```python
[3]: import numpy as np
     import matplotlib.pyplot as plt
     import pandas as pd
```

```python
[4]: dataset = pd.read_csv('https://raw.githubusercontent.com/mk-gurucharan/
     ↪Classification/master/IrisDataset.csv')

     X=dataset.iloc[:,:4].values
     y = dataset['species'].values
     print(dataset.head(5))
```

```
   sepal_length  sepal_width  petal_length  petal_width species
0           5.1          3.5           1.4          0.2  setosa
1           4.9          3.0           1.4          0.2  setosa
2           4.7          3.2           1.3          0.2  setosa
3           4.6          3.1           1.5          0.2  setosa
4           5.0          3.6           1.4          0.2  setosa
```

```python
[6]: from sklearn.model_selection import train_test_split
     X_train, X_test, y_train, y_test =train_test_split(X, y, test_size = 0.2)
```

```python
[8]: from sklearn.preprocessing import StandardScaler
     sc = StandardScaler()
     X_train = sc.fit_transform(X_train)
     X_test = sc.transform(X_test)
```

```python
[9]: from sklearn.naive_bayes import GaussianNB
     classifier = GaussianNB()
     classifier.fit(X_train, y_train)
```

```
[9]: GaussianNB()
```

```python
[10]: y_pred = classifier.predict(X_test)
```

```python
[12]: from sklearn.metrics import confusion_matrix
      cm =confusion_matrix(y_test, y_pred)
      from sklearn.metrics import accuracy_score
```

```
print("Accuracy : ", accuracy_score(y_test,y_pred))
print(cm)
```

```
Accuracy :  0.9666666666666667
[[ 9  0  0]
 [ 0 12  0]
 [ 0  1  8]]
```

[13]:
```
df = pd.DataFrame({'Real Values':y_test, 'Predicted Values':y_pred})
print(df)
```

```
    Real Values Predicted Values
0    versicolor       versicolor
1     virginica        virginica
2    versicolor       versicolor
3     virginica        virginica
4     virginica       versicolor
5        setosa           setosa
6    versicolor       versicolor
7        setosa           setosa
8    versicolor       versicolor
9     virginica        virginica
10       setosa           setosa
11       setosa           setosa
12    virginica        virginica
13       setosa           setosa
14    virginica        virginica
15   versicolor       versicolor
16   versicolor       versicolor
17       setosa           setosa
18    virginica        virginica
19    virginica        virginica
20   versicolor       versicolor
21   versicolor       versicolor
22   versicolor       versicolor
23   versicolor       versicolor
24    virginica        virginica
25   versicolor       versicolor
26       setosa           setosa
27       setosa           setosa
28   versicolor       versicolor
29       setosa           setosa
```

[14]:
```
from sklearn.metrics import precision_score, recall_score, accuracy_score
```

[16]:
```
m=accuracy_score(y_test, y_pred)
print("error rate:-",1-m)
```

error rate:- 0.033333333333333326

[17]:
```python
print('Precision:',precision_score(y_test,y_pred,average='micro'))
```

Precision: 0.9666666666666667

[18]:
```python
print("Recall Score:",recall_score(y_test,y_pred,average='micro'))
```

Recall Score: 0.9666666666666667