Exercise

```
> getwd()
[1] "C:/Users/it24103399/Desktop/it24103399_Lab04"
> setwd("C:\\Users\\it24103399\\Desktop\\it24103399_Lab04")
> ##1
> branch_data<-read.table("Exercise.txt",header=TRUE,sep=",")
> ##2
> 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 ...
> summary(branch_data)
     Branch          Sales_X1       Advertising_X2     Years_X3
 Min.   : 1.00   Min.   :2.500   Min.   : 80.0   Min.   : 1.00
 1st Qu.: 8.25   1st Qu.:3.125   1st Qu.:101.2   1st Qu.: 3.25
 Median :15.50   Median :3.850   Median :132.5   Median : 5.50
 Mean   :15.50   Mean   :3.790   Mean   :134.8   Mean   : 5.70
 3rd Qu.:22.75   3rd Qu.:4.375   3rd Qu.:158.8   3rd Qu.: 7.75
 Max.   :30.00   Max.   :5.100   Max.   :210.0   Max.   :12.00
> ##3
> boxplot(branch_data$Sales_X1,main="Boxplot of Sales",hirizontal=TRUE)
```

```
> ##4
> summary(branch_data$Advertising_X2)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
   80.0   101.2   132.5   134.8   158.8   210.0
> IQR_Advertising<-IQR(branch_data$Advertising_X2)
> print(IQR_Advertising)
[1] 57.5
> ##5
> get.outlier<-function(x) {
+    q1<-quantile(x,0.25)
+    q3<-quantile(x,0.75)
+    iqr<-q3-q1
+    lower_bound<-q1-1.5*iqr
+    upper_bound<-q3+1.5*iqr
+    outliers<-x[x<lower_bound|x>upper_bound]
+    return(outliers)
+ }
> get.outlier(branch_data$Years_X3)
integer(0)
>
```

```
Data
● branch_data          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 ...
Values
  IQR_Advertising       57.5
Functions
  get.outlier           function (x)
```

Boxplot of Sales