

Exp:10

VISUALIZE DATA USING ANY PLOTTING FRAMEWORK

1) SCATTER PLOT

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
```



2) **BAR CHART**

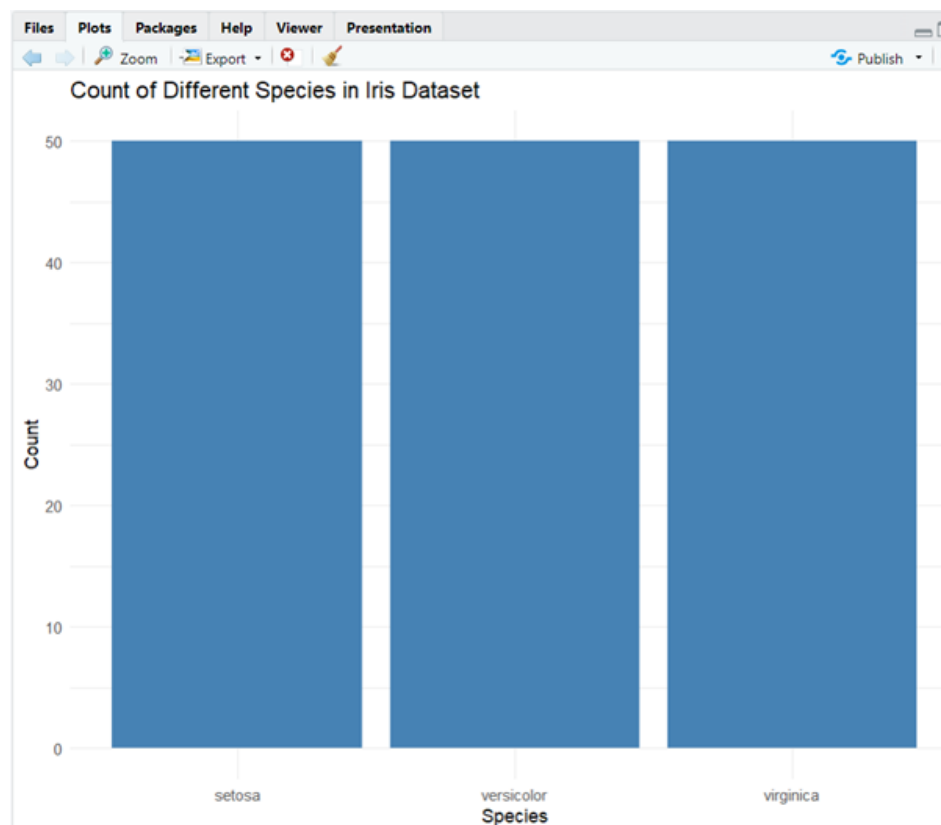
```
# Install ggplot2 (if not already installed)
install.packages("ggplot2")
```

```
# 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()
```

```
1 # Load the ggplot2 package
2 library(ggplot2)
3 # Bar plot of Species counts
4 ggplot(data = iris, aes(x = Species)) +
5   geom_bar(fill = "steelblue") + # Adds bars filled with steel blue color
6   labs(title = "Count of Different Species in Iris Dataset",
7         x = "Species",
8         y = "Count") +
9   theme_minimal()
```



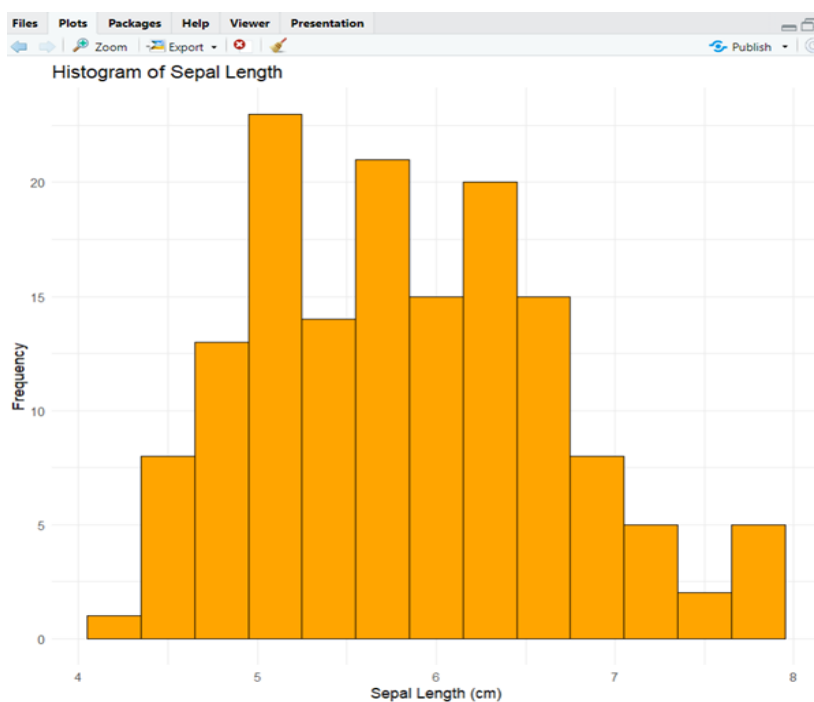
3) HISTOGRAM

```
# 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()
```

```
1 # Load the ggplot2 package
2 library(ggplot2)
3 # Histogram of Sepal Length
4 ggplot(data = iris, aes(x = Sepal.Length)) +
5   geom_histogram(binwidth = 0.3, fill = "orange", color = "black") +
6   labs(title = "Histogram of Sepal Length",
7        x = "Sepal Length (cm)",
8        y = "Frequency") +
9   theme_minimal()
```



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

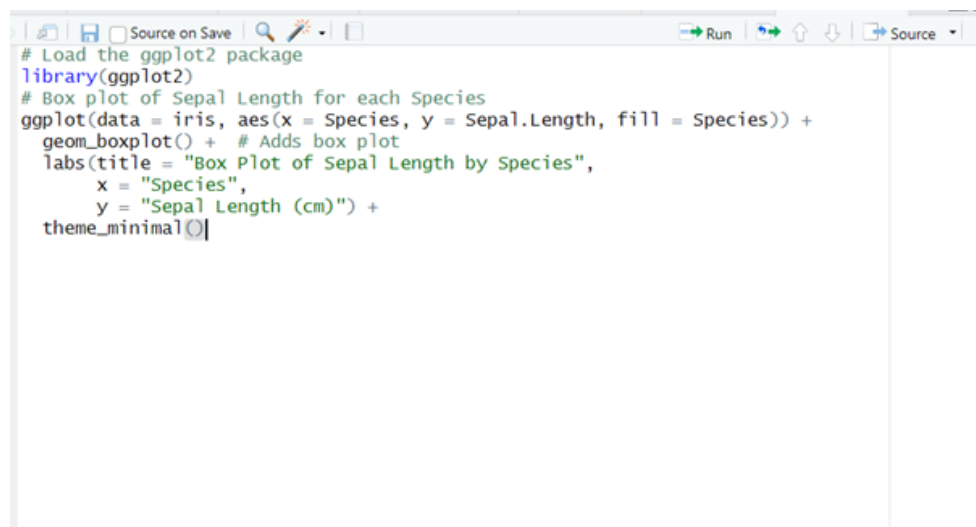
```
ggplot(data = iris, aes(x = Species, y = Sepal.Length, fill = Species)) +
```

```
  geom_boxplot() + # Adds box plot
```

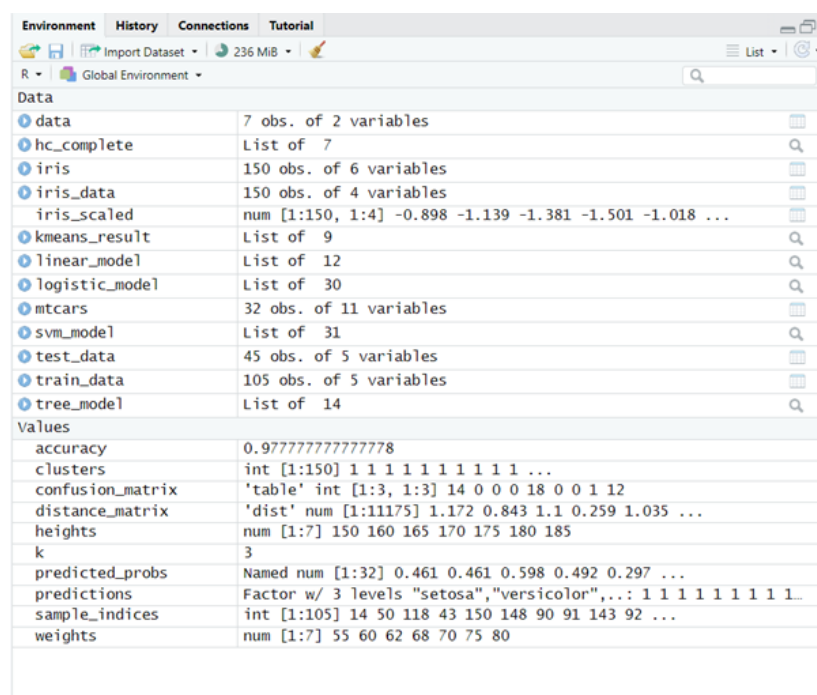
```
  labs(title = "Box Plot of Sepal Length by Species",
```

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

```
        y = "Sepal Length (cm)") + theme_minimal()
```



```
# 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()
```



Environment	
Global Environment	
Data	
data	7 obs. of 2 variables
hc_complete	List of 7
iris	150 obs. of 6 variables
iris_data	150 obs. of 4 variables
iris_scaled	num [1:150, 1:4] -0.898 -1.139 -1.381 -1.501 -1.018 ...
kmeans_result	List of 9
linear_model	List of 12
logistic_model	List of 30
mtcars	32 obs. of 11 variables
svm_model	List of 31
test_data	45 obs. of 5 variables
train_data	105 obs. of 5 variables
tree_model	List of 14
Values	
accuracy	0.977777777777778
clusters	int [1:150] 1 1 1 1 1 1 1 1 1 1 ...
confusion_matrix	'table' int [1:3, 1:3] 14 0 0 0 18 0 0 1 12
distance_matrix	'dist' num [1:11175] 1.172 0.843 1.1 0.259 1.035 ...
heights	num [1:7] 150 160 165 170 175 180 185
k	3
predicted_probs	Named num [1:32] 0.461 0.461 0.598 0.492 0.297 ...
predictions	Factor w/ 3 levels "setosa","versicolor",...: 1 1 1 1 1 1 1 1 1 1 ...
sample_indices	int [1:105] 14 50 118 43 150 148 90 91 143 92 ...
weights	num [1:7] 55 60 62 68 70 75 80

