

Ex No. 5	Naïve Bayesian Classifier
Date:	

Aim

To implement and compute the accuracy of Naïve Bayesian Classifier using training and test datasets.

Definition

Naïve Bayes Classifier

Naive Bayes classifiers are a collection of classification algorithms based on **Bayes' Theorem**. It is not a single algorithm but a family of algorithms where all of them share a common principle, i.e. every pair of features being classified is independent of each other.

Procedure

Open PyCharm Community Edition.

Go to File menu → New Project → Specify the project name → Press “Create” button.

Right Click on Project name → New → Python File → Specify the file name → Press Enter.

Type the following codes. Right click on file name or coding window → Select “Run” to view the result.

Naivebayes.py

```
# load the iris dataset
from sklearn.datasets import load_iris
from sklearn import metrics
from sklearn.naive_bayes import GaussianNB
from sklearn.model_selection import train_test_split

iris = load_iris()

# store the feature matrix (X) and response vector (y)
X = iris.data
y = iris.target

# splitting X and y into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.4, random_state=1)

# training the model on training set
gnb = GaussianNB()
gnb.fit(X_train, y_train)

# making predictions on the testing set
y_pred = gnb.predict(X_test)

# comparing actual response values (y_test) with predicted response values (y_pred)
print("Gaussian Naive Bayes model accuracy(in %):", metrics.accuracy_score(y_test, y_pred)*100)
```

Output

Gaussian Naive Bayes model accuracy (in %): 95.0

Result

Thus, naïve Bayesian classifier has implemented and its accuracy has been computed successfully.