

## EX 5

### CODING:

```
import math

data = [
    ([1,2], 'A'),
    ([2,3], 'A'),
    ([3,3], 'B'),
    ([6,5], 'B')
]

k = 3
test = [2,2]

def dist(a,b):
    return math.sqrt(sum((x-y)**2 for x,y in zip(a,b)))

d = [(dist(test,x),label) for x,label in data]
d.sort()

labels = [label for _,label in d[:k]]

result = max(set(labels), key=labels.count)

print("Test Point:", test)
print("Classified as:", result)
```

## OUTPUT:

main.py	Output
<pre>1 import math 2 3 4 data = [ 5     ([1,2], 'A'), 6     ([2,3], 'A'), 7     ([3,3], 'B'), 8     ([6,5], 'B') 9 ] 10 11 k = 3 12 test = [2,2] 13 14 def dist(a,b): 15     return math.sqrt(sum((x-y)**2 for x,y in zip(a,b))) 16 17 d = [(dist(test,x),label) for x,label in data] 18 d.sort() 19 20 labels = [label for _,label in d[:k]] 21 22 result = max(set(labels), key=labels.count) 23 24 print("Test Point:", test) 25 print("Classified as:", result) 26</pre>	<pre>Test Point: [2, 2] Classified as: A  === Code Execution Successful ===</pre>