In [5]:
```
import numpy as np
import pandas as pd

df = pd.read_csv("C:/Users/Batchise1/Desktop/p2.csv")
df.head()

from sklearn.model_selection import train_test_split

X = df[['Outlook', 'Temperature']]
y = df['PlayTennis']
from sklearn import preprocessing

print(X)

from sklearn.preprocessing import LabelEncoder

X1 = X.apply(LabelEncoder().fit_transform)
print(X1)
le = preprocessing.LabelEncoder()
y1 = le.fit_transform(y)
print(y1)

from sklearn.model_selection import train_test_split

X_train, X_test, y_train, y_test = train_test_split(X1, y1, test_size=0.33, random_state=42)
print('Training Data Shape:', X_train.shape)
print('Testing Data Shape:', X_test.shape)
print(X_train)
print(X_test)

from sklearn.naive_bayes import GaussianNB
```

```
X_train, X_test, y_train, y_test = train_test_split(X1, y1, test_size=0.33, random_state=42)
print('Training Data Shape:', X_train.shape)
print('Testing Data Shape:', X_test.shape)
print(X_train)
print(X_test)

from sklearn.naive_bayes import GaussianNB

naive_model = GaussianNB()
naive_model.fit(X_train, y_train)
from sklearn import metrics

predictions = naive_model.predict(X_test)
print(metrics.classification_report(y_test, predictions))
df = pd.DataFrame(metrics.confusion_matrix(y_test, predictions), index=['yes', 'no'], columns=['yes ', 'no'])
print(df)
print(metrics.accuracy_score(y_test, predictions))
```

```
     Outlook Temperature
```

```
df = pd.DataFrame(metrics.confusion_matrix(y_test, predictions), index=['yes', 'no'],
print(df)
print(metrics.accuracy_score(y_test, predictions))
```

```
     Outlook Temperature
0      sunny         hot
1      sunny         hot
2   overcast         hot
3       rain        mild
4       rain        cool
5       rain        cool
6   overcast        cool
7      sunny        mild
8      sunny        cool
9       rain        mild
10     sunny        mild
11  overcast        mild
12  overcast         hot
13      rain        mild
    Outlook  Temperature
0         2            1
1         2            1
2         0            1
3         1            2
4         1            0
5         1            0
6         0            0
7         2            2
8         2            0
9         1            2
10        2            2
11        0            2
12        0            1
```

```
10          2              2
11          0              2
12          0              1
13          1              2
[0 0 1 1 1 0 1 0 1 1 1 1 1 0]
Training Data Shape: (9, 2)
Testing Data Shape: (5, 2)
    Outlook  Temperature
8         2            0
2         0            1
1         2            1
13        1            2
4         1            0
7         2            2
10        2            2
3         1            2
6         0            0
    Outlook  Temperature
9         1            2
11        0            2
0         2            1
12        0            1
5         1            0
              precision    recall  f1-score   support

           0       0.50      0.50      0.50         2
           1       0.67      0.67      0.67         3

avg / total       0.60      0.60      0.60         5

     yes   no
yes    1    1
no     1    2
```