**DS 710**

**R Programming Assignment**

**Homework 1:**  Share text file containing R code

1a. Open a new script in R or a new document in your text editor, such as Notepad++. Type your full name at the top of file, and save it as a .r file. For each of the following, copy your (clean, finished, working) R code into the file, with the R output immediately after the code.

b.  Open R.

c. Calculate the cube root of 2017, as follows:  
2017^(1/3)

d. Find the absolute value of 5.7 minus 6.8 divided by .58:  
abs(5.7-6.8)/.58

e. Create a list of integers from 1 to 12 and call it “a”:  
a = 1:12  
a   #(this will print a, so you can paste it into your homework; do this each time)

f. Create a sequence of odd numbers from 1 to 11:

b = c(1, 3, 5, 7, 9, 11)

b

g. Create the same sequence in another way:  
c = seq(1,11, 2)  
c

h. Take the natural log (ln) of a. (Note that this is done to the entire “vector” called a.)  
ln.a = log(a)  
ln.a

i. Compute the **squares** of the odd numbers from 1 to 11.

j. Use ?sd to view the help file for the sd function.  In the same document as your code, write an answer to the following question: What does the sd function do?

k. Create a variable Name that contains your first name.  Because your name is a character string, not a number, you will need to put it in quotes so that R knows not to go looking for a variable with that name:

Name = "Susan"

Then type

paste("My name is", Name)

L.  When you shut down R, R will ask if you want to save the workspace image.  Always choose **no**.

(Saving the workspace image means saving in memory any variables you have defined.  It does *not* save the code you wrote—you need to save your code in a .r file, or script, for this.  Saving your variables can be confusing:  If you later write another function that’s supposed to use, say, the name of a company, stored in the variable Name, but forget to initialize it, normally R would give you an error message that you could use to figure out your mistake.  But if you save the workspace image, then R won’t give an error message.  It will just use the stored value of Name—but that’s your name, not the company name.  This produces a bug that can be much harder to track down.)

Submit your finished .r document to GitHub.