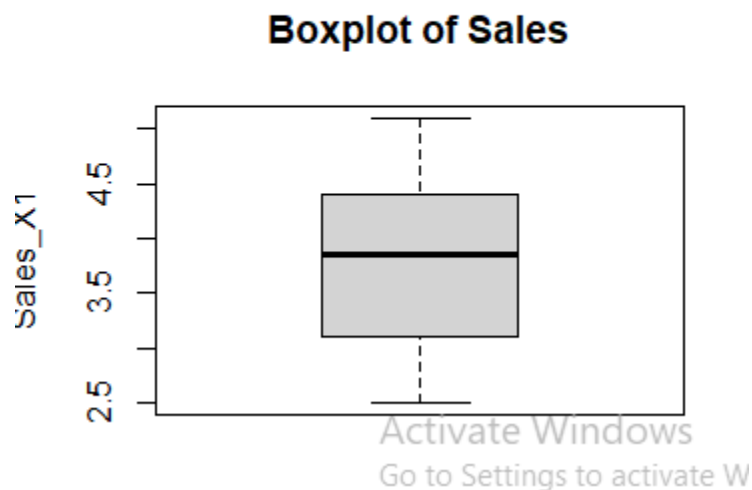
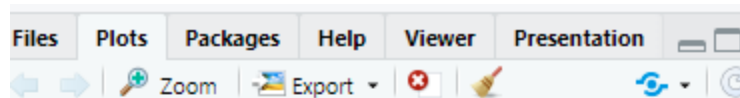


1. Import the dataset ('Exercise.txt') into R and store it in a data frame called "branch data".

```
setwd("C:\\Users\\IT24100441\\Desktop\\Lab04")  
branch_data <- read.csv("Exercise.txt", header = TRUE)
```

- 3.

```
boxplot(branch_data$Sales_x1, main = "Boxplot of sales", ylab = "sales_x1")
```



4. Calculate the five number summary and IQR for advertising variable

```
# calculate the five-number summary  
summary_ad <- summary(branch_data$Advertising_x2)  
print(summary_ad)  
  
# calculate the IQR  
iqr_ad <- IQR(branch_data$Advertising_x2)  
print(paste("IQR for Advertising_x2:", iqr_ad))
```

values	
iqr_ad	57.5
outliers_years	numeric (empty)
summary_ad	'summaryDefault' Named num [1:6] 80 101 132 135 159 ...

5. Write an R function to find the outliers in a numeric vector and check for outliers in years variables

```
# Function to find outliers in a numeric vector
find_outliers <- 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)
}

# Check for outliers in the 'Years_X3' variable
outliers_years <- find_outliers(branch_data$Years_X3)

# Print the results
if (length(outliers_years) == 0) {
  print("No outliers found in the 'Years' variable.")
} else {
  print("Outliers found in the 'Years' variable:")
  print(outliers_years)
}
```