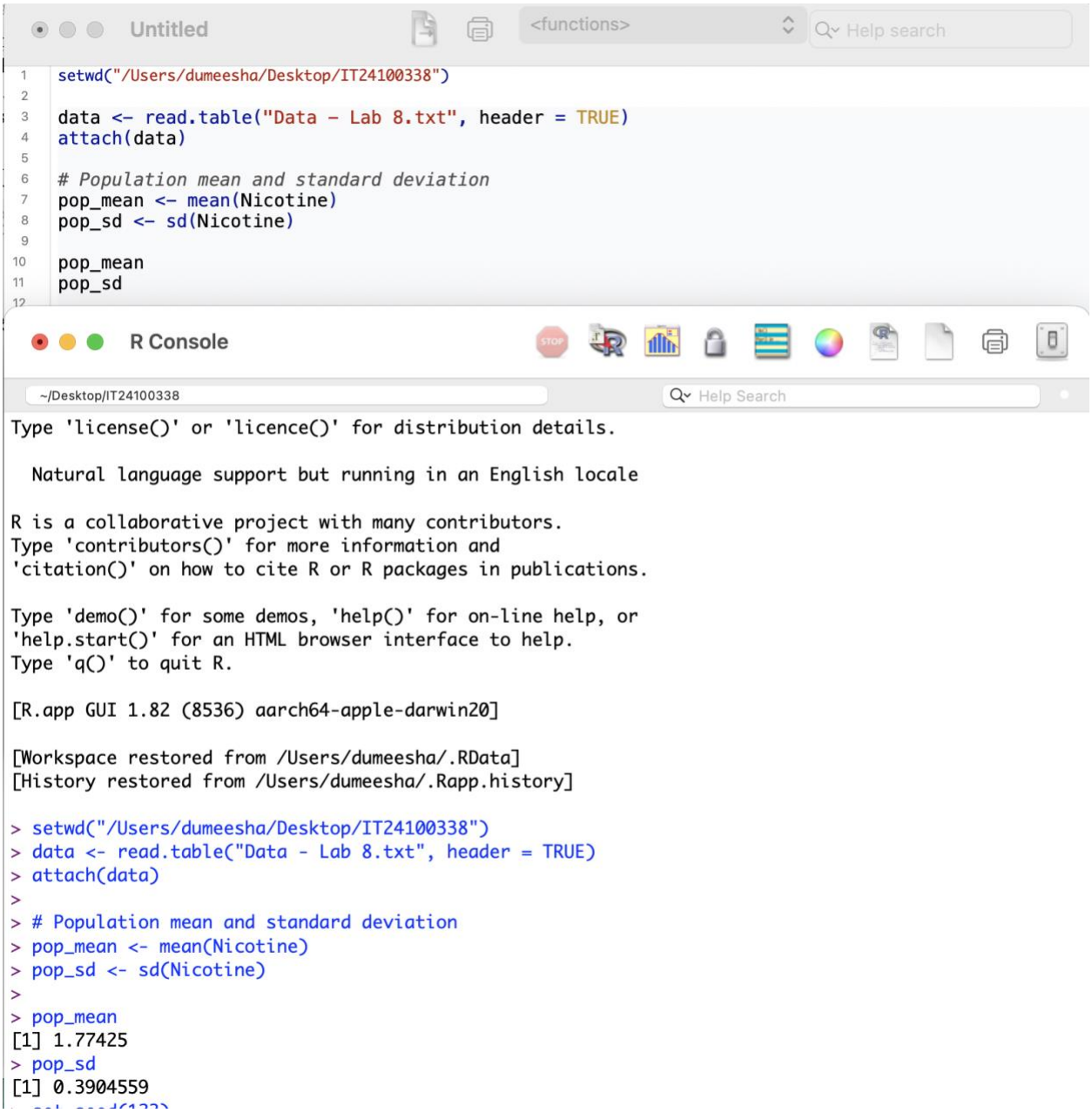
Exercise

1


Untitled
<functions>
Help search
1 setwd("/Users/dumeesha/Desktop/IT24100338")
2
3 data <- read.table("Data - Lab 8.txt", header = TRUE)
4 attach(data)
5
6 # Population mean and standard deviation
7 pop_mean <- mean(Nicotine)
8 pop_sd <- sd(Nicotine)
9
10 pop_mean
11 pop_sd
12
R Console
~/Desktop/IT24100338
Help Search
Type 'license()' or 'licence()' for distribution details.
Natural language support but running in an English locale
R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.
Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.
[R.app GUI 1.82 (8536) aarch64-apple-darwin20]
[Workspace restored from /Users/dumeesha/.RData]
[History restored from /Users/dumeesha/.Rapp.history]
> setwd("/Users/dumeesha/Desktop/IT24100338")
> data <- read.table("Data - Lab 8.txt", header = TRUE)
> attach(data)
>
> # Population mean and standard deviation
> pop_mean <- mean(Nicotine)
> pop_sd <- sd(Nicotine)
>
> pop_mean
[1] 1.77425
> pop_sd
[1] 0.3904559

2

Untitled

```r
set.seed(123)
samples <- matrix(nrow = 6, ncol = 25)

for(i in 1:25) {
    samples[, i] <- sample(Nicotine, size = 6, replace = TRUE)
}

colnames(samples) <- paste("Sample", 1:25, sep = "_")

# Sample means and sample standard deviations
sample_means <- apply(samples, 2, mean)
sample_sds <- apply(samples, 2, sd)

# Display sample results
results <- data.frame(
    Sample = 1:25,
    Mean = round(sample_means, 4),
    SD = round(sample_sds, 4)
)
print(results)
```

R Console

~/Desktop/IT24100338

```
> set.seed(123)
> samples <- matrix(nrow = 6, ncol = 25)
>
> for(i in 1:25) {
+     samples[, i] <- sample(Nicotine, size = 6, replace = TRUE)
+ }
>
> colnames(samples) <- paste("Sample", 1:25, sep = "_")
>
> # Sample means and sample standard deviations
> sample_means <- apply(samples, 2, mean)
> sample_sds <- apply(samples, 2, sd)
>
> # Display sample results
> results <- data.frame(
+     Sample = 1:25,
+     Mean = round(sample_means, 4),
+     SD = round(sample_sds, 4)
+ )
> print(results)
         Sample   Mean     SD
Sample_1       1 1.9817 0.3910
Sample_2       2 1.7167 0.4847
Sample_3       3 1.7150 0.5703
Sample_4       4 1.9983 0.3612
Sample_5       5 1.7167 0.2406
Sample_6       6 1.7550 0.3538
Sample_7       7 1.6883 0.2337
Sample_8       8 1.7667 0.5609
Sample_9       9 1.6367 0.4253
Sample_10     10 1.8383 0.1525
Sample_11     11 1.6350 0.5828
Sample_12     12 1.8600 0.3768
Sample_13     13 1.9833 0.3343
Sample_14     14 1.7350 0.4021
Sample_15     15 1.6500 0.2527
Sample_16     16 1.9950 0.3804
Sample_17     17 1.8067 0.3942
Sample_18     18 1.5750 0.3994
Sample_19     19 1.8283 0.3732
Sample_20     20 1.7450 0.1694
Sample_21     21 1.3650 0.5533
Sample_22     22 1.7933 0.3961
Sample_23     23 1.9667 0.2563
Sample_24     24 1.7350 0.1662
Sample_25     25 1.6200 0.4568
```

3

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

mean_of_sample_means
sd_of_sample_means
```

```
>
> mean_of_sample_means <- mean(sample_means)
> sd_of_sample_means <- sd(sample_means)
>
> mean_of_sample_means
[1] 1.764267
> sd_of_sample_means
[1] 0.1503661
> mean_of_sample_means <- mean(sample_means)
> sd_of_sample_means <- sd(sample_means)
>
> mean_of_sample_means
[1] 1.764267
> sd_of_sample_means
[1] 0.1503661
>
```