PSYC 7014, Week 7 stats lab

This weeks homework involves the file **anxiety_data.csv**

Part 1

Dr. Flora is studying the relationship between anxiety and baseline heart rate. He hypothesizes that there is a positive relationship between the two, such that people that are more anxious will have a higher basline heart rate. To test this he administers the Davis anxiety test (score range 0-60). Any score equal to 40 or above he deems as a person with high anxiety and score lower than 40 is low anxiety. He wants to test whether participants in the high anxiety group have on average a higher resting heart rate than participant from the low anxiety group.

- what is the appropriate test for Dr. Flora's hypothesis?
- conduct the appropriate analysis including
    - Appropriate checks for assumptions related to the data (e.g., normality? homogeneity?)
    - The appropriate visualization of this data given the hypothesis (what is a good type of plot to make? Make it!!)
    - Run the appropriate inferential test.
- write up you results being sure to include all relevant information for a proper report (test statistic, means if applicable, **effect size**, figure caption, etc).

Part 2

Dr. Turing is also studying the relationship between anxiety and baseline heart rate. She happens to come across Dr. Flora's data set that he has graciously shared on his OSF page. She notices that in his document he reports data related to group differences, but his data set also includes raw anxiety scores. She elects to follow-up on his data set, testing the relationship between individual's baseline heart rate and these raw anxiety scores. She hypothesizes that there is a positive relationship between the two, such that people that are more anxious will have a higher basline heart rate.

- what is the appropriate test for Dr. Turing's hypothesis?
- conduct the appropriate analysis including
    - Appropriate checks for assumptions related to the data (e.g., normality? homogeneity?)
    - The appropriate visualization of this data given the hypothesis (what is a good type of plot to make? Make it!!)
    - Run the appropriate inferential test.
- write up you results being sure to include all relevant information for a proper report (test statistic, means if applicable, **effect size**, figure caption, etc).

Part 3

Given what you know, what investigator do you believe conducted the more apprioate test? Why? I know these were listed as optional a few weeks back, but it might be worth it to check out:

- MacCallum et al (2002) “On the practice of dichotomization of quantitative variables."
- Altman (2006) "The cost of dichotomising continuous variables"