IT24101566 – LAB 08

```
> setwd("C:\\Users\\Dulara\\Desktop\\IT24101566")
> data <- read.table("Exercise - LaptopsWeights.txt", header=TRUE)
> fix(data)
> attach(data)
> ## Question 01
> popmn <- mean(Weight.kg.)
> popvar <- var(Weight.kg.) * (length(Weight.kg.)-1)/length(Weight.kg.)
> popSD <- sqrt(popvar)
> popmn
[1] 2.468
> popvar
[1] 0.063951
> popSD
[1] 0.2528853
> ## Question 02
> samples <- c()
> n <- c()
> for (i in 1:25){
+   s <- sample(Weight.kg., 6, replace=TRUE)
+   samples <- cbind(samples, s)
+   n <- c(n,paste('S',i))
+ }
> colnames(samples) <- n
> s.means <- apply(samples, 2, mean)
> s.var   <- apply(samples, 2, var)
> s.SD    <- sqrt(s.var)
> s.means
     S 1      S 2      S 3      S 4      S 5      S 6      S 7      S 8      S 9     S 10
2.493333 2.483333 2.383333 2.306667 2.486667 2.463333 2.373333 2.573333 2.513333 2.526667
    S 11     S 12     S 13     S 14     S 15     S 16     S 17     S 18     S 19     S 20
2.361667 2.705000 2.515000 2.348333 2.573333 2.218333 2.463333 2.698333 2.473333 2.306667
    S 21     S 22     S 23     S 24     S 25
2.555000 2.383333 2.540000 2.513333 2.365000
```

```
> s.SD
      S 1       S 2       S 3       S 4       S 5       S 6       S 7       S 8       S 9
0.2185101 0.1752332 0.1876877 0.3109126 0.2401388 0.2746392 0.3857806 0.1489519 0.1985615
     S 10      S 11      S 12      S 13      S 14      S 15      S 16      S 17      S 18
0.1677697 0.5150696 0.1930544 0.3320090 0.2191271 0.2427893 0.3268894 0.3170909 0.1105290
     S 19      S 20      S 21      S 22      S 23      S 24      S 25
0.3557902 0.1727040 0.2611322 0.3785587 0.1148913 0.2541391 0.1954226
> ## Question 03
> mean_smeans <- mean(s.means)
> sd_smeans   <- sd(s.means)
> mean_smeans
[1] 2.464933
> sd_smeans
[1] 0.1170672
```

Data	
data	40 obs. of 1 variable
$ Weight.kg.: num 2.46 2.45 2.47 2.71 2.46 2.05 2.6 2.42 2.43 2.53 ...	
samples	num [1:6, 1:25] 2.46 2.76 2.53 2.66 2.42 2.13 2.17 2.43 2.47 2.6 ...
Values	
i	25L
mean_smeans	2.46493333333333
n	chr [1:25] "S 1" "S 2" "S 3" "S 4" "S 5" "S 6" "S 7" "S 8" "S 9" "S 10" "S 11" "S 1…
popmn	2.468
popSD	0.252885349516337
popvar	0.063951
s	num [1:6] 2.7 2.2 2.41 2.17 2.43 2.28
s.means	Named num [1:25] 2.49 2.48 2.38 2.31 2.49 ...
s.SD	Named num [1:25] 0.219 0.175 0.188 0.311 0.24 ...
s.var	Named num [1:25] 0.0477 0.0307 0.0352 0.0967 0.0577 ...
sd_smeans	0.117067248796325

```r
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data <- read.table("Exercise - LaptopsWeights.txt", header=TRUE)
fix(data)
attach(data)

## Question 01
popmn <- mean(Weight.kg.)
popvar <- var(Weight.kg.) * (length(Weight.kg.)-1)/length(Weight.kg.)
popSD <- sqrt(popvar)

popmn
popvar
popSD


## Question 02
samples <- c()
n <- c()
for (i in 1:25){
  s <- sample(Weight.kg., 6, replace=TRUE)
  samples <- cbind(samples, s)
  n <- c(n,paste('S',i))
}
colnames(samples) <- n

s.means <- apply(samples, 2, mean)
s.var   <- apply(samples, 2, var)
s.SD    <- sqrt(s.var)

s.means
s.SD


## Question 03
mean_smeans <- mean(s.means)
sd_smeans   <- sd(s.means)
```