

VISUALIZE DATA USING ANY PLOTTING FRAMEWORK

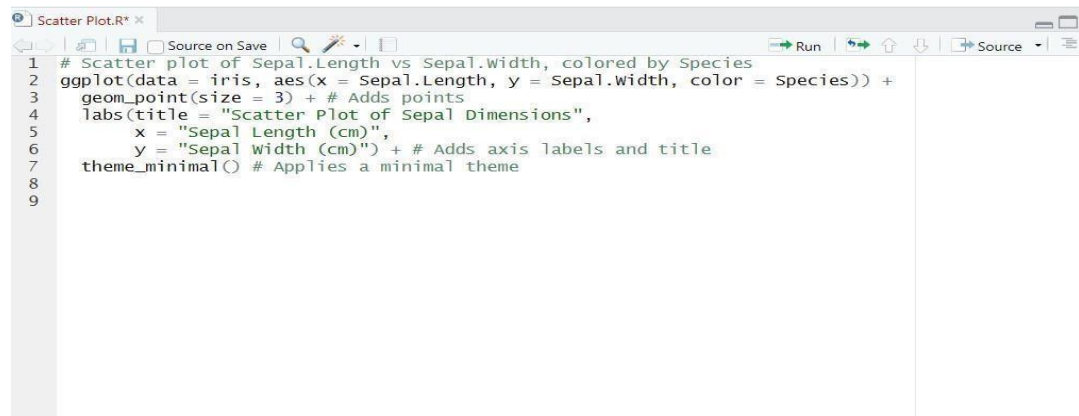
AIM:

To implement a visualize Data using any plotting framework using R Studio.

1) SCATTER PLOT

```
# 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:

A screenshot of the R Studio interface. The title bar shows 'Scatter Plot.R*'. The source editor contains the following R code:

```
1 # Scatter plot of Sepal.Length vs Sepal.Width, colored by Species  
2 ggplot(data = iris, aes(x = Sepal.Length, y = Sepal.Width, color = Species)) +  
3   geom_point(size = 3) + # Adds points  
4   labs(title = "Scatter Plot of Sepal Dimensions",  
5         x = "Sepal Length (cm)",  
6         y = "Sepal Width (cm)") + # Adds axis labels and title  
7   theme_minimal() # Applies a minimal theme  
8  
9
```

The code is line-numbered from 1 to 9. The R Studio toolbar is visible at the top, including buttons for Run, Source, and other standard IDE functions.



2) BAR CHART

```
# Install ggplot2 (if not already installed)
```

```
install.packages("ggplot2")
```

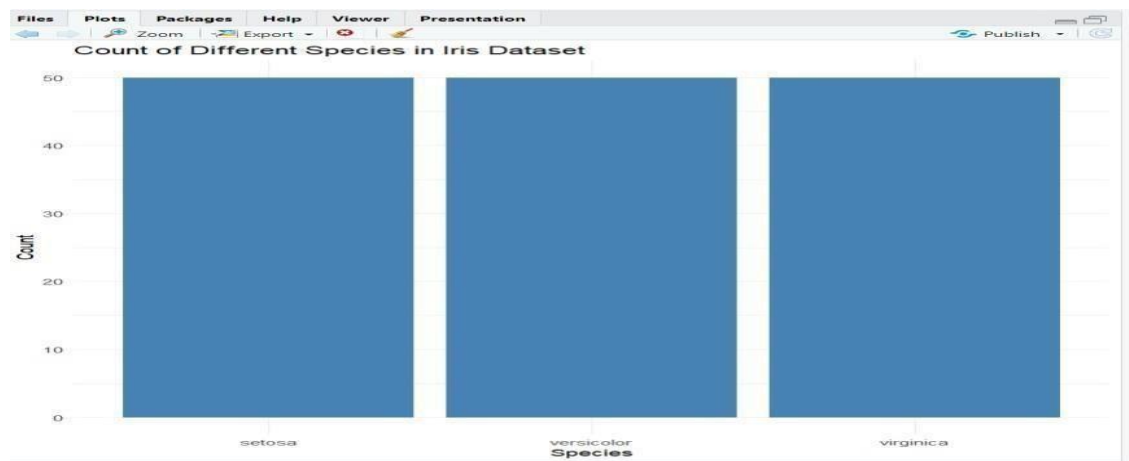
```
# Load the ggplot2 package library(ggplot2)
```

```
# 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:
```

```

Scatter Plot.R x Bar Chart.R x
1 # Bar plot of Species counts
2 ggplot(data = iris, aes(x = Species)) +
3   geom_bar(fill = "steelblue") + # Adds bars filled with steel blue color
4   labs(title = "Count of Different Species in Iris Dataset",
5         x = "Species",
6         y = "Count") +
7   theme_minimal()
8 |

```



3) HISTOGRAM

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") +
```

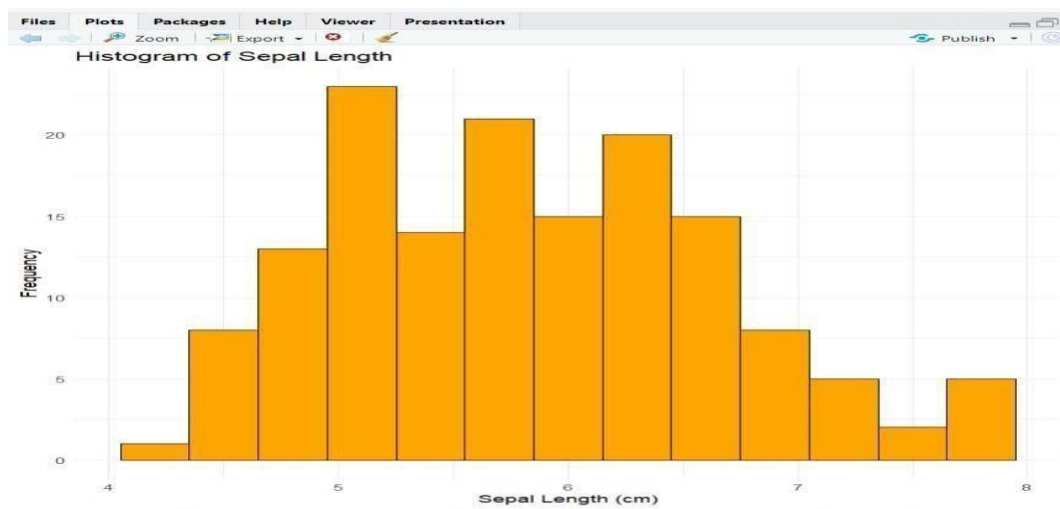
```
  theme_minimal()
```

OUTPUT:

```

Scatter Plot.R x Bar Chart.R x Histogram.R x
1 # Histogram of Sepal Length
2 ggplot(data = iris, aes(x = Sepal.Length)) +
3   geom_histogram(binwidth = 0.3, fill = "orange", color = "black") +
4   # Adds histogram bars
5   labs(title = "Histogram of Sepal Length",
6         x = "Sepal Length (cm)",
7         y = "Frequency") +
8   theme_minimal()
9 |

```

**4) BOX PLOT**

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:

```
1 # Box plot of Sepal Length for each Species
2 ggplot(data = iris, aes(x = Species, y = Sepal.Length, fill = Species)) +
3   geom_boxplot() + # Adds box plot
4   labs(title = "Box Plot of Sepal Length by Species",
5        x = "Species",
6        y = "Sepal Length (cm)") +
7   theme_minimal()
8
```

**RESULT:**

Thus, the visualize Data using any plotting framework using R Studio have been successfully executed.