

VISUALIZE DATA USING ANY PLOTTING FRAMEWORK

Aim:

To visualize data using plotting framework like scatter plot, Bar chart, Histogram and Box Plot using RStudio.

Procedure:

1) SCATTER PLOT

Install ggplot2 (if not already installed)

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

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

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
```

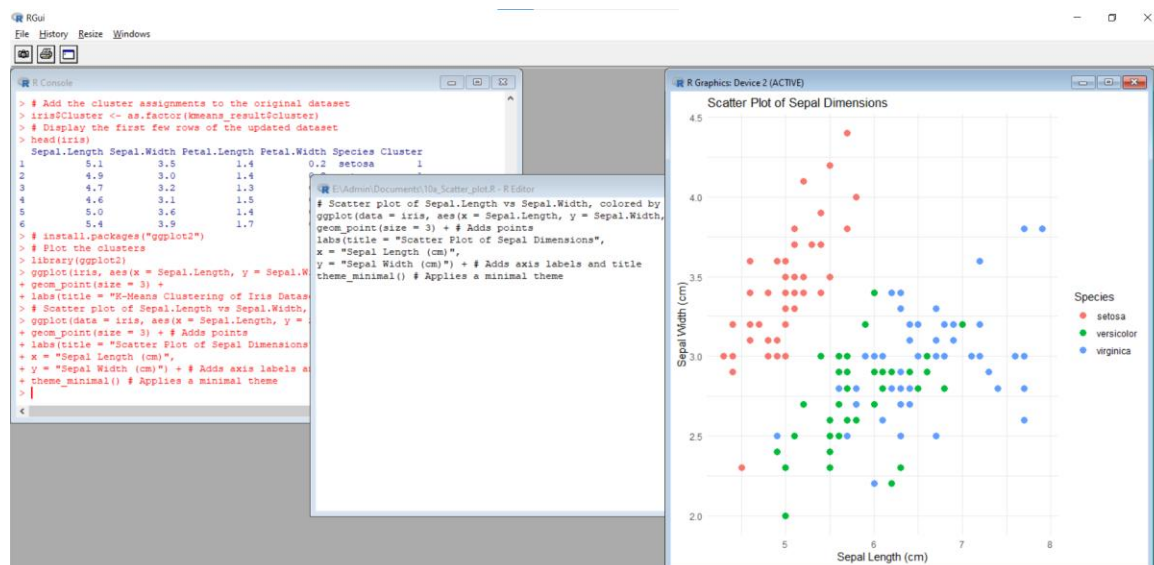
```
labs(title = "Scatter Plot of Sepal Dimensions",
```

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

```
y = "Sepal Width (cm)") + # Adds axis labels and title
```

```
theme_minimal() # Applies a minimal theme
```

Output:



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
```

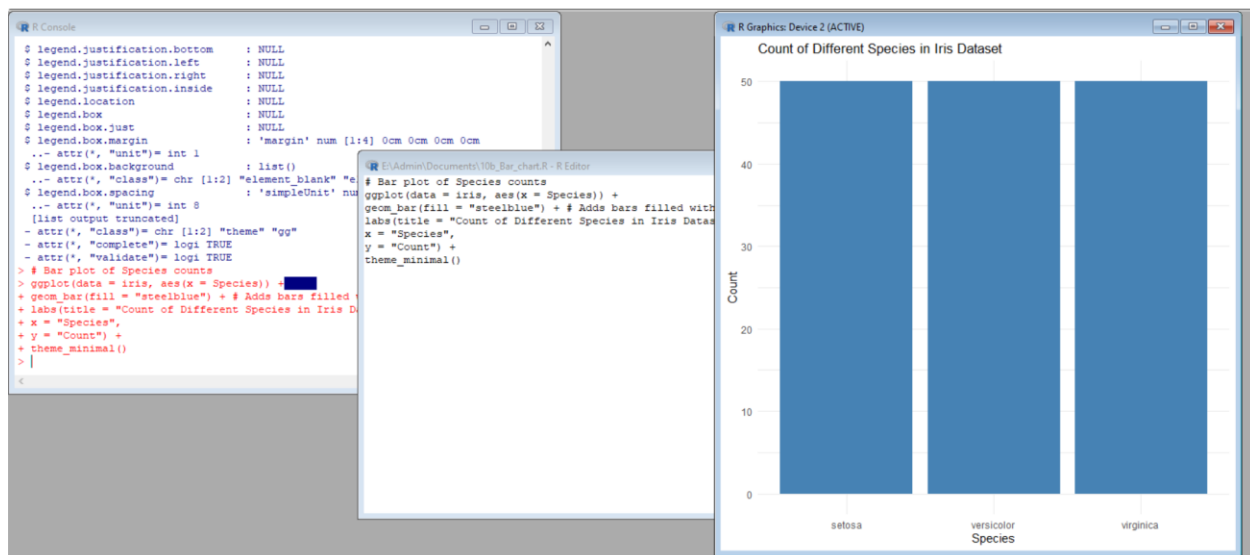
```
labs(title = "Count of Different Species in Iris Dataset",
```

```
x = "Species",
```

```
y = "Count") +
```

```
theme_minimal()
```

Output:



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
```

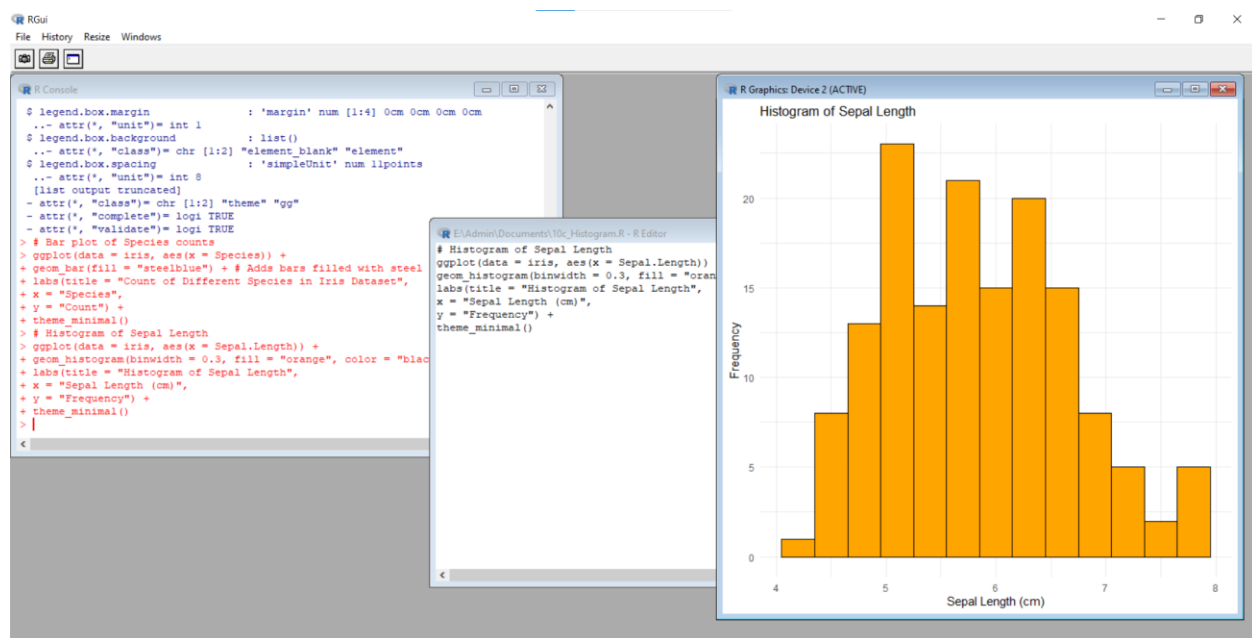
```
labs(title = "Histogram of Sepal Length",
```

```
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:



Result:

Thus, data was visualized using Scatter plot, Bar chart, Histogram and Box Plot using R and RStudio successfully.