from sklearn.datasets import make\_classification

from sklearn.model\_selection import train\_test\_split

from sklearn.ensemble import RandomForestClassifier

from sklearn import metrics

import matplotlib.pyplot as plt

# Do not change anything in this code

X, y = make\_classification(

n\_samples=1000,

n\_features=12,

n\_informative=4,

n\_redundant=0,

n\_repeated=0,

n\_classes=2,

random\_state=5,

shuffle=False)

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, stratify=y, random\_state=43)

RFClassifier = RandomForestClassifier()

RFClassifier.fit(X\_train, y\_train)

y\_test\_predicted = RFClassifier.predict(X\_test)

feature\_importances = RFClassifier.feature\_importances\_

print('Feature Importances: \n')

for i in range(0, 12):

print('Feature '+str(i+1), feature\_importances[i])

plt.title('Feature Importance')

plt.bar(range(X\_train.shape[1]), feature\_importances, align='center')

plt.xticks(range(X\_train.shape[1]), ['Feature ' + str(i) for i in range(1,X\_train.shape[1]+1)], rotation=90)

plt.tight\_layout()

plt.show()

accuracy = RFClassifier.score(X\_test, y\_test)

print('Accuracy using score function: ', accuracy)

accuracy2 = metrics.accuracy\_score(y\_test, y\_test\_predicted)

print('Accuracy using accuracy\_score function: ', accuracy2)