

# Sri Lanka Institute of Information Technology



Lab Submission  
<Lab sheet No 8>

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**Probability and Statistics| IT2120**

B.Sc. (Hons) in Information Technology

## Exercise

```
# Setting the working directory
setwd("C:\\Users\\it24102308\\Desktop\\IT24102308")

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

### Question 01

```
#1:
popmn <- mean(weight.kg.)
popstd <- sd(weight.kg.)
```

### Output

i	25L
mean_sample_me...	2.48033333333333
n	int [1:30] 1 2 3 4 5 6 7 8 9 10 ...
popmn	2.468
popstd	0.256106948813907

### Question 02

```
#2:
sample_create <- NULL
for(i in 1:25) sample_create[i] <- list(sample(weight.kg., 6, replace=TRUE))
sample_means <- sapply(sample_create, mean)
sample_stds <- sapply(sample_create, sd)
```

### Output

popvar	0.152455833333333
sample_means	num [1:25] 2.41 2.51 2.37 2.36 2.42 ...
sample_stds	num [1:25] 0.331 0.202 0.235 0.194 0.447 ...
sample_vars	num [1:30] 0.3287 0.0363 0.0391 0.0203 0.25 ...

### Question 03

```
#3:
mean_sample_means <- mean(sample_means)
std_sample_means <- sd(sample_means)

# Relationship:
#mean_sample_means should be approximately equal to popmn,
#and std_sample_means should be approximately equal to popstd / sqrt(6)
```

### Output

samplemn	1.77773333333333
samplevar	0.0297742712643678
std_sample_means	0.0899530227190631