```
> # Read data
> data <- read.table("Exercise - LaptopsWeights.txt", header = TRUE)
> fix(data)
> attach(data)
> weights <- data$Weight.kg.
> head(weights)
[1] 2.46 2.45 2.47 2.71 2.46 2.05
> #Q1
> pop_mean <- mean(weights)
> #Q1
> pop_mean <- mean(weights)
> pop_sd <- sd(weights)
> cat("Population mean =", pop_mean)
Population mean = 2.468
> cat("Population standard deviation =", pop_sd)
Population standard deviation = 0.2561069


>
> set.seed(123)  # for reproducibility
> num_samples <- 25
> sample_size <- 6
>
> # Matrix to store samples
> samples <- matrix(nrow = sample_size, ncol = num_samples)
>
> # Generate samples
> for (i in 1:num_samples) {
+   samples[, i] <- sample(weights, size = sample_size, replace = TRUE)
+ }
>
> # Name samples
> colnames(samples) <- paste("Sample", 1:num_samples, sep = "_")
>
> # Calculate sample means and sample standard deviations
> sample_means <- apply(samples, 2, mean)
> sample_sds <- apply(samples, 2, sd)
>
> # Display first few sample means and SDs
> head(sample_means)
Sample_1 Sample_2 Sample_3 Sample_4 Sample_5 Sample_6
2.530000 2.573333 2.473333 2.591667 2.456667 2.401667
> head(sample_sds)
 Sample_1  Sample_2  Sample_3  Sample_4  Sample_5  Sample_6
0.1513935 0.1191078 0.1718914 0.1345239 0.2749303 0.2544340
```

```
> #Q3
> mean_of_sample_means <- mean(sample_means)
> sd_of_sample_means <- sd(sample_means)
>
> cat("Mean of sample means =", mean_of_sample_means)
Mean of sample means = 2.4668> cat("Standard deviation of sample means =",
sd_of_sample_means)
Standard deviation of sample means = 0.07624874
>
```