Sri Lanka Institute of Information Technology

Lab Submission

Work Sheet – 04

IT24102559

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Probability and Statistics- IT2120

B.Sc. (Hons) in Information Technology

01.

```
1  setwd("C:/Users/amara/OneDrive - Sri Lanka Institute of Information Technology/SLIIT/2Y1S/Prob
2  data <-read.table("Exercise.txt",header = TRUE , sep = " ")
3  fix (data)
4  attach(data)
```

```
> setwd("C:/Users/amara/OneDrive - Sri Lanka Institute of Information Technology/SLIIT/2Y1S/Probail
ity and Statistics/Labs/Lab 04/Lab 04-20250822")
> data <-read.table("Exercise.txt",header = TRUE , sep = " ")
> fix (data)
```

Data Editor

File   Edit   Help

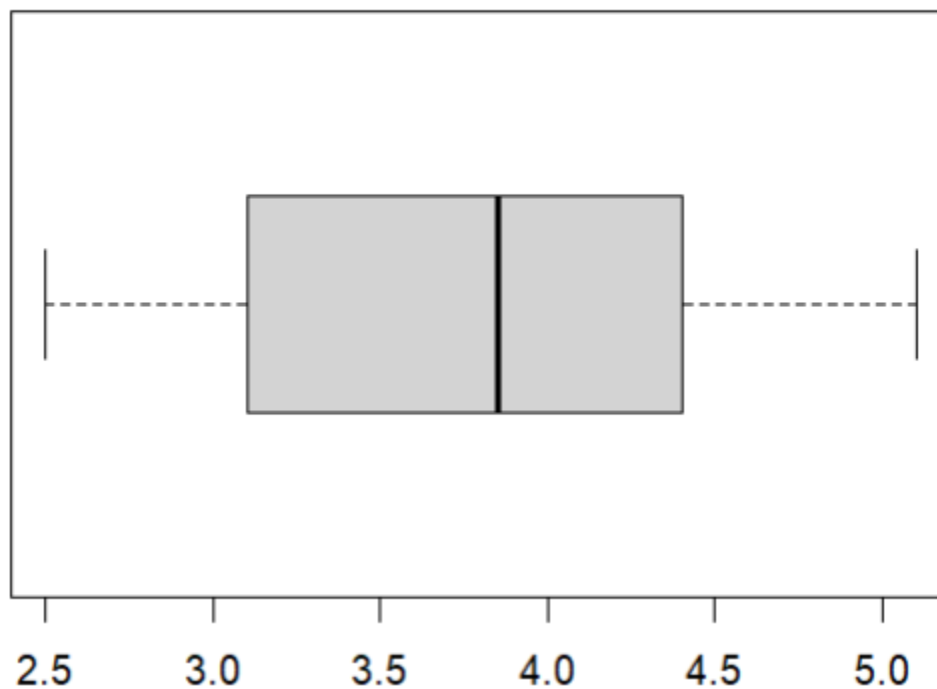|	Branch.Sales_X1.Advertising_X2.Years_X3	var2	var3	var4
1	1,3.4,120,4			
2	2,4.1,150,7			
3	3,2.8,90,3			
4	4,5,200,10			
5	5,3.7,110,5			
6	6,4.5,175,6			
7	7,3,95,2			
8	8,4.9,185,9			
9	9,3.2,105,4			
10	10,2.5,80,1			
11	11,3.9,130,5			
12	12,4.2,140,7			
13	13,2.7,100,3			
14	14,3.6,125,4			
15	15,4.8,190,8			
16	16,3.3,115,5			
17	17,4,135,6			
18	18,5.1,210,12			
19	19,3.8,145,6			

02.

```
6
7
8   #2.Indentify Variables
9   #Branch ---- CAtegorical (Nominal)
10  #Sales_X1        ---- Numeric (Ratio Scale)
11  #Advertising_X2 ---- Numeric (Ratio Scale)
12  #Years_X3        ---- Numeric (Ratio Scale)
13
14
15
16
```

03.

```
boxplot(data$Sales_X1,main = "Box plot for Sales ", outline = TRUE ,outpch = 8 ,horizontal = TRUE)
```


Box plot for Sales

04.

```
17
18   summary(data$Advertising_X2)
19   fivenum(data$Advertising_X2)
20   IQR(data$Advertising_X2)
21
```

```
The following objects are masked from data (pos = 3):

    Advertising_X2, Branch, Sales_X1, Years_X3
```

```
> summary(data$Advertising_X2)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
   80.0   101.2   132.5   134.8   158.8   210.0
> fivenum(data$Advertising_X2)
[1]   80.0 100.0 132.5 160.0 210.0
> IQR(data$Advertising_X2)
[1] 57.5
>
```

05.

```
R  ▼  R 4.3.1  ·  C:/Users/amara/OneDrive - Sri Lanka Institute of Information Technology/
+ }
> find_outliers(data$Years_X3)
> find_outliers <-function(x){
+    Q1 <- quantile(x,0.25)
+    Q3 <- quantile(x,0.75)
+
+    IQR_val   <- Q3 -Q1
+    lower <-   Q1 - 1.5* IQR_val
+    upper <-   Q3 + 1.5* IQR_val
+
+    outliers <- x[x<lower | x > upper]
+    return(outliers)
+ }
> find_outliers(data$Years_X3)
numeric(0)
>
```