Quiz 4

Hand in your ipython notebook here:
https://classroom.github.com/a/HgVNd2A6

1. Use the Kirby 21 data. For the 21 subjects, use both the left and right telencephalon to predict CSF volume (using the level 1, type 1 volumes). Interpret the coefficients. (Do not do any data splitting on this example).
2. Load the admissions data https://stats.idre.ucla.edu/stat/data/binary.csv
    a. Create a logistic regression model to predict graduate school admission using gpa, gre score and undergraduate department prestige (rank). Hold out 25% of the data (randomly selected) for testing and 75% for training.
    b. Interpret your logistic regression coefficients.
    c. Predict the probability of admission for your testing data. Create a series of probability thresholds from 0 to 1. For each threshold, threshold your predicted probabilities and compare the sensitivity, specificity and accuracy of your predictions. Create a plot of each, plotting
        i. Threshold (x) by sensitivity (y)
        ii. Threshold (x) by specificity (y)
        iii. Threshold (x) by accuracy (y)
3. For your project, load in your data and start doing some basic exploratory data analysis in the form of plots and summaries.