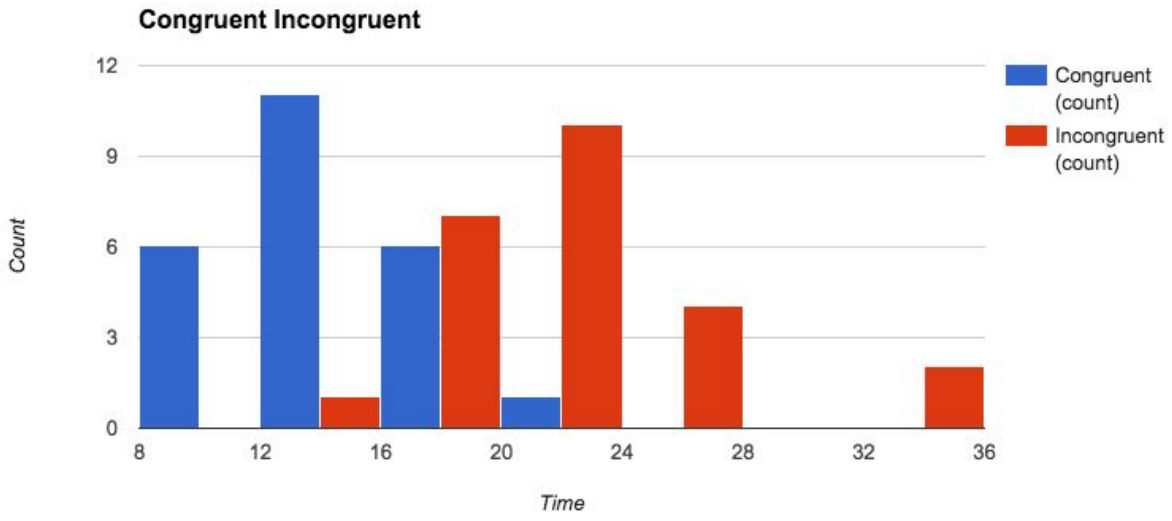
1. What is our independent variable? What is our dependent variable?
    - Dependent Variable: Time that it takes to name the color of the ink
    - Independent Variable: Congruent or Incongruent
2. What is an appropriate set of hypotheses for this task? What kind of statistical test do you expect to perform? Justify your choices.
    - In the following hypothesis, Null and Alternative hypothesis, I will be referring to the population mean of Incongruent and Congruent data sets. In other words, the average time for the respective groups to recognize font colors.
    - Null Hypothesis - H_0: Amount of time that it takes to name the colors for congruent and incongruent tasks is the same.
    - Alternative Hypothesis - H_1: Amount of time that it takes to name the colors for congruent and incongruent tasks is not the same.
    - H_0: μCongruent = μIncongruent
    - H_1: μCongruent != μIncongruent (not equal)
    - I will be using a two tailed dependent t-test for the reason that I will be comparing two dependent samples of data. Furthermore our sample size is less than 30 and we don't know the population standard deviation.
    - μ -Population Mean
3. Congruent:
    - Mean:14.051125
    - Standard Deviation:3.559357958

    Incongruent:
    - Mean:22.01591667
    - Standard Deviation:4.797057122
4. Provide one or two visualizations that show the distribution of the sample data. Write one or two sentences noting what you observe about the plot or plots.



- The chart demonstrates to us that there is an evident difference in the range of data between Congruent and Incongruent tests. Furthermore, It also shows us that there is a difference in median times from the two tests.

5. Now, perform the statistical test and report your results. What is your confidence level and your critical statistic value? Do you reject the null hypothesis or fail to reject it? Come to a conclusion in terms of the experiment task. Did the results match up with your expectations?
    - μD = -7.964791667
    - S = 4.727773527
    - Degree of freedom = 23
    - T-stat = -8.0207
    - Confidence level = 5%
    - 95 percent confidence interval:(-10.019028 -5.910555)
    - P value = less than 0.0001

    At a = . 05, the p value is less than .05 and as such we can reject the null hypothesis. We then Can state that the difference between congruence and incongruence group time is statistically significant. In other words, the stroop effect exists. This is what I was expecting.

Websites referred to:

https://www.graphpad.com/quickcalcs/ttest1.cfm
http://www2.fiu.edu/~howellip/paired-ht.pdf
http://stattrek.com/statistics/formulas.aspx
https://graphpad.com/quickcalcs/pValue2/
https://faculty.southwest.tn.edu/hprovinc/content/Materials/Lecture%20Notes/Hybrid%20Statistics/Chapter%207.pdf