

**Visualize Data using Any plotting Framework****AIM:**

To Visualize Data using Any plotting Framework 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 pandas as pd.
- Load your dataset into a DataFrame using pd.read\_csv() or other data loading methods.
  - Explore the dataset to understand its structure, variables, and potential visualizations.
- Choose the appropriate Plotly function (e.g., px.scatter, px.bar, px.line) based on 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 deeper insights.
- Render the plot using fig.show() to display it in a web browser or inline in a notebook.
- 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:

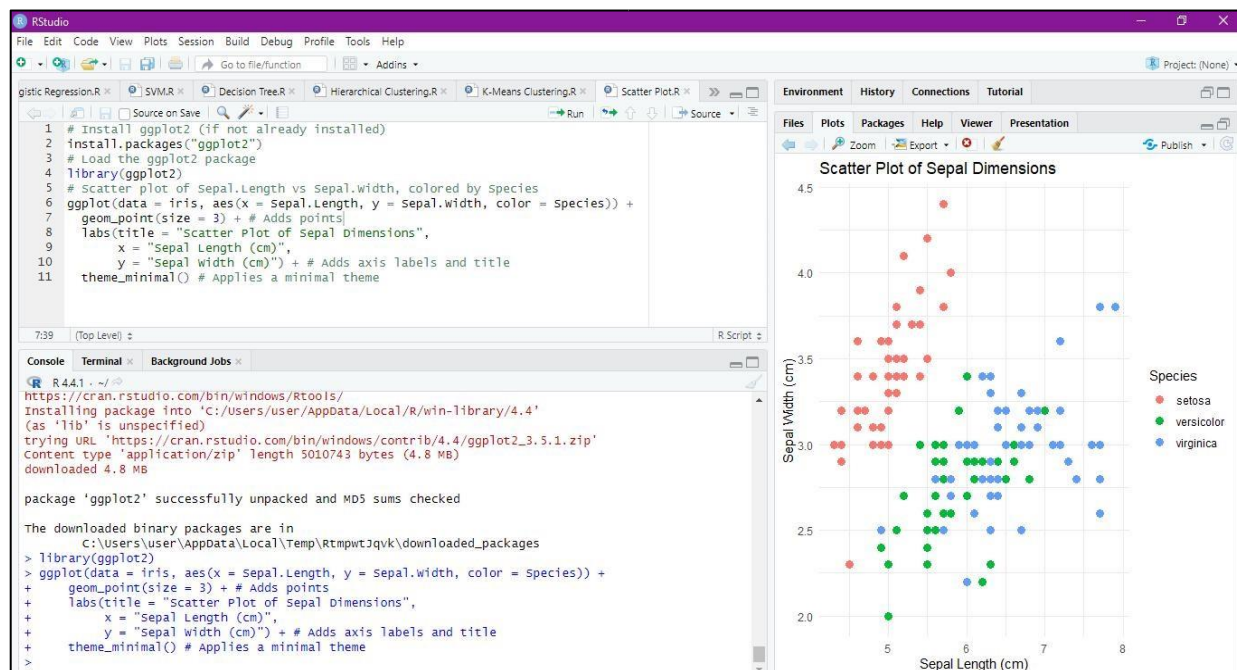
```
# Install ggplot2 (if not already installed)
install.packages("ggplot2")
# Load the ggplot2 package
library(ggplot2)
# Histogram of Sepal Length ggplot(data = iris, aes(x = Sepal.Length)) +
geom_histogram(binwidth = 0.3, fill = "orange", color = "black") + # Adds histogram bars
labs(title = "Histogram of Sepal Length", x = "Sepal Length (cm)", y = "Frequency") +
theme_minimal()
```

### Box Plot.R:

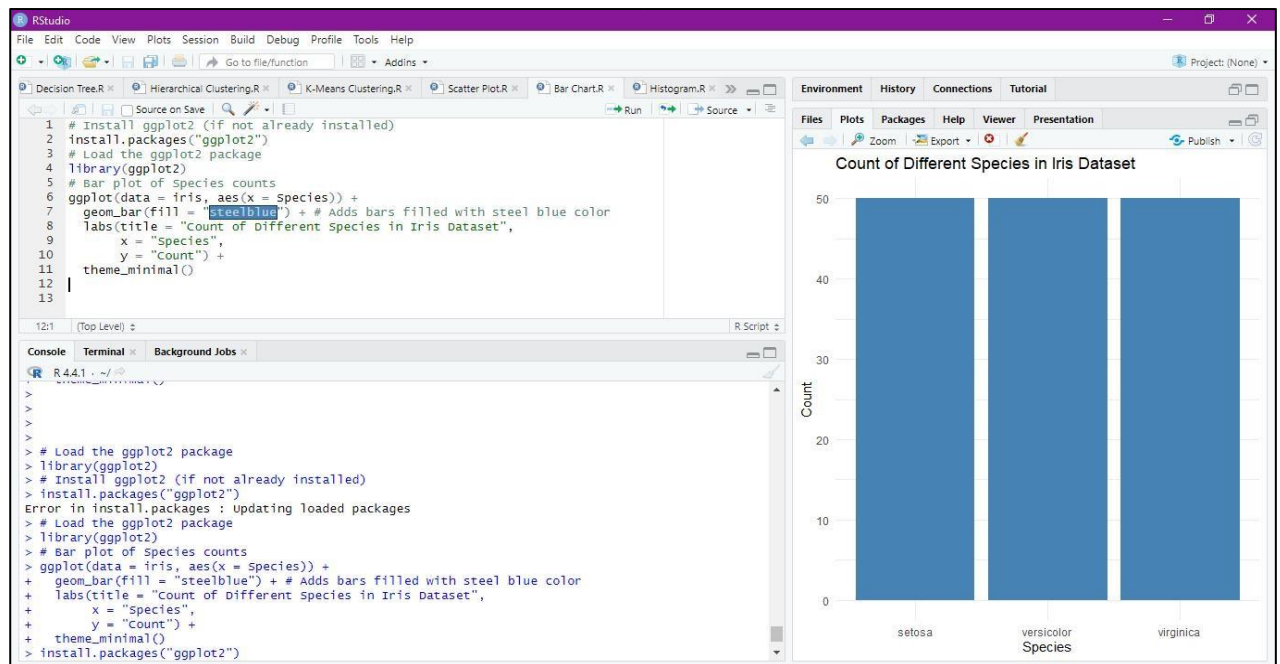
```
# Install ggplot2 (if not already installed)
install.packages("ggplot2")
# Load the ggplot2 package
library(ggplot2)
# Box plot of Sepal Length for each Species ggplot(data = iris, aes(x =
Species, y = Sepal.Length, fill = Species)) +
geom_boxplot() + # Adds box plot labs(title =
"Box Plot of Sepal Length by Species", x =
"Species", y = "Sepal Length (cm)") +
theme_minimal()
```

## OUTPUT:

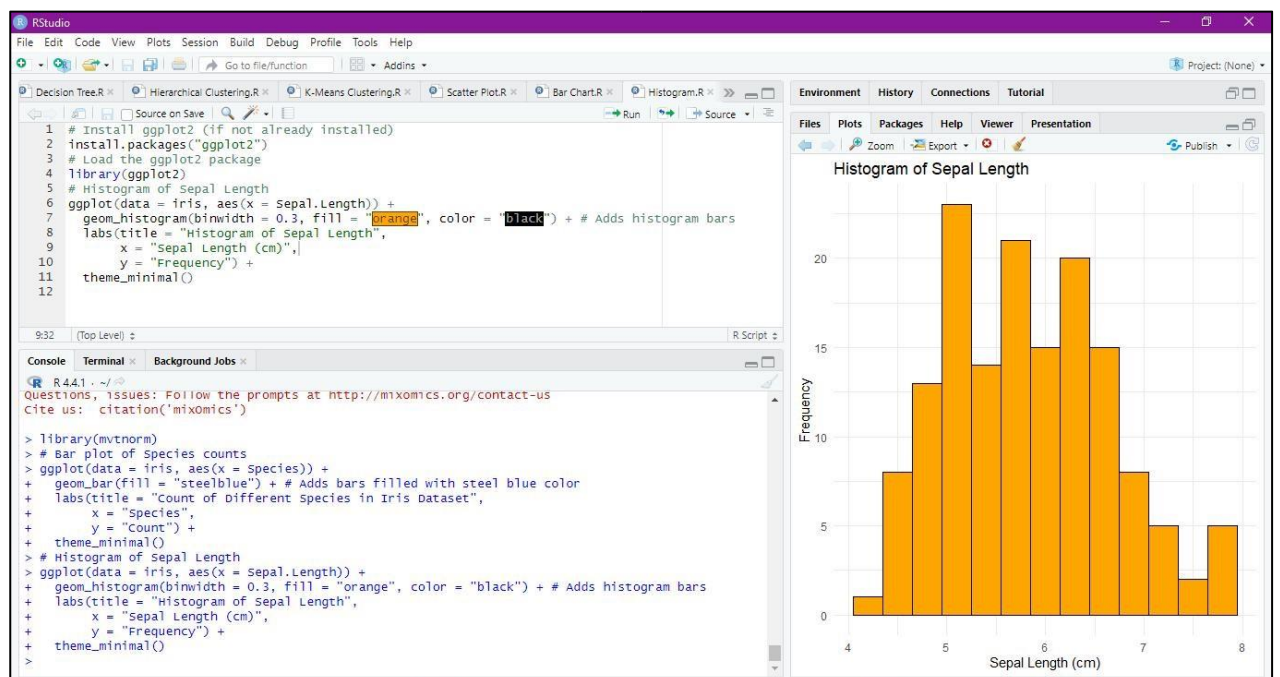
### Scatter Plot:



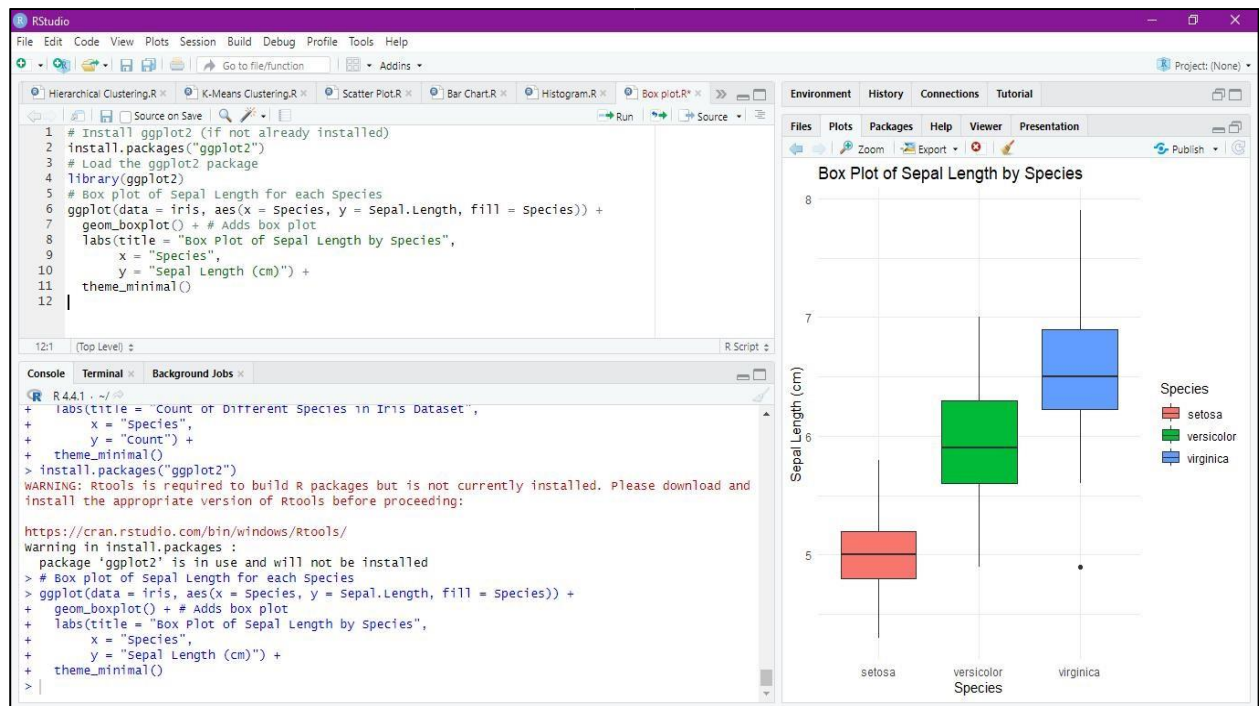
### Bar Chart:



## Histogram:



## Box Plot:



## RESULT:

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