**RV COLLEGE OF ENGINEERING**

***(Autonomous Institution Affiliated to VTU, Belagavi)***

**Department of Computer Science & Engineering**

**Bengaluru – 560 059**

**PROGRAM 3**

Demonstrate of classification rule process on a dataset using Naïve Bayes algorithm.

Code:

#libraries required

import pandas as pd

import numpy as np

from sklearn.naive\_bayes import GaussianNB

from sklearn.model\_selection import train\_test\_split

from sklearn.metrics import accuracy\_score

#load the data set

data = pd.read\_csv("tennis.csv")

data

data['play'].value\_counts(sort=True).plot.bar()

#one hot encoding for easy training

X = pd.get\_dummies(data[['outlook', 'temp', 'humidity', 'wind']])

y = pd.DataFrame(data['play'])

#70% train data and 30% test set

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.3, random\_state=42)

model = GaussianNB()

model.fit(X\_train, y\_train)

predicted= model.predict([[0,1,0,0,0,1,0,1,0,0]])

print(predicted)

y\_pred = model.predict(X\_test)

accuracy\_score(y\_test, y\_pred)







