Sri Lanka Institute of Information Technology

Lab Submission
<Lab sheet No.08>

<IT24100716>

<Silva PHN>

B.Sc. (Hons) in Information Technology

```r
setwd("C:\\Users\\IT24100716\\Downloads\\Lab 08-20250926")


data <- read.table("Exercise - LaptopsWeights.txt", header = TRUE)


fix(data)

attach(data)


popmn <- mean(Weight.kg.)
popvar <- var(Weight.kg.)
print(popmn)
print(popvar)
```

```
>
> data <- read.table("Exercise - LaptopsWeights.txt", header = TRUE)
>
>
> fix(data)
>
> attach(data)
>
>
> popmn <- mean(Weight.kg.)
> popvar <- var(Weight.kg.)
> print(popmn)
[1] 2.468
> print(popvar)
[1] 0.06559077
```

```r
samples <- c()


n <- c()
for(i in 1:25) {
  s <- sample(Weight.kg., 5, replace = TRUE)
  samples <- cbind(samples, s)
  n <- c(n, paste('s', i))
}

```

```
> samples <- c()
>
>
> n <- c()
> for(i in 1:25) {
+   s <- sample(Weight.kg., 5, replace = TRUE)
+   samples <- cbind(samples, s)
+   n <- c(n, paste('s', i))
+ }
>
```

```
colnames(samples) = n

s.means <- apply(samples, 2, mean)
s.sd <- apply(samples, 2, sd)
print(s.means)
print(s.sd)

samplemean<-mean(s.means)
samplesd<-sd(s.means)
samplemean
samplesd

popsd<-sd(weight.kg.)
popsd
```

```
>
> colnames(samples) = n
>
> s.means <- apply(samples, 2, mean)
> s.sd <- apply(samples, 2, sd)
> print(s.means)
  s 1   s 2   s 3   s 4   s 5   s 6   s 7   s 8   s 9  s 10  s 11  s 12  s 13  s 14  s 15  s 16  s 17  s 18  s 19  s 20
2.444 2.434 2.444 2.374 2.568 2.558 2.530 2.450 2.350 2.486 2.356 2.608 2.362 2.508 2.388 2.632 2.638 2.532 2.590 2.476
 s 21  s 22  s 23  s 24  s 25
2.556 2.374 2.492 2.596 2.478
> print(s.sd)
      s 1       s 2       s 3       s 4       s 5       s 6       s 7       s 8       s 9      s 10      s 11      s 12
0.4212838 0.2173246 0.4462959 0.3287552 0.1967740 0.3130016 0.1960867 0.2411431 0.2425902 0.1932097 0.3649384 0.1921458
     s 13      s 14      s 15      s 16      s 17      s 18      s 19      s 20      s 21      s 22      s 23      s 24
0.3908580 0.2225309 0.2229798 0.2254329 0.1951154 0.1874033 0.2885308 0.1422322 0.2286482 0.5183917 0.1190378 0.3337364
     s 25
0.2184491
```

```
popsd

se<-popsd/sqrt(5)
se
popsd
samplesd

popmn
samplemean
```

```
> samplemean<-mean(s.means)
> samplesd<-sd(s.means)
> samplemean
[1] 2.48896
> samplesd
[1] 0.09049331
>
> popsd<-sd(weight.kg.)
> popsd
[1] 0.2561069
>
> se<-popsd/sqrt(5)
> se
[1] 0.1145345
> popsd
[1] 0.2561069
> samplesd
[1] 0.09049331
>
> popmn
[1] 2.468
> samplemean
[1] 2.48896
>
```