

VISUALIZE DATA USING ANY PLOTTING FRAMEWORK

AIM:

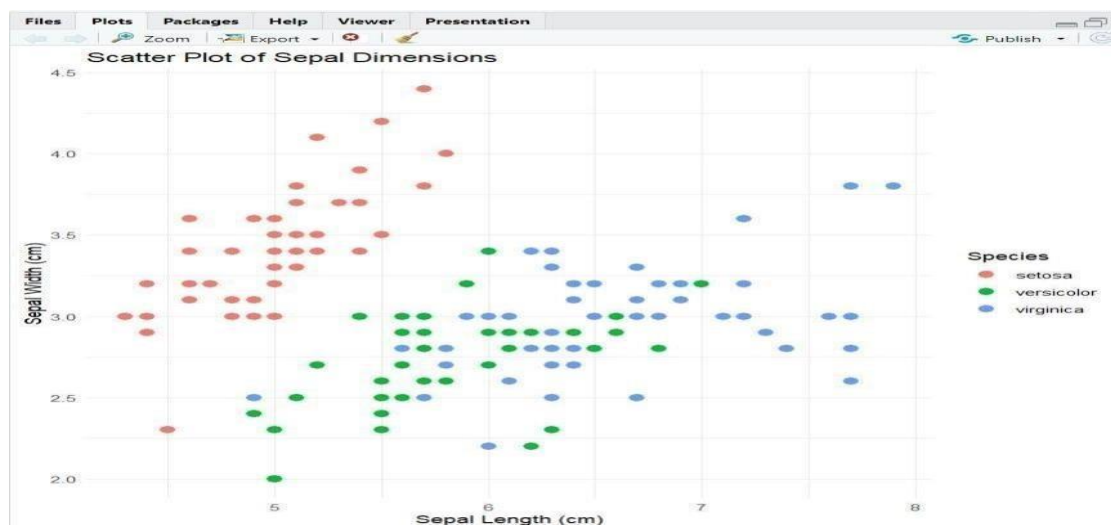
To implement a visualize Data using any plotting framework using R Studio.

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:

```
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
```



```
ggplot2 (if not already installed)
install.packages("ggplot2")
```

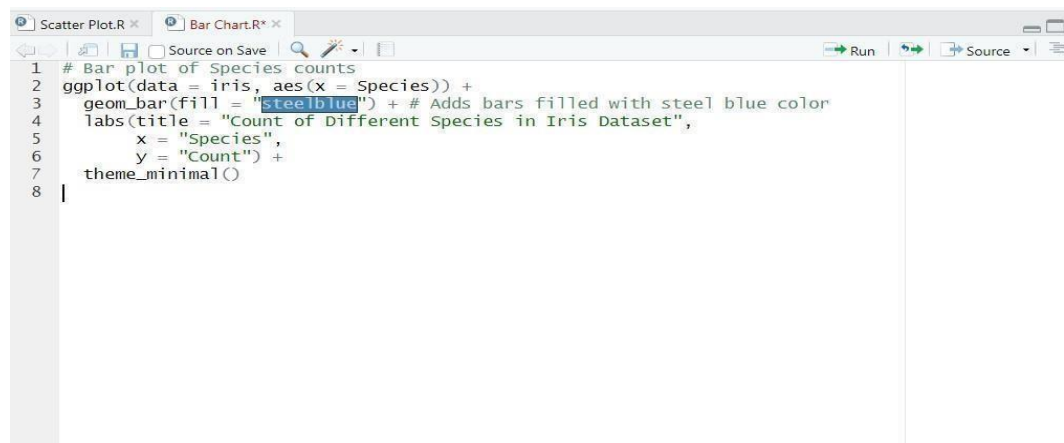
2) BAR CHART

```
# Install
```

```
# 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:
```

A screenshot of an RStudio script editor window. The window has two tabs: 'Scatter Plot.R' and 'Bar Chart.R*'. The 'Bar Chart.R*' tab is active, showing a script with 8 lines of R code. The code is for creating a bar chart of species counts from the iris dataset. The code is as follows:

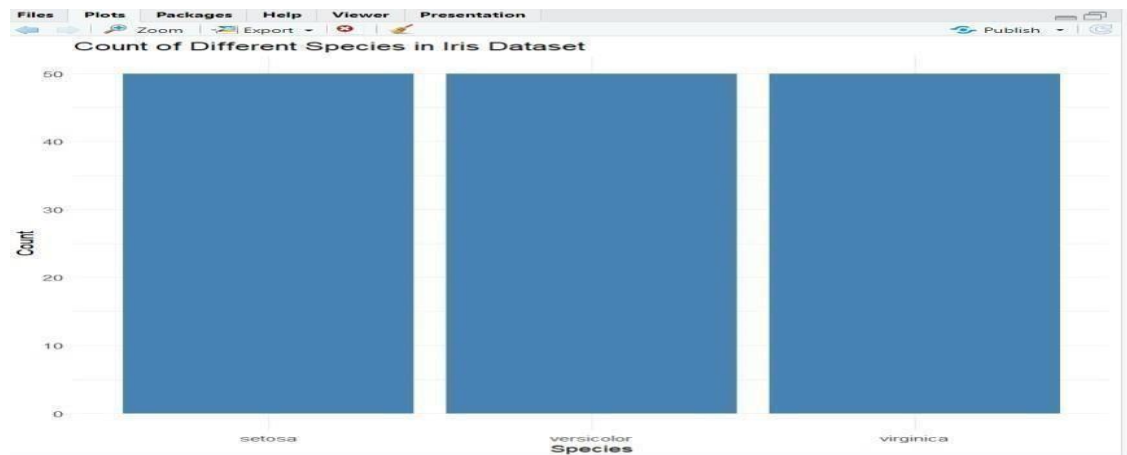
```
1 # Bar plot of Species counts
2 ggplot(data = iris, aes(x = Species)) +
3   geom_bar(fill = "steelblue") + # Adds bars filled with steel blue color
4   labs(title = "Count of Different Species in Iris Dataset",
5         x = "Species",
6         y = "Count") +
7   theme_minimal()
8 |
```

The script editor includes a toolbar with icons for file operations (save, open, etc.), a search icon, and buttons for 'Run', 'Source', and 'Environment'. The 'Run' button is highlighted with a green arrow.

```

ggplot2 (if not already installed)
install.packages("ggplot2")

```



3) HISTOGRAM

```
# Install
```

```
# 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:

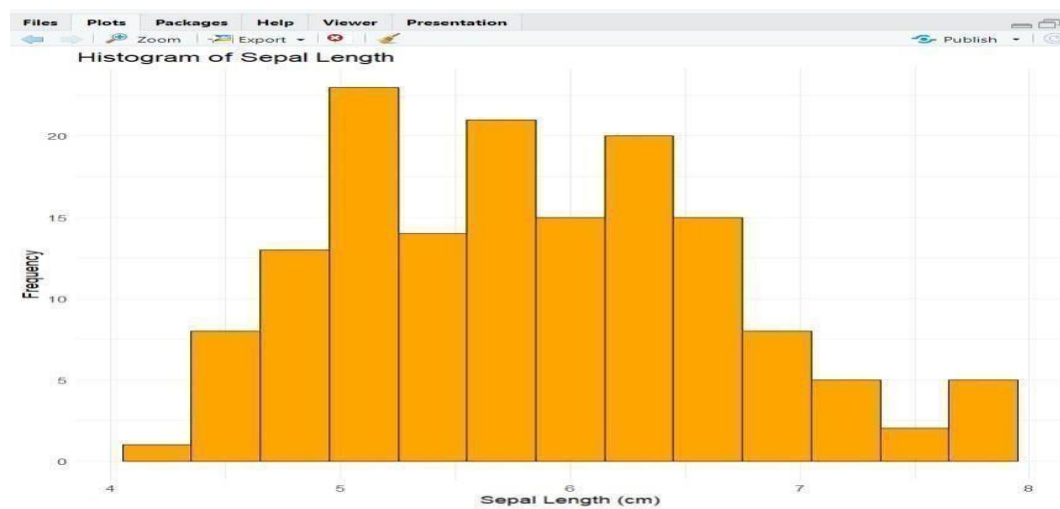
ggplot2 (if not already installed)

install.packages("ggplot2")

```

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

Load the ggplot2 package library(ggplot2)

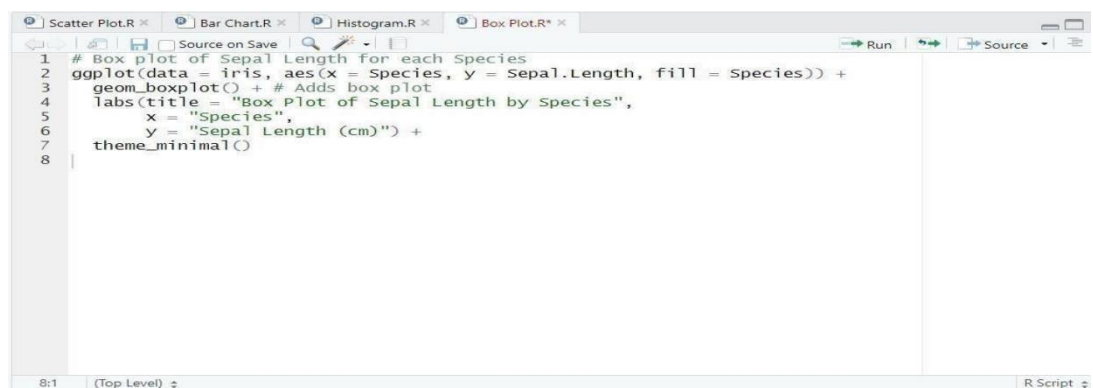
Box plot of Sepal Length for each Species ggplot(data = iris, aes(x = Species, y = Sepal.Length, fill = Species))

+ geom_boxplot() + # Adds box plot labs(title = "Box Plot of

```
ggplot2 (if not already installed)

install.packages("ggplot2")

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.