IT24101574.R

```
setwd("C:\\Users\\THITHIRA.D\\Desktop\\Y2S1\\IT24101546")
getwd()

# Read the data file
weights <- read.table("Exercise - LaptopsWeights.txt", header = TRUE)
fix(weights)
attach(weights)

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

Console Terminal Background Jobs

R 4.3.3 · C:/Users/THITHIRA.D/Desktop/Y2S1/IT24101546/

```
> setwd("C:\\Users\\THITHIRA.D\\Desktop\\Y2S1\\IT24101546")
> getwd()
[1] "C:/Users/THITHIRA.D/Desktop/Y2S1/IT24101546"
>
>
> # Read the data file
> weights <- read.table("Exercise - LaptopsWeights.txt", header = TRUE)
> fix(weights)
> attach(weights)
>
>
> #Q1
> popmn<-mean(Weight.kg.)
> popmn
[1] 2.468
> popsd<-sd(Weight.kg.)
> popsd
[1] 0.2561069
```

IT24101574.R

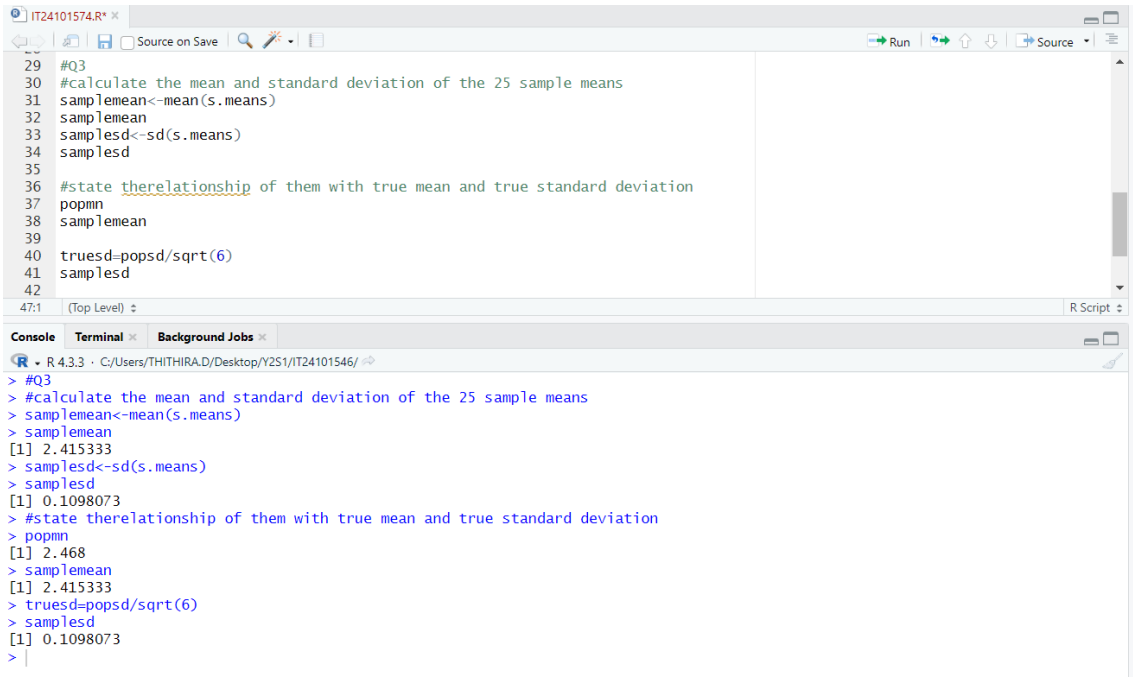
```
samples<-c()
n<-c()
for(i in 1:25){
  s<-sample(Weight.kg.,6,replace = TRUE)
  samples<-cbind(samples,s)
  n<-c(n,paste('S',i))
}
colnames(samples)=n
s.means<-apply(samples,2,mean)
s.means
s.sd<-apply(samples,2,sd)
s.sd
```

29:1 (Top Level) R Script

Console Terminal Background Jobs

R 4.3.3 · C:/Users/THITHIRA.D/Desktop/Y2S1/IT24101546/

```
> # 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.means
     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
2.500000 2.271667 2.543333 2.316667 2.406667 2.420000 2.483333 2.278333 2.388333 2.455000 2.173333 2.500000 2.396667
    S 14     S 15     S 16     S 17     S 18     S 19     S 20     S 21     S 22     S 23     S 24     S 25
2.338333 2.503333 2.451667 2.630000 2.316667 2.391667 2.471667 2.418333 2.400000 2.583333 2.508333 2.236667
> s.sd<-apply(samples,2,sd)
> s.sd
       S 1        S 2        S 3        S 4        S 5        S 6        S 7        S 8        S 9       S 10       S 11
0.17955501 0.30694734 0.26695817 0.16120380 0.23804761 0.29624314 0.18359375 0.33355160 0.23498227 0.23313086 0.27645373
      S 12       S 13       S 14       S 15       S 16       S 17       S 18       S 19       S 20       S 21       S 22
0.18633304 0.27587437 0.28861162 0.21238330 0.27228049 0.13957077 0.23440705 0.20798237 0.25584501 0.20321581 0.18460769
      S 23       S 24       S 25
0.09437514 0.24766240 0.43209567
>
```

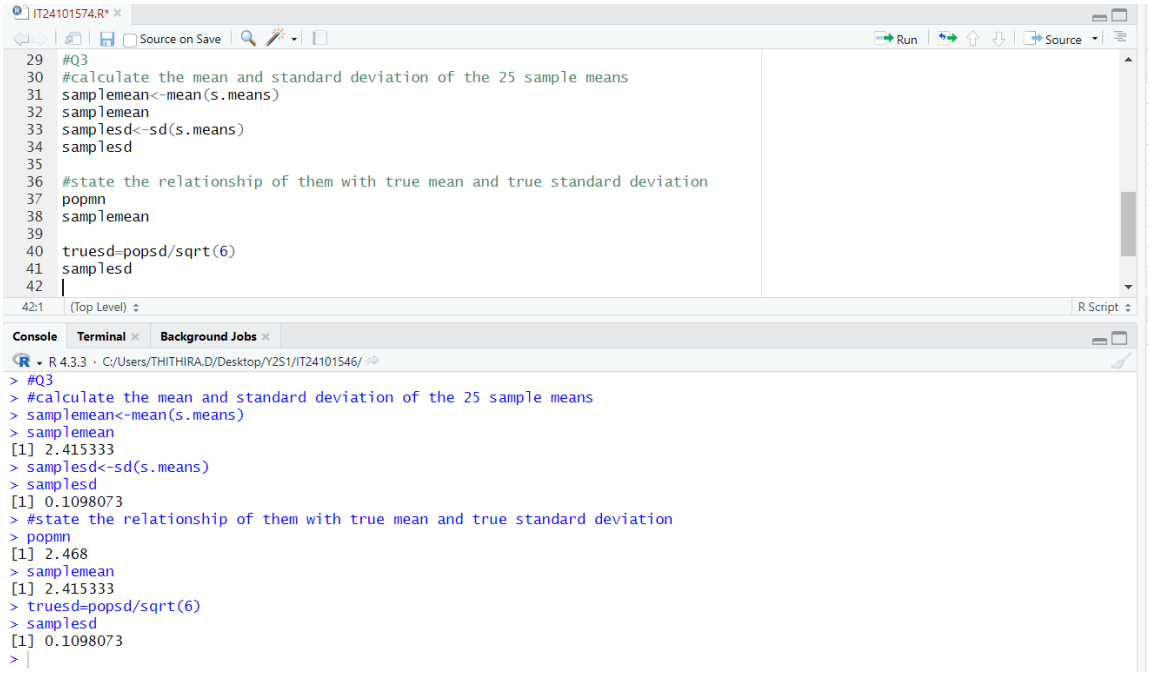


```
#Q3
#calculate the mean and standard deviation of the 25 sample means
samplemean<-mean(s.means)
samplemean
samplesd<-sd(s.means)
samplesd

#state therelationship of them with true mean and true standard deviation
popmn
samplemean

truesd=popsd/sqrt(6)
samplesd
```

```
> #Q3
> #calculate the mean and standard deviation of the 25 sample means
> samplemean<-mean(s.means)
> samplemean
[1] 2.415333
> samplesd<-sd(s.means)
> samplesd
[1] 0.1098073
> #state therelationship of them with true mean and true standard deviation
> popmn
[1] 2.468
> samplemean
[1] 2.415333
> truesd=popsd/sqrt(6)
> samplesd
[1] 0.1098073
>
```



```
#Q3
#calculate the mean and standard deviation of the 25 sample means
samplemean<-mean(s.means)
samplemean
samplesd<-sd(s.means)
samplesd

#state the relationship of them with true mean and true standard deviation
popmn
samplemean

truesd=popsd/sqrt(6)
samplesd
```

```
> #Q3
> #calculate the mean and standard deviation of the 25 sample means
> samplemean<-mean(s.means)
> samplemean
[1] 2.415333
> samplesd<-sd(s.means)
> samplesd
[1] 0.1098073
> #state the relationship of them with true mean and true standard deviation
> popmn
[1] 2.468
> samplemean
[1] 2.415333
> truesd=popsd/sqrt(6)
> samplesd
[1] 0.1098073
>
```