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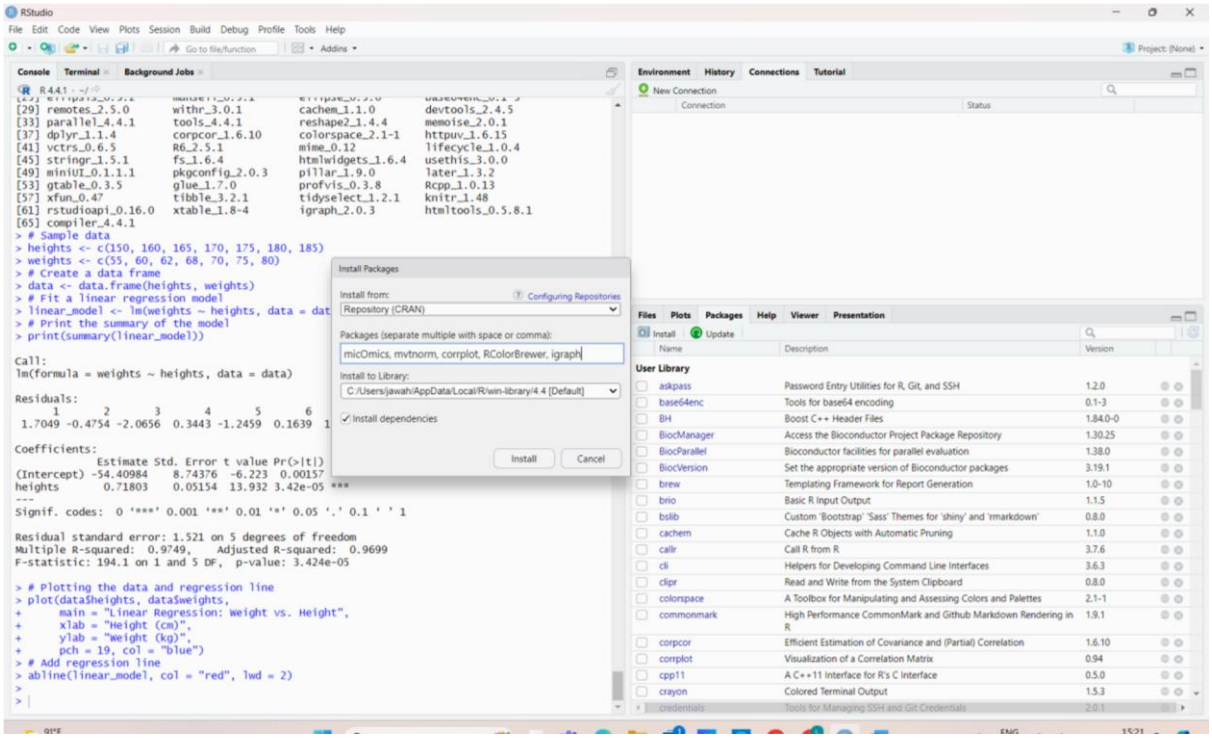
Ex 10 VISUALIZE DATA USING ANY PLOTTING FRAMEWORK

Aim:

To visualize data using any plotting framework in R Programming.

PROCEDURE:

1. Install R for windows.
2. Install R Studio.
3. Open R Studio and install packages

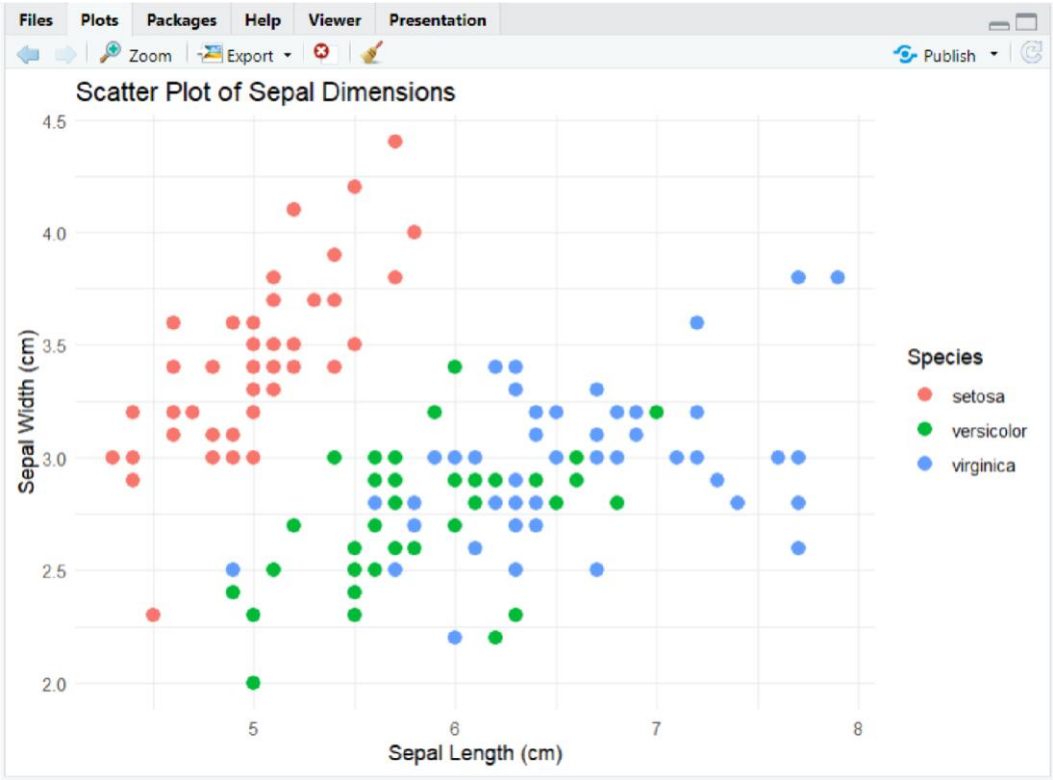


Thus R studio is set up successfully.

1) SCATTER PLOT <u>Program:</u>

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



2) BAR CHART <u>Program:</u>

```
# 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:

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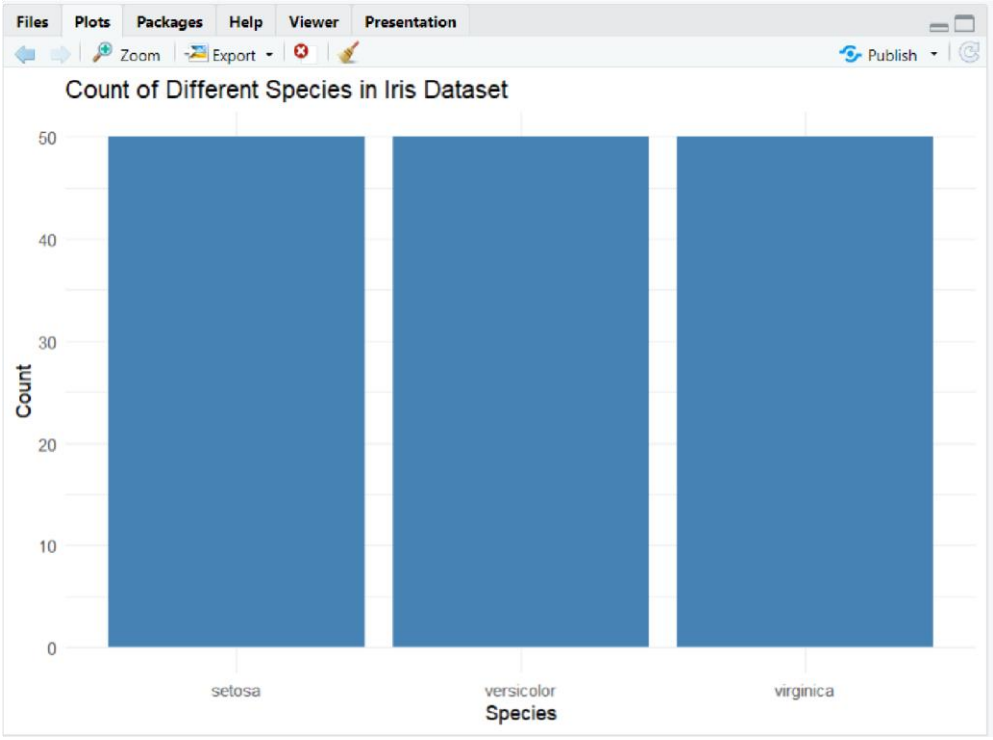
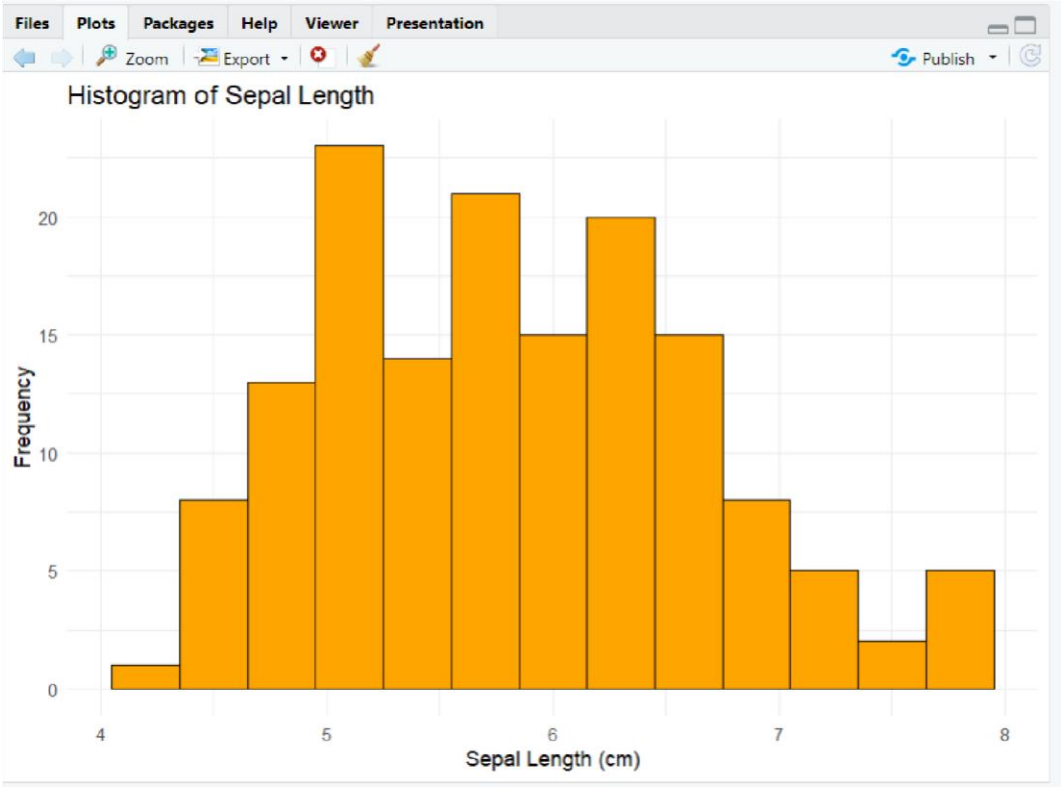


3) HISTOGRAM

Program:

```
# 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

Program:

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

Ouput:

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Result:

Thus the program to visualize data using any plotting framework in R Programming is implemented successfully.