "code" with clear and complete documentation (i.e. write out why/what you are doing next to calculations). You can think of this as the exploratory portion of your work. [Note, for this assignment there is not much technical work so technical appendix will be short; however, it still needs to be complete. The "code" portion could be printed out R code, an Rmarkdown document or a documented spreadsheet. Don't include the data. Watch this tutorial if you want to learn Rmarkdown.]

The memo presents your explanatory work and the technical appendix shows your exploratory work. All writing must be clear, concise and accurate – no repetition or excessive use of adverbs and adjectives. No fluff or filler, every sentence and word should have purpose. **Your manager does not have time to guess at what you have done, and she is not a data analyst so the memo must be written clearly in plain English with NO technical jargon.** The memo should be than two pages for items 1 – 3, in 12-point font with 1.25 inch margins. Item 4 should begin on a separate page and provide the technical background for your work. The Technical Appendix must be clearly labeled and organized.

Please bring a hardcopy to class on Thursday, Sept 22nd.

FDA Grade Rubric		
Category - Percent of grade	Score	**Comments**
Introductory Paragraph – 2 points Brief findings, clear, no jargon		
Finding 1 – 2 points Description, Stat, Visual, no jargon		
Finding 2 – 2 points Description, Stat, Visual, no jargon		
Other findings – 1 point Clear, Stat, no jargon		
Technical Appendix – 3 points Clear and complete, jargon okay here		
Total	**/10**	

What does "no jargon" mean? When you are writing to a lay audience you need to assume they have only a limited background in quantitative methods. You can generally assume that people know what an average is and understand that variance or standard deviation relates to variation of the data, but not much more. They may or may not know what the median or mode are and why they might be better than the mean at representing data. You would likely need to explain what a box plot illustrates, but a histogram should be self-explanatory. When trying to determine if terminology or a visualization is "jargon" or not, think about saying or showing it to a friend without a quantitative background. Would they know what it was or would you need to provide more background for them to understand it?