

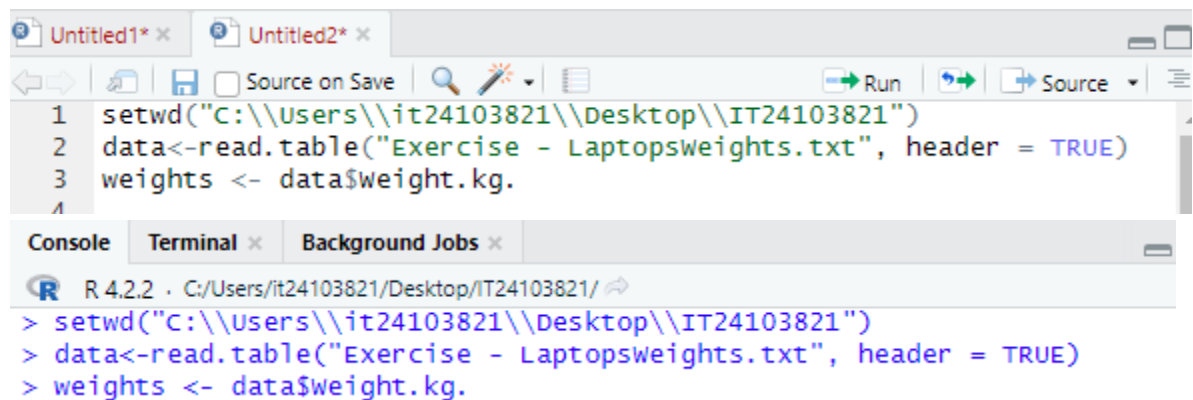
Lab sheet – 8

Tharindi W.A.M

IT24103821

Exercise

1



The screenshot shows an R Studio interface with two tabs: 'Untitled1*' and 'Untitled2*'. The 'Untitled2*' tab is active and contains the following R code:

```
1 setwd("C:\\Users\\it24103821\\Desktop\\IT24103821")
2 data<-read.table("Exercise - Laptopsweights.txt", header = TRUE)
3 weights <- data$weight.kg.
```

Below the code editor, the 'Console' tab is active, showing the execution of the same code:

```
R 4.2.2 · C:/Users/it24103821/Desktop/IT24103821/
> setwd("C:\\Users\\it24103821\\Desktop\\IT24103821")
> data<-read.table("Exercise - Laptopsweights.txt", header = TRUE)
> weights <- data$weight.kg.
```

2

```
9 #2
10 num_samples<-25
11 sample_size<-6
12
13 sample_means<-numeric(num_samples)
14 sample_sds<-numeric(num_samples)
15
16 set.seed(123)
17
18 for( i in 1:num_samples){
19   samp<-sample(weights, size = sample_size, replace =TRUE)
20   sample_means[i]<-mean(samp)
21   sample_sds[i]<-sd(samp)
22 }
```

```

results<-data.frame(
  Sample=1:num_samples,
  Mean = round(sample_means,3),
  SD = round(sample_sds,3)
)
print(results)

```

```

> #2
> num_samples<-25
> sample_size<-6
> sample_means<-numeric(num_samples)
> sample_sds<-numeric(num_samples)
> set.seed(123)
> for( i in 1:num_samples){
+   samp<-sample(weights, size = sample_size, replace =TRUE)
+   sample_means[i]<-mean(samp)
+   sample_sds[i]<-sd(samp)
+ }

> results<-data.frame(
+   Sample=1:num_samples,
+   Mean = round(sample_means,3),
+   SD = round(sample_sds,3)
+ )
> print(results)

```

	Sample	Mean	SD
1	1	2.530	0.151
2	2	2.573	0.119
3	3	2.473	0.172
4	4	2.592	0.135
5	5	2.457	0.275
6	6	2.402	0.254
7	7	2.590	0.217
8	8	2.467	0.453
9	9	2.402	0.223
10	10	2.335	0.324
11	11	2.587	0.171
12	12	2.378	0.324
13	13	2.382	0.299

```

14      14 2.465 0.231
15      15 2.485 0.175
16      16 2.452 0.276
17      17 2.385 0.204
18      18 2.338 0.244
19      19 2.428 0.248
20      20 2.552 0.265
21      21 2.538 0.171
22      22 2.467 0.245
23      23 2.470 0.241
24      24 2.448 0.279
25      25 2.475 0.236

```

#3

```

32 #3
33 mean_of_means <- mean(sample_means)
34 sd_of_means<-sd(sample_means)
35

```

```

> #3
> mean_of_means <- mean(sample_means)
> sd_of_means<-sd(sample_means)

```
