R Exercises Session 6

Introduction to R for Data Management and Analysis

June 21, 2016

# Exercises

1. You are tasked to test whether there is a difference in mean miles per gallon (mpg) by type of motor (vs) (v-shape or straight). Run a t-test on the variables in question. What is the result? Show another way to calculate the mean by group. What type of motor has a higher mean miles per gallon? Show your code.
2. Fit a linear model with the Orange dataset. You are investigating how age relates to circumference of a tree. Use the predict function to estimate the circumference of a 500 year old tree. Show your code.
3. Using what you learned, load the babies.txt dataset and replace the missing values in the smoking variable smoke. Run a t-test to see if the average birth weight (bwt) is significantly different between mothers who smoke and those who don't.
4. Run a linear regression with gestation, smoke, age as predictor of birth weight bwt. Create a plot of fitted vs residual values using the functions learned in class.

## Extra Credit

1. Using the lm object in 4, create a table of beta () coefficients using the coef function on the summary of the model. Add columns for confidence intervals with confint.