**DS 710**

**R Programming Assignment**

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

For each of the following, copy **your R code and the output** (and your written response, for part 1.8) into a .r, .txt, .doc, .docx, or .rmd document.  Submit your finished document to GitHub.

1.0 R version 3.2.5 (2016-04-14) -- "Very, Very Secure Dishes"

Copyright (C) 2016 The R Foundation for Statistical Computing

Platform: x86\_64-w64-mingw32/x64 (64-bit)

* 1. Calculate the cube root of 2015

|  |
| --- |
| > 2015^(1/3)  [1] 12.63063 |
|  |
| |  | | --- | |  | |

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

[1] 1.896552

|  |
| --- |
| 1.3 Create a list of integers from 1 to 12 and call it “a”: > a = 1:12  > a  [1] 1 2 3 4 5 6 7 8 9 10 11 12 |
|  |
| |  | | --- | |  | |

1.4 Create a sequence of odd numbers from 1 to 11:

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

> b

[1] 1 3 5 7 9 11

|  |
| --- |
| 1.5 Create the same sequence in another way: > c = seq(1,11, 2)  > c  [1] 1 3 5 7 9 11 |
|  |

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

|  |
| --- |
| > ln.a = log(a)  > ln.a  [1] 0.0000000 0.6931472 1.0986123 1.3862944 1.6094379 1.7917595 1.9459101 2.0794415 2.1972246 2.3025851 2.3978953 2.484906 |
|  |
| |  | | --- | |  | |

1.7 Compute the squares of the odd numbers from 1 to 11.

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

> d = b^2

> d

[1] 1 9 25 49 81 121

1.8 Use ?sd to view the help file for the sd function.  What does it do?

The standard deviation function computes the standard deviation of the values in x (a numeric vector). na.rm = True will remove missing numbers prior to the calculation

1.9. 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 = "Mike"  > paste("my name is", Name)  [1] "my name is Mike" |
|  |
| |  | | --- | |  | |

1.10  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.)

Shutdown R … did not save workspace image