

EXPERIMENT – 5

PROGRAM:

```
import math

print("Enter number of training samples:")
n = int(input())

print("Enter k value:")
k = int(input())

print("Enter training data (features and class):")
X_train = []
y_train = []

for _ in range(n):
    data = input().split()
    X_train.append(list(map(float, data[:-1])))
    y_train.append(data[-1])

print("Enter test sample features:")
test = list(map(float, input().split()))

distances = []
for i in range(n):
    dist = math.sqrt(sum((a - b) ** 2 for a, b in zip(X_train[i], test)))
    distances.append((dist, y_train[i]))

distances.sort()
neighbors = distances[:k]
```

```
from collections import Counter  
  
votes = Counter([label for _, label in neighbors])  
  
result = votes.most_common(1)[0][0]  
  
  
print("Predicted class:", result)
```