IT2120 - Probability and Statistics

Name: Deneshkar. P

IT No: IT24103828

```
> getwd()
[1] "C:/Users/it24103828/Downloads/Lab 08-20250923"
> setwd("C:\\Users\\it24103828\\Downloads\\Lab 08-20250923")
> data<- read.table("Exercise - LaptopsWeights.txt" , header = TRUE)
> fix(data)
> attach(data)
The following object is masked from data (pos = 3):

    Weight.kg.

The following object is masked from data (pos = 4):

    Weight.kg.

The following object is masked from data (pos = 5):

    Weight.kg.
```

Exercise 1

```
> #Q1
> pop_mean <- mean(Weight.kg.)
> pop_sd <- sd(Weight.kg.)
```

Exercise 2

```
> #Q2
> samples <- c()
> sample_names <- c()
> for(i in 1:25) {
+   s <- sample(Weight.kg., 6, replace=TRUE)
+   samples <- cbind(samples, s)
+   sample_names <- c(sample_names, paste("s", i))
+ }
> colnames(samples) <- sample_names
```

Exercise 3

```
> #Q3
> sample_means <- apply(samples, 2, mean)
> sample_sds <- apply(samples, 2, sd)
> mean_of_sample_means <- mean(sample_means)
> sd_of_sample_means <- sd(sample_means)
> n
```

Output

```
> pop_mean
[1] 2.468
> pop_sd
[1] 0.2561069
> mean_of_sample_means
[1] 2.488733
> sd_of_sample_means
[1] 0.09304803
```