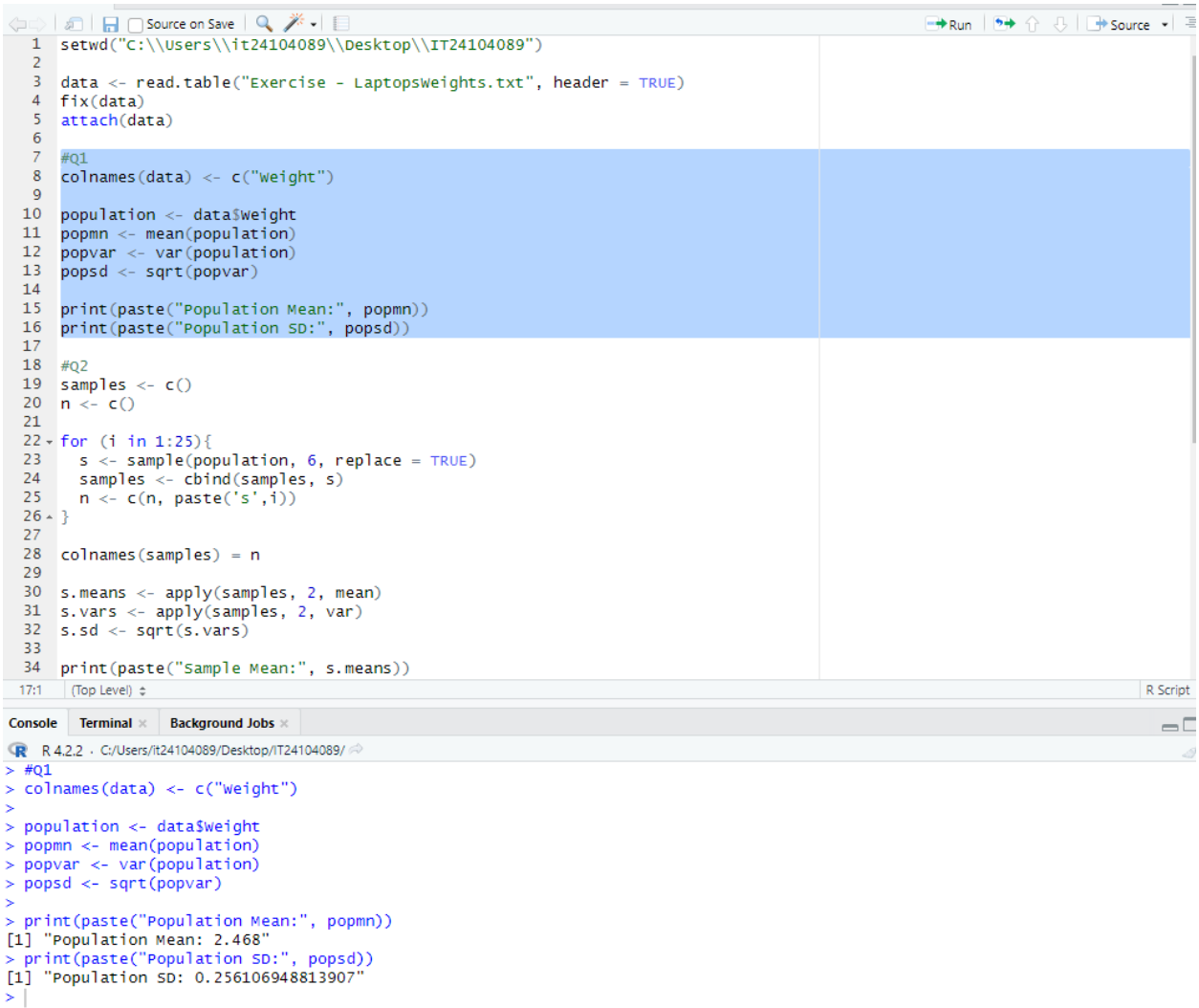
IT24104089

Lab Sheet 8

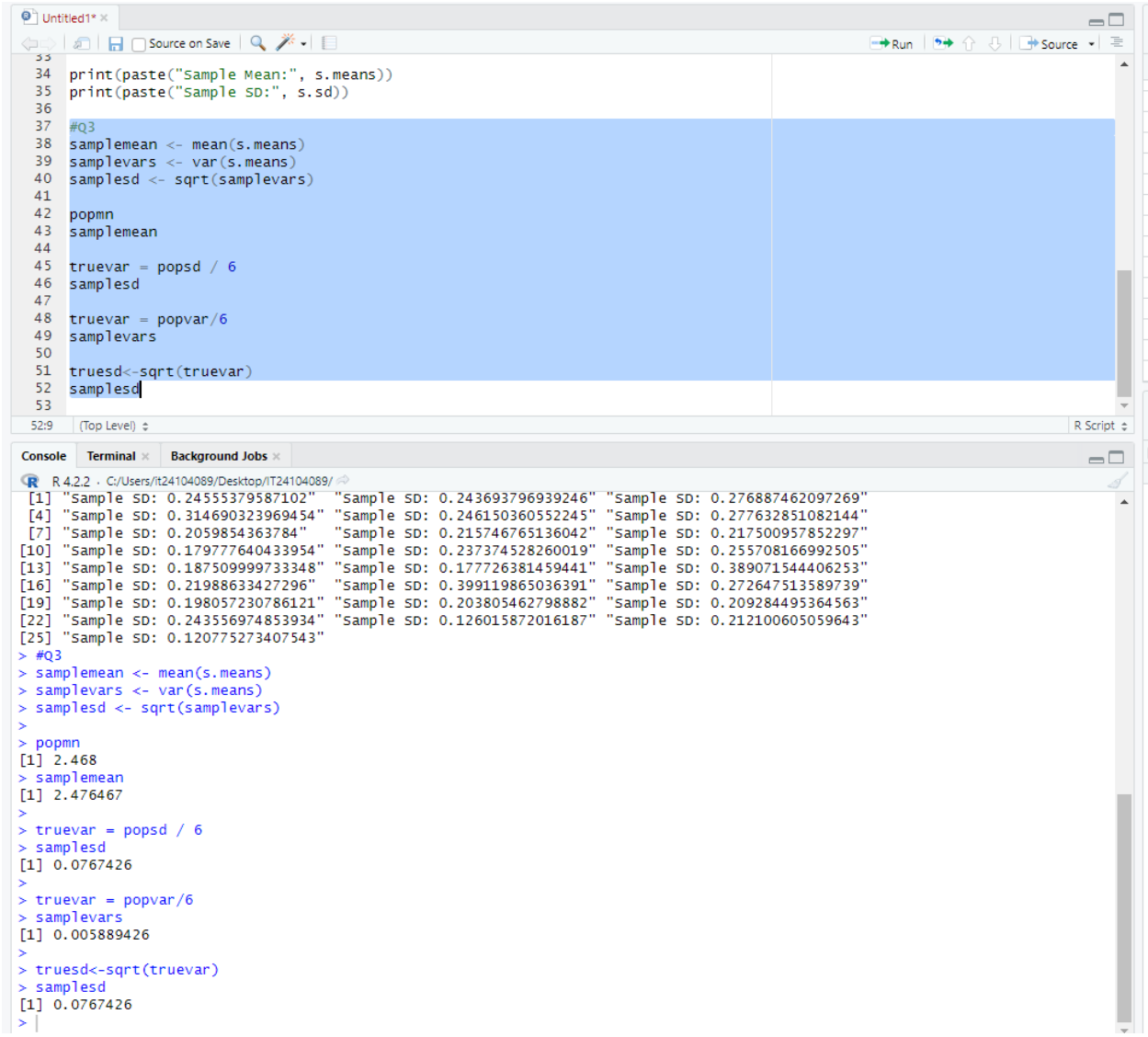


```r
setwd("C:\\Users\\it24104089\\Desktop\\IT24104089")

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

#Q1
colnames(data) <- c("Weight")

population <- data$weight
popmn <- mean(population)
popvar <- var(population)
popsd <- sqrt(popvar)

print(paste("Population Mean:", popmn))
print(paste("Population SD:", popsd))

#Q2
samples <- c()
n <- c()

for (i in 1:25){
  s <- sample(population, 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)
s.sd <- sqrt(s.vars)

print(paste("Sample Mean:", s.means))
```

```
> #Q1
> colnames(data) <- c("weight")
>
> population <- data$weight
> popmn <- mean(population)
> popvar <- var(population)
> popsd <- sqrt(popvar)
>
> print(paste("Population Mean:", popmn))
[1] "Population Mean: 2.468"
> print(paste("Population SD:", popsd))
[1] "Population SD: 0.256106948813907"
>
```

```r
print(paste("Population SD:", popsd))

#Q2
samples <- c()
n <- c()

for (i in 1:25){
  s <- sample(population, 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)
s.sd <- sqrt(s.vars)

print(paste("Sample Mean:", s.means))
print(paste("Sample SD:", s.sd))
```

```
+   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)
> s.sd <- sqrt(s.vars)
>
> print(paste("Sample Mean:", s.means))
 [1] "Sample Mean: 2.44833333333333" "Sample Mean: 2.61333333333333" "Sample Mean: 2.40333333333333"
 [4] "Sample Mean: 2.455"            "Sample Mean: 2.475"            "Sample Mean: 2.49"
 [7] "Sample Mean: 2.625"            "Sample Mean: 2.50333333333333" "Sample Mean: 2.50666666666667"
[10] "Sample Mean: 2.41"             "Sample Mean: 2.46666666666667" "Sample Mean: 2.49333333333333"
[13] "Sample Mean: 2.5"              "Sample Mean: 2.53666666666667" "Sample Mean: 2.34833333333333"
[16] "Sample Mean: 2.525"            "Sample Mean: 2.31833333333333" "Sample Mean: 2.53833333333333"
[19] "Sample Mean: 2.57333333333333" "Sample Mean: 2.40166666666667" "Sample Mean: 2.54"
[22] "Sample Mean: 2.46"             "Sample Mean: 2.39"             "Sample Mean: 2.50333333333333"
[25] "Sample Mean: 2.38666666666667"
> print(paste("Sample SD:", s.sd))
 [1] "Sample SD: 0.24555379587102"  "Sample SD: 0.243693796939246" "Sample SD: 0.276887462097269"
 [4] "Sample SD: 0.314690323969454" "Sample SD: 0.246150360552245" "Sample SD: 0.277632851082144"
 [7] "Sample SD: 0.2059854363784"   "Sample SD: 0.215746765136042" "Sample SD: 0.217500957852297"
[10] "Sample SD: 0.179777640433954" "Sample SD: 0.237374528260019" "Sample SD: 0.255708166992505"
[13] "Sample SD: 0.187509999733348" "Sample SD: 0.177726381459441" "Sample SD: 0.389071544406253"
[16] "Sample SD: 0.21988633427296"  "Sample SD: 0.399119865036391" "Sample SD: 0.272647513589739"
[19] "Sample SD: 0.198057230786121" "Sample SD: 0.203805462798882" "Sample SD: 0.209284495364563"
[22] "Sample SD: 0.243556974853934" "Sample SD: 0.126015872016187" "Sample SD: 0.212100605059643"
[25] "Sample SD: 0.120775273407543"
>
```


Untitled1*
Source on Save
Run
Source
print(paste("Sample Mean:", s.means))
print(paste("Sample SD:", s.sd))
#Q3
samplemean <- mean(s.means)
samplevars <- var(s.means)
samplesd <- sqrt(samplevars)
popmn
samplemean
truevar = popsd / 6
samplesd
truevar = popvar/6
samplevars
truesd<-sqrt(truevar)
samplesd
52:9
(Top Level)
R Script
Console
Terminal
Background Jobs
R 4.2.2 · C:/Users/it24104089/Desktop/IT24104089/
[1] "Sample SD: 0.24555379587102" "Sample SD: 0.243693796939246" "Sample SD: 0.276887462097269"
[4] "Sample SD: 0.314690323969454" "Sample SD: 0.246150360552245" "Sample SD: 0.277632851082144"
[7] "Sample SD: 0.2059854363784" "Sample SD: 0.215746765136042" "Sample SD: 0.217500957852297"
[10] "Sample SD: 0.179777640433954" "Sample SD: 0.237374528260019" "Sample SD: 0.255708166992505"
[13] "Sample SD: 0.187509999733348" "Sample SD: 0.177726381459441" "Sample SD: 0.389071544406253"
[16] "Sample SD: 0.21988633427296" "Sample SD: 0.399119865036391" "Sample SD: 0.272647513589739"
[19] "Sample SD: 0.198057230786121" "Sample SD: 0.203805462798882" "Sample SD: 0.209284495364563"
[22] "Sample SD: 0.243556974853934" "Sample SD: 0.126015872016187" "Sample SD: 0.212100605059643"
[25] "Sample SD: 0.120775273407543"
> #Q3
> samplemean <- mean(s.means)
> samplevars <- var(s.means)
> samplesd <- sqrt(samplevars)
>
> popmn
[1] 2.468
> samplemean
[1] 2.476467
>
> truevar = popsd / 6
> samplesd
[1] 0.0767426
>
> truevar = popvar/6
> samplevars
[1] 0.005889426
>
> truesd<-sqrt(truevar)
> samplesd
[1] 0.0767426
>