

```
In [4]: import pandas as pd
import numpy as np
from matplotlib import pyplot as plt
```

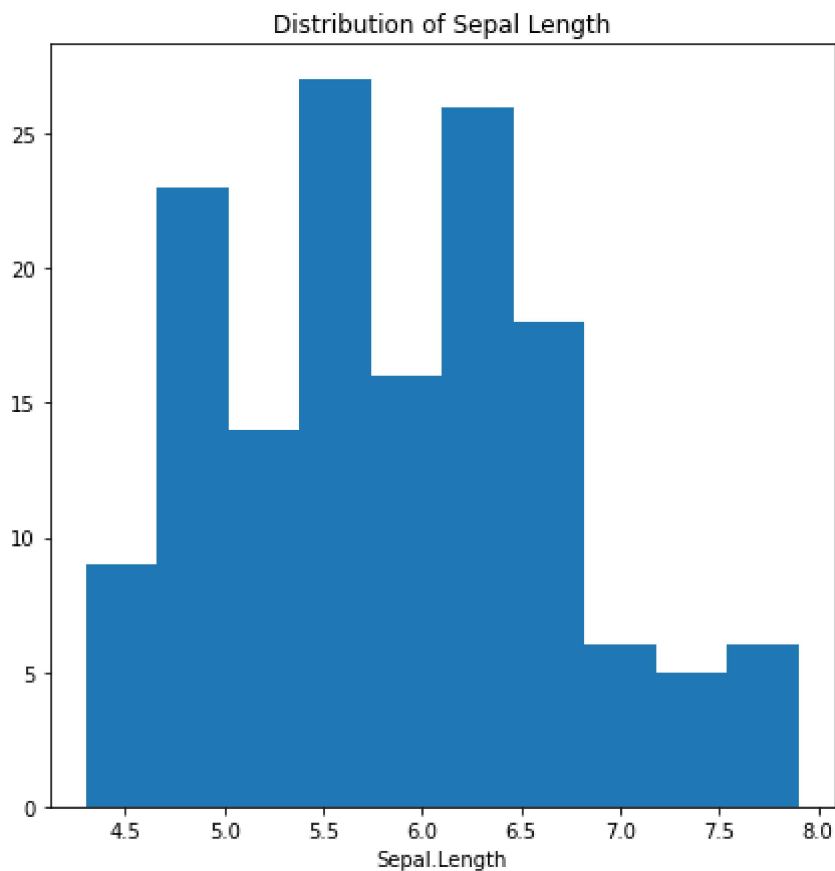
```
In [2]: iris=pd.read_csv('Iris.csv')
```

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

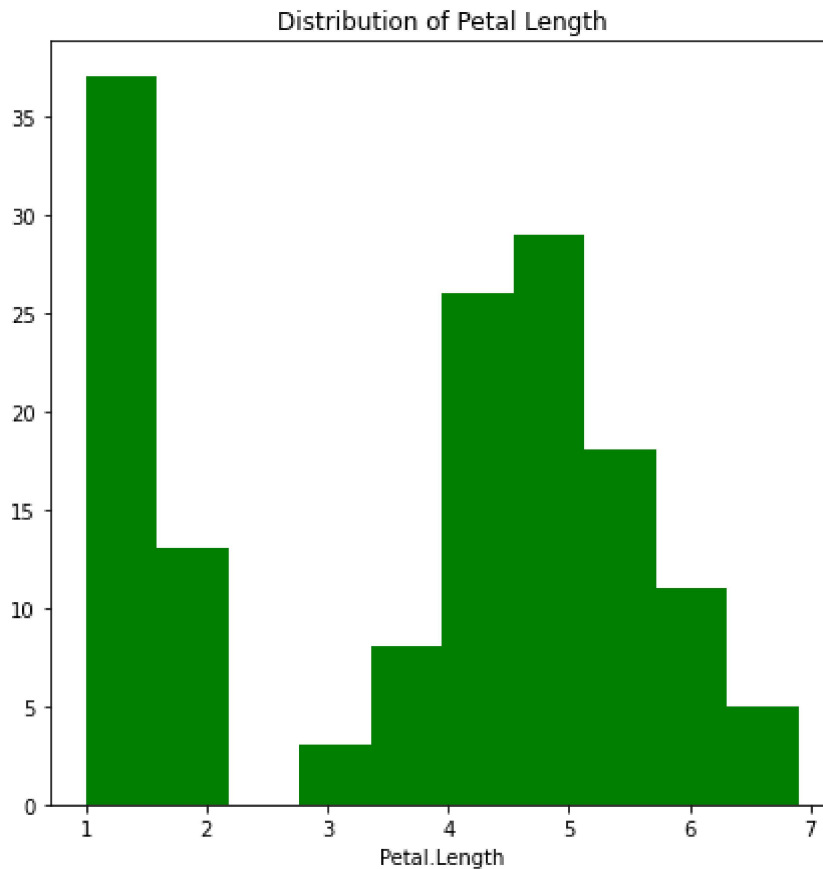
```
Out[3]:
```

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	1	5.1	3.5	1.4	0.2	Iris-setosa
1	2	4.9	3.0	1.4	0.2	Iris-setosa
2	3	4.7	3.2	1.3	0.2	Iris-setosa
3	4	4.6	3.1	1.5	0.2	Iris-setosa
4	5	5.0	3.6	1.4	0.2	Iris-setosa

```
In [11]: plt.figure(figsize=(7,7))
plt.hist(iris['SepalLengthCm'])
plt.title('Distribution of Sepal Length')
plt.xlabel('Sepal.Length')
plt.show()
```



```
In [13]: plt.figure(figsize=(7,7))
plt.hist(iris['Petal.Length'],color='green')
plt.title('Distribution of Petal Length')
plt.xlabel('Petal.Length')
plt.show()
```



```
In [14]: x= iris[['Sepal.LengthCm']]
y= iris[['Species']]
```

```
In [15]: from sklearn.model_selection import train_test_split
```

```
In [16]: x_train,x_test,y_train,y_test = train_test_split(x,y,test_size=0.3)
```

```
In [17]: from sklearn.tree import DecisionTreeClassifier
```

```
In [18]: dtc=DecisionTreeClassifier()
```

```
In [19]: dtc.fit(x_train,y_train)
```

```
Out[19]: DecisionTreeClassifier()
```

```
In [20]: y_pred = dtc.predict(x_test)
```

```
In [23]: from sklearn.metrics import confusion_matrix
```

```
In [24]: confusion_matrix(y_test,y_pred)
```

```
Out[24]: array([[12,  1,  0],
                [ 1,  9,  4],
                [ 0,  9,  9]], dtype=int64)
```

```
In [26]: acc = (12+9+9)/(12+1+1+9+4+9+9)
         print(acc)
```

0.6666666666666666

Model - 2

```
In [27]: x= iris[['SepallLengthCm','PetalLengthCm']]
         y= iris[['Species']]
```

```
In [28]: from sklearn.model_selection import train_test_split
```

```
In [29]: x_train,x_test,y_train,y_test = train_test_split(x,y,test_size=0.3)
```

```
In [30]: from sklearn.tree import DecisionTreeClassifier
```

```
In [31]: dtc2=DecisionTreeClassifier()
```

```
In [32]: dtc2.fit(x_train,y_train)
```

```
Out[32]: DecisionTreeClassifier()
```

```
In [34]: y_pred = dtc2.predict(x_test)
```

```
In [35]: from sklearn.metrics import confusion_matrix
```

```
In [36]: confusion_matrix(y_test,y_pred)
```

```
Out[36]: array([[13,  0,  0],
                [ 0, 16,  1],
                [ 0,  1, 14]], dtype=int64)
```

```
In [37]: acc = (13+16+14)/(13+16+1+1+14)
         print(acc)
```

0.9555555555555556

