1. What is the independent variable? What is the dependent variable?
    - The independent variable: Condition i.e. Congruent or Incongruent
    - The dependent variable: Time

2. What is an appropriate set of hypotheses for this task? Specify your null and alternative hypotheses, and clearly define any notation used. Justify your choices.
    - H_0(Null Hypothesis) - Average time taken by the incongruent words is lesser or equal to the average time taken by congruent words.
    - $H_{1(}$Alternative Hypothesis) - Average time taken by the incongruent words is more than the average time taken by the congruent words.

    Notation:

    $H_{0:}$ (Null hypothesis) $\rightarrow \mu_{incongruent} <= \mu_{congruent}$

    H_1: (Alternative hypothesis) $\rightarrow \mu_{incongruent} > \mu_{congruent}$

3. Report some descriptive statistics regarding this dataset. Include at least one measure of central tendency and at least one measure of variability. The name of the data file is 'stroopdata.csv'.
    - The mean < median for congruent words the graph is left skewed. The mean > median for incongruent data the graph is right skewed.

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 congruent words data has no outliers but has a larger spread indicating the values lie away from the center of the data. The incongruent words data has two outliers but has smaller spread indicating the values lie closer to the center of the data.

5. Now, perform the statistical test and report your results. What is your confidence level or Type I error associated with your test? What is your conclusion regarding the hypotheses you set up? Did the results match up with your expectations? Hint: Think about what is being measured on each individual, and what statistic best captures how an individual reacts in each environment.

    - Type 1 Error: Average time taken by the incongruent words is more than the average time taken by congruent words when, in reality, average time taken by congruent words are more than or equal to the average time taken by the incongruent words.
    - p value is lesser than 0.05, The results are statistically significant.
    - The null hypothesis can be rejected.