Lab 6 - Nonparametric Tests - STA 570

# Project Goals

In this lab assignment, you will be asked to:

* Determine an appropriate nonparametric test for a specific situation
* Identify factors for using a nonparametric test
* Make conclusions when using a nonparametric test

# Sample Data Set

Data Set 3 “Births” lists birth weights from four different hospitals with very different geographic locations in New York State. We want to investigate an effect of geographic location on birth weights. NOTE: The data set has been edited so that only two locations are included. Do NOT use the original Births data set. Use the edited data set included in the lab assignment on Canvas.

1. Which nonparametric test applies?
2. Identify the requirements for the appropriate nonparametric test and determine if they are satisfied.
3. State the null and alternative hypothesis in words.
4. Apply the test, using the code below. Make a conclusion regarding the hypothesis and defend it using the p-value.
5. Would this nonparametric test or a two-sample t-test be more appropriate in this case? Explain.

# Import your data set   
births <- read.table(file = "03 - Birthsedited.txt", sep = "\t", header = TRUE)  
  
# Plot your two variables of interest - What are you looking for?  
# cex.names is the scale of the x-axis labels   
plot(births$FACILITY, cex.names = 0.55)

hist(births$BIRTH.WEIGHT)

# Wilcoxon Rank-Sum Test - What are the requirements for this test?  
wilcox.test(births$BIRTH.WEIGHT ~ births$FACILITY)