IT24103496

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1.

```
setwd("C:\\Users\\Dasun\\OneDrive\\Desktop\\lab 8 stats")


#PART 01
weights <- scan("Exercise - LaptopsWeights.txt", skip = 1)

po_mean_wt <-mean(weights)
po_sd_wt <-sd(weights)

cat("Laptop Weights population Mean:",po_mean_wt, "\n")
cat("Laptop weights population Std Dev",po_sd_wt, "\n")

```

```
> setwd("C:\\Users\\Dasun\\OneDrive\\Desktop\\lab 8 stats")
>
>
> #PART 01
> weights <- scan("Exercise - LaptopsWeights.txt", skip = 1)
Read 40 items
>
> po_mean_wt <-mean(weights)
> po_sd_wt <-sd(weights)
>
> cat("Laptop Weights population Mean:",po_mean_wt, "\n")
Laptop Weights population Mean: 2.468
> cat("Laptop weights population Std Dev",po_sd_wt, "\n")
Laptop weights population Std Dev 0.2561069
>
```

2.

```
#PART 02

set.seed(456)
sample_means_wt <- numeric(25)
sample_sds_wt <- numeric(25)

for (i in 1:25) {
  s <- sample(weights, size = 6, replace = TRUE)
  sample_means_wt[i] <- mean(s)
  sample_sds_wt[i] <- sd(s)
  }
```

```
> #PART 02
>
> set.seed(456)
> sample_means_wt <- numeric(25)
> sample_sds_wt <- numeric(25)
>
> for (i in 1:25) {
+   s <- sample(weights, size = 6, replace = TRUE)
+   sample_means_wt[i] <- mean(s)
+   sample_sds_wt[i] <- sd(s)
+   }
>
```

3.

```r
#PART 03

mean_sample_means_wt <- mean(sample_means_wt)
sd_sample_means_wt <- sd(sample_means_wt)

cat("Mean of Sample Means (Weights):", mean_sample_means_wt, "\n")
cat("Std Dev of Sample Means (Weights):", sd_sample_means_wt, "\n")

cat("Compare: Sample Means vs Population Mean & Std Dev\n")
```

```
> #PART 03
>
> mean_sample_means_wt <- mean(sample_means_wt)
> sd_sample_means_wt <- sd(sample_means_wt)
>
> cat("Mean of Sample Means (Weights):", mean_sample_means_wt, "\n")
Mean of Sample Means (Weights): 2.475067
> cat("Std Dev of Sample Means (Weights):", sd_sample_means_wt, "\n")
Std Dev of Sample Means (Weights): 0.1057398
>
> cat("Compare: Sample Means vs Population Mean & Std Dev\n")
Compare: Sample Means vs Population Mean & Std Dev
```