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

#Q1
#mean and Var
# Set working directory (change the path to your folder)
setwd("D:/2025 - Sem 2/IT2120/Lab Sessions/Lab 08")

# Load dataset
data <- read.table("Exercise - LaptopsWeights.txt", header = TRUE)
str(data)
# If the column is named "Weight", extract it
weights <- data$Weight.kg
popmn<-mean(weights)
popmn
popsd<-sd(weights)
popsd
```

```
> weights <- data$Weight.kg
> popmn<-mean(weights)
> popmn
[1] 2.468
> popsd<-sd(weights)
> popsd
[1] 0.2561069
```

```r
#Q2
#25 samp 6size
samples<-c()
n<-c()
for (i in 1:25) {
  samp <- sample(weights, size=6, replace=TRUE)
  samples<-cbind(samples,samp)
  n<-c(n,paste('S',i))
}
colnames(samples)=n
smeans <- apply(samples, 2, mean)
smeans
samsds   <- apply(samples, 2, sd)
samsds
```

```
> samples<-c()
> n<-c()
> for (i in 1:25) {
+   samp <- sample(weights, size=6, replace=TRUE)
+   samples<-cbind(samples,samp)
+   n<-c(n,paste('S',i))
+ }
> colnames(samples)=n
> smeans <- apply(samples, 2, mean)
> smeans
     S 1      S 2      S 3      S 4      S 5      S 6      S 7      S 8      S 9     S 10
2.470000 2.243333 2.590000 2.305000 2.343333 2.473333 2.485000 2.428333 2.483333 2.526667
    S 11     S 12     S 13     S 14     S 15     S 16     S 17     S 18     S 19     S 20
2.471667 2.603333 2.545000 2.510000 2.445000 2.515000 2.605000 2.406667 2.458333 2.546667
    S 21     S 22     S 23     S 24     S 25
2.498333 2.506667 2.470000 2.335000 2.378333
> samsds   <- apply(samples, 2, sd)
> samsds
      S 1       S 2       S 3       S 4       S 5       S 6       S 7       S 8       S 9
0.1778764 0.3209154 0.2181742 0.2029532 0.2717106 0.2182353 0.4243466 0.1785964 0.1879007
     S 10      S 11      S 12      S 13      S 14      S 15      S 16      S 17      S 18
0.2114395 0.2582570 0.2513696 0.1176010 0.2184491 0.2204314 0.2682350 0.3032985 0.3206036
     S 19      S 20      S 21      S 22      S 23      S 24      S 25
0.2157236 0.1787363 0.2565476 0.2797618 0.2385791 0.1795272 0.3944828
```

```
#Q3
mean_of_sample_means <- mean(smeans)
mean_of_sample_means
sd_of_sample_means   <- sd(smeans)
sd_of_sample_means

popmn
mean_of_sample_means

popsd
sd_of_sample_means
```

```
> #Q3
> mean_of_sample_means <- mean(smeans)
> mean_of_sample_means
[1] 2.465733
> sd_of_sample_means   <- sd(smeans)
> sd_of_sample_means
[1] 0.09097476
> popmn
[1] 2.468
> mean_of_sample_means
[1] 2.465733
> popsd
[1] 0.2561069
> sd_of_sample_means
[1] 0.09097476
```