

Program-6: Write a program to implement the naive Bayesian classifier for a sample training data set stored as a .CSV file. Compute the accuracy of the classifier, considering few test data sets.

```
import pandas as pd
from sklearn.preprocessing import LabelEncoder
from sklearn.model_selection import train_test_split

data = pd.read_csv('tennis.csv')
print("The first 5 Values of data is :\n", data.head())

X = data.iloc[:, :-1]
print("\nThe First 5 values of the train attributes is\n",
X.head())

Y = data.iloc[:, -1]
print("\nThe First 5 values of target values is\n", Y.head())

obj1= LabelEncoder()
X.Outlook = obj1.fit_transform(X.Outlook)
print("\n The Encoded and Transformed Data in Outlook
\n",X.Outlook)

obj2 = LabelEncoder()
X.Temperature = obj2.fit_transform(X.Temperature)

obj3 = LabelEncoder()
X.Humidity = obj3.fit_transform(X.Humidity)

obj4 = LabelEncoder()
X.Wind = obj4.fit_transform(X.Wind)
print("\n The Encoded and Transformed Training Examples \n",
X.head())

obj5 = LabelEncoder()
Y = obj5.fit_transform(Y)
print("The class Label encoded in numerical form is",Y)

X_train, X_test, Y_train, Y_test = train_test_split(X,Y,
test_size = 0.20)

from sklearn.naive_bayes import GaussianNB
classifier = GaussianNB()
classifier.fit(X_train, Y_train)
from sklearn.metrics import accuracy_score
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print("Accuracy is:", accuracy_score(classifier.predict(X_test),  
Y_test))
```