Importing the Libraries

```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
```

Importing the dataset

```
dataset = pd.read_csv('/content/IRIS.csv')
```

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

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

Splitting the dataset into the Training set and Test set

```
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)
```

Feature Scaling

```
from sklearn.preprocessing import StandardScaler
sc = StandardScaler()
X_train = sc.fit_transform(X_train)
X_test = sc.transform(X_test)
```

Training the Naive Bayes Classification model on the Training Set

```
from sklearn.naive_bayes import GaussianNB
classifier = GaussianNB()
classifier.fit(X_train, y_train)
```

```
GaussianNB()
```

Predicting the Test set results

```
y_pred = classifier.predict(X_test)
y_pred
```

```
array(['Iris-virginica', 'Iris-virginica', 'Iris-versicolor',
       'Iris-versicolor', 'Iris-virginica', 'Iris-virginica',
       'Iris-virginica', 'Iris-setosa', 'Iris-virginica', 'Iris-setosa',
       'Iris-virginica', 'Iris-virginica', 'Iris-setosa',
       'Iris-versicolor', 'Iris-setosa', 'Iris-versicolor', 'Iris-setosa',
       'Iris-virginica', 'Iris-virginica', 'Iris-setosa',
       'Iris-virginica', 'Iris-versicolor', 'Iris-setosa', 'Iris-setosa',
       'Iris-virginica', 'Iris-setosa', 'Iris-virginica',
       'Iris-virginica', 'Iris-virginica', 'Iris-virginica'], dtype='<U15')
```

Confusion Matrix and Accuracy

```
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))
cm
```

```
Accuracy :  0.9333333333333333
array([[ 9,  0,  0],
       [ 0,  5,  2],
       [ 0,  0, 14]])
```

Comparing the Real Values with Predicted Values

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

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

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