**Ex No 10**

**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 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")

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",

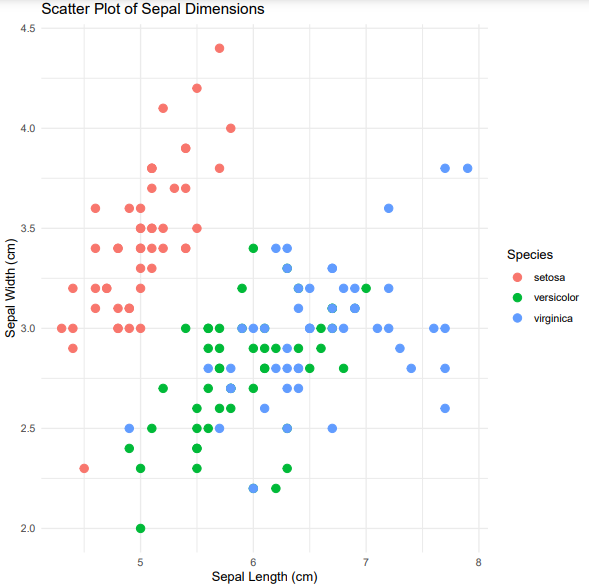
x = "Species",

y = "Sepal Length (cm)") +

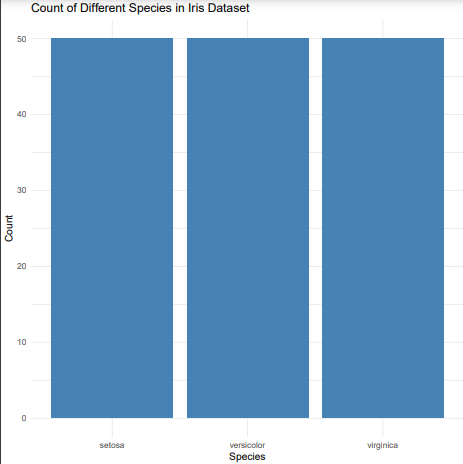
theme\_minimal()

**OUTPUT:**

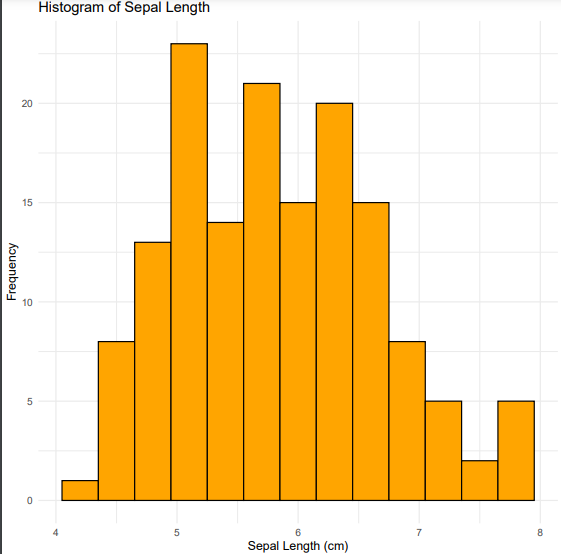
**Scatter Plot:**

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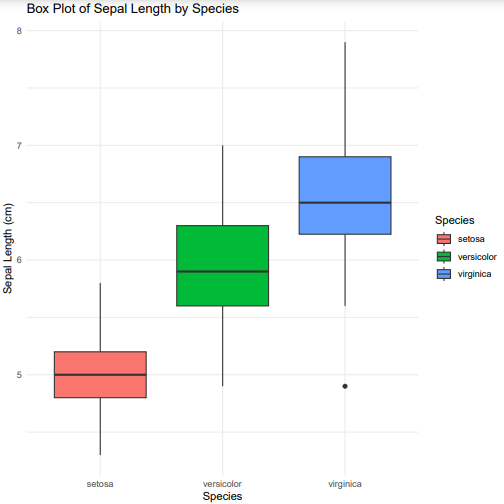
**Bar Chart:**

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**Histogram:**



**Box Plot:**

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**RESULT:**

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