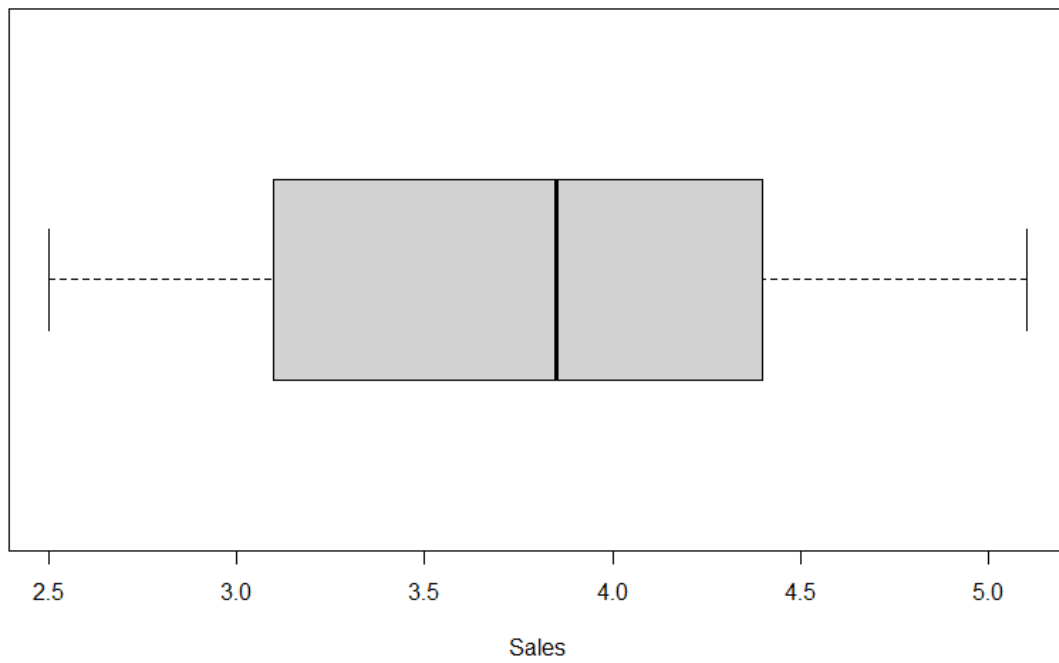


```
1 getwd()
2 setwd("C:\\Users\\it24102307\\Desktop\\IT24102307")
3 getwd()
4
5 #Exercise
6
7 #1
8 branch_data <- read.table("Exercise.txt",header=TRUE,sep=",")
9 fix(branch_data)
10 attach(branch_data)
11
12 #2
13 str(branch_data)
14
15 #3
16 boxplot(branch_data$Sales_X1, Main="Sales",outline=TRUE, outpch=8, horizontal=TRUE,xlab="Sales")
17 hist(branch_data$Sales_X1, Main="Sales",outline=TRUE,outpch=8, horizontal=TRUE)
18
19 #4
20 summary(Advertising_X2)
21 IQR(Advertising_X2)
22
23 #5
24 find_outliers <- function(z) {
25   Q1 <- quantile(z, 0.25)
26   Q3 <- quantile(z, 0.75)
27   IQR <- Q3 - Q1
28
29   ub <- Q3 + 1.5 * IQR
30   lb <- Q1 - 1.5 * IQR
31
32   print(paste("Upper Bound = ", ub))
33   print(paste("Lower Bound = ", lb))
34   print(paste("Outliers =", paste(sort(x[x<lb | x>ub]),collapse=",")))
35 }
36 get.outlier(Years_X3)
```

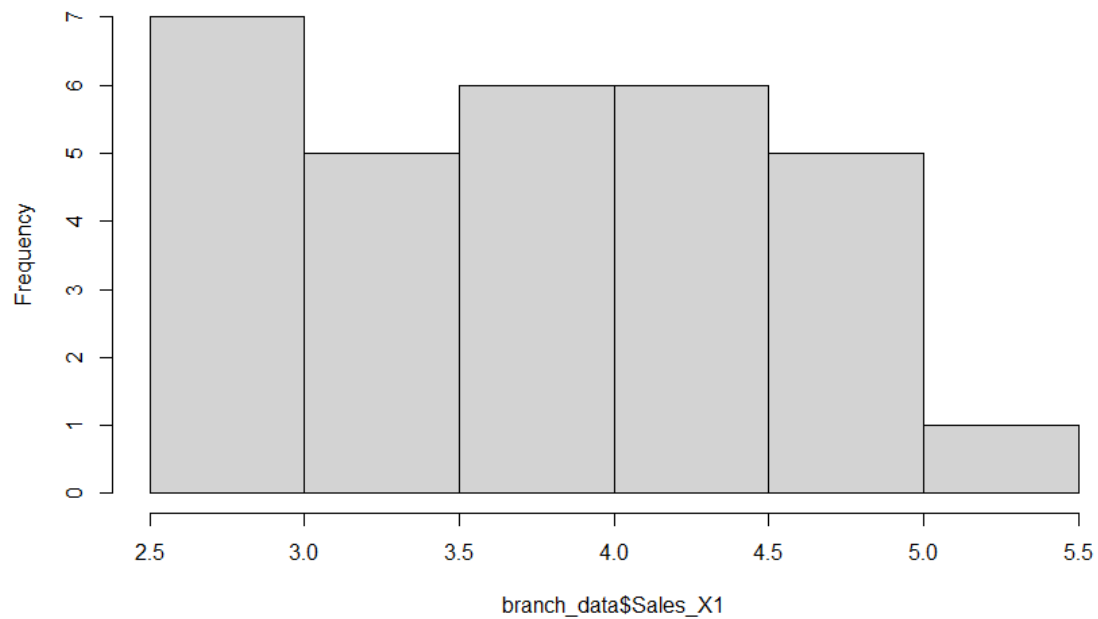
Data Editor							
File Edit Help							
	Branch	Sales_X1	Advertising_X2	Years_X3	var5	var6	var7
1	1	3.4	120	4			
2	2	4.1	150	7			
3	3	2.8	90	3			
4	4	5	200	10			
5	5	3.7	110	5			
6	6	4.5	175	6			
7	7	3	95	2			
8	8	4.9	185	9			
9	9	3.2	105	4			
10	10	2.5	80	1			
11	11	3.9	130	5			
12	12	4.2	140	7			
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			

```
> #2
> str(branch_data)
'data.frame': 30 obs. of 4 variables:
 $ Branch      : num  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: num  120 150 90 200 110 175 95 185 105 80 ...
 $ Years_X3     : num  4 7 3 10 5 6 2 9 4 1 ...
```

```
> #3  
> boxplot(branch_data$Sales_X1, Main="Sales",outline=TRUE, outpch=8, horizontal=TRUE,xlab="Sales")  
> hist(branch_data$Sales_X1, Main="Sales",outline=TRUE,outpch=8, horizontal=TRUE)
```



Histogram of branch_data\$Sales_X1



```

> #4
> summary(Advertising_X2)
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
  80.0  101.2   132.5   134.8   158.8   210.0
> IQR(Advertising_X2)
[1] 57.5
>
> #5
> find_outliers <- function(z) {
+   Q1 <- quantile(z, 0.25)
+   Q3 <- quantile(z, 0.75)
+   IQR <- Q3 - Q1
+
+   ub <- Q3 + 1.5 * IQR
+   lb <- Q1 - 1.5 * IQR
+
+   print(paste("Upper Bound = ", ub))
+   print(paste("Lower Bound = ", lb))
+   print(paste("Outliers =", paste(sort(x[x<lb | x>ub]),collapse=",")))
+ }
> get.outlier(Years_X3)
[1] "Upper Bound = 14.5"
[1] "Lower Bound = -3.5"
[1] "Outliers = "

```