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#!/usr/bin/env python
# coding: utf-8

# In[1]:

# load the iris dataset
from sklearn.datasets import load_iris
iris = load_iris()

# store the feature matrix (X) and response vector (y)
X = iris.data
y = iris.target

# splitting X and y into training and testing sets
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y,
test_size=0.3, random_state=1)
print("Size of the dataset:",len(X))
print("Number of training Instances:",len(X_train))
print("Number of testing Instances:",len(y_test))

# training the model on training set
from sklearn.naive_bayes import GaussianNB
gnb = GaussianNB()
gnb.fit(X_train, y_train)

# making predictions on the testing set
y_pred = gnb.predict(X_test)

# comparing actual response values (y_test) with predicted response
values (y_pred)
from sklearn import metrics
print("Gaussian Naive Bayes model accuracy(in %):",
metrics.accuracy_score(y_test, y_pred)*100)
#print(metrics.classification_report(y_test, y_pred))
metrics.confusion_matrix(y_test, y_pred)

# In[ ]:
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