Exercise

```
setwd("C:\\Users\\Vinod Madhuranga\\Desktop\\IT24100599")
getwd()

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

```
> setwd("C:\\Users\\Vinod Madhuranga\\Desktop\\IT24100599")
> getwd()
[1] "C:/Users/Vinod Madhuranga/Desktop/IT24100599"
>
> data <- read.table("Exercise - LaptopsWeights.txt", header=TRUE)
> fix(data)
> attach(data)
The following object is masked from data (pos = 3):

    Weight.kg.
```

01.

```
#Q1
popmn <-mean(Weight.kg.)
popmn

popvar <-var(Weight.kg.)
popvar

popsd<- sqrt(popvar)
popsd
```

```
> #Q1
> popmn <-mean(Weight.kg.)
> popmn
[1] 2.468
>
> popvar <-var(Weight.kg.)
> popvar
[1] 0.06559077
>
> popsd<- sqrt(popvar)
> popsd
[1] 0.2561069
```

02.

```
#Q2
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.vars <- apply(samples,2,var)

samplemean <-mean(s.means)
samplemean

samplevars <-var(s.means)
samplevars

samplesd <- sqrt(samplevars)
samplesd
```

```
> #Q2
> 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.vars <- apply(samples,2,var)
>
> samplemean <-mean(s.means)
> samplemean
[1] 2.480933
>
> samplevars <-var(s.means)
> samplevars
[1] 0.01082733
>
> samplesd <- sqrt(samplevars)
> samplesd
[1] 0.1040545
```

03.

```
#Q3
samplemean <-mean(s.means)
samplemean

samplevars <-var(s.means)
samplevars

samplesd <- sqrt(samplevars)
samplesd

popmn
samplemean

truemean=popmn
truemean
samplemean

truesd <- popsd / sqrt(6)
truesd
samplesd
```

```
> #Q3
> samplemean <-mean(s.means)
> samplemean
[1] 2.480933
>
> samplevars <-var(s.means)
> samplevars
[1] 0.01082733
>
> samplesd <- sqrt(samplevars)
> samplesd
[1] 0.1040545
>
> popmn
[1] 2.468
> samplemean
[1] 2.480933
>
> truemean=popmn
> truemean
[1] 2.468
> samplemean
[1] 2.480933
>
> truesd <- popsd / sqrt(6)
> truesd
[1] 0.1045552
> samplesd
[1] 0.1040545
```