

VISUALIZE DATA USING ANY PLOTTING FRAMEWORK

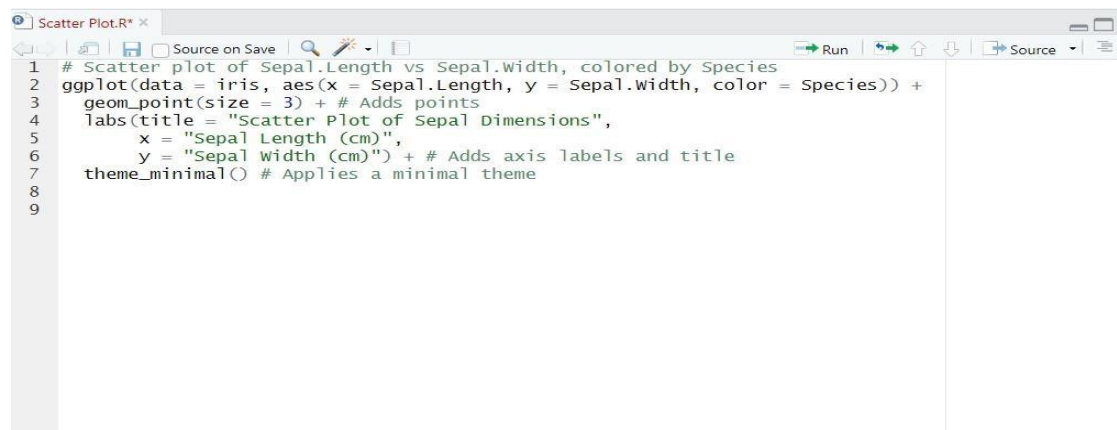
AIM:

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 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 bottom pane is empty, showing the output area.



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)) +
```

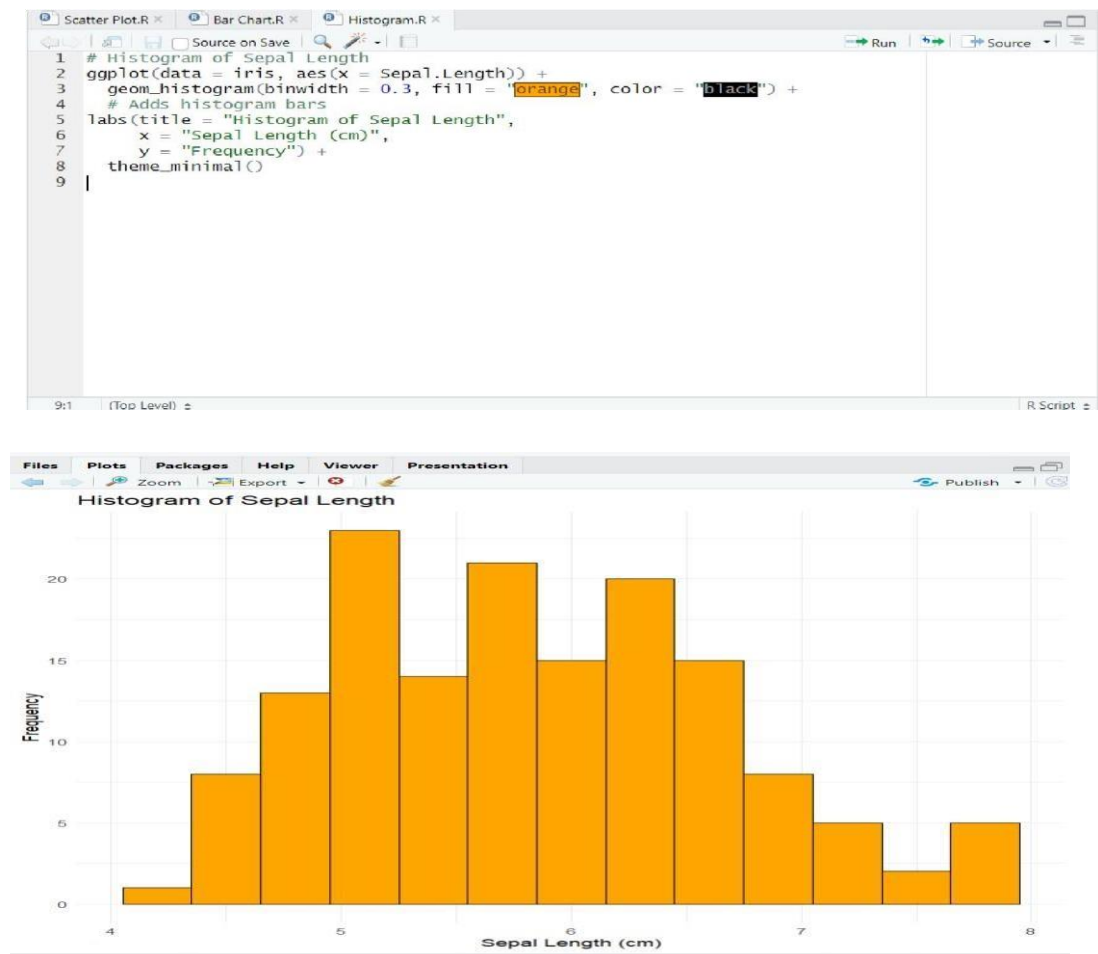
```
  geom_histogram(binwidth = 0.3, fill = "orange", color = "black") + # Adds
```

```
  histogram bars  labs(title = "Histogram of Sepal
```

```
Length", x = "Sepal Length (cm)", y
```

```
= "Frequency") +
```

```
theme_minimal()
```

OUTPUT:**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.