ST555 Homework 12

When you have completed this HW, submit via Moodle the following:

I. Submit a .rmd file (R Markdown file)

II. Submit a .html, .pdf, or Word document generated by R Markdown that contains the answers to the questions and the code utilized to obtain these answers. You will not receive full credit without both the code and answer printed out.

III. Meet the R Programming Standard

Utilize the dataset called **Cars93** to complete this homework assignment.

1) The dataset Cars93 is in the MASS library. If necessary install the MASS package and then use the following commands to load Cars93 into you R session:
   a. >library(MASS)
   b. >data(Cars93)

2) Write a command to print out the names of the variables in the dataset Cars93. How many variables are there?

3) How many cars (i.e. rows of data) are included in the dataset?

4) Use the variable Type to answer the following:
   a. How many different Types of cars are included in the dataset?
   b. How many cars in the dataset are considered “Sporty”?

5) Provide summary statistics for City miles per gallon (MPG.city).

6) Create a boxplot to view City miles per gallon by Type of car. Based on the boxplots:
   a. Which Type of car seems to travels the least number of miles per gallon?
   b. Explain in a comment how you came to the conclusion you mentioned in 6a.

7) Create one or several scatterplots examining the relationship between City miles per gallon versus Price, Highway miles per gallon, Length, and Horsepower. Based on the plots only,
   a. Which variable (Price, Highway miles per gallon, Length, Horsepower) appears to have the strongest negative association with City miles per gallon?
   b. Which variable (Price, Highway miles per gallon, Length, Horsepower) appears to have the strongest positive association with City miles per gallon?

8) Check your guess to number 7) by calculating the correlation between City miles per gallon versus Price, Highway miles per gallon, Length, and Horsepower.