```
In [1]:   import numpy as np
          import pandas as pd
          import matplotlib.pyplot as plt
```

```
In [2]:   from sklearn.model_selection import train_test_split
```

```
In [3]:   iris=pd.read_csv("/home/student/Desktop/COTA54/Iris.csv")
```

```
In [4]:   iris.head()
```

Out[4]:

	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 [5]:   iris.isnull().any()
```

```
Out[5]:   Id               False
          SepalLengthCm    False
          SepalWidthCm     False
          PetalLengthCm    False
          PetalWidthCm     False
          Species          False
          dtype: bool
```

```
In [6]:   x=iris.iloc[:, :4].values
```

```
In [8]:   y=iris['Species'].values
```

```
In [10…   x_train,x_test,y_train,y_test=train_test_split(x,y,test_size = 0.2, ran
```

```
In [11…   from sklearn.preprocessing import StandardScaler
          scaler=StandardScaler()
          scaler.fit(x_train)
          x_train=scaler.fit_transform(x_train)
          x_test=scaler.transform(x_test)
```

```
In [12…   from sklearn.naive_bayes import GaussianNB
          gaussian=GaussianNB()
          gaussian.fit(x_train,y_train)
```

```
Out[12]:  ▾ GaussianNB

          GaussianNB()
```

```
In [13…   y_pred=gaussian.predict(x_test)
          y_pred
```

```
Out[13]:  array(['Iris-virginica', 'Iris-versicolor', 'Iris-setosa',
                 'Iris-virginica', 'Iris-setosa', 'Iris-virginica', 'Iris-setosa
                 ',
```

```
        'Iris-versicolor', 'Iris-versicolor', 'Iris-versicolor',
        'Iris-virginica', 'Iris-versicolor', 'Iris-versicolor',
        'Iris-versicolor', 'Iris-versicolor', 'Iris-setosa',
        'Iris-versicolor', 'Iris-versicolor', 'Iris-setosa', 'Iris-setos
a',
        'Iris-virginica', 'Iris-versicolor', 'Iris-setosa', 'Iris-setosa
',
        'Iris-virginica', 'Iris-setosa', 'Iris-setosa', 'Iris-versicolor
',
        'Iris-versicolor', 'Iris-setosa'], dtype='<U15')
```

In [14…
```python
from sklearn.metrics import precision_score,confusion_matrix,accuracy_s
cm=confusion_matrix(y_test,y_pred)
```

In [15…
```python
accuracy = accuracy_score(y_test,y_pred)
precision = precision_score(y_test, y_pred,average='micro')
recall = recall_score(y_test, y_pred,average='micro')
```

In [16…
```python
print(accuracy)
print(precision)
print(recall)
print(cm)
```

```
1.0
1.0
1.0
[[11  0  0]
 [ 0 13  0]
 [ 0  0  6]]
```

In [ ]: