

The screenshot shows the RStudio environment with a script editor, console, and environment pane.

```

1 setwd("F:\\SLIIT\\Y2S1\\DDD\\Lab8")
2
3 data <- read.table("Exercise - Laptopsweights.txt",header=TRUE)
4 fix(data)
5 attach(data)
6
7 pop_mean = mean(weight.kg.)
8 print(pop_mean)
9
10 pop_variance = var(weight.kg.)
11 print(pop_variance)
12
13 #2
14 samples <- c()
15 n <- c()
16
17
18
19
20

```

The console shows the following output:

```

The following object is masked from data (pos = 3):
  weight.kg.

> pop_mean = mean(weight.kg.)
> print(pop_mean)
[1] 2.468
> pop_variance = var(weight.kg.)
> print(pop_variance)
[1] 0.06559077
> samples <- c()
> n <- c()
>

```

The environment pane shows the following data:

Variable	Value
n	NULL
pop_mean	2.468
pop_variance	0.0655907692307692
samples	NULL

2)

The screenshot shows the RStudio environment with a script editor, console, and environment pane.

```

12
13 #2
14 samples <- c()
15 n <- c()
16
17 for (i in 1:25) {
18   s <- sample(weight.kg., 6, replace = TRUE)
19   samples <- cbind(samples, s)
20   n <- c(n, paste("s", i, sep = ""))
21 }
22 colnames(samples) <- n
23
24
25 s.means <- apply(samples,2, mean)
26 s.vars <- apply(samples,2, var)
27
28
29

```

The console shows the following output:

```

> pop_variance = var(weight.kg.)
> print(pop_variance)
[1] 0.06559077
> samples <- c()
> n <- c()
> for (i in 1:25) {
+   s <- sample(weight.kg., 6, replace = TRUE)
+   samples <- cbind(samples, s)
+   n <- c(n, paste("s", i, sep = ""))
+ }
> colnames(samples) <- n
> s.means <- apply(samples,2, mean)
> s.vars <- apply(samples,2, var)
>

```

The environment pane shows the following data:

Variable	Value
i	25L
n	chr [1:25] "s1" "s2" "s3" "s4" "s5" ...
pop_mean	2.468
pop_variance	0.0655907692307692
s	num [1:6] 2.75 2.43 2.05 2.85 2.05 ...
s.means	Named num [1:25] 2.49 2.61 2.27 2.3...
s.vars	Named num [1:25] 0.00115 0.01795 0...

3)

The screenshot displays the RStudio environment with the following components:

- Source Editor:** Contains an R script with the following code:

```
29 sMean <- mean(s.means)
30 svar <- var(s.vars)
31
32 print(sMean)
33 print(svar)
34
35 pop_mean
36 sMean
37
38 truevar = pop_variance/6
39 print(truevar)
40 svar
41
42
43
```
- Environment:** Shows the current environment with the following variables:

Variable	Value
pop_mean	2.468
pop_variance	0.0655907692307692
s	num [1:6] 2.75 2.43 2.05 2.85 2.05 ...
s.means	Named num [1:25] 2.49 2.61 2.27 2.3...
s.vars	Named num [1:25] 0.00115 0.01795 0...
sMean	2.46433333333333
svar	0.0016801188361111
truevar	0.0109317948717949
- Console:** Shows the output of the script execution:

```
> R 4.5.1 : F:\SLIIT\Y2S1\DDD\Lab6/
> sMean <- mean(s.means)
> svar <- var(s.vars)
> print(sMean)
[1] 2.464333
> print(svar)
[1] 0.001680119
> pop_mean
[1] 2.468
> sMean
[1] 2.464333
> truevar = pop_variance/6
> print(truevar)
[1] 0.01093179
> svar
[1] 0.001680119
~
```