ORCA 2500, HW 9. Due April 6, 2018.

1. In class, we discussed deflategate, and analyzed whether the New England Patriots cheated in 2015. We used the statistic that was the mean value of the balls for each team. Choose a different statistic and create a jupyter notebook that repeats the analysis for the new statistic. Briefly justify your choice of statistic.

2. Write a function that computes the correlation coefficient r. Your input should two arrays x and y, and you should return the r value. Don't use a package that already contains an r method, write code that implements the definition.

3. Use the correlation coefficient function you wrote to answer the following questions:

   (a) What happens to r if you double each of the values in your data. How does this compare to what happens to the covariance?

   (b) What happens to r is you add 100 to each value in your data set. How does this compare to what happens to the covariance?

4. Continue working on your project (nothing to turn in).