Homework 1

Directions

Launch RStudio and open a new R Script. Give the script a name with a .R extension, say, hw1.R and save it on your working directory. The aim of this exercise is to make you get used to using R, create a few objects, and use R as a calculator. Explore the basic functionalities of R and include enough documentation with annotated comments.

Use R-Markdown and knit your solution document to pdf. To do so, go to File, New File, then click on R Markdown. A template will open up. Save this with an .Rmd extension, e.g. hw.Rmd. Submit BOTH your Rmd file and pdf file when finished.

Show all your work/code. Late submission will attract a penalty of 10 points per day after the due date.

If you have any questions, please post them on the lesson discussion board.

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1. (a) Calculate the square root of 625
   (b) Create a new object y and asign it to the value 100
   (c) Calculate the natural logarithm of y
   (d) Calculate the logarithm to base 10 of y
2. (a) Generate 1000 random numbers from a normal distribution with mean 0 and standard deviation 1. (Hint: use the R

function *rnorm*(). Also you can set a seed by typing *set.seed*() for the random generator to give you the same numbers every time you run the R code. *Do not print out the 1000 numbers on the solution document.*)

(b) Plot a histogram of the numbers generated in (a) above. (Hint: use *hist*() function)

(c) Calculate the mean, standard deviation, variance, standard error, minimum, maximum, median, and range of the 1000 random numbers. (Hint: R already has functions to do this. Look for them or create your own)