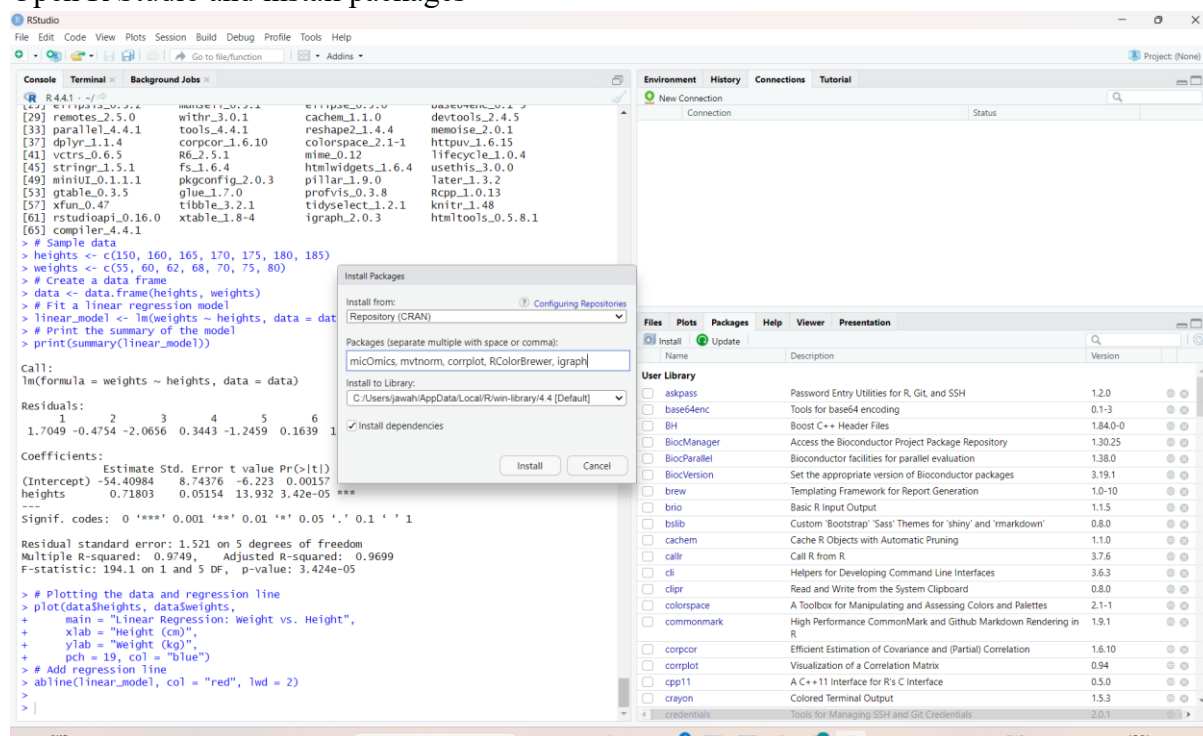# Ex 10   VISUALIZE DATA USING ANY PLOTTING FRAMEWORK

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

Program:

```
# 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
```
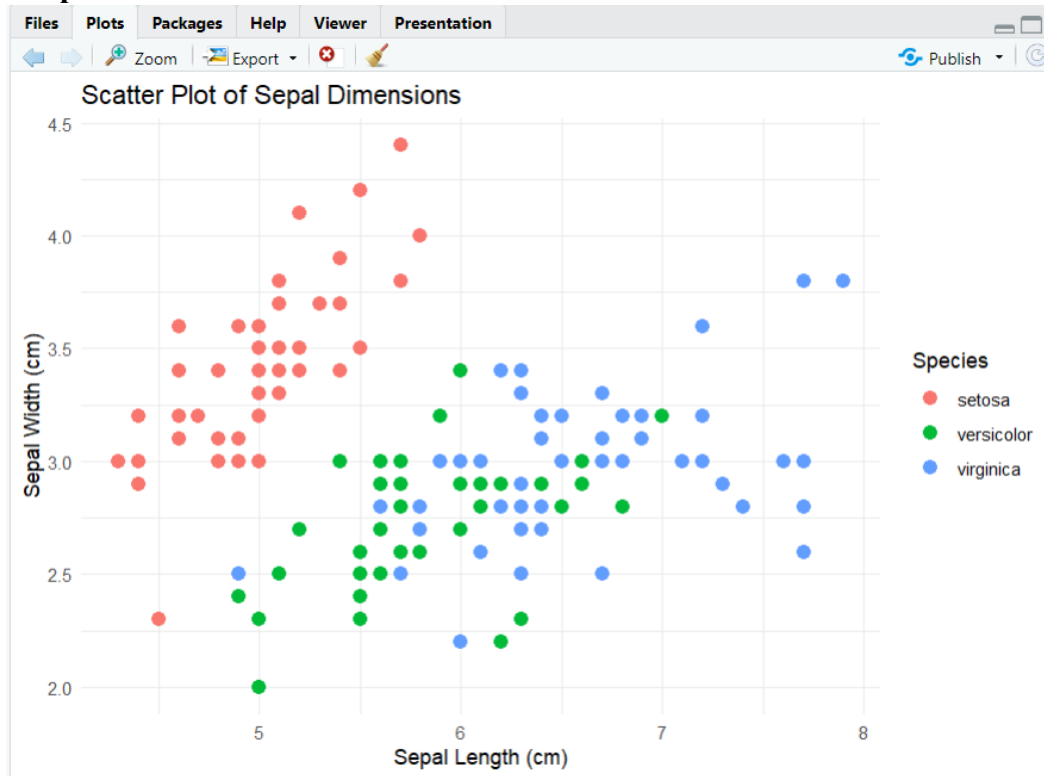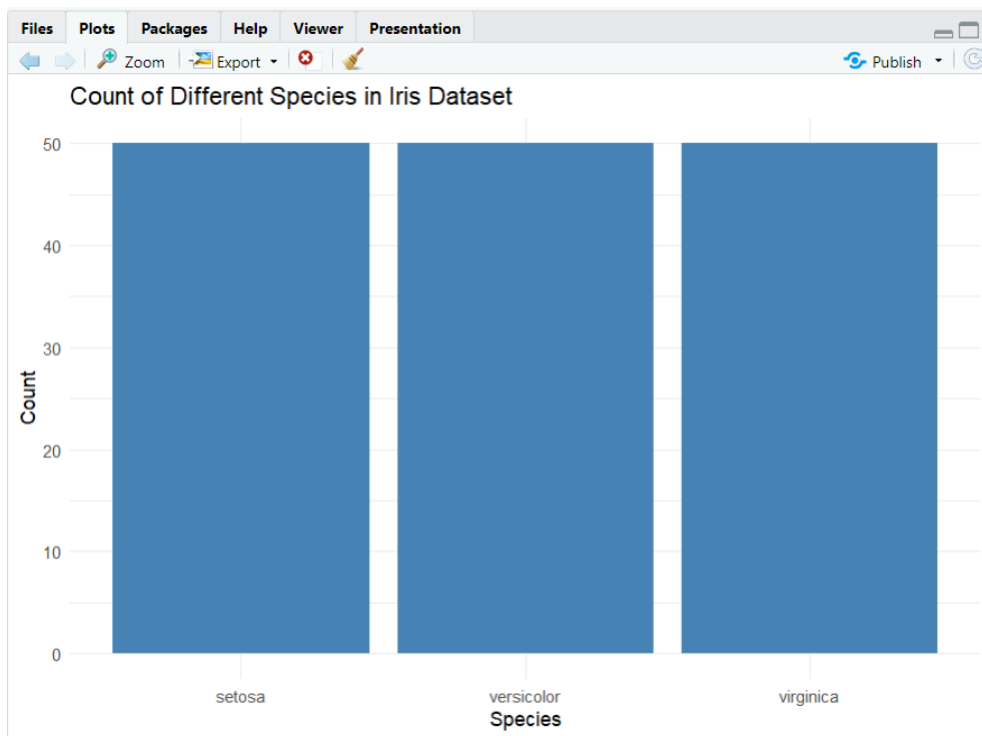
Output:

Scatter Plot of Sepal Dimensions

2) **BAR CHART**

Program:

```
# 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()
```
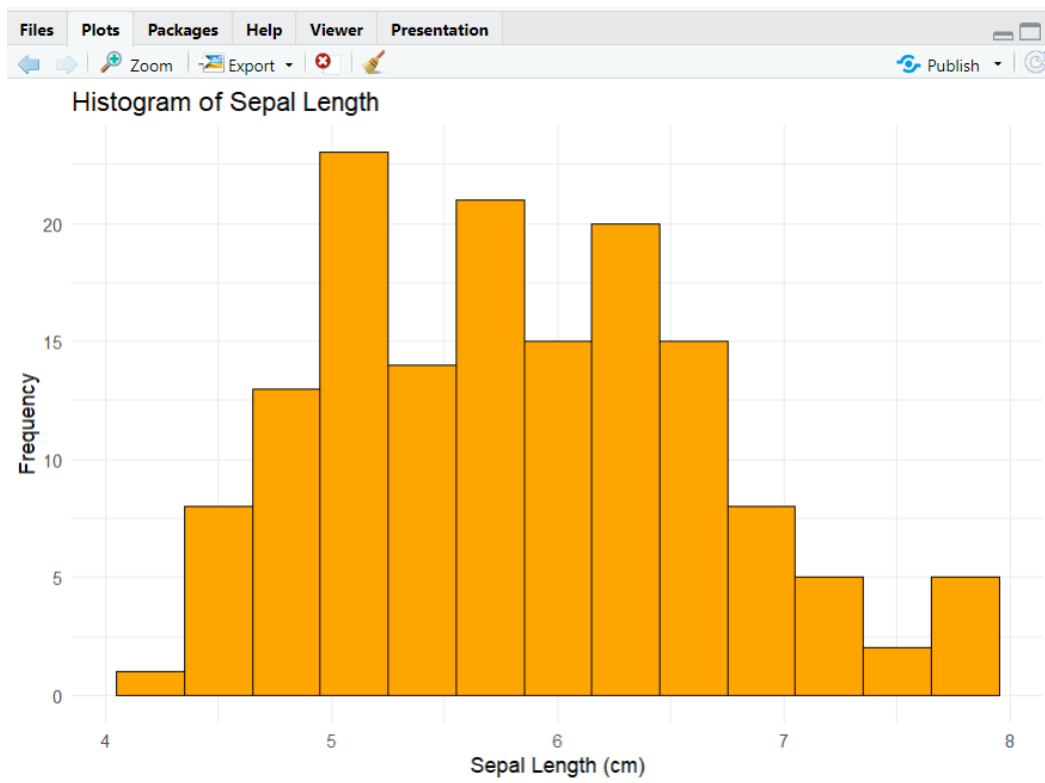
OUTPUT:

3) HISTOGRAM

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:
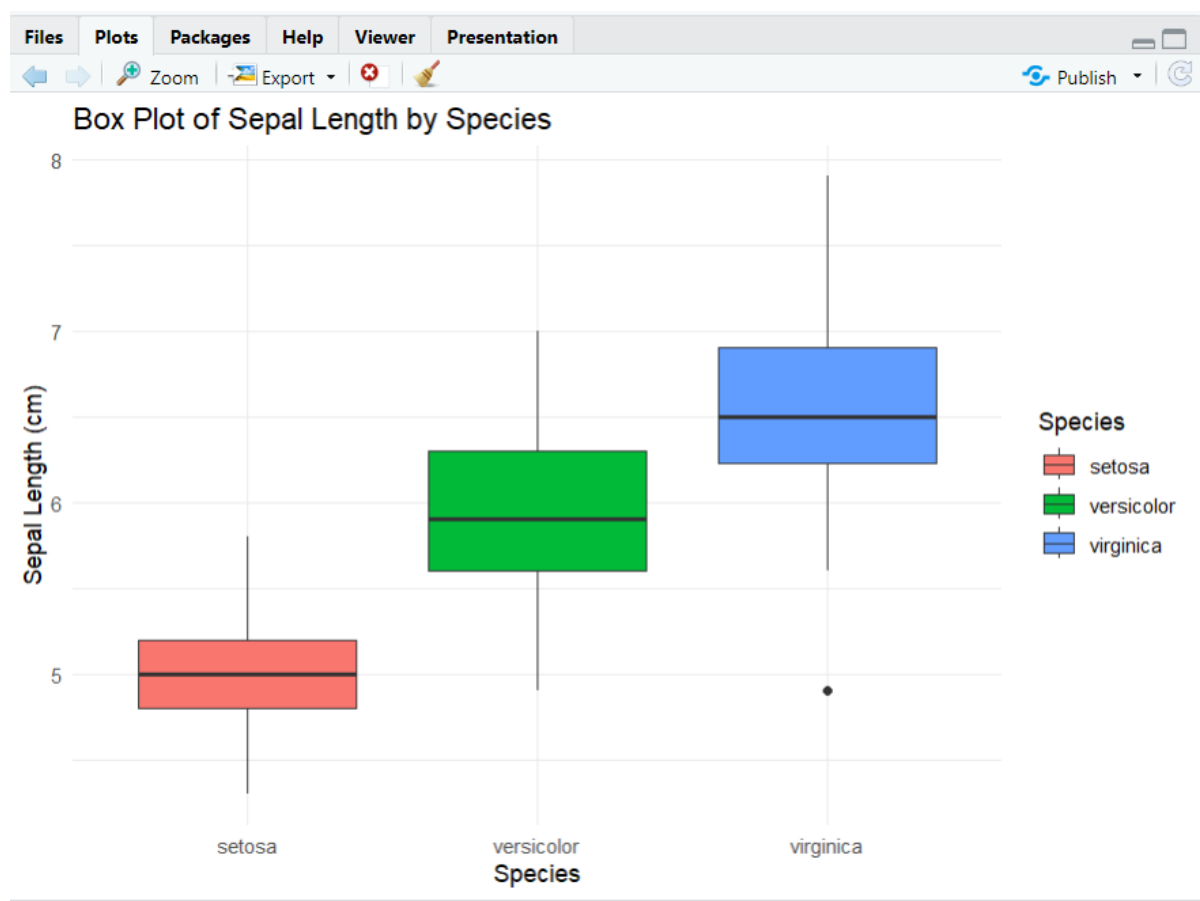
Result:

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