

```
import math, random

data = [
    ([4,1200,1],0), ([6,1500,2],0), ([8,1800,2],1),
    ([12,2200,3],1), ([16,3000,4],1), ([3,1000,1],0)
]

random.shuffle(data)

train, test = data[:4], data[4:]

def knn(train, test, k=3):
    pred=[]
    for x,y in test:
        d=sorted(train, key=lambda t: math.dist(t[0],x))
        pred.append(round(sum(c for _,c in d[:k])/k))
    return pred

def accuracy(p,a):
    return sum(i==j for i,j in zip(p,a))/len(a)

y_test=[c for _,c in test]
pred=knn(train,test)

print("Predicted:",pred)
print("Actual  :",y_test)
print("Accuracy :,"accuracy(pred,y_test))
```

OUTPUT:

```
IDLE Shell 3.13.9
File Edit Shell Debug Options Window Help
Python 3.13.9 (tags/v3.13.9:8183fa5, Oct 14 2025, 14:09:13) [MSC v.1944 64 bit (AMD64)] on win32
Enter "help" below or click "Help" above for more information.
>>> ===== RESTART: C:/Users/prast/OneDrive/Desktop/ML LAB/EXP 17.py =====
Predicted: [1, 1]
Actual   : [0, 0]
Accuracy : 0.0
>>> |
```