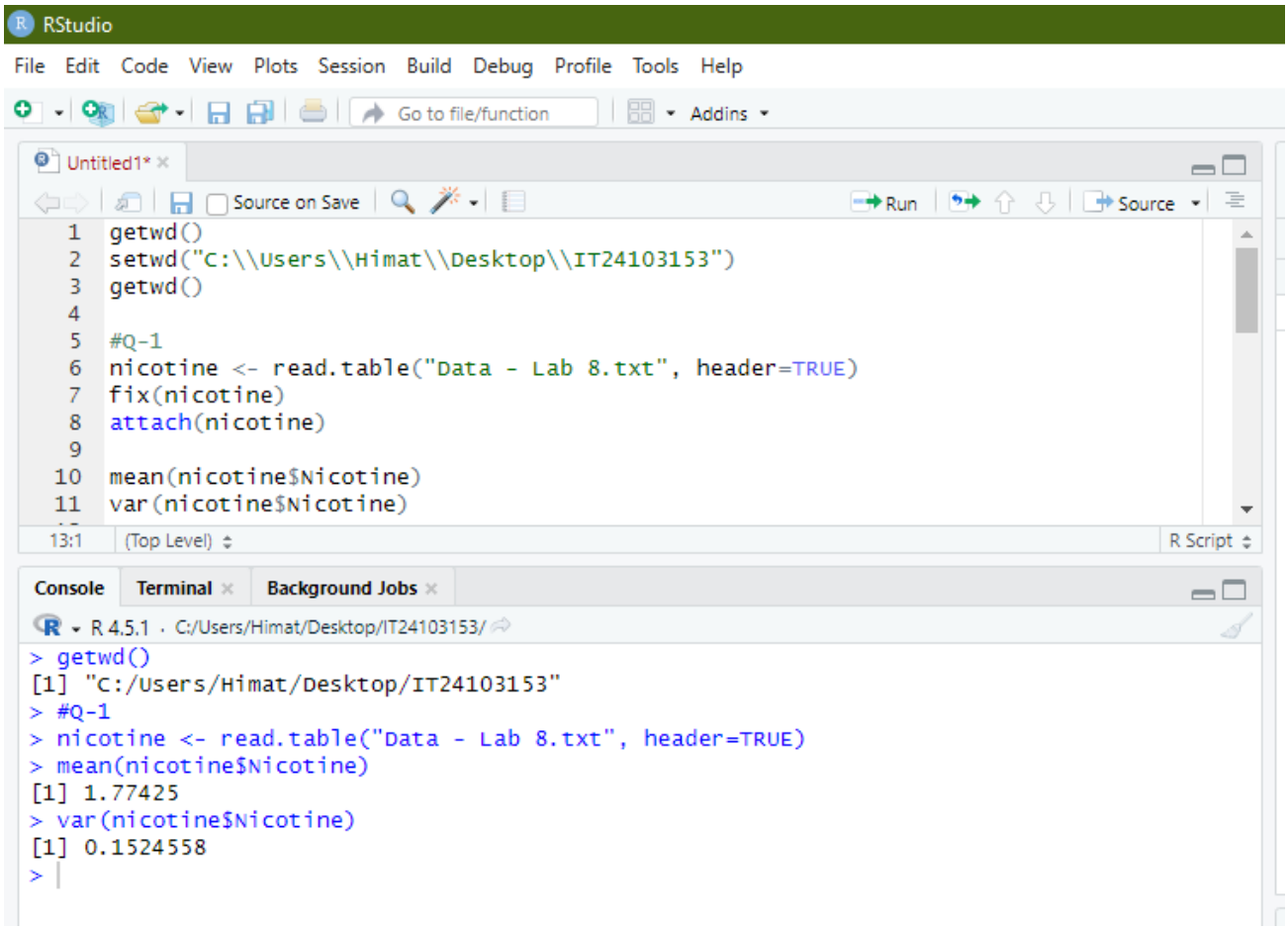
IT2120 - Probability and Statistics

Lab Sheet – 08

IT24103153

Dassanayake H.N



Data Editor

File Edit Help

	Nicotine	var2	var3	var4	var5	var6	var7
1	1.09						
2	1.74						
3	1.58						
4	2.11						
5	1.64						
6	1.79						
7	1.37						
8	1.75						
9	1.92						
10	1.47						
11	2.03						
12	1.86						
13	0.72						
14	2.46						
15	1.93						
16	1.63						
17	2.31						
18	1.97						
19	1.7						

Environment History Connections Tutorial

Import Dataset 147 MiB List

R Global Environment

Data	
nicotine	40 obs. of 1 variable
Values	
i	1L
n	NULL
num_samples	25
s	num [1:5] 1.64 1.93 2.46 1.58 1.82
sample_means	num [1:25] 1.89 0 0 0 0 ...
sample_sds	num [1:25] 0 0 0 0 0 0 0 0 0 0 ...
sample_size	6
samples	NULL

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

Untitled1*

Source on Save Run Source

```r

mean(nicotine$Nicotine)
var(nicotine$Nicotine)

#Q-2
samples <- c()
n <- c()

set.seed(123)
num_samples <- 25
sample_size <- 6

sample_means <- numeric(num_samples)
sample_sds   <- numeric(num_samples)

for(i in 1:30){
  s <- sample(nicotine$Nicotine, size=5, replace=TRUE)
  sample_means[i] <- mean(s)
  sample_vars[i] <- var(s)
}

```

30:1 (Top Level) R Script

Console Terminal Background Jobs

R 4.5.1 · C:/Users/Himat/Desktop/IT24103153/

```
> #Q-2
> samples <- c()
> n <- c()
> set.seed(123)
> num_samples <- 25
> sample_size <- 6
> sample_means <- numeric(num_samples)
> sample_sds   <- numeric(num_samples)
> for(i in 1:30){
+   s <- sample(nicotine$Nicotine, size=5, replace=TRUE)
+   sample_means[i] <- mean(s)
```

```r
#Q-3
mean(sample_means)
var(sample_means)

```

32:1 (Top Level) R Script

Console Terminal Background Jobs

R 4.5.1 · C:/Users/Himat/Desktop/IT24103153/

```
> #Q-3
> mean(sample_means)
[1] 0.07544
> var(sample_means)
[1] 0.1422798
```