

**Exp.No:10****VISUALIZE DATA USING ANY PLOTTING FRAMEWORK****AIM:**

To write an R code to visualize data using plotting framework such as scatter plot, bar chart, histogram and box plot.

**PROCEDURE:**

1. Install and Load ggplot2: Ensure the ggplot2 package is installed and loaded to use its plotting functions.
2. Scatter Plot: Create a scatter plot of Sepal Length vs. Sepal Width, colored by Species, to visualize the relationship between these two variables across different species in the iris dataset.
3. Bar Chart: Generate a bar chart to show the count of different Species in the iris dataset, using bars filled with a specified color to represent the counts.
4. Histogram: Create a histogram of Sepal Length to visualize the frequency distribution of this variable within the dataset, specifying the bin width and colors for the histogram bars.
5. Box Plot: Plot a box plot of Sepal Length for each Species to compare the distribution and central tendency of Sepal Length across the different species in the dataset.

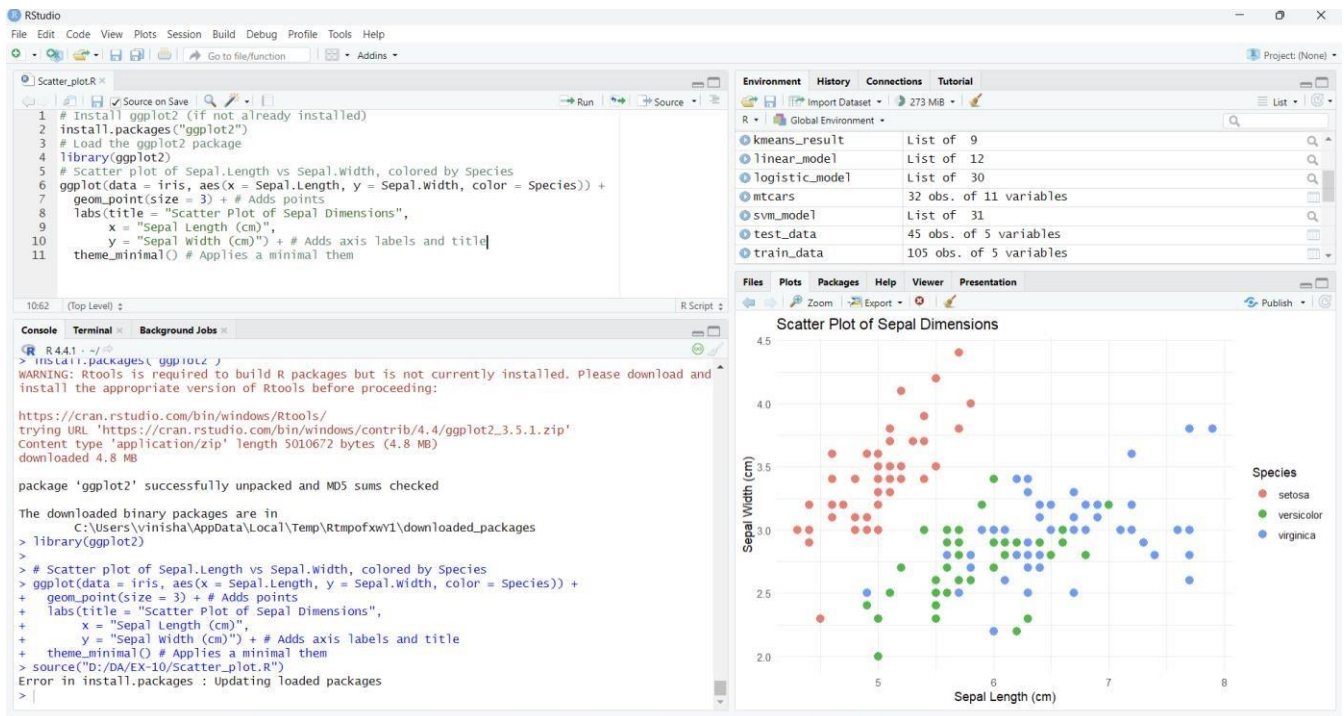
**1) SCATTER PLOT**

```
# Install ggplot2 (if not already installed) install.packages("ggplot2")
```

```
# Load the ggplot2 package library(ggplot2)
```

```
# Scatter plot of Sepal.Length vs Sepal.Width, colored by Species ggplot(data  
= iris, aes(x = Sepal.Length, y = Sepal.Width, color = Species)) +  
geom_point(size = 3) + # Adds points labs(title = "Scatter Plot of Sepal  
Dimensions", x = "Sepal Length (cm)", y = "Sepal Width (cm)") +  
# Adds axis labels and title theme_minimal() # Applies a minimal theme
```

**OUTPUT:**



## 2) BAR CHART

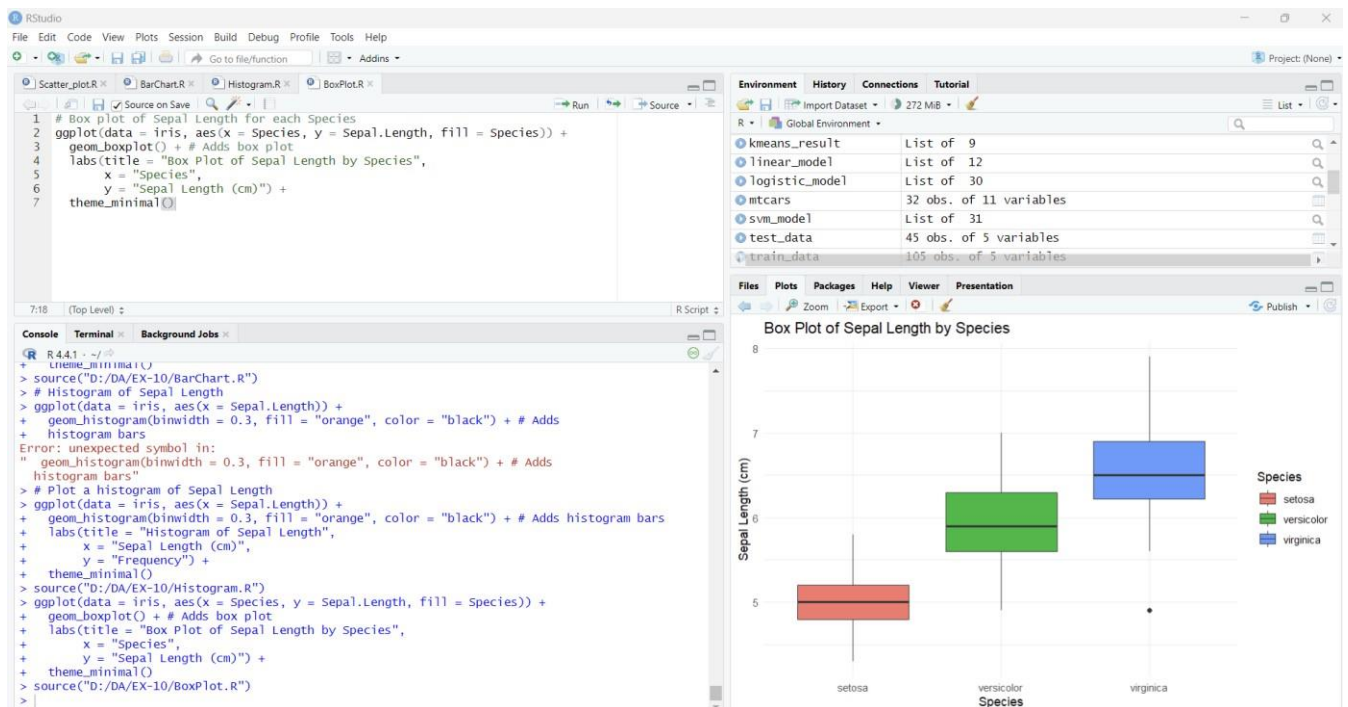
# Install ggplot2 (if not already installed) `install.packages("ggplot2")`

# Load the ggplot2 package `library(ggplot2)`

# Bar plot of Species counts `ggplot(data = iris, aes(x = Species)) + geom_bar(fill = "steelblue")` + # Adds bars filled with steel blue color

`labs(title = "Count of Different Species in Iris Dataset", x = "Species", y = "Count") + theme_minimal()`

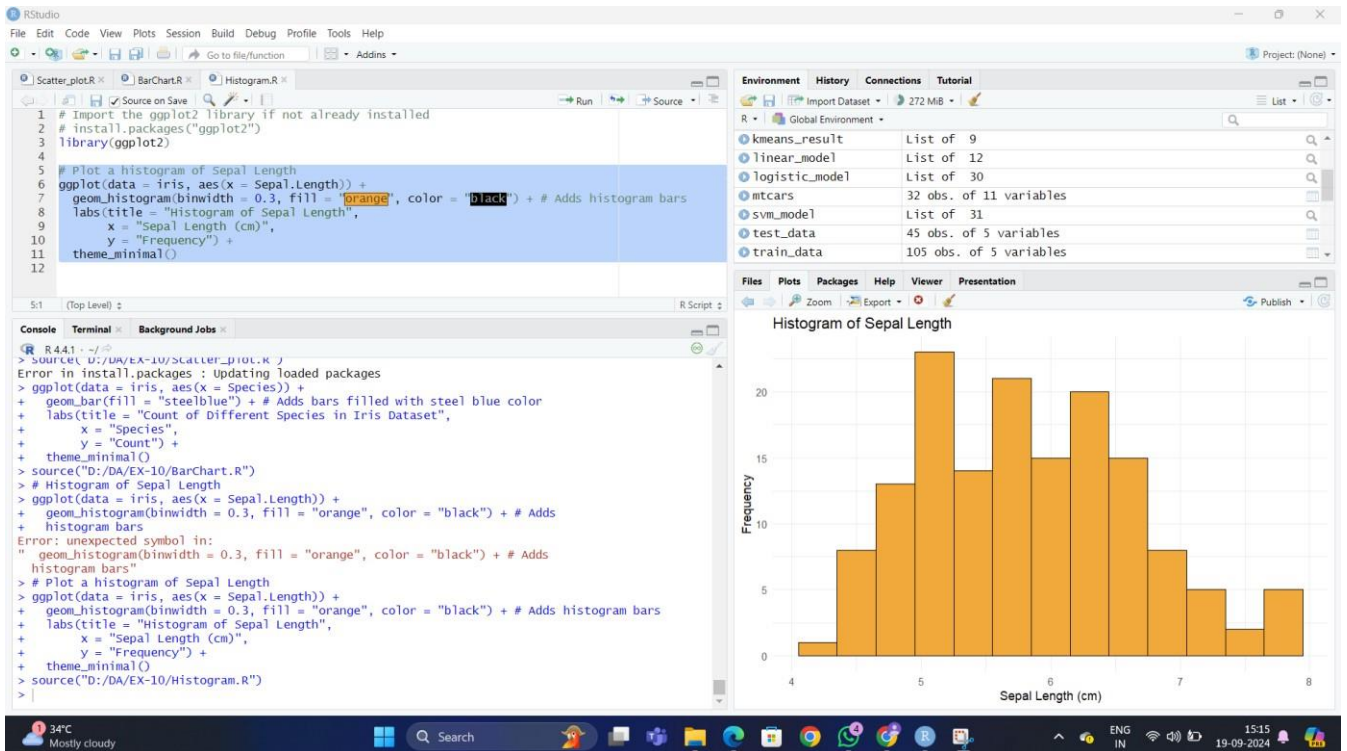
**OUTPUT:**



### 3) HISTOGRAM

```
# Histogram of Sepal Length ggplot(data =
iris, aes(x = Sepal.Length)) +
  geom_histogram(binwidth = 0.3, fill = "orange", color = "black") + # Adds histogram bars
  labs(title = "Histogram of Sepal Length", x = "Sepal Length (cm)", y = "Frequency") +
  theme_minimal()
```

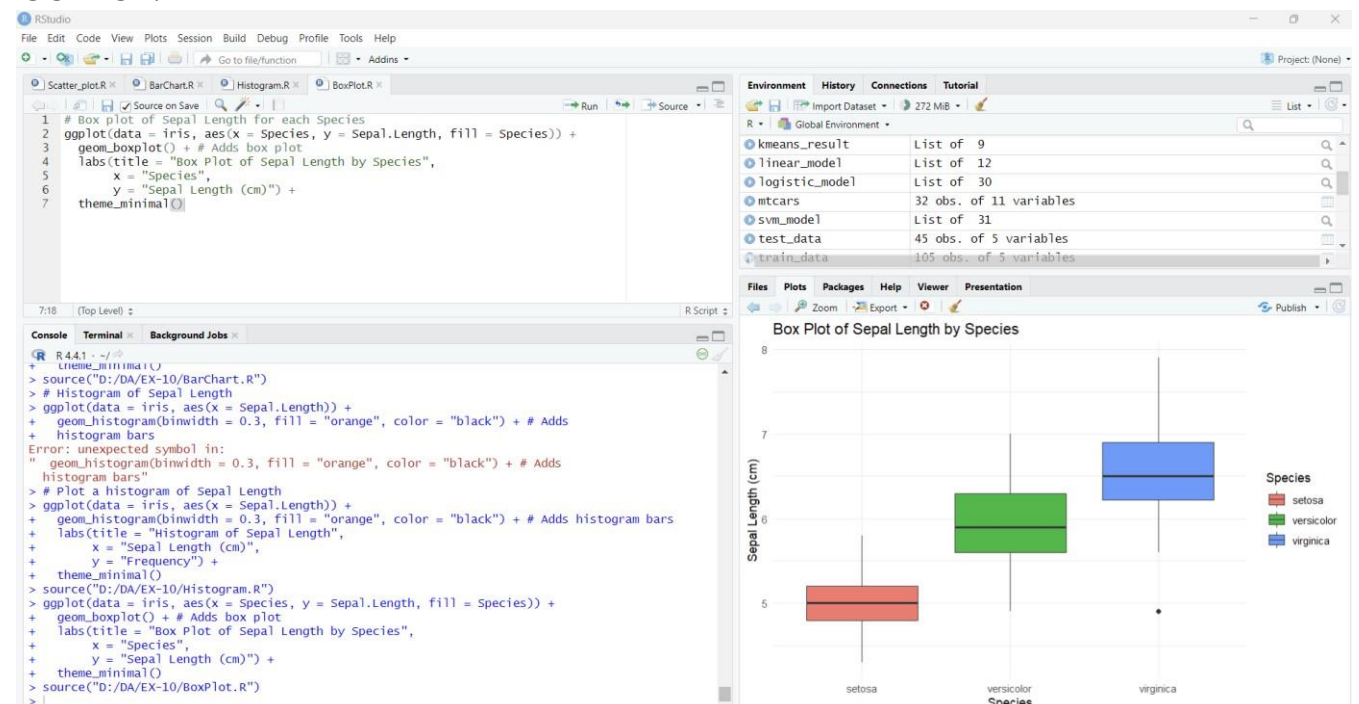
### OUTPUT:



#### 4) BOX PLOT

# Box plot of Sepal Length for each Species `ggplot(data = iris, aes(x = Species, y = Sepal.Length, fill = Species)) + geom_boxplot() + #`  
 Adds box plot `labs(title = "Box Plot of Sepal Length by Species", x = "Species", y = "Sepal Length (cm)") + theme_minimal()`

#### OUTPUT:



**RESULT:**

Thus the R program to visualize data using plotting framework such as scatter plot, bar char, histogram and box plot has been executed and verified successfully.