

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:

The screenshot shows a Jupyter Notebook interface with the following details:

- Code Cell (moin.py):**

```
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
```
- Run Button:** A blue "Run" button is located at the top of the code cell.
- Output:** The output section displays the results of the code execution:

```
Test Point: [2, 2]
Classified as: A
==== Code Execution Successful ===
```
- Clear Button:** A "Clear" button is located in the top right corner of the output area.