Reg.No: 210701320

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 char, 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.

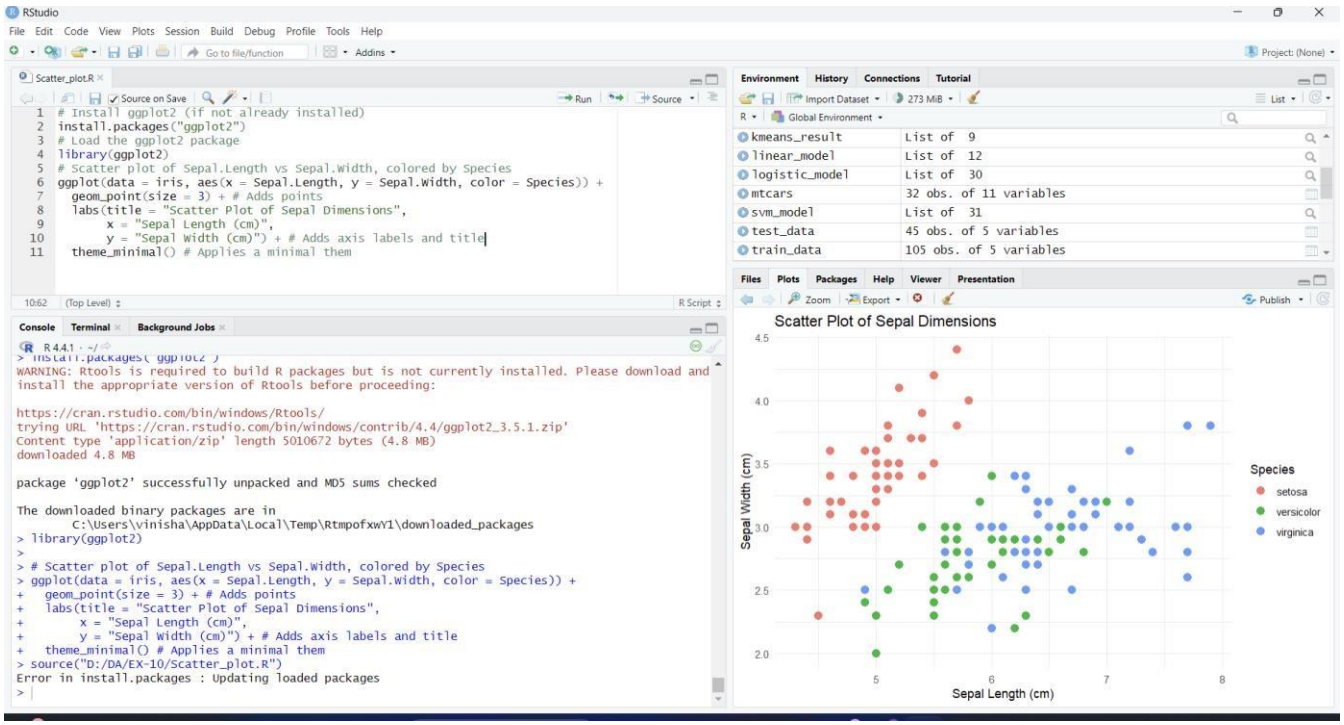
1) SCATTER PLOT

```
# 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:



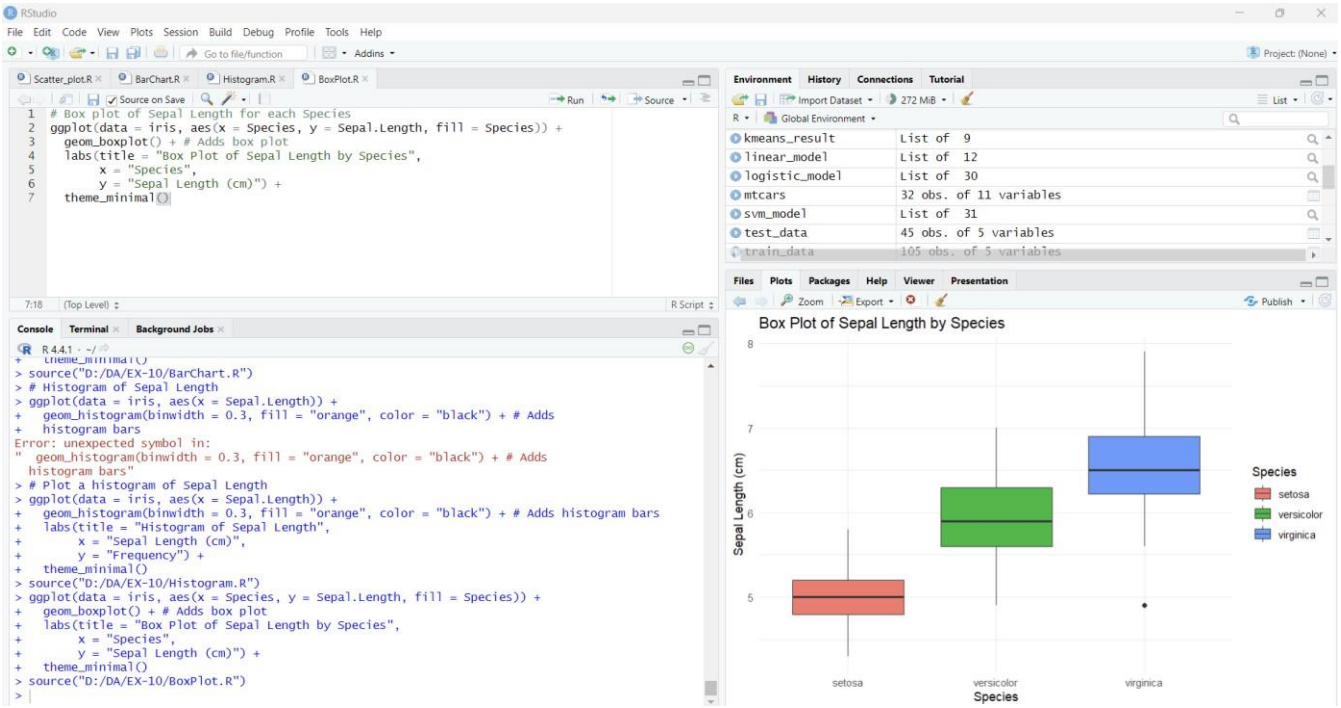
2) BAR CHART

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()

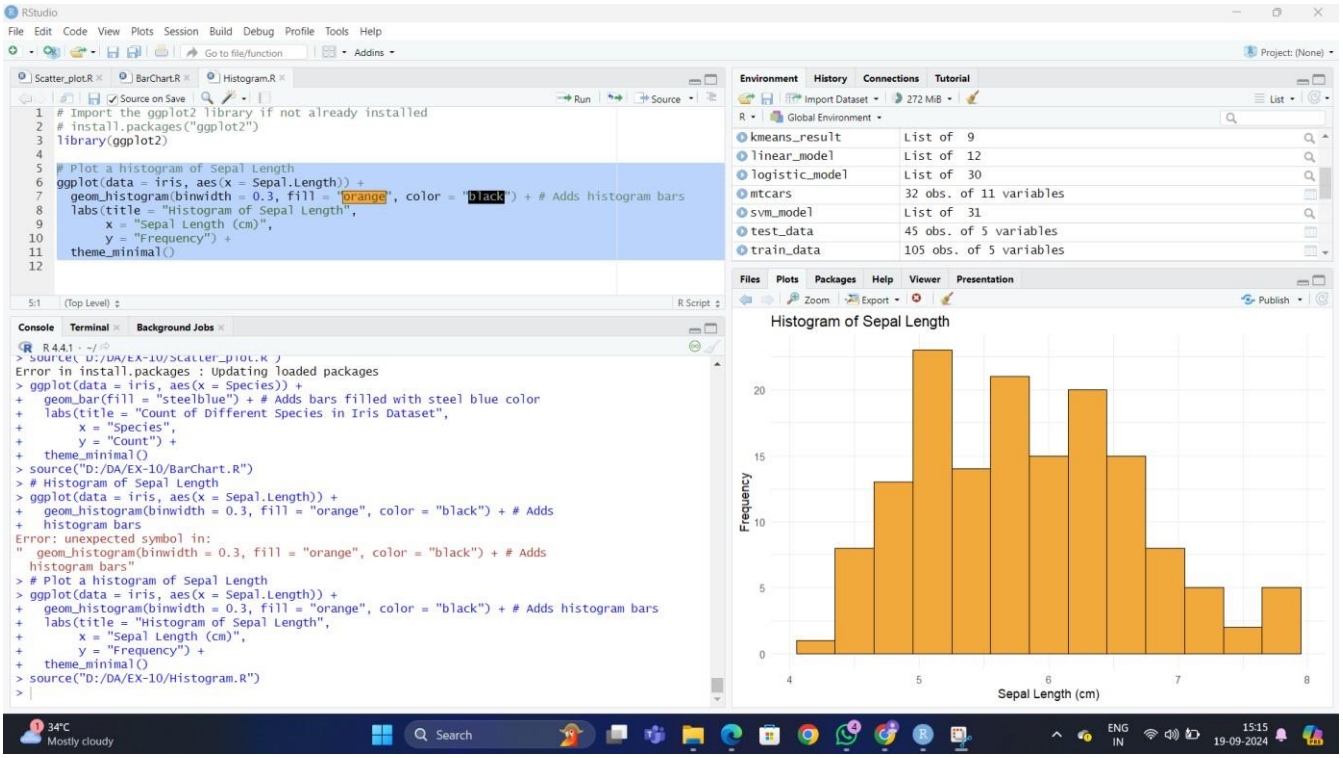
OUTPUT:



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()

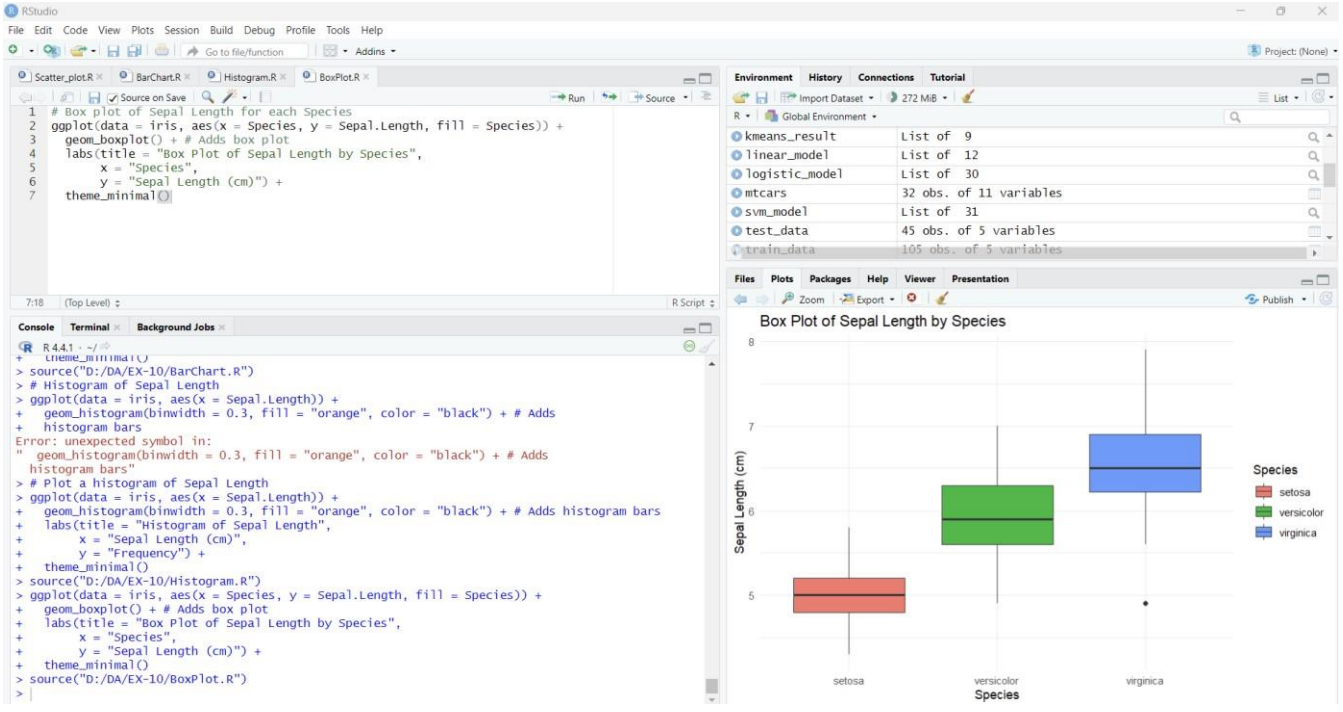
OUTPUT:



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:



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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.