

KIET Group of Institutions, Ghaziabad

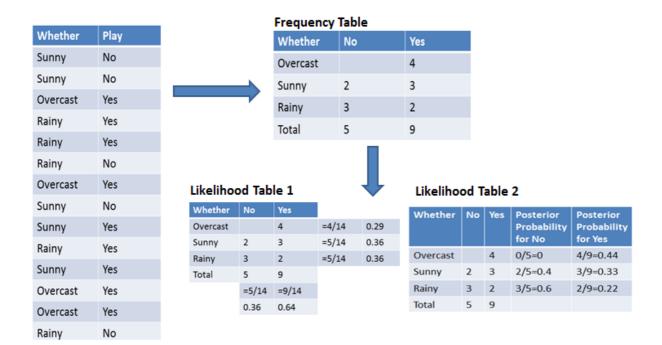
Department of Computer Applications

(An ISO – 9001: 2015 Certified & 'A' Grade accredited Institution by NAAC)

Artificial Intelligence Lab KCA 351: Session 2021-22

Experiment – No-10

Problem Statement: Given an example of weather conditions and playing sports. You need to calculate the probability of playing sports. Now, you need to classify whether players will play or not, based on the weather condition.





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Program:

```
weather =['sunny','sunny','overcast','rainy','rainy','rainy','overcast','s
unny', 'rainy', 'sunny', 'overcast', 'overcast', 'rainy']
temp = ['hot','hot','mild','cool','cool','cool','mild','cool','mild'
,'mild','hot','hot']
play = ['no','no','yes','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','no','yes','yes','no','yes','no','yes','no','yes','yes','no','yes','yes','no','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes','yes'
from sklearn import preprocessing
le = preprocessing.LabelEncoder()
weather encoded = le.fit transform(weather)
print(weather encoded)
type (weather encoded)
temp encoded = le.fit transform(temp)
play encoded = le.fit transform(play)
print(temp encoded)
print(play encoded)
features = list(zip(weather encoded, temp encoded))
print(features)
from sklearn.naive bayes import GaussianNB
model = GaussianNB()
model.fit(features,play encoded)
predicted = model.predict([[0,2]])
print("Predicted Value = ", predicted)
```

Output:

```
[2 2 0 1 1 1 0 2 2 1 2 0 0 1]

Temp: [1 1 1 2 0 0 0 2 0 2 2 2 1 2]

Play: [0 0 1 1 1 0 1 0 1 1 1 1 1 0]

[(2, 1), (2, 1), (0, 1), (1, 2), (1, 0), (1, 0), (0, 0), (2, 2), (2, 0), (1, 2), (2, 2), (0, 2), (0, 1), (1, 2)]
```

Predicted Value: [1]