

EX 6

CODING:

```
import math
```

```
X = [[1],[2],[3],[6],[7],[8]]
```

```
y = [0,0,0,1,1,1]
```

```
def mean(v): return sum(v)/len(v)
```

```
def var(v): return sum((x-mean(v))**2 for x in v)/len(v)
```

```
def gauss(x,m,v): return math.exp(-(x-m)**2/(2*v))
```

```
def predict(x):
```

```
    p = {}
```

```
    for c in set(y):
```

```
        d = [X[i][0] for i in range(len(y)) if y[i]==c]
```

```
        p[c] = gauss(x, mean(d), var(d))
```

```
    return max(p, key=p.get)
```

```
correct = sum(predict(X[i][0])==y[i] for i in range(len(y)))
```

```
print("Accuracy:", correct/len(y))
```

OUTPUT:

main.py

Share

Run

```
1 import math
2
3 X = [[1],[2],[3],[6],[7],[8]]
4 y = [0,0,0,1,1,1]
5
6 def mean(v): return sum(v)/len(v)
7 def var(v): return sum((x-mean(v))**2 for x in v)/len(v)
8 def gauss(x,m,v): return math.exp(-(x-m)**2/(2*v))
9
10 def predict(x):
11     p = {}
12     for c in set(y):
13         d = [X[i][0] for i in range(len(y)) if y[i]==c]
14         p[c] = gauss(x, mean(d), var(d))
15     return max(p, key=p.get)
16
17 correct = sum(predict(X[i][0])==y[i] for i in range(len(y)))
18 print("Accuracy:", correct/len(y))
19
```

Output

Clear

Accuracy: 1.0

=== Code Execution Successful ===