IT24104338 PS Lab 8

```r
setwd("C:\\Users\\it24104338\\Desktop\\IT24104338 PS Lab 8")
getwd()

data<-read.table("Exercise - LaptopsWeights.txt", header=TRUE)
colnames(data)[1] <- "Weight.kg"
attach(data)
#Q1; Calculate population mean & population sd
pop_mean <- mean(Weight.kg)
pop_mean

pop_sd <- sd(Weight.kg)
pop_sd
```

```
> setwd("C:\\Users\\it24104338\\Desktop\\IT24104338 PS Lab 8")
> getwd()
[1] "C:/Users/it24104338/Desktop/IT24104338 PS Lab 8"
> data<-read.table("Exercise - LaptopsWeights.txt", header=TRUE)
> colnames(data)[1] <- "Weight.kg"
> attach(data)
> pop_mean <- mean(Weight.kg)
> pop_mean
[1] 2.468
> pop_sd <- sd(Weight.kg)
> pop_sd
[1] 0.2561069
```

```r
#Q2; create empty vectors
sample_means <- c()
sample_sds <-c()
#loop for create & assign 25 samples of size 6
for(i in 1:25){
  #draw a random sample of size 6 w replacement from 'Weight.kg' data
  s <- sample(Weight.kg, 6, replace = TRUE)
  #cal mean & sd of current sample

  sample_mean_val <- mean(s)
  sample_sd_val <- sd(s)
  #append calculates values to our vectors
  sample_means <- c(sample_means, sample_mean_val)
  sample_sds < c(sample_sds, sample_sd_val)
}
sample_means
sample_sds
```

```
> #Q2; create empty vectors
> sample_means <- c()
> sample_sds <-c()
> for(i in 1:25){
+   #draw a random sample of size 6 w replacement from 'weight.kg' data
+
+   s <- sample(weight.kg, 6, replace = TRUE)
+   #cal mean & sd of current sample
+
+   sample_mean_va1 <- mean(s)
+   sample_sd_va1 <- sd(s)
+
+   #append calculates values to our vectors
+   sample_means <- c(sample_means, sample_mean_va1)
+   sample_sds < c(sample_sds, sample_sd_va1)
+
+ }
> sample_means
 [1] 2.278333 2.536667 2.211667 2.516667 2.628333 2.200000 2.531667 2.345000 2.536667 2.521667 2.268
333 2.428333 2.433333 2.445000 2.495000 2.506667 2.510000
[18] 2.510000 2.455000 2.670000 2.606667 2.416667 2.493333 2.353333 2.603333
> sample_sds
NULL
```

```
#Q3; cal mean of 25 sample means
mean_of_sample_means <- mean(sample_means)

#cal sd of 25 sample means
sd_of_sample_means <- sd(sample_means)

pop_mean
mean_of_sample_means

pop_sd
sd_of_sample_means
```

```
> #Q3; cal mean of 25 sample means
> mean_of_sample_means <- mean(sample_means)
> #cal sd of 25 sample means
> sd_of_sample_means <- sd(sample_means)
> pop_mean
[1] 2.468
> mean_of_sample_means
[1] 2.460067
> pop_sd
[1] 0.2561069
> sd_of_sample_means
[1] 0.1250606
>
```