

Program :-

```
import pandas as pd
import csv
from sklearn.naive_bayes import GaussianNB
from sklearn.metrics import classification_report, confusion_matrix, accuracy_score
from sklearn.model_selection import train_test_split

df = pd.read_csv("/home/student/Desktop/sinan/glass.csv")
print(df.head(0))

feature_col = ['RI', 'Na', 'Mg', 'Al', 'Si', 'K', 'Ca', 'Ba', 'Fe']
x = df[feature_col]
y = df.Type
x_train, x_test, y_train, y_test = train_test_split(x, y, test_size = 0.5, random_state = 100)

clf = GaussianNB()
clf = clf.fit(x_train, y_train)
y_pred = clf.predict(x_test)

cm = confusion_matrix(y_test, y_pred)
cr = classification_report(y_test, y_pred)
acc = accuracy_score(y_test, y_pred)

print("Confusion_matrix:\n", cm)
print("Classification_report:\n", cr)
print("Accuracy:", acc)
```

Output :-

```
(base) student@cseadmin:~/Desktop/sinan$ python3 naive.py
Empty DataFrame
Columns: [RI, Na, Mg, Al, Si, K, Ca, Ba, Fe, Type]
Index: []
Confusion_matrix:
[[10  0 18  0  0  0]
 [13  7 17  0  0  0]
 [ 2  0  4  0  0  0]
 [ 0  7  0  2  0  2]
 [ 0  6  0  0  1  0]
 [ 1  4  0  0  0 13]]
Classification_report:
              precision    recall  f1-score   support

     1             0.38       0.36       0.37         28
     2             0.29       0.19       0.23         37
     3             0.10       0.67       0.18          6
     5             1.00       0.18       0.31         11
     6             1.00       0.14       0.25          7
     7             0.87       0.72       0.79         18

 accuracy              0.35         107
 macro avg              0.61         107
weighted avg              0.52         107

Accuracy: 0.34579439252336447
(base) student@cseadmin:~/Desktop/sinan$
```