Percentage of Drivers Fully Stopped at a Stop Sign

Objective: to understand the percentage of drivers fully stopped at a stop sign.

Preparation:

- Determine **which** location to collect data.
- Determine **when** to visit the location. Pick a proper time so that more data can be collected in a short period of time.
- **Make a hypothesis** on the percentage of drivers fully stopped at a stop sign before you actually collect the data. You only need one for research/alternative hypothesis.

  Example of possible hypotheses:
  - The percentage of drivers fully stopped at a stop sign is more than 20%.
  - The percentage of drivers fully stopped at a stop sign is less than 30%.
  - The percentage of drivers fully stopped at a stop sign is not than 50%.

  You will make a hypothesis statement yourself based on the location that you plan to visit for data collection. When you make such a hypothesis you should consider the time factor and the location factor. The location and time of the day should also be considered as part of your hypothesis statement.
- Determine the **sample size**. (How large a sample to be collected?) Try to collect a sample of 100 or more data so that the margin of error for the estimation will not be too large. It would be great if you can specify a margin of error as a goal of the estimation, and use it to determine the sample size.
- Write a section in your paper, call it "Introduction", to describe your research hypothesis and how you reached your research hypothesis.

Data Collection:

- Although this is just a class activity. When collecting data, please do not interfere with any person during data collection. Do not collect data from a location that does not allow you to do such an activity. Try to avoid possible bias in data collection.
- Again, do not collect the data before you reach a decision on your hypothesis.
- Write a section in your paper to describe data collection process.

Data Processing and Descriptive Statistics:

- Create a data file and use your name as part of the file name to store it and you will need to turn in your data file along with your report.
- Generate statistical graphs to describe your data. This could be a bar chart or any other graphs.
- Compute descriptive measures such as percentage distribution, etc.
- Write a section in your paper to report these descriptive statistics.

Inferential Statistics:

- Do a z-test for proportion to see if the data support your hypothesis, report the p-value of the test, and conclusion your analysis.
- Produce a 95% confidence interval for estimating the percentage of drivers fully stopped at a stop sign.
- Write a section in your paper to describe these two inferential statistics and the results of your analysis. Also include the SPSS output on the test and confidence interval.

Write a summery for your report as the last section of your term project report paper that summarizes your analysis and reports any limitations in your research project.