7) Visualize all the statistical measures (mean, mode, median, range, inter quartile range, etc.) using Histograms, Boxplots, scatter plots, etc.

In [4]:
```
import pandas as pd
import warnings
warnings.filterwarnings("ignore")
```

In [2]:
```
iris = pd.read_csv("iris.csv")
iris.dtypes
```

Out[2]:
```
Unnamed: 0        int64
Sepal.Length    float64
Sepal.Width     float64
Petal.Length    float64
Petal.Width     float64
Species          object
dtype: object
```

In [3]:
```
iris.columns
```

Out[3]:
```
Index(['Unnamed: 0', 'Sepal.Length', 'Sepal.Width', 'Petal.Length',
       'Petal.Width', 'Species'],
      dtype='object')
```

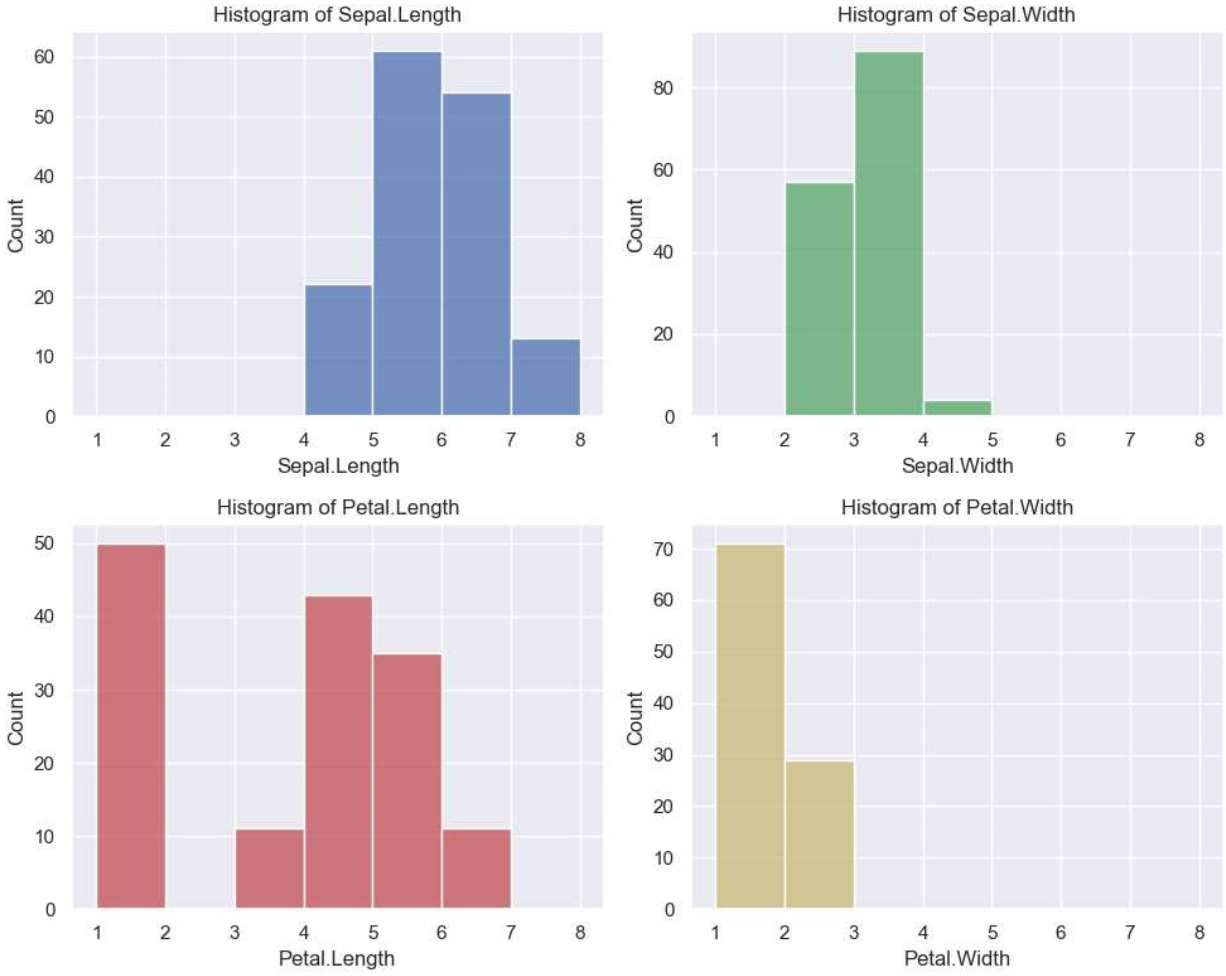
In [3]:
```
iris.describe()
```

Out[3]:

	Unnamed: 0	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width
count	150.000000	150.000000	150.000000	150.000000	150.000000
mean	75.500000	5.843333	3.057333	3.758000	1.199333
std	43.445368	0.828066	0.435866	1.765298	0.762238
min	1.000000	4.300000	2.000000	1.000000	0.100000
25%	38.250000	5.100000	2.800000	1.600000	0.300000
50%	75.500000	5.800000	3.000000	4.350000	1.300000
75%	112.750000	6.400000	3.300000	5.100000	1.800000
max	150.000000	7.900000	4.400000	6.900000	2.500000

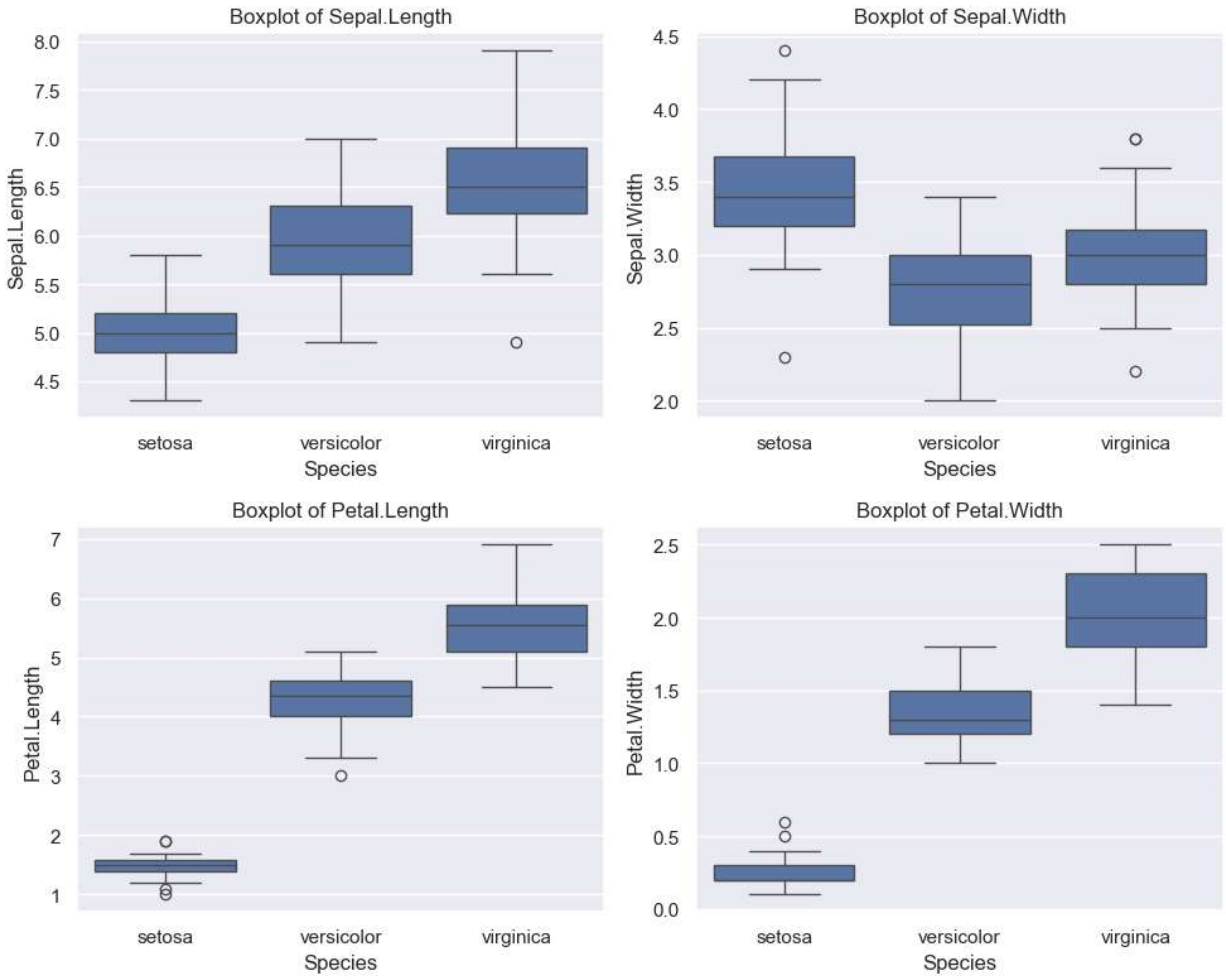
In [12]:
```
#histogram
import matplotlib.pyplot as plt
import seaborn as sns

# Create subplots for each feature
fig, axes = plt.subplots(2, 2, figsize=(10, 8))

# Define bin ranges for each feature
bins = [1, 2, 3, 4, 5, 6, 7, 8]

# Plot histograms for 'Sepal.Length', 'Sepal.Width', 'Petal.Length', 'Petal.Width'
sns.histplot(iris["Sepal.Length"], bins=bins, kde=False, color='b', ax=axes[0, 0])
sns.histplot(iris["Sepal.Width"], bins=bins, kde=False, color='g', ax=axes[0, 1])
```

```
sns.histplot(iris["Petal.Length"], bins=bins, kde=False, color='r', ax=axes[1, 0])
sns.histplot(iris["Petal.Width"], bins=bins, kde=False, color='y', ax=axes[1, 1])

# Set titles for each subplot
axes[0, 0].set_title("Histogram of Sepal.Length")
axes[0, 1].set_title("Histogram of Sepal.Width")
axes[1, 0].set_title("Histogram of Petal.Length")
axes[1, 1].set_title("Histogram of Petal.Width")

plt.tight_layout()
plt.show()
```

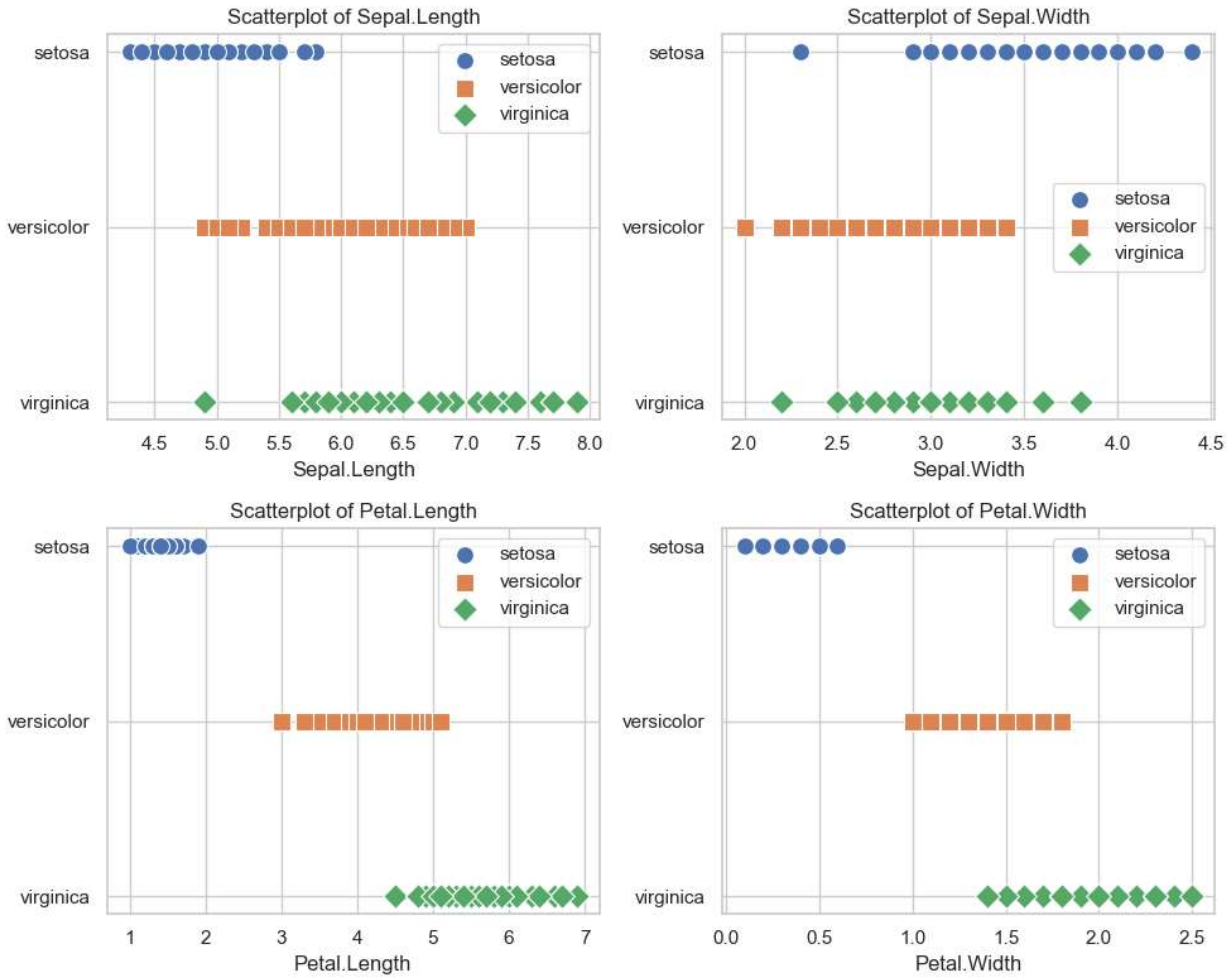


In [13]:

```
#Boxplot
fig, axes = plt.subplots(2, 2, figsize=(10, 8))

# Plot boxplots for 'Sepal.Length', 'Sepal.Width', 'Petal.Length', 'Petal.Width'
sns.boxplot(data=iris, x="Species", y="Sepal.Length", ax=axes[0, 0])
sns.boxplot(data=iris, x="Species", y="Sepal.Width", ax=axes[0, 1])
sns.boxplot(data=iris, x="Species", y="Petal.Length", ax=axes[1, 0])
sns.boxplot(data=iris, x="Species", y="Petal.Width", ax=axes[1, 1])

# Set titles for each subplot
axes[0, 0].set_title("Boxplot of Sepal.Length")
axes[0, 1].set_title("Boxplot of Sepal.Width")
axes[1, 0].set_title("Boxplot of Petal.Length")
axes[1, 1].set_title("Boxplot of Petal.Width")

plt.tight_layout()
plt.show()
```



In [14]:
```
import matplotlib.pyplot as plt
import seaborn as sns

# Create a scatterplot for each variable with different shapes
sns.set(style="whitegrid")

# Create a figure and axes
fig, axes = plt.subplots(2, 2, figsize=(10, 8))

# Define a list of marker shapes for different species
markers = ["o", "s", "D"]

# Loop through each variable and create scatterplots with different markers
for i, feature in enumerate(['Sepal.Length', 'Sepal.Width', 'Petal.Length', 'Petal.Wid
    row, col = divmod(i, 2)
    ax = axes[row, col]

    for j, species in enumerate(iris['Species'].unique()):
        data = iris[iris['Species'] == species]
        sns.scatterplot(data=data, x=feature, y="Species", marker=markers[j], s=100, l

    ax.set_title(f'Scatterplot of {feature}')
    ax.set_xlabel(feature)
    ax.set_ylabel("")
    ax.legend()

plt.tight_layout()
plt.show()
```


Scatterplot of Sepal.Length
setosa
versicolor
virginica
4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0
Sepal.Length
Scatterplot of Sepal.Width
2.0 2.5 3.0 3.5 4.0 4.5
Sepal.Width
Scatterplot of Petal.Length
1 2 3 4 5 6 7
Petal.Length
Scatterplot of Petal.Width
0.0 0.5 1.0 1.5 2.0 2.5
Petal.Width

In [ ]: