Basketball officials need to be able to reliably and silently count ten seconds. (In fact they must do this at the same time they are running and watching for all manner of fouls and violations.) In this project, you will see whether you have this skill.

This project requires at least two people and is limited to three.

Data collection: one person in the group will attempt to estimate 10 seconds without counting aloud. That person should be given at least 20 trials. To perform the 20 trials for an individual, a second person should serve as the timer. The timer will start a watch and say “Start” at the same time. The timer will stop the watch and record the elapsed time when the subject says “Stop.” The time should be recorded to at least tenths of a second. The subject should not be told the result of any trial until all 20 are completed. (To prevent the subject from learning from trial to trial.)

Write a report that includes the following:

1. A short description of the experimental design – most of the details are given above but you should elaborate on the design based on the particular decisions that you had to make in implementing the design.

2. Describe the sample distribution of the trials including a description of shape, center, spread and any unusual features. This description will include, at minimum, a histogram and various appropriate numerical summaries. For this project, make sure that the histogram is nicely labeled and presented and that the summary statistics are presented with appropriate notation and significant figures.

3. Present the task as a hypothesis testing situation. Write appropriate null and alternate hypotheses, perform the test, and write a clear, correct conclusion for the test.

4. Present the task as a confidence interval situation. Report the confidence interval in a clear, correct statement that draws a conclusion about this particular context.

5. Write a summary that draws a clear conclusion about the subject’s ability to carry out this particular duty of a basketball official.

6. Include the data with your report.