CSCI 3900C Lab #5 (30 points)

Write an R script to accomplish the tasks below. Please put all code in a single script file, and use comments to identify the different sections. Also use comments for your name at the top.

UPLOAD YOUR SCRIPT TO THE LAB5 D2L Dropbox.

Download the following files from D2L:

IowaHousing.csv (This is the data file for the assignment)
IowaHousingDocumentation.txt (This explains the columns in the data set)

Notice that the data set represents a ***population***:
All houses sold in Ames, Iowa during a particular time period.

R Script Tasks

A. Use read.csv to read the Iowa Housing data set into a data frame.
B. Set your seed to a 3-4 digit number that represents your birthday (month and day). Examples: November 20 is 1120, June 8 is 608
C. Use the sample_n function in dplyr to draw a sample of 50 homes from the data set.
D. Examine the variable representing graded living area (Gr.Liv.Area).
    1. What is the mean graded living area of your sample?
    2. Does your sample provide evidence that the true mean graded living area of all houses in this population is less than 2000 square feet? Conduct a t test and show the results. Use comments to state the t-statistic and p-value, and interpret the results.
    3. Does your sample provide evidence that the true mean graded living area of all houses in this population is less than 1500 square feet? Conduct a t test and show the results. Use comments to state the t-statistic and p-value, and interpret the results.
    4. Give a 95% confidence interval for the true mean graded living area of all houses in this population.
    5. Give a 90% confidence interval for the true mean graded living area of all houses in this population.
    6. Give a 99% confidence interval for the true mean graded living area of all houses in this population.