Live Session Unit 1 Assignment

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| > ##############################################  > ## 1 - Basic Math  > ##############################################  >  > ### a. Log of positive number  > log(16)  [1] 2.772589  >  > ### b. Default for log is a natural log. log(16, 2) = 4  > log(27, 3)  [1] 3  >  > ### c. Log of negative number is Nan because its impossible to have a number to a power be a negative number  > log(-1)  [1] NaN  Warning message:  In log(-1) : NaNs produced  >  > ### d. square root of 16 is 4  > sqrt(16)  [1] 4  >  > ##############################################  > ## 2 - Random Number Generation  > ##############################################  >  > ### a. Vector of 15 normal random variables and its mean and SD  > my.numbers <- rnorm(15)  >  > mean(my.numbers)  [1] -0.1319162  >  > sd(my.numbers)  [1] 1.005149  >  > ### b. Vector of 15 normal random variables with mean of 10 and SD of 2... and its mean and SD  > my.numbers <- rnorm(15, mean = 10, sd = 2)  >  > mean(my.numbers)  [1] 9.84462  >  > sd(my.numbers)  [1] 2.044729  >  > ### c. The means and SDs don't match because they're using a small set of random numbers. If the sample size increased then they would be closer  >  > ##############################################  > ## 3 - Vector Operations  > ##############################################  >  > ### a. Weights  > weights.kg <- c(60, 72, 57, 90, 95, 72)  >  > ### b. heights  > heights.m <- c(1.80, 1.85, 1.72, 1.90, 1.74, 1.91)  >  > ### c. enter into R  > weights.kg  [1] 60 72 57 90 95 72  > heights.m  [1] 1.80 1.85 1.72 1.90 1.74 1.91  >  > ### d. scatterplot - Shows there's not much of any correlation between height  ### and weight for this sample. There may be a positive correlation of weight  ### to height, but there are outliers.  > plot(weights.kg, heights.m)  >  > ### e. BMIs  > BMI <- weights.kg / sqrt(heights.m)  >  > BMI  [1] 44.72136 52.93545 43.46209 65.29286 72.01931 52.09737  >  > ### f. Mean of weights  > weights.kg.mean <- mean(weights.kg)  >  > ### g. Weights - Mean of Weights  > weights.diff\_from\_mean <- weights.kg - weights.kg.mean  >  > weights.diff\_from\_mean  [1] -14.333333 -2.333333 -17.333333 15.666667 20.666667 -2.333333  >  > ### h. Sum the diffs from mean  > sum(weights.diff\_from\_mean)  [1] 2.842171e-14  >  >  > ##############################################  > ## 4 - Data Science Profile  > ##############################################  >  > categories <- c(  + "Computer \nProgramming",  + "Math",  + "Statistics",  + "Machine \nLearning",  + "Domain \nExpertise",  + "Communication\n& Presentation\nSkills",  + "Data \nVisualization"  + )  >  > ranking <- c(  + 4,  + 3,  + 2,  + 3,  + 1,  + 3,  + 5  + )  >  > jeremy <- data.frame(categories, ranking)  >  > jeremy  categories ranking  1 Computer \nProgramming 4  2 Math 3  3 Statistics 2  4 Machine \nLearning 3  5 Domain \nExpertise 1  6 Communication\n& Presentation\nSkills 3  7 Data \nVisualization 5  >  > barplot(  + jeremy$ranking,  + las = 2,  + names.arg=jeremy$categories,  + cex.names = .7  + )  >  > ##############################################  > ## 5 - Swirl  > ##############################################  >  > ### 1. install  > #install.packages("swirl")  >  > ### 2. load  > #library(swirl)  >  > ### 3. install course  > #install\_from\_swirl("R Programming")  >  > ### 4. complete swirl lessons  > ## Completed - see .txt file for console results. First module got truncated off  > ## as my console didn't store all of the session. I assume you can accept the remaining  > ## console output in good faith that I completed all 7 modules. |
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