

VISUALIZE DATA USING ANY PLOTTING FRAMEWORK

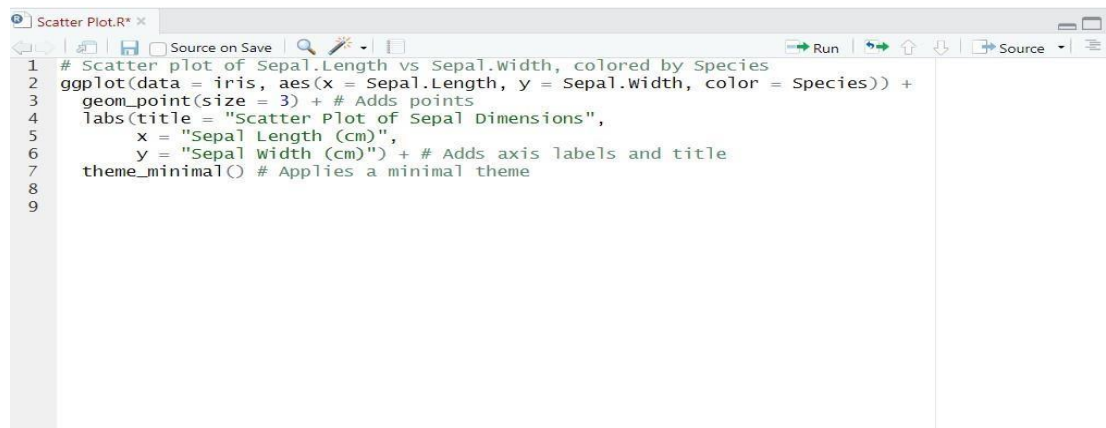
AIM:

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*' with a close button. The menu bar includes 'Source on Save', 'Run', 'Source', and a 'Source' dropdown. The code 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
```



2) BAR CHART

Install ggplot2 (if not already installed)

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

Load the ggplot2 package library(ggplot2)

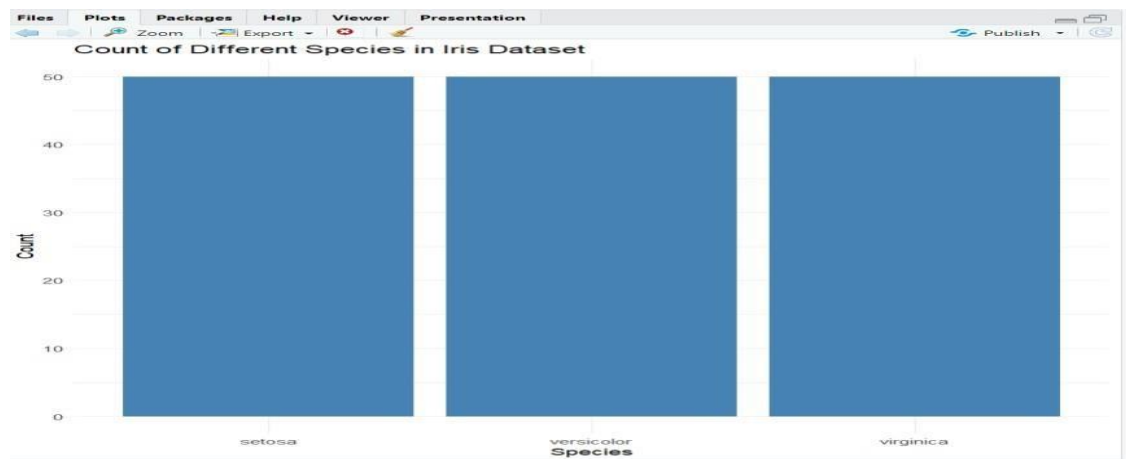
Bar plot of Species counts ggplot(data

```
= 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:
```

```
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)

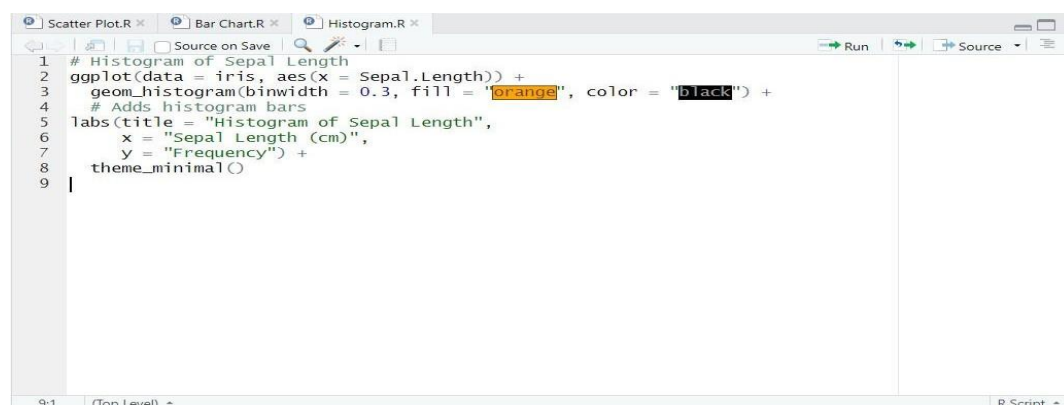
```
install.packages("ggplot2")
```

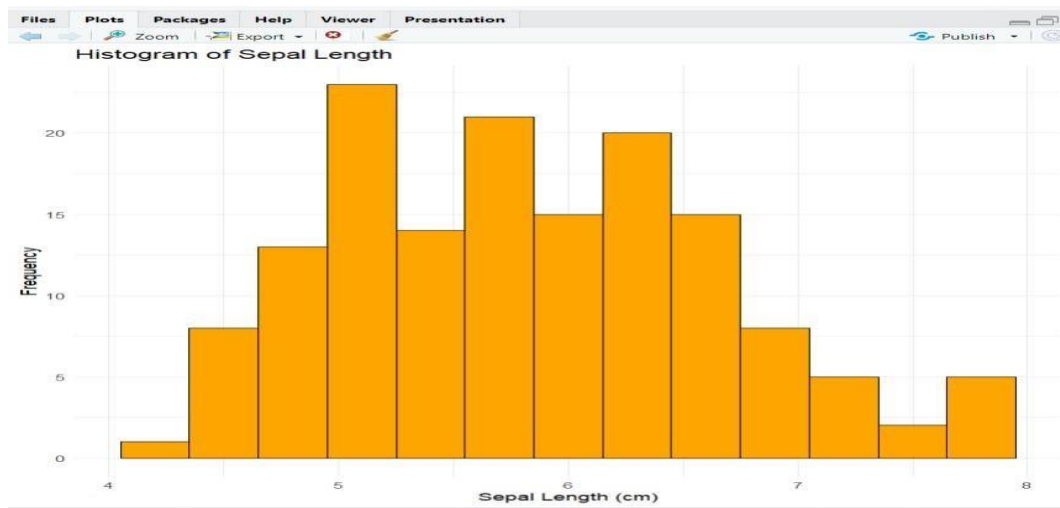
Load the ggplot2 package library(ggplot2)

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:

A screenshot of an R script editor window with 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 editor window has tabs for "Scatter Plot.R", "Bar Chart.R", "Histogram.R", and "Box Plot.R". The status bar at the bottom shows "8:1 (Top Level)" and "R Script".

**RESULT:**

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