IT24100524_PS Lab 08.R

Source on Save | Run | Source

```r
setwd("C:\\Users\\Asus\\Desktop\\IT24100524\\PS Lab 08")
getwd()

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

fix(data)

attach(data)

weights <- data$Weight.kg.

weights

pop_mean <- mean(weights)

pop_var <- mean((weights - pop_mean)^2)

pop_sd <- sqrt(pop_var)

pop_mean
pop_var
pop_sd


samples <- c()
n <- c()

for (i in 1:25) {
  s <- sample(weights, 6, replace = TRUE)
  samples <- cbind(samples, s)
  n <- c(n, paste('S', i))
}


colnames(samples) <- n


s.means <- apply(samples, 2, mean)
s.means
s.vars  <- apply(samples, 2, var)
```

1:1 (Top Level) R Script

```r
s.means <- apply(samples, 2, mean)
s.means
s.vars  <- apply(samples, 2, var)
s.vars

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


```

1:1 (Top Level) R Script

## Output

Console | Terminal | Background Jobs

R 4.5.1 · C:/Users/Asus/Desktop/IT24100524/PS Lab 08/

```
> setwd("C:\\Users\\Asus\\Desktop\\IT24100524\\PS Lab 08")
> getwd()
[1] "C:/Users/Asus/Desktop/IT24100524/PS Lab 08"
>
> data <- read.table("Exercise - LaptopsWeights.txt", header = TRUE)
>
> fix(data)
>
> attach(data)
>
> weights <- data$Weight.kg.
>
> weights
 [1] 2.46 2.45 2.47 2.71 2.46 2.05 2.60 2.42 2.43 2.53 2.57 2.85 2.70 2.53 2.28 2.20 2.57 2.89
[19] 2.51 2.47 2.66 2.06 2.41 2.65 2.76 2.43 2.61 2.57 2.73 2.17 2.67 2.05 1.71 2.32 2.23 2.76
[37] 2.70 2.13 2.75 2.20
>
> pop_mean <- mean(weights)
>
> pop_var <- mean((weights - pop_mean)^2)
>
> pop_sd <- sqrt(pop_var)
>
> pop_mean
[1] 2.468
> pop_var
[1] 0.063951
> pop_sd
[1] 0.2528853
>
>
> samples <- c()
> n <- c()
>
> for (i in 1:25) {
+   s <- sample(weights, 6, replace = TRUE)
+   samples <- cbind(samples, s)
+   n <- c(n, paste('S', i))
+ }
>
```

```
> s.means <- apply(samples, 2, mean)
> s.means
     S 1      S 2      S 3      S 4      S 5      S 6      S 7      S 8      S 9     S 10
2.483333 2.421667 2.376667 2.250000 2.683333 2.378333 2.480000 2.531667 2.398333 2.523333
    S 11     S 12     S 13     S 14     S 15     S 16     S 17     S 18     S 19     S 20
2.450000 2.353333 2.606667 2.495000 2.515000 2.571667 2.448333 2.425000 2.410000 2.446667
    S 21     S 22     S 23     S 24     S 25
2.393333 2.428333 2.511667 2.535000 2.588333
> s.vars  <- apply(samples, 2, var)
> s.vars
       S 1         S 2         S 3         S 4         S 5         S 6         S 7
0.057706667 0.044936667 0.028106667 0.101080000 0.043426667 0.006656667 0.087720000
       S 8         S 9        S 10        S 11        S 12        S 13        S 14
0.044136667 0.079056667 0.070506667 0.047640000 0.149146667 0.012706667 0.059430000
       S 15        S 16        S 17        S 18        S 19        S 20        S 21
0.085030000 0.017016667 0.038856667 0.051070000 0.040760000 0.066186667 0.118746667
       S 22        S 23        S 24        S 25
0.069616667 0.074256667 0.041030000 0.030696667
>
> samplemean <- mean(s.means)
> samplemean
[1] 2.4682
> sampleSD   <- sd(s.means)
> sampleSD
[1] 0.09247362
>
```