

VISUALIZE DATA USING ANY PLOTTING FRAMEWORK

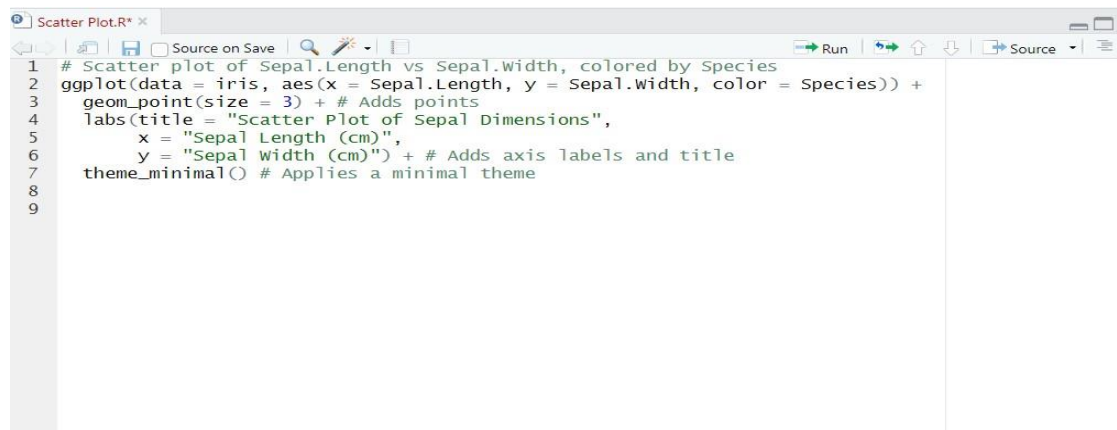
AIM:

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 top pane shows a script editor with R code for creating a scatter plot. The code uses ggplot2 to plot Sepal.Length against Sepal.Width, colored by Species. The plot is titled "Scatter Plot of Sepal Dimensions" and has axis labels "Sepal Length (cm)" and "Sepal Width (cm)". The theme is set to theme_minimal(). The bottom pane is empty, showing the output area.

```
Scatter Plot.R* x
Source on Save
Run
Source
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
```



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



3) HISTOGRAM

Install ggplot2 (if not already installed)

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

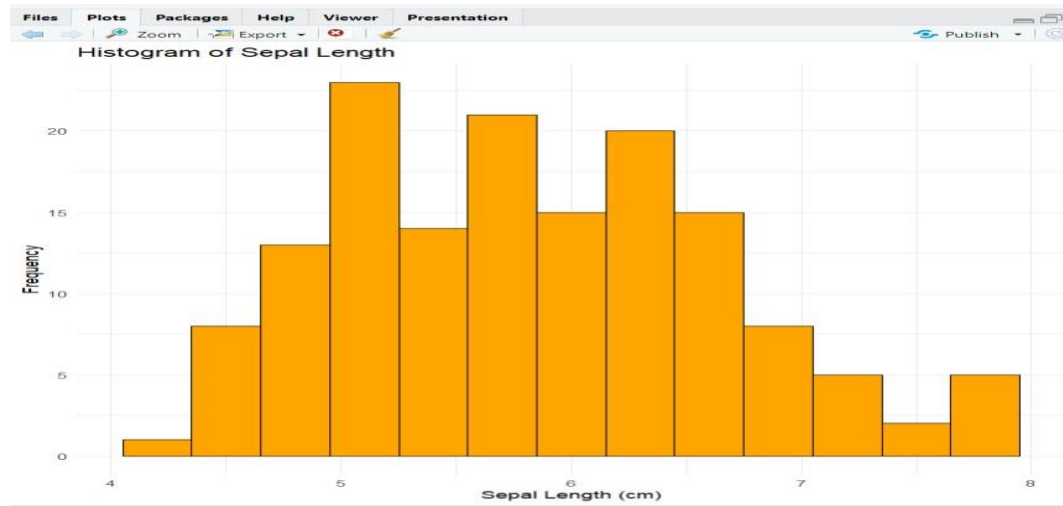
Load the ggplot2 package library(ggplot2)

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:

```
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:

The image shows the R Studio interface with the R script editor open. The script contains the following code:

```
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
```

The status bar at the bottom indicates the cursor is at line 8, column 1, on the (Top Level) of the R Script.

**RESULT:**

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