LAB 04

PS

IT24103260

01)

```
branch_data <-read.table("Exercise.txt",header = TRUE , sep = ",")
str(branch_data)
```

```
> branch_data <-read.table("Exercise.txt",header = TRUE , sep = ",")
> str(branch_data)
'data.frame':   30 obs. of  4 variables:
 $ Branch        : int  1 2 3 4 5 6 7 8 9 10 ...
 $ Sales_X1      : num  3.4 4.1 2.8 5 3.7 4.5 3 4.9 3.2 2.5 ...
 $ Advertising_X2: int  120 150 90 200 110 175 95 185 105 80 ...
 $ Years_X3      : int  4 7 3 10 5 6 2 9 4 1 ...
```

02)

branch-Categorical(nominal)

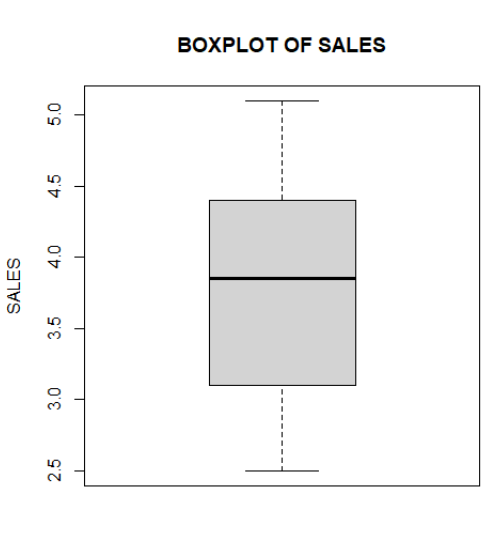
Sales_X1-Quantitative(Ratio scale, continuous)

Advertising_X2-Quantitative (Ratio scale, continuous)

Years_X3-Quantitative(Ratio scale, discrete - whole years)

03)

```
boxplot(branch_data$Sales,main="BOXPLOT OF SALES",ylab="SALES")
```



04)

```
boxplot(branch_data$Sales,main="BOXPLOT OF SALES",ylab="SALES")

quantile(branch_data$Advertising_X2)
summary(branch_data$Advertising_X2)
IQR(branch_data$Advertising_X2)
```

```
> boxplot(branch_data$Sales,main="Boxplot of sales",ylab="sales")
> boxplot(branch_data$Sales,main="BOXPLOT OF SALES",ylab="SALES")
> quantile(branch_data$Advertising_X2)
    0%    25%    50%    75%   100%
 80.00 101.25 132.50 158.75 210.00
> summary(branch_data$Advertising_X2)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
   80.0   101.2   132.5   134.8   158.8   210.0
> IQR(branch_data$Advertising_X2)
[1] 57.5
```

05)

```
find_outliers <-function(x){
  Q1<- quantile(x,0.25)
  Q3 <- quantile (x,0.75)
  IQR_value <- Q3 -Q1
  lower_bound <- Q1-1.5 * IQR_value
  upper_bound <-Q3 +1.5 * IQR_value
  return(x[x<lower_bound|x>upper_bound])
}

find_outliers(branch_data$Years)
```

```
> find_outliers(branch_data$Years)
integer(0)
>
```