Lab sheet -8

```
setwd("C:\\Users\\aa\\Desktop\\IT24100463 PS Lab-8")
```

```
> setwd("C:\\Users\\aa\\Desktop\\IT24100463 PS Lab-8")
```

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

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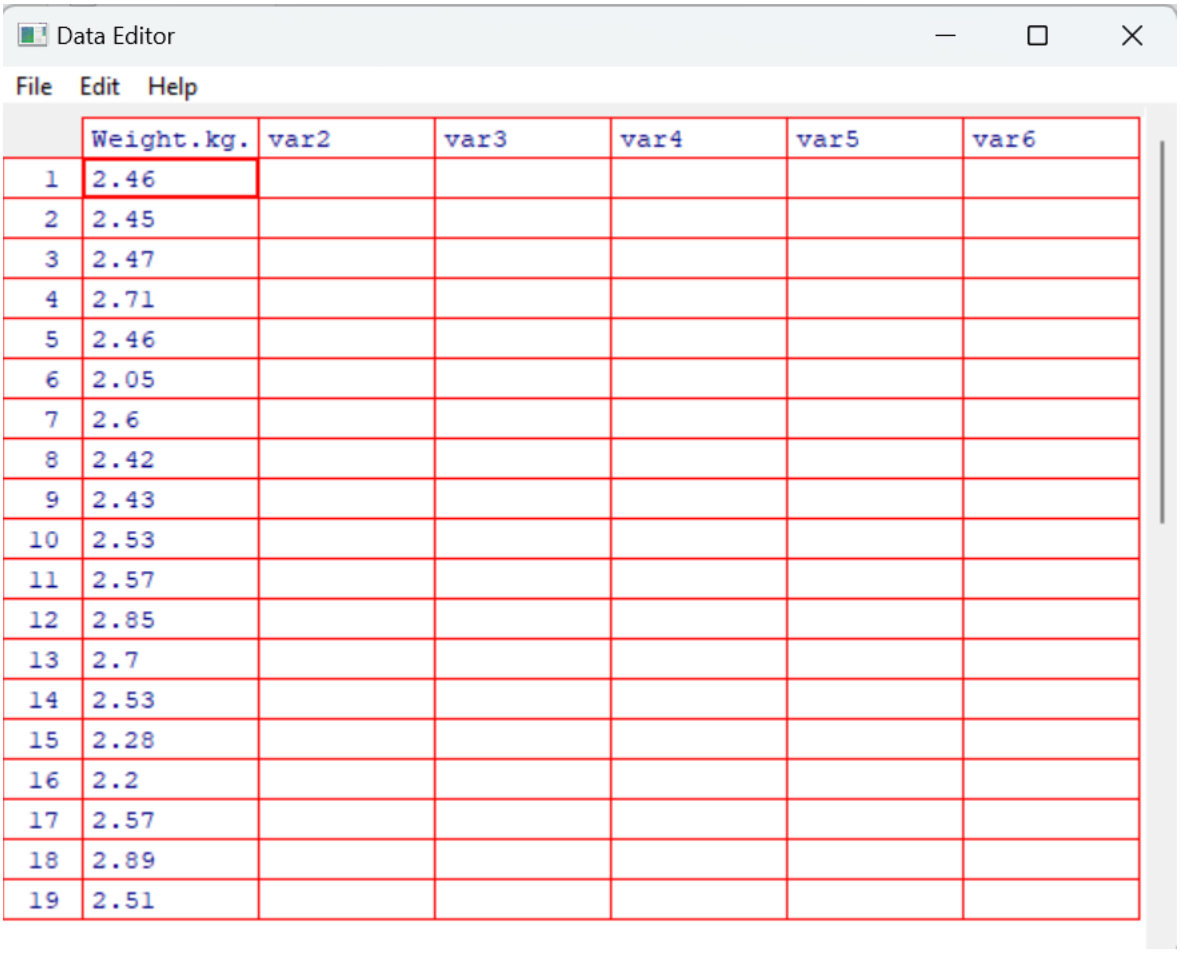

	Weight.kg.	var2	var3	var4	var5	var6
1	2.46					
2	2.45					
3	2.47					
4	2.71					
5	2.46					
6	2.05					
7	2.6					
8	2.42					
9	2.43					
10	2.53					
11	2.57					
12	2.85					
13	2.7					
14	2.53					
15	2.28					
16	2.2					
17	2.57					
18	2.89					
19	2.51					

Q1)

```
#Q1
#Commands "mean" & "var" will compute the mean and variance for data.
popmn<-mean(Weight.kg.)
popsd<-sd(Weight.kg.)
```

```
> #Q1
> #Commands "mean" & "var" will compute the mean and variance for data.
> popmn<-mean(Weight.kg.)
> popsd<-sd(Weight.kg.)
```

popmn	2.468
popsd	0.256106948813907

Q2)

```
#Q2
#First create null vectors to store sample data sets.
samples<-c()
n<-c()
```

```
> #Q2
> #First create null vectors to store sample data sets.
> samples<-c()
> n<-c()
```

n	NULL
samples	NULL

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

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

i	25L

```
#Assign column names for each sample created. Names have stored earlier under "n" variable
colnames(samples)=n
s.means<-apply(samples,2,mean)
s.sd<-apply(samples,2,sd)
```

```
> #Assign column names for each sample created. Names have stored earlier under "n" variable
> colnames(samples)=n
> s.means<-apply(samples,2,mean)
> s.sd<-apply(samples,2,sd)
```

samples	num [1:6, 1:50] 2.6 2.57 2.2 2.57 2.57 2.71 2.73 2.7 2.61 2.13 ...

n	chr [1:50] "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 …
s	num [1:6] 2.57 2.53 2.41 2.2 2.71 2.7
s.means	Named num [1:25] 2.54 2.52 2.26 2.39 2.42 ...
s.sd	Named num [1:25] 0.174 0.252 0.358 0.368 0.378 ...

Q3)

```
#Q3
#calculate mean and standard deviation of sample means stored in "s.means" variable.
samplemean<-mean(s.means)
samplesd<-sd(s.means)
```

```
> #Q3
> #calculate mean and standard deviation of sample means stored in "s.means" variable.
> samplemean<-mean(s.means)
> samplesd<-sd(s.means)
```

samplemean	2.462

samplesd	0.0895061036611057

```
#state the relationship of them with true mean and true standard deviation
truemn=popmn/6
truesd=popsd/6
```

```
> #state the relationship of them with true mean and true standard deviation
> truemn=popmn/6
> truesd=popsd/6
```

truemn	0.411333333333333
truesd	0.0426844914689845