EXPERIMENT – 15

PROGRAM:

```
iris_data = [
    [5.1, 3.5, 1.4, 0.2, 'setosa'],
    [4.9, 3.0, 1.4, 0.2, 'setosa'],
    [7.0, 3.2, 4.7, 1.4, 'versicolor'],
    [6.4, 3.2, 4.5, 1.5, 'versicolor'],
    [6.3, 3.3, 6.0, 2.5, 'virginica'],
    [5.8, 2.7, 5.1, 1.9, 'virginica']
]


print("Enter sepal length, sepal
width, petal length, petal width:")
test = list(map(float, input().split()))


classes = list(set(flower[4] for
flower in iris_data))
class_probs = {}


for cls in classes:
    class_data = [f for f in iris_data if
f[4] == cls]
    prior = len(class_data) /
len(iris_data)
    likelihood = 1.0


    for i in range(4):
        feature = test[i]
        similar = 0
        for flower in class_data:
```

```
            if abs(flower[i] - feature) <
1.0:

                similar += 1

        likelihood *= (similar + 1) /
(len(class_data) + 2)


    class_probs[cls] = prior *
likelihood


pred = max(class_probs,
key=class_probs.get)

print("Predicted species:", pred)ice)
```