Ex.No -10 Roll No - 210701134

Visualize Data using Any plotting Framework

AIM:

To Visualize Data using Any plotting Frame work using R programming.

PROCEDURE:

1. Install Plotly using pip install plotly if it's not already installed.
2. Import the necessary libraries: import plotly.express as px and import pandas as pd.
3. Load your dataset into a DataFrame using pd.read_csv() or other data loading methods.
4. Explore the dataset to understand its structure, variables, and potential visualizations.
5. Choose the appropriate Plotly function (e.g., px.scatter, px.bar,px.line) based on the type of data and the desired plot.
6. Define the x and y axes by specifying the columns from the DataFrame.
7. Customize the plot by adding titles, labels, color coding, and other plot-specific attributes.
8. Add interactive elements like hover data, tooltips, or facet plots for deeper insights.
9. Render the plot using fig.show() to display it in a web browser or inline in a notebook.
10. Save the plot to an HTML file or as a static image using fig.write_html() or fig.write_image().

CODE:

a) SCATTER PLOT

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

```
R Console

R version 4.4.1 (2024-06-14) -- "Race for Your Life"
Copyright (C) 2024 The R Foundation for Statistical Computing
Platform: aarch64-apple-darwin20

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  Natural language support but running in an English locale

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

[R.app GUI 1.80 (8416) aarch64-apple-darwin20]

[Workspace restored from /Users/mohamedhussainshahulhameed/.RData]
> SCATTER PLOT
Error: unexpected symbol in "SCATTER PLOT"
> # Install ggplot2 (if not already installed)
> install.packages("ggplot2")
--- Please select a CRAN mirror for use in this session ---
Error in if (res > nrow(m)) { : argument is of length zero
> # Load the ggplot2 package
> library(ggplot2)
> # 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
>
```

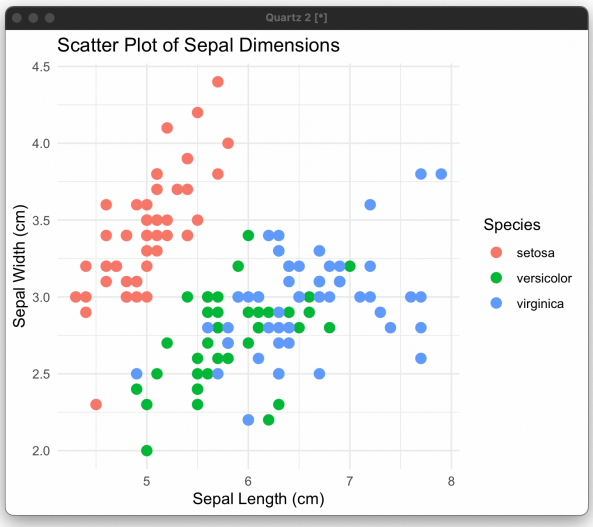

---

b)Bar Graph

CODE:

```
> # 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:

```
R Console

R version 4.4.1 (2024-06-14) -- "Race for Your Life"
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[R.app GUI 1.80 (8416) aarch64-apple-darwin20]

[Workspace restored from /Users/mohamedhussainshahulhameed/.RData]
[History restored from /Users/mohamedhussainshahulhameed/.Rapp.history]

> # Install ggplot2 (if not already installed)
> install.packages("ggplot2")
--- Please select a CRAN mirror for use in this session ---
Error in if (res > nrow(m)) { : argument is of length zero
> # 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()
>
```

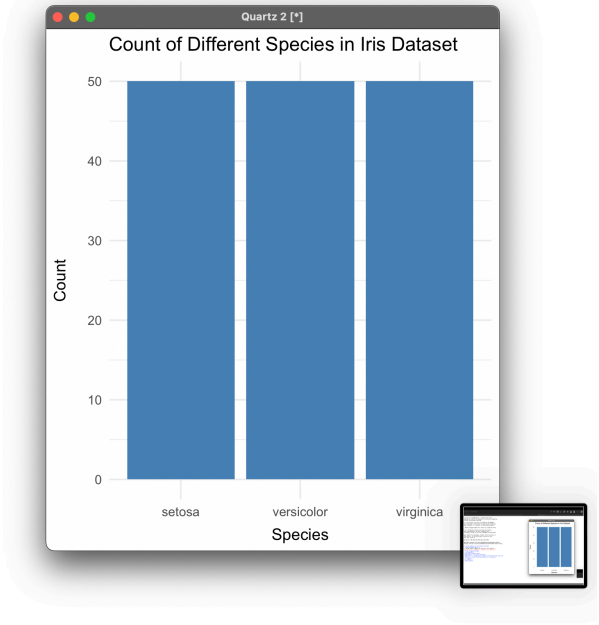

RESULT:

Thus, Visualize Data using Any plotting Frame work using R programming has been successfully executed.