# IT2120 – PS

# Labsheet08

# IT24101099

Q1

```
#Q1
popmn<-mean(weight.kg.)
popmn

popvar<-var(weight.kg.)
popvar
```

```
> fix(data)
> popmn<-mean(weight.kg.)
> popmn
[1] 2.468
> popvar<-var(weight.kg.)
> popvar
[1] 0.06559077
>
```

Q2

```
#Q2

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

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

samples


colnames(samples) = n
samples


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

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

```
> colnames(samples) = n
> samples
      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
[1,] 2.70 2.67 2.71 2.05 2.61 2.42 2.45 2.46 2.43 2.57 2.67 2.47 2.41 2.66
[2,] 2.85 2.73 2.89 2.76 2.57 2.71 2.47 2.47 2.20 2.85 2.06 2.20 2.13 2.57
[3,] 2.51 2.05 2.51 2.53 2.23 2.73 2.57 2.71 2.76 2.43 2.45 2.70 2.46 2.32
[4,] 2.76 2.61 2.47 2.47 2.05 2.28 2.76 2.75 2.05 2.75 2.23 2.28 2.28 2.61
[5,] 2.66 2.23 2.28 2.70 2.73 2.53 2.28 2.20 2.61 2.57 2.65 2.23 2.32 2.53
[6,] 2.20 2.71 2.66 2.70 2.75 2.45 2.43 2.20 2.23 2.43 2.75 2.23 2.73 2.20
     S 15 S 16 S 17 S 18 S 19 S 20 S 21 S 22 S 23 S 24 S 25
[1,] 2.43 2.71 2.73 2.46 2.32 2.73 2.41 2.89 2.73 2.71 2.65
[2,] 2.47 2.46 2.76 2.47 2.53 2.70 2.61 2.20 2.73 2.61 2.71
[3,] 2.70 2.71 2.53 2.76 2.41 2.47 2.13 2.46 2.28 2.45 2.53
[4,] 2.57 1.71 2.47 2.46 2.66 2.61 2.57 2.42 2.76 2.47 2.67
[5,] 2.47 2.67 2.28 2.76 2.73 2.13 2.23 2.73 2.57 2.51 2.73
[6,] 2.51 2.70 2.75 2.73 2.66 2.20 2.53 2.45 2.20 2.53 2.57
> s.means<-apply(samples,2,mean)
> s.means
     S 1      S 2      S 3      S 4      S 5      S 6      S 7      S 8
2.613333 2.500000 2.586667 2.535000 2.490000 2.520000 2.493333 2.465000
     S 9     S 10     S 11     S 12     S 13     S 14     S 15     S 16
2.380000 2.600000 2.468333 2.351667 2.388333 2.481667 2.525000 2.493333
    S 17     S 18     S 19     S 20     S 21     S 22     S 23     S 24
2.586667 2.606667 2.551667 2.473333 2.413333 2.525000 2.545000 2.546667
    S 25
2.643333
> s.vars<-apply(samples,2,var)
> s.vars
        S 1         S 2         S 3         S 4         S 5         S 6
0.053746667 0.082680000 0.045226667 0.068910000 0.081440000 0.030560000
        S 7         S 8         S 9        S 10        S 11        S 12
0.025786667 0.056350000 0.072720000 0.028920000 0.075376667 0.038616667
       S 13        S 14        S 15        S 16        S 17        S 18
0.041096667 0.032776667 0.009590000 0.156506667 0.037626667 0.024786667
       S 19        S 20        S 21        S 22        S 23        S 24
0.025896667 0.065706667 0.038146667 0.060350000 0.060910000 0.009506667
       S 25
0.006186667
```

Q3

```
#Q3
samplemean<-mean(s.means)
samplevars<-var(s.means)

samplemean
samplevars

popmn
samplemean
```

```
> samplemean
[1] 2.511333
> samplevars
[1] 0.005673843
> popmn
[1] 2.468
> samplemean
[1] 2.511333
>
```