In [11]:

```
import csv
import pandas as pd
import numpy as np
```

In [20]:

```
data = pd.read_csv('Pgm 1 Tennis Dataset.csv')

a = np.array(data.iloc[:,1:])
print(a)
```

```
[['Sunny' 'Hot' 'High' 'Weak' 'No']
 ['Sunny' 'Hot' 'High' 'Strong' 'No']
 ['Overcast' 'Hot' 'High' 'Weak' 'Yes']
 ['Rain' 'Mild' 'High' 'Weak' 'Yes']
 ['Rain' 'Cool' 'Normal' 'Weak' 'Yes']
 ['Rain' 'Cool' 'Normal' 'Strong' 'No']
 ['Overcast' 'Cool' 'Normal' 'Strong' 'Yes']
 ['Sunny' 'Mild' 'High' 'Weak' 'No']
 ['Sunny' 'Cool' 'Normal' 'Weak' 'Yes']
 ['Rain' 'Mild' 'Normal' 'Weak' 'Yes']
 ['Sunny' 'Mild' 'Normal' 'Strong' 'Yes']
 ['Overcast' 'Mild' 'High' 'Strong' 'Yes']
 ['Overcast' 'Hot' 'Normal' 'Weak' 'Yes']
 ['Rain' 'Mild' 'High' 'Strong' 'No']]
```

In [18]:

```
numAttr = len(a[0]) - 1
hypothesis = ['0'] * numAttr
print("Initial Hypo : ", hypothesis)
```

```
Initial Hypo :  ['0', '0', '0', '0', '0', '0']
```

In [19]:

```
for i in range(len(a)):
    if a[i][numAttr] == 'Yes':
        for j in range(0, numAttr):
            if hypothesis[j] == '0' or hypothesis[j] == a[i][j]:
                hypothesis[j] = a[i][j]
            else:
                hypothesis[j] = '?'

print("Final Hypo : ", hypothesis)
```

```
Final Hypo :  ['Sunny', 'Warm', '?', 'Strong', '?', '?']
```