```r
setwd("C:\\Users\\it24100047\\Desktop\\IT24100047")
#Q1
data <- read.table("Exercise - LaptopsWeights.txt",header = TRUE)
fix(data)
attach(data)

popmn <- mean(weight.kg.)
popsd <- sd(weight.kg.)
popvar<- var(weight.kg.)

popvar
popsd

#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
#Q3
s.means <-apply(samples,2,mean)
s.stds <-apply(samples,2,sd)

s.means
s.stds

samplemean<-mean(s.means)
samplestds<-sd(s.stds)

popmn
samplemean

popvar
samplestds
```

Answers

```
> setwd("C:\\Users\\it24100047\\Desktop\\IT24100047")
> #Q1
> data <- read.table("Exercise - LaptopsWeights.txt",header = TRUE)
> fix(data)
> attach(data)
The following object is masked from data (pos = 3):

    Weight.kg.

The following object is masked from data (pos = 4):

    Weight.kg.

The following object is masked from data (pos = 5):

    Weight.kg.

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

```
> #Q3
> s.means <-apply(samples,2,mean)
> s.stds <-apply(samples,2,sd)
> s.means
     S 1      S 2      S 3      S 4      S 5      S 6      S 7      S 8      S 9
2.516667 2.588333 2.665000 2.278333 2.683333 2.588333 2.431667 2.391667 2.491667
    S 10     S 11     S 12     S 13     S 14     S 15     S 16     S 17     S 18
2.400000 2.490000 2.396667 2.290000 2.501667 2.576667 2.420000 2.273333 2.551667
    S 19     S 20     S 21     S 22     S 23     S 24     S 25
2.348333 2.471667 2.458333 2.561667 2.475000 2.465000 2.558333
> s.stds
       S 1        S 2        S 3        S 4        S 5        S 6        S 7
0.17659747 0.27014194 0.15162454 0.16240895 0.19592516 0.12765840 0.19762760
       S 8        S 9       S 10       S 11       S 12       S 13       S 14
0.34775950 0.20556426 0.25698249 0.19493589 0.34488645 0.34287024 0.06524314
      S 15       S 16       S 17       S 18       S 19       S 20       S 21
0.28394835 0.28774989 0.37622688 0.28540614 0.39014954 0.17290653 0.39295886
      S 22       S 23       S 24       S 25
0.10815113 0.23080295 0.16610238 0.10048217
> samplemean<-mean(s.means)
> samplestds<-sd(s.stds)
> popmn
[1] 2.468
> samplemean
[1] 2.474933
> popvar
[1] 0.06559077
> samplestds
[1] 0.09551162
```

Data	
data	40 obs. of 1 variable
samples	num [1:6, 1:25] 2.42 2.53 2.23 2.57 2.75 2.6 2.89 2.66 2.51 2.17 ...
Values	
i	25L
n	chr [1:25] "S 1" "S 2" "S 3" "S 4" "S 5" "S 6" "S 7" "S 8" "S 9" "S 10"...
popmn	2.468
popsd	0.256106948813907
popvar	0.0655907692307692
s	num [1:6] 2.53 2.57 2.42 2.53 2.57 2.73
s.means	Named num [1:25] 2.52 2.59 2.66 2.28 2.68 ...
s.stds	Named num [1:25] 0.177 0.27 0.152 0.162 0.196 ...
samplemean	2.47493333333333
samplestds	0.0955116187044992

Untitled1* | IT24100028.r* | samples

Filter

	S 1	S 2	S 3	S 4	S 5	S 6	S 7	S 8	S 9	S 10	S 11	S 12	S 13	S 14	S 15	S 16	S 17	S 18	S 19	S 20	S 21	S 22	S 23	S 24	S 25
1	2.42	2.89	2.70	2.05	2.71	2.60	2.47	2.76	2.75	2.13	2.45	2.53	2.43	2.53	2.05	2.20	1.71	2.57	2.65	2.20	2.76	2.57	2.45	2.45	2.53
2	2.53	2.66	2.89	2.13	2.89	2.70	2.05	2.70	2.13	2.57	2.76	2.53	2.06	2.41	2.85	2.61	2.45	2.89	2.20	2.43	1.71	2.57	2.42	2.47	2.57
3	2.23	2.51	2.61	2.43	2.76	2.76	2.60	2.66	2.46	2.71	2.65	1.71	2.65	2.57	2.70	2.53	2.13	2.47	2.20	2.70	2.47	2.47	2.47	2.23	2.42
4	2.57	2.17	2.57	2.46	2.47	2.43	2.53	2.05	2.47	2.05	2.46	2.42	2.42	2.47	2.57	2.13	2.60	2.05	2.57	2.42	2.67	2.70	2.85	2.43	2.53
5	2.75	2.85	2.76	2.32	2.85	2.47	2.53	2.05	2.57	2.47	2.20	2.53	1.71	2.46	2.53	2.20	2.70	2.60	2.76	2.47	2.73	2.41	2.13	2.46	2.57
6	2.60	2.45	2.46	2.28	2.42	2.57	2.41	2.13	2.57	2.47	2.42	2.66	2.47	2.57	2.76	2.85	2.05	2.73	1.71	2.61	2.41	2.65	2.53	2.75	2.73