Visualize Data using Any plotting Framework

AIM:

To Visualize Data using Any plotting Frame work using R programming.

PROCEDURE:

- Install Plotly using pip install plotly if it's not already installed.
- Import the necessary libraries: import plotly.express as px and import pandasas pd.
- Load your dataset into a DataFrame using pd.read_csv() or other data loadingmethods.
  ☐ Explore the dataset to understand its structure, variables, and potentialvisualizations.
- Choose the appropriate Plotly function (e.g., px.scatter, px.bar,px.line) basedon the type of data and the desired plot.
- Define the x and y axes by specifying the columns from the DataFrame.
- Customize the plot by adding titles, labels, color coding, and other plot-specific attributes.
- Add interactive elements like hover data, tooltips, or facet plots for deeperinsights.
- Render the plot using fig.show() to display it in a web browser or inline in anotebook.
- Save the plot to an HTML file or as a static image using fig.write_html() or fig.write_image().

CODE:

Scatter Plot.R:

```
# 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
```

Bar Chart.R:

```
# 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()
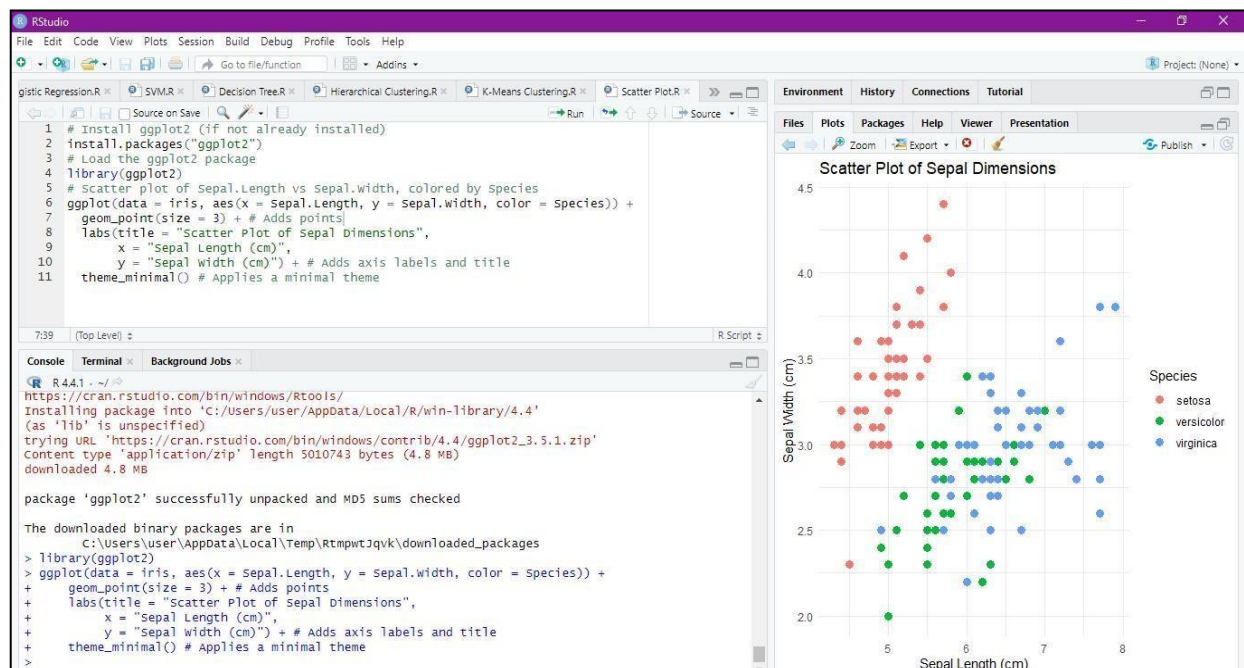
Histogram.R:

```
# Install ggplot2 (if not already installed)
install.packages("ggplot2")
# Load the ggplot2 package
library(ggplot2)
# 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()
```
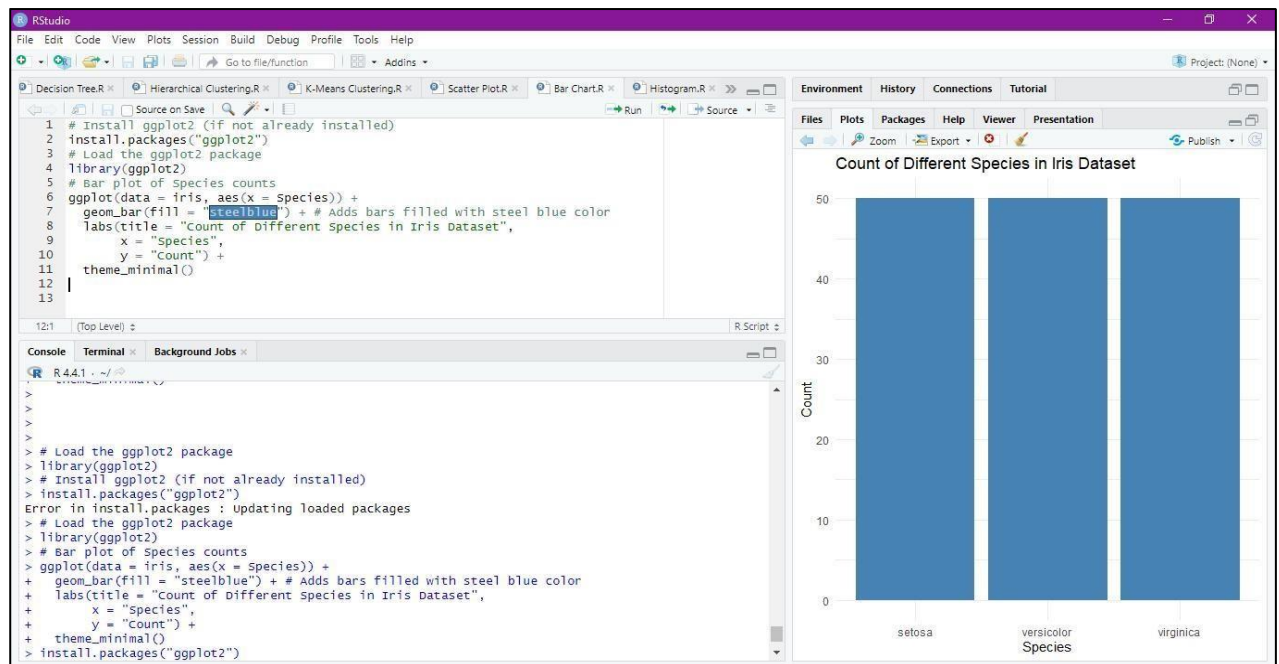
Box Plot.R:

```
# Install ggplot2 (if not already installed)
install.packages("ggplot2")
# Load the ggplot2 package
library(ggplot2)
# 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()
```
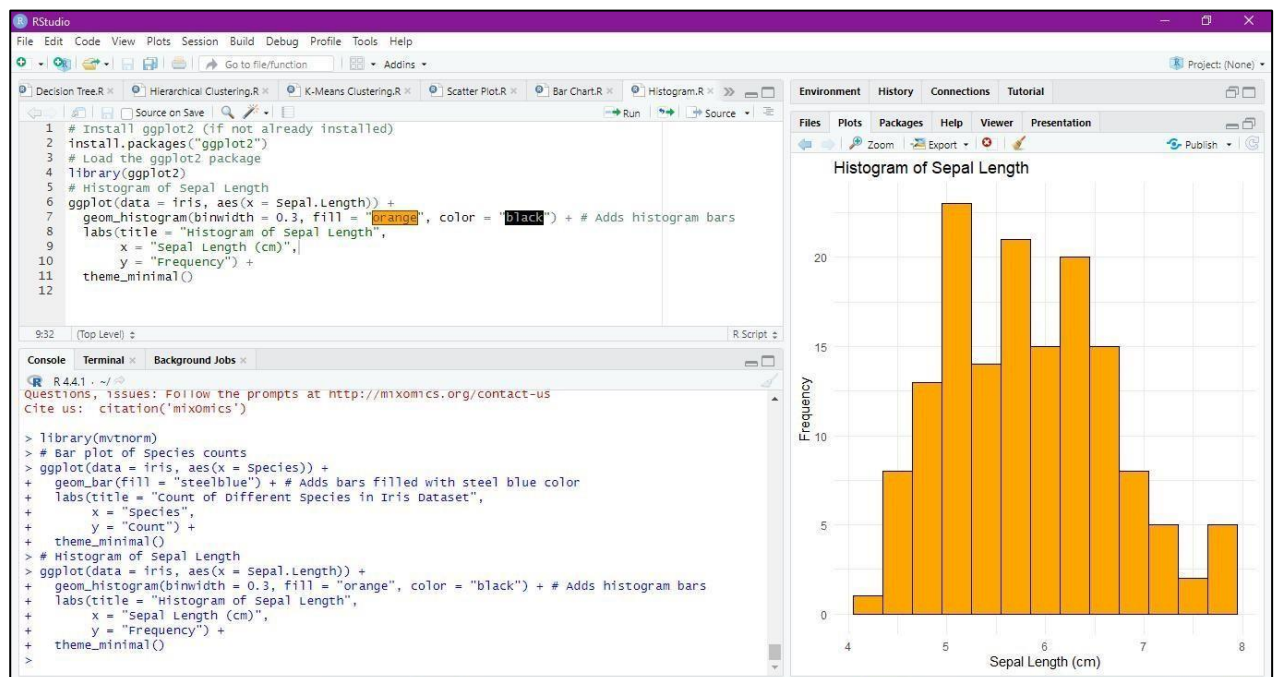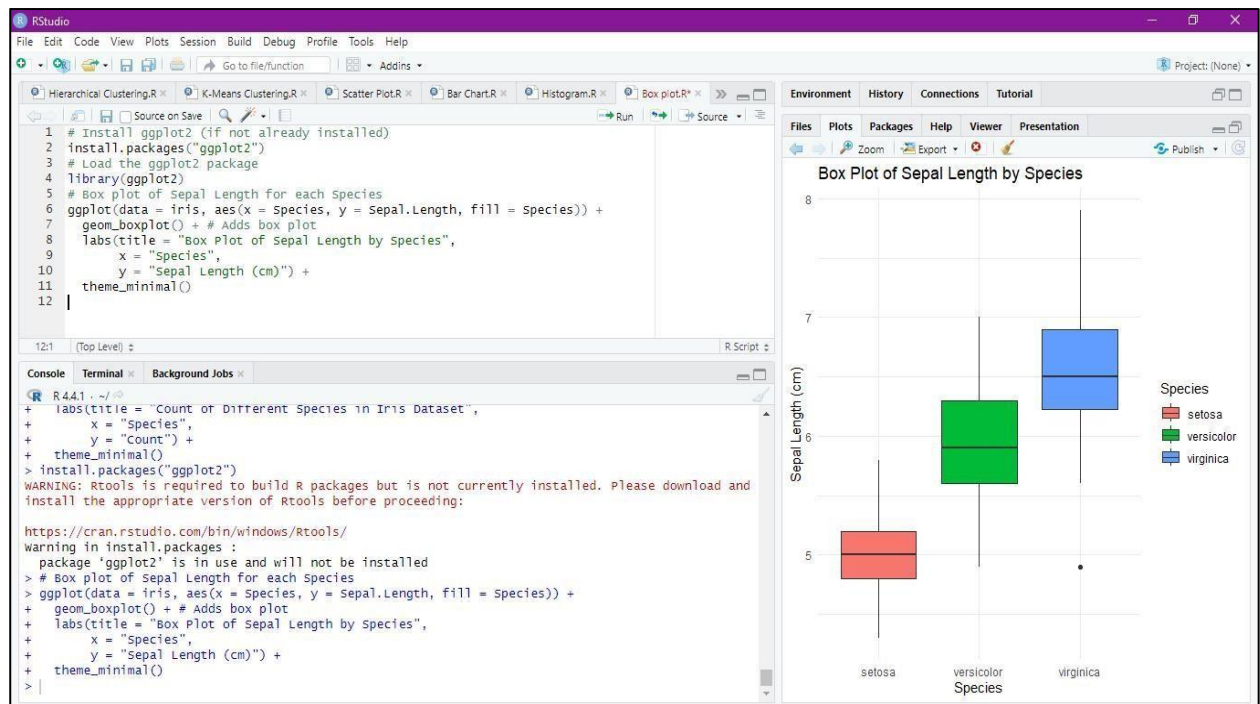
OUTPUT:
Scatter Plot:

Bar Chart:

Histogram:

Box Plot:

RESULT:

Thus, Visualizing Data using any plotting framework using R programming has been successfully executed.