Pract6

```
import pandas as pd
import numpy as np

df = pd.read_csv('iris.csv')
df.shape
df.columns

x = df.drop(["species"], axis = 1)
y = df["species"]
x
y.value_counts()

#cross validation
from sklearn.model_selection import train_test_split
x_train, x_test, y_train, y_test = train_test_split(x,y, test_size=0.25, random_state=42)
x_train.shape
x_test.shape

#import the class
from sklearn.naive_bayes import GaussianNB

#create the object
gnb = GaussianNB()

#train the algorithm
gnb.fit(x_train, y_train)


y_pred = gnb.predict(x_test)
y_pred
y_test
from sklearn.metrics import confusion_matrix
from sklearn.metrics import classification_report
from sklearn.metrics import accuracy_score
from sklearn.metrics import plot_confusion_matrix

confusion_matrix(y_test,y_pred)
plot_confusion_matrix(clf,x_test,y_test)

accuracy_score(y_pred,y_test)



gnb.predict_proba(x_test)


newl=[[4.5,2.9,3.1,0.4]]
gnb.predict(newl)[0]

newl=[[5.5,3.1,1.0,0.8]]
gnb.predict(newl)[0]

newl=[[6.5,3.3,4.9,1.8]]
gnb.predict(newl)[0]
print(classification_report(y_test,y_pred))
```