R Lab 1

PART 1

Use Jupyter Notebook with R to perform analyses on two datasets. Use the R Cookbook to figure out how to do all the analyses. Also, use the markup language to indicate what analyses have been done.

MAKE SURE TO SAVE THE NOTEBOOK AS: LastNameRLab1

Datasets to analyze (R built in datasets)

(1) airquality
(2) ToothGrowth

1. Show the top of the dataset using head
2. Attach variables to be easier to analyze: attach(dataframe)
3. Use 3 different methods to determine normality: qqnorm, a histogram, stats test
4. Figure out which transformation could make it normal
5. Transform variables as necessary
6. Make scatterplots of all the non-categorical variables
7. Test all pairs of correlations
8. Adjust p-value using fdr and Bonferroni

Specific tests

TootGrowth:
Perform an ANOVA with supp as the factor.
Perform a linear regression of len with dose

Airquality:
Perform an ANOVA of temp with month as factor
Correlate Ozone with Solar.R, Wind with Temp

PART 2

Do all the analyses above but run them as BASH and PYTHON scripts. They should produce output files and write one of the scatterplots to a pdf file.