IT24100788 – Abeysinghe S.D

Probability and Statistics | Lab Sheet 08 Exercise

IT24100788.R

```r
setwd("C:\\Users\\User\\Desktop\\IT24100788_Lab_8")

#Part 1
data2<-read.table("Exercise - LaptopsWeights.txt",header=TRUE)
fix(data)
attach(data2)

#1
pop_mean<-mean(Weight.kg.)
pop_sd<-sd(Weight.kg.)

cat("Population Mean (True Mean):",pop_mean,"\n")
cat("Population Standard Deviation (True SD):",pop_sd,"\n")

#2
samples<-c()
sample_names <- c()

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

colnames(samples)= sample_names
s.means<-apply(samples,2,mean)
s.sds<-apply(samples,2,sd)

#3

samplemean<-mean(s.means)
samplesd<-sd(s.means)

pop_mean
pop_sd

truesd=pop_sd/6
samplesd
```

Environment | History | Connections | Tutorial

Import Dataset | 140 MiB | List

R | Global Environment

Data	
data2	40 obs. of 1 variable
samples	num [1:6, 1:25] 2.65 2.76 2.51 2.57 2.73 2.71 2.67 2.46…
Values	
i	25L
pop_mean	2.468
pop_sd	0.256106948813907
S	num [1:6] 2.71 2.2 2.73 2.45 2.2 2.47
s.means	Named num [1:25] 2.65 2.46 2.35 2.3 2.43 ...
s.sds	Named num [1:25] 0.0979 0.2027 0.2681 0.3914 0.2196 ...
sample_names	chr [1:25] "S 1" "S 2" "S 3" "S 4" "S 5" "S 6" "S 7" "S 8…
samplemean	2.4626
samplesd	0.107545296227872
truesd	0.0426844914689845
Functions	
data	function (..., list = character(), package = NULL, lib.…

R 4.5.1 · C:/Users/User/Desktop/IT24100788_Lab_8/

```
> setwd("C:\\Users\\User\\Desktop\\IT24100788_Lab_8")
> data2<-read.table("Exercise - LaptopsWeights.txt",header=TRUE)
> fix(data)
> attach(data2)
> #1
> pop_mean<-mean(Weight.kg.)
> pop_sd<-sd(Weight.kg.)
> cat("Population Mean (True Mean):",pop_mean,"\n")
Population Mean (True Mean): 2.468
> cat("Population Standard Deviation (True SD):",pop_sd,"\n")
Population Standard Deviation (True SD): 0.2561069
> #2
> samples<-c()
> sample_names <- c()
> for (i in 1:25){
+   S <- sample(Weight.kg.,6,replace =TRUE)
+   samples <- cbind(samples,S)
+   sample_names<-c(sample_names, paste('S',i))
+ }
> colnames(samples)= sample_names
> s.means<-apply(samples,2,mean)
> s.sds<-apply(samples,2,sd)
> samplemean<-mean(s.means)
> samplesd<-sd(s.means)
> pop_mean
[1] 2.468
> pop_sd
[1] 0.2561069
> truesd=pop_sd/6
>
```