In [1]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

```
Matplotlib is building the font cache; this may take a moment.
```

In [2]:
```
df=pd.read_csv('PlayTennis.csv')
df
```

Out[2]:

	outlook	temp	humidity	windy	play
0	sunny	hot	high	False	no
1	sunny	hot	high	True	no
2	overcast	hot	high	False	yes
3	rainy	mild	high	False	yes
4	rainy	cool	normal	False	yes
5	rainy	cool	normal	True	no
6	overcast	cool	normal	True	yes
7	sunny	mild	high	False	no
8	sunny	cool	normal	False	yes
9	rainy	mild	normal	False	yes
10	sunny	mild	normal	True	yes
11	overcast	mild	high	True	yes
12	overcast	hot	normal	False	yes
13	rainy	mild	high	True	no

In [3]:
```
from sklearn.preprocessing import LabelEncoder
```

In [4]:
```
le = LabelEncoder()
```

In [5]:
```
df = df.apply(le.fit_transform)
x= df.iloc[:,:4]
y= df.iloc[:,-1]
df
```

Out[5]:

	outlook	temp	humidity	windy	play
0	2	1	0	0	0
1	2	1	0	1	0
2	0	1	0	0	1
3	1	2	0	0	1
4	1	0	1	0	1
5	1	0	1	1	0
6	0	0	1	1	1
7	2	2	0	0	0
8	2	0	1	0	1
9	1	2	1	0	1
10	2	2	1	1	1
11	0	2	0	1	1
12	0	1	1	0	1
13	1	2	0	1	0

In [6]:
```
from sklearn.naive_bayes import GaussianNB ,MultinomialNB,BernoulliNB
nb_ber = BernoulliNB()
nb_ber.fit(x,y)
nb_ber.predict([[1,2,0,1]])

# nb.predict_proba([[1,2,0,1]])
```

```
C:\Users\DSAI\anaconda3\lib\site-packages\sklearn\base.py:450: UserWarning: X
does not have valid feature names, but BernoulliNB was fitted with feature na
mes
  warnings.warn(
```

Out[6]:
```
array([0])
```

In [7]:
```
# nb_mul = MultinomialNB()
# nb_mul.fit(x,y)
# nb_mul.predict([[1,2,0,1]])
```

In [8]:
```
nb_ber = BernoulliNB()
nb_ber.fit(x,y)
nb_ber.predict([[1,2,0,1]])
```

```
C:\Users\DSAI\anaconda3\lib\site-packages\sklearn\base.py:450: UserWarning: X
does not have valid feature names, but BernoulliNB was fitted with feature na
mes
  warnings.warn(
```

Out[8]:
```
array([0])
```

In [9]:
```
nb_ber = BernoulliNB()
nb_ber.fit(x,y)
nb_ber.predict([[1,2,0,1]])
```

```
C:\Users\DSAI\anaconda3\lib\site-packages\sklearn\base.py:450: UserWarning: X
does not have valid feature names, but BernoulliNB was fitted with feature na
mes
  warnings.warn(
```

Out[9]:
```
array([0])
```

In [ ]:
```

```