613 Classwork Week 2

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1. In three or four sentences, explain why constructing a Function in order to execute tasks, is beneficial or advantageous

One of the benefits of creating a function is that it helps to eliminate repetitive tasks when coding. Instead of doing the same thing over and over again, you can instead create a function to do it for you which allows you to be more efficient. Additionally, creating a function can also help to eliminate any the probability of creating execution errors.

1. Write a function (using r code and structure demonstrated in class) to calculate a z score for a given observed value, a mean, and a standard deviation value. And then use your function to find a z score for the following problem. (Research the internet to find the formula used to calculate a z score)

zscore <- function(observed, mean, sd) {  
 return((observed-mean)/sd)  
}  
zscore(25.77,23.54,2.442)

## [1] 0.9131859

Observed value = 25.77, mean = 23.54, standard deviation = 2.442

1. Write a function (using r code and the structure demonstrated in class) to calculate the natural log of a number multiplied by the common log of the same number divided by the cube root of a given prime number. Use your function to find the answer if the number to be used for both log expressions is 32 and the given prime number is 11. Also use R code to round your answer to the nearest tenth.

logprime <- function(x,prime) {  
 cuberoot<-prime^(1/3)  
 y<-(log(x)\*log10(x))/cuberoot  
 print(round(y,digits=1))  
}  
logprime(32,11)

## [1] 2.3

1. Use and show R coding to calculate the standard deviation for each variable of the data table mtcars using the “Special For Loop Method” demonstrated in the class notes.

output2 <- vector("double", ncol(mtcars)) # 1. output  
 for (i in seq\_along(mtcars)) { # 2. sequence  
 output2[[i]] <- sd(mtcars[[i]]) # 3. body  
 }  
 output2

## [1] 6.0269481 1.7859216 123.9386938 68.5628685 0.5346787 0.9784574  
## [7] 1.7869432 0.5040161 0.4989909 0.7378041 1.6152000