PROGRAM NO : 5

AIM : Program to implement Naïve Bayes algorithm classification using any standard dataset available in the public domain and find the accuracy of the algorithm

PROGRAM

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

#importing the dataset

dataset = pd.read_csv('Social_Network_Ads.csv')
x = dataset.iloc[:, [2,3]].values
y = dataset.iloc[: , -1].values

#Splitting the dataset into 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 =
0.20,random_state = 20)

#feature scaling

from sklearn.preprocessing import StandardScaler
sc=StandardScaler()
x_train = sc.fit_transform(x_train)
x_test = sc.transform(x_test)

print(x_train)
print(x_test)

#training the naive bayes model on the training set

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

#predicting the test set results
y_pred = classifier.predict(x_test)
print(y_pred)

# making the confusion matrix
from sklearn.metrics import confusion_matrix, accuracy_score
ac = accuracy_score(y_test,y_pred)
cm = confusion_matrix(y_test,y_pred)

print(ac)
print(cm)
```

OUTPUT

```
C:\Users\ajcemca\AppData\Local\Programs\Python\Python39\python.exe C:/Users/ajcemca/PycharmProjects/pythonProject/pythonProject1/naivebayers.py
[[-0.80276277  0.44295604]
 [-0.70800656  1.43671337]
 [-0.23422551 -0.5508013 ]
 [ 0.90284902  1.16568865]
 [-1.0870314   0.4730699 ]
 [-0.89751898 -1.09285075]
 [-0.51849414  0.95489164]
 [ 1.47138628  0.41284218]
 [-1.46605624  0.38272832]
 [-1.75032487 -1.48433091]
 [-0.42373793 -1.12296461]
 [ 0.99760523 -1.00250917]
 [-0.23422551 -1.24342004]
 [ 0.90284902 -1.36387548]
 [ 0.52382418  1.82819354]
 [-1.65556866 -0.97239532]
 [ 0.14479933  0.20204517]
 [ 0.05004312 -0.5508013 ]
 [-0.61325035  0.17193131]
 [-0.32898172 -0.76159831]
 [-0.1394693   1.49694109]
 [ 1.37663007 -1.42410318]
 [ 0.52382418  1.31625794]
 [-1.84508108  0.53329761]
 [ 1.94516733  2.27990141]
 [-0.1394693  -1.06273689]
 [-1.37130003 -1.45421705]
 [ 2.03992354  1.85830739]
 [-0.80276277 -0.76159831]]
[0 1 0 0 0 0 0 1 0 1 1 0 1 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 1 0 0 0 0 0 1 0 1 0
 0 1 0 0 0 1 1 1 0 0 0 1 1 0 1 1 0 0 1 0 0 1 1 1 0 0 0 0 0 1 0 0 0 1 0 0 1
 0 1 0 0 1 0]
0.8875
[[44  1]
 [ 8 27]]

Process finished with exit code 0
```