

IT24103785

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The screenshot displays the RStudio environment with the following components:

- Source Editor:** Contains R code for data manipulation and sampling. The code includes setting the working directory, reading a table, calculating mean and standard deviation, and performing a loop to sample data and calculate means and standard deviations for each sample.
- Console:** Shows the execution of the R code, with output for each step, including the calculation of mean and standard deviation for the population and the results of the sampling loop.
- Environment:** Displays the objects created in the R session, including 'data', 'samples', 'popmn', 'popdev', 'popvar', 's', 's.means', 's.sds', 's.vars', 'samplemean', 'samplemeans', 'samplestd', 'samplevars', and 'truevar'.
- Files:** Shows the file explorer with a list of files and folders, including 'desktop.ini', 'My Music', 'My Pictures', and 'My Videos'.

```
1 setwd("C:\\Users\\it24103785\\Desktop\\IT24103785")
2 data<-read.table("Exercise - Laptopsweights.txt",header=TRUE)
3 fix(data)
4 attach(data)
5
6 #Q1
7 popmn<-mean(weight.kg.)
8 popdev<-sd(weight.kg.)
9
10 #Q2
11 samples<-c()
12 n<-c()
13 for(i in 1:25){
14   s<-sample(weight.kg.,6,replace = TRUE)
15   samples<-cbind(samples,s)
16   n<-c(n,paste("s",i))
17 }
18 colnames(samples)=n
19 s.means<-apply(samples,2,mean)
20 s.sds<-apply(samples,2,sd)
21
22 #Q3
23 samplemean<-mean(s.means)
24 samplestd<-sd(s.means)
25
```

Environment Data:

Object	Class	Value
data	data.frame	40 obs. of 1 variable
samples	matrix	num [1:6, 1:25] 1.71 2.32 2.46 2.89 1.71 2.76 2.41 2.61 2.05 ...
n	character	chr [1:25] "s 1" "s 2" "s 3" "s 4" "s 5" "s 6" "s 7" "s 8" "s 9" ...
popmn	numeric	0.256106948813907
popdev	numeric	2.468
popvar	numeric	0.152455833333333
s	matrix	num [1:6] 2.05 2.46 2.43 2.45 2.66 2.73
s.means	numeric	Named num [1:25] 2.31 2.37 2.45 2.48 2.43 ...
s.sds	numeric	Named num [1:25] 0.506 0.197 0.323 0.155 0.257 ...
s.vars	numeric	Named num [1:30] 0.08737 0.3224 0.21337 0.02918 0.00887 ...
samplemean	numeric	2.45086666666667
samplemeans	numeric	2.44666666666667
samplestd	numeric	0.0951121657522006
samplevars	numeric	0.0366098620689655
truevar	numeric	0.0304911666666667