

Naïve Bayes

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from sklearn.naive_bayes import GaussianNB
from sklearn.naive_bayes import MultinomialNB,BernoulliNB
from sklearn import datasets
from sklearn.metrics import confusion_matrix
from sklearn.model_selection import train_test_split
iris = datasets.load_iris()
X = iris.data
y = iris.target
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=0)

gnb = GaussianNB()
y_pred_gnb = gnb.fit(X_train, y_train).predict(X_test)
cnf_matrix_gnb = confusion_matrix(y_test, y_pred_gnb)
print('GaussianNB')
print(cnf_matrix_gnb)

print("-----")

mnb = MultinomialNB()
print('MultinomialNB')
y_pred_mnb = mnb.fit(X_train, y_train).predict(X_test)
cnf_matrix_mnb = confusion_matrix(y_test, y_pred_mnb)
print(cnf_matrix_mnb)

print("-----")
print('BernoulliNB')
bern = BernoulliNB()
y_pred_bern = bern.fit(X_train,y_train).predict(X_test)
bern_cnf_mat = confusion_matrix(y_test,y_pred_bern)
print(bern_cnf_mat)
```

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Output

```
GaussianNB  
[[16  0  0]  
 [ 0 18  0]  
 [ 0  0 11]]
```

```
-----  
MultinomialNB  
[[16  0  0]  
 [ 0  0 18]  
 [ 0  0 11]]
```

```
-----  
BernoulliNB  
[[ 0  0 16]  
 [ 0  0 18]  
 [ 0  0 11]]
```