IT24103520 – Karunarathna H.M.R.L

Probability and Statistics - IT2120

Q1

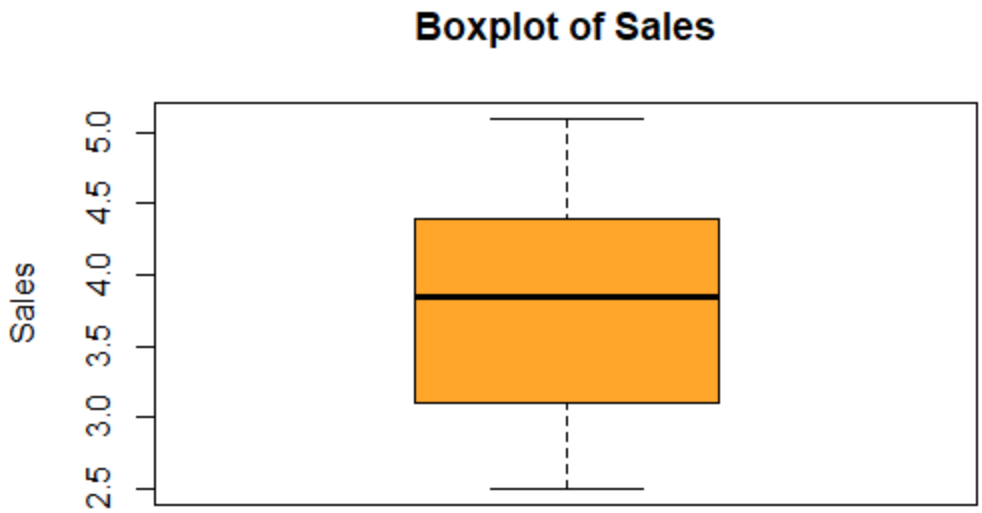
```
#Q1
setwd("C:\\Users\\IT24103520\\Desktop\\IT24103520")
branch_data<-read.table("Exercise.txt",header =TRUE, sep=",")
head(branch_data)

#Q2
str(branch_data)
```

```
> setwd("C:\\Users\\IT24103520\\Desktop\\IT24103520")
> branch_data<-read.table("Exercise.txt",header =TRUE, sep=",")
> head(branch_data)
  Branch Sales_X1 Advertising_X2 Years_X3
1      1      3.4            120        4
2      2      4.1            150        7
3      3      2.8             90        3
4      4      5.0            200       10
5      5      3.7            110        5
6      6      4.5            175        6
```

Q3

```
#Question_03
boxplot(branch_data$Sales,
        main = "Boxplot of Sales",
        ylab = "Sales",
        col = "orange")
```

```
> #Question_03
> boxplot(branch_data$Sales,
+         main = "Boxplot of Sales",
+         ylab = "Sales",
+         col = "orange")
```



Q4

```
#Question_04
fivenum(branch_data$Advertising)

summary(branch_data$Advertising)


IQR(branch_data$Advertising)
```

```
> #Question_04
> fivenum(branch_data$Advertising)
[1]  80.0 100.0 132.5 160.0 210.0
>
> summary(branch_data$Advertising)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
   80.0   101.2   132.5   134.8   158.8   210.0
>
>
> IQR(branch_data$Advertising)
[1] 57.5
```

Q5

```r
#Question_05
find_outliers <- function(x) {
  Q1 <- quantile(x, 0.25)
  Q3 <- quantile(x, 0.75)
  IQR <- Q3 - Q1
  lower <- Q1 - 1.5 * IQR
  upper <- Q3 + 1.5 * IQR
  outliers <- x[x < lower | x > upper]
  return(outliers)
}
find_outliers(branch_data$Years)
```

```
> #Question_05
> find_outliers <- function(x) {
+   Q1 <- quantile(x, 0.25)
+   Q3 <- quantile(x, 0.75)
+   IQR <- Q3 - Q1
+   lower <- Q1 - 1.5 * IQR
+   upper <- Q3 + 1.5 * IQR
+   outliers <- x[x < lower | x > upper]
+   return(outliers)
+ }
> find_outliers(branch_data$Years)
integer(0)
```