BUAN 6357 (Johnston)

Homework 2

Code Due: 26 January 2019 (6:00PM)

Part B Due: 27 January 2019 (11:59PM)

Points available: 100.

This assignment is about use of the Monte Carlo method and good programming practice in R. All deliverables for this first portion of the assignment (part A) are to be vectors. For this assignment you do not need and should not use any additional packages. Do not use the "require()" or "library()" statement in your code.

The first commands of your code MUST be:

setwd("c:/data/BUAN6357/HW_2"); source("prep.txt", echo=T)

and the last command of your code MUST be:

source("validate.txt", echo=T)

Be careful with the quote characters as they must ALL be the same at the beginning and end of a string.(Use the single or double quote character from the key next to "Enter".) Inclusion of these lines is required BEFORE your code will be tested.

1. Run the code as presented in the blog (Monte Carlo Method in R, Approximation of Pi, see Notes_20190114b.xlsx)
2. Re-write the code to remove all loops while preserving the exact contents of the X, Y, and in_circle structures across both sets of code.(Remember to call set.seed() each time with the same seed value.
3. Calculate both results estimating Pi. The names for all deliverables are provided below.

4. Use the system.time() function for both sets of code.

Submit the code to eLearning as an ASCII file which can be copied directly into R.

You may submit this assignment as many times as needed until you get full credit.

Deliverables (all names lower case) :

1. X1 original X coordinates
2. Y1 original Y coordinates
3. In_circle1 original “in_circle” values
4. My_pi1 original estimate of PI
5. X2 new X coordinates
6. Y2 new Y coordinates
7. In_circle2 new “in_circle” values
8. My_pi2 new estimate of PI

Part B of HW 2 will direct you to change some values and run the entire code again, using the system.time() function to assess execution speed. You will see why there are changes to 1 of the parameters when you execute the code.