In [2]:
```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import sklearn
from sklearn.preprocessing import StandardScaler
from sklearn.model_selection import train_test_split
from sklearn.neighbors import KNeighborsClassifier
from sklearn.naive_bayes import GaussianNB
```

In [3]:
```python
data=pd.read_csv('iris.csv')
```

In [5]:
```python
data.head()
```

Out[5]:

	sepal.length	sepal.width	petal.length	petal.width	variety
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

In [7]:
```python
x=data.iloc[:,:4]
x.head()
```

Out[7]:

	sepal.length	sepal.width	petal.length	petal.width
0	5.1	3.5	1.4	0.2
1	4.9	3.0	1.4	0.2
2	4.7	3.2	1.3	0.2
3	4.6	3.1	1.5	0.2
4	5.0	3.6	1.4	0.2

In [8]:
```python
y=data.iloc[:,-1]
y.head()
```

Out[8]:
```
0    Setosa
1    Setosa
2    Setosa
3    Setosa
4    Setosa
Name: variety, dtype: object
```

In [9]:
```python
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=.20)
```

In [10]:
```python
x_train.head()
```

Out[10]:

	sepal.length	sepal.width	petal.length	petal.width
89	5.5	2.5	4.0	1.3
63	6.1	2.9	4.7	1.4
114	5.8	2.8	5.1	2.4
146	6.3	2.5	5.0	1.9
134	6.1	2.6	5.6	1.4

In [12]:
```python
x_test.head()
```

Out[12]:

	sepal.length	sepal.width	petal.length	petal.width
141	6.9	3.1	5.1	2.3
76	6.8	2.8	4.8	1.4
91	6.1	3.0	4.6	1.4
103	6.3	2.9	5.6	1.8
121	5.6	2.8	4.9	2.0

In [13]:
```python
sc=StandardScaler()
sc.fit(x_train)
x_train=sc.transform(x_train)
x_test=sc.transform(x_test)
```

In [34]:
```python
classifier=GaussianNB()
```

In [35]:
```python
classifier.fit(x_train,y_train)
```

Out[35]:
```
GaussianNB()
```

In [36]:
```python
y_pred=classifier.predict(x_test)
```

In [37]:
```python
y_pred
```

Out[37]:
```
array(['Virginica', 'Versicolor', 'Versicolor', 'Virginica', 'Virginica',
       'Versicolor', 'Setosa', 'Versicolor', 'Setosa', 'Versicolor',
       'Setosa', 'Versicolor', 'Virginica', 'Versicolor', 'Virginica',
       'Virginica', 'Setosa', 'Virginica', 'Virginica', 'Setosa',
       'Versicolor', 'Versicolor', 'Setosa', 'Versicolor', 'Versicolor',
       'Virginica', 'Virginica', 'Versicolor', 'Setosa', 'Versicolor'],
      dtype='<U10')
```

In [38]: `y_test`

Out[38]:
```
141      Virginica
76       Versicolor
91       Versicolor
103      Virginica
121      Virginica
98       Versicolor
29          Setosa
58       Versicolor
23          Setosa
119      Virginica
27          Setosa
53       Versicolor
124      Virginica
87       Versicolor
147      Virginica
137      Virginica
38          Setosa
127      Virginica
109      Virginica
42          Setosa
73       Versicolor
96       Versicolor
26          Setosa
94       Versicolor
72       Versicolor
129      Virginica
144      Virginica
71       Versicolor
46          Setosa
88       Versicolor
Name: variety, dtype: object
```

In [39]:
```python
from sklearn.metrics import confusion_matrix, accuracy_score
cm=confusion_matrix(y_test,y_pred)
ac=accuracy_score(y_test,y_pred)
```

In [40]: `cm`

Out[40]:
```
array([[ 7,  0,  0],
       [ 0, 12,  0],
       [ 0,  1, 10]], dtype=int64)
```

In [41]: `ac`

Out[41]: `0.9666666666666667`

In [ ]:

In [ ]: