Week – 7

Write a program of Naive Bayesian classification using Python programming language.

AIM: To write a program of Naive Bayesian classification using Python programming language.

DESCRIPTION:

Naive Bayesian is a statistical classification technique based on

bayes theorem. It is fast, accurate and liable algorithm.

Naive Bayesian has classifiers have high accuracy and speed on large datasets.

The Naive Bayes classification algorithm is **a probabilistic classifier**. It is based on probability models that incorporate strong independence assumptions.

PROGRAM:

```
from sklearn import datasets
from sklearn import metrics
from sklearn.naive_bayes import GaussianNB
dataset = datasets.load_iris()
print(datasets)
model = GaussianNB()
model.fit(dataset.data,dataset.target)
print(model)
expected = dataset.target
predicted = model.predict(dataset.data)
print(metrics.classification_report(expected,predicted))
print(metrics.confusion_matrix(expected,predicted))
```

OUTPUT:

```
<module 'sklearn.datasets' from '/usr/local/lib/python3.7/dist-packages/sklearn/datasets/__init__.py'>
GaussianNB()
              precision    recall  f1-score   support

           0       1.00      1.00      1.00        50
           1       0.94      0.94      0.94        50
           2       0.94      0.94      0.94        50

    accuracy                           0.96       150
   macro avg       0.96      0.96      0.96       150
weighted avg       0.96      0.96      0.96       150

[[50  0  0]
 [ 0 47  3]
 [ 0  3 47]]
```