Sri Lanka Institute of Information Technology

Lab Submission

Lab sheet No 08

IT24100036

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Probability and Statistics | IT2120

B.Sc. (Hons) in Information Technology

IT24100036 Lab Sheet 08.R

```r
setwd("C:\\Users\\IT24100036\\Desktop\\IT24100036_Lab_08_PS")
getwd()

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

#Q1
pop_mean <- mean(weight.kg.)
pop_sd <- sd(weight.kg.)


#Q2
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

#Q3
sample_means <- apply(samples, 2, mean)
sample_sds <- apply(samples, 2, sd)

mean_of_sample_means <- mean(sample_means)
sd_of_sample_means <- sd(sample_means)

pop_mean
pop_sd
mean_of_sample_means
sd_of_sample_means
```

Console | Terminal | Background Jobs

R 4.2.2 · C:/Users/IT24100036/Desktop/IT24100036_Lab_08_PS/

```
> setwd("C:\\Users\\IT24100036\\Desktop\\IT24100036_Lab_08_PS")
> getwd()
[1] "C:/Users/IT24100036/Desktop/IT24100036_Lab_08_PS"
> data<- read.table("Exercise - LaptopsWeights.txt" , header = TRUE)
> fix(data)
> attach(data)
> #Q1
> pop_mean <- mean(weight.kg.)
> pop_sd <- sd(weight.kg.)
> #Q2
> 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
> #Q3
> sample_means <- apply(samples, 2, mean)
> sample_sds <- apply(samples, 2, sd)
> mean_of_sample_means <- mean(sample_means)
> sd_of_sample_means <- sd(sample_means)
> pop_mean
[1] 2.468
> pop_sd
[1] 0.2561069
> mean_of_sample_means
[1] 2.465267
> sd_of_sample_means
[1] 0.1320377
>
```

Environment | History | Connections | Tutorial

Import Dataset · 246 MiB · List

R · Global Environment

Data	
data	40 obs. of 1 variable
samples	num [1:6, 1:25] 1.71 2.66 2.65 2.46 2.76 2.06 2.89 2.45 2.41 2.51 ...
Values	
i	25L
mean_of_sample_means	2.46526666666667
pop_mean	2.468
pop_sd	0.256106948813907
popMean	1.77425
popVar	0.152455833333333
s	num [1:6] 2.7 2.41 2.73 2.76 2.7 2.41
sample_means	Named num [1:25] 2.38 2.6 2.5 2.36 2.46 ...
sample_names	chr [1:25] "s 1" "s 2" "s 3" "s 4" "s 5" "s 6" "s 7" "s 8" "s 9" "s 10" "s 11" "...
sample_sds	Named num [1:25] 0.413 0.186 0.44 0.315 0.204 ...
sd_of_sample_means	0.132037698040006