```python
import numpy as np
from sklearn import metrics
import matplotlib.pyplot as plt
score = np.array([0.97, 0.93, 0.65, 0.52, 0.37, 0.89, 0.71, 0.56, 0.54, 0.16])
y = np.array([1,1,1,1,1,0,0,0,0,0])
FPR = []
TPR = []
thresholds = np.arange(0.0, 1.01, 0.0001)
P = sum(y)
N = len(y) - P
for thresh in thresholds:
    FP=0
    TP=0
    thresh = round(thresh,2)
    for i in range(len(score)):
        if (score[i] >= thresh):
            if y[i] == 1:
                TP = TP + 1
            if y[i] == 0:
                FP = FP + 1
    FPR.append(FP/N)
    TPR.append(TP/P)

auc = metrics.auc(FPR, TPR)
plt.plot(FPR, TPR, linestyle='--', marker='o', color='darkorange', lw = 2, label='ROC curve', clip_o
plt.plot([0, 1], [0, 1], color='navy', linestyle='--')
plt.xlim([0.0, 1.0])
plt.ylim([0.0, 1.0])
plt.xlabel('False Positive Rate')
plt.ylabel('True Positive Rate')
plt.title('ROC curve, AUC = %.2f'%auc)
plt.legend(loc="lower right")
plt.savefig('AUC_example.png')
plt.show()
```