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.
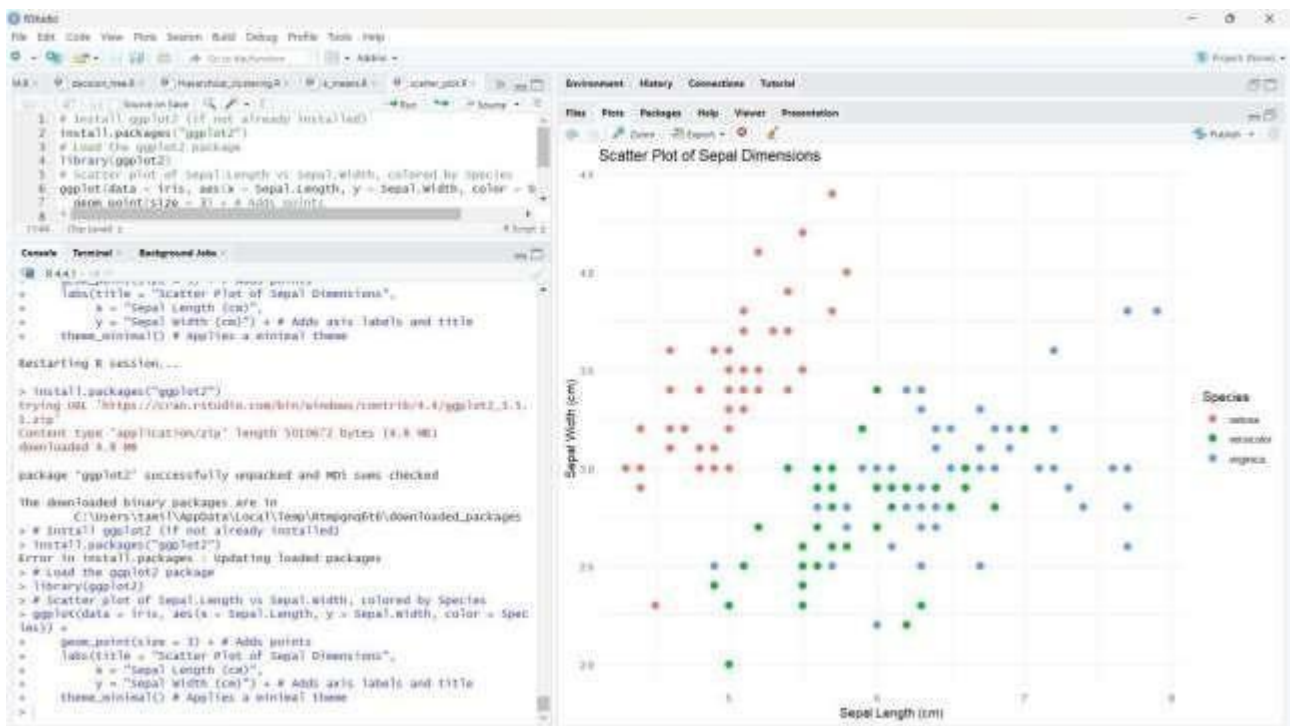
1) SCATTER PLOT

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**

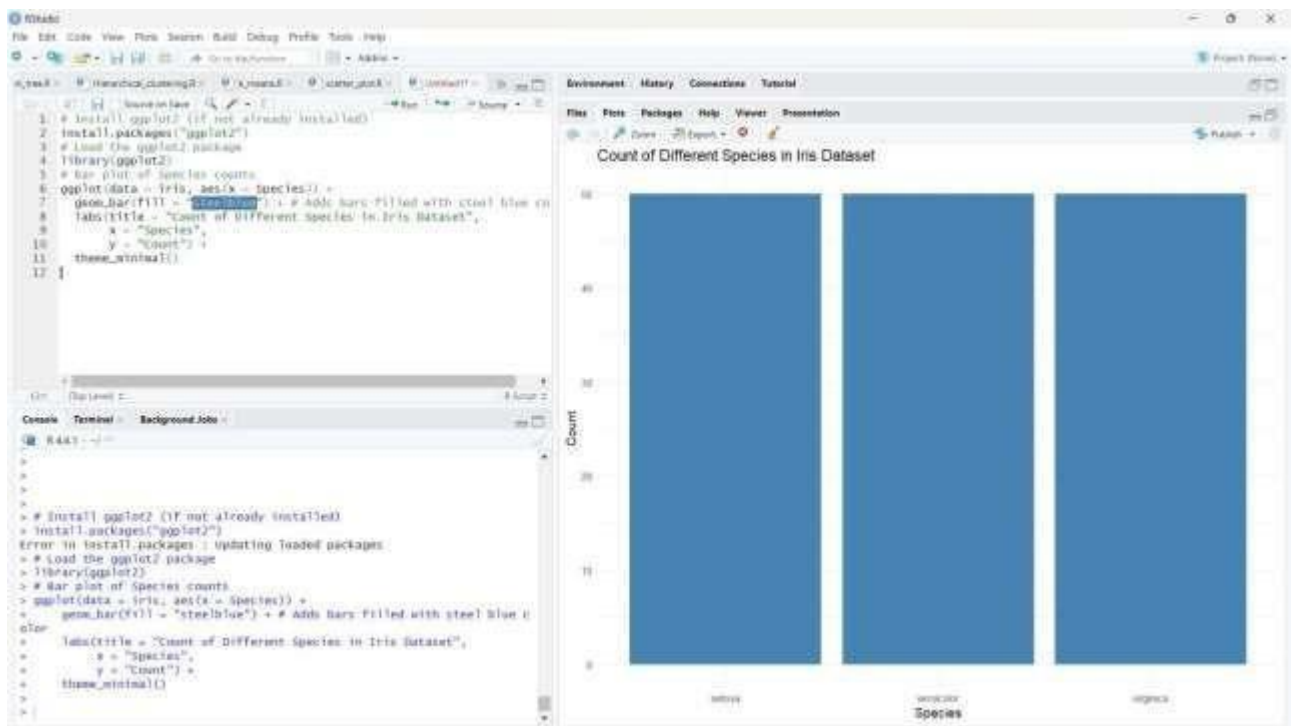# Install ggplot2 (if not already installed) install.packages("ggplot2")

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",
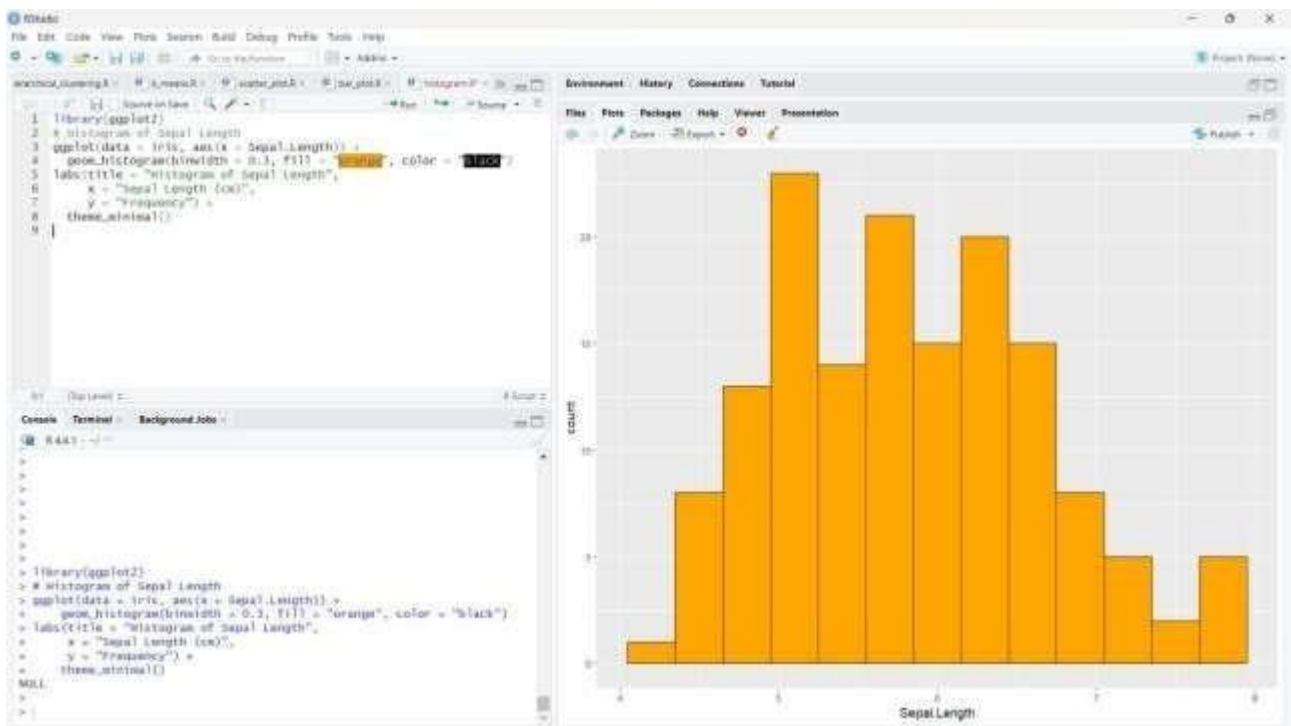   y = "Count") + theme_minimal()

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 =
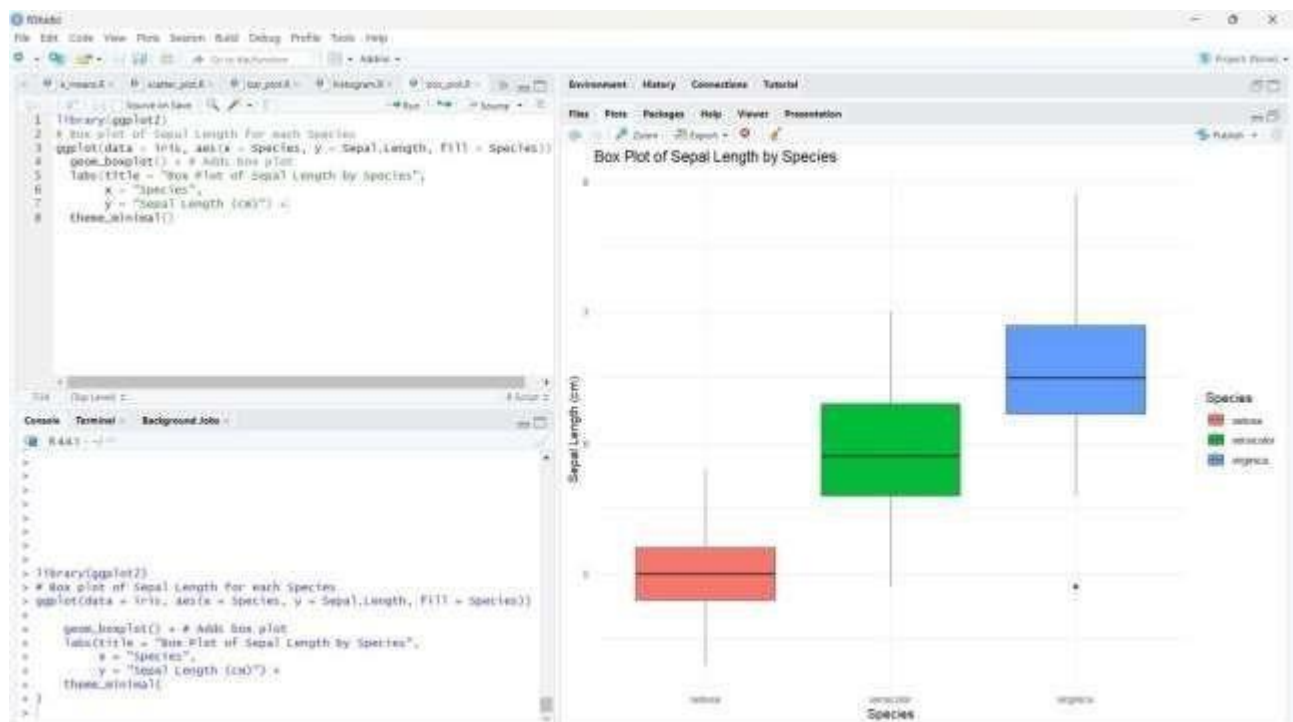
"Frequency") + theme_minimal()

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:**

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.