

IT24103555

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IT2120 - Probability and Statistics

1)

```
1 # 1.  
2 setwd("C:\\Users\\IT24103555\\Desktop\\IT24103555")  
3 branch_data <- read.csv("Exercise.txt", header=TRUE)  
4 head(branch_data)  
5 str(branch_data)  
6
```



The screenshot shows the R console interface with the following commands and their output:

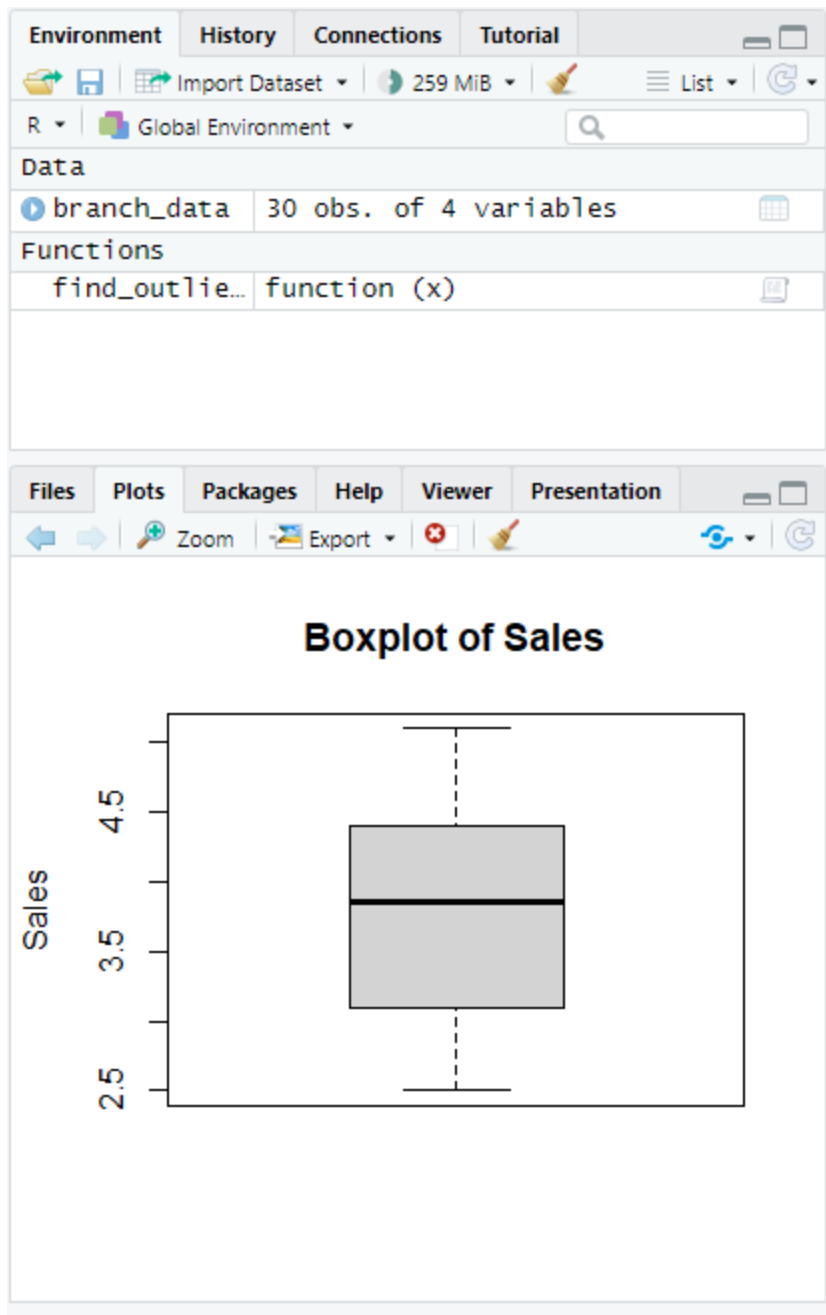
```
R 4.2.2 - C:/Users/IT24103555/Desktop/IT24103555/  
> # 1.  
> setwd("C:\\Users\\IT24103555\\Desktop\\IT24103555")  
> branch_data <- read.csv("Exercise.txt", header=TRUE)
```

2)

```
6  
7 # 2.  
8 # Branch - Integer (Nominal)  
9 # Sales_X1 - Numeric(Ratio)  
10 # Advertising_X2 - Numeric(Ratio)  
11 # Years_X3 - Integer(Ratio)
```

3)

```
12  
13 # 3.  
14 boxplot(branch_data$Sales_X1, main="Boxplot of Sales", ylab="Sales")  
15
```



4)

```
16 #4.  
17 fivenum(branch_data$Advertising)  
18 IQR(branch_data$Advertising_x2)
```

```
> fivenum(branch_data$Advertising)
[1] 80.0 100.0 132.5 160.0 210.0
> IQR(branch_data$Advertising_X2)
[1] 57.5
> boxplot(branch_data$Sales_X1, main="Boxplot of sales", ylab="Sales")
```

5)

```
20 #5.
21
22 find_outliers <- function(x) {
23   Q1 <- quantile(x, 0.25)
24   Q3 <- quantile(x, 0.75)
25   IQR_value <- Q3 - Q1
26
27   lower_bound <- Q1 - 1.5 * IQR_value
28   upper_bound <- Q3 + 1.5 * IQR_value
29
30   outliers <- x[x < lower_bound | x > upper_bound]
31
32   return(outliers)
33 }
34
35 outliers_in_years <- find_outliers(branch_data$years)
36
37 print(outliers_in_years)
38
```