ADA1 Homework 1

Instructions of homework:

1. Homework can be either typed or written by hand. You need to hand in with a hard copy.
2. For problems related to a data set, you can do calculations either by hand (if it is a small data set) or by R console. If you are using R console, please include your R code in appendix.
3. Output from R is not a solution. You shall provide comments/interpretation of the output. Make sure that you only include necessary output to facilitate your explanation.

Assignment 1: Due August 30 Wednesday in class

For assignment 1, please do all calculations by R.

- ``cars" is a built in dataset in R with 50 observations on two variables:
- ``speed" gives the speed of cars (mph) and
- ``dist" gives the distances taken to stop (ft)
- Please refer to columns in the data using the ``$'' sign, if we use , d1<-cars, then,
- speed column is d1$speed
- dist column is d1$dist

a. Plot dist vs speed, have you seen a pattern?

b. Compute the mean, median, standard deviation, and interquartile range for the dist data.

c. Make a stem-and-leaf display, histogram, and boxplot for the dist data. Is there much difference between the mean and median? Discuss, briely, whether the size and the direction of the difference is sensible, given the graphical summaries.

d. Using the graphical summaries, describe the shape of the dist distribution. Discuss modality, presence/absence of outliers, whether skewness is present, and if so, in what direction, and whether it would be reasonable to assume that the dist distribution is normal.