

```
1 Program-1:
2 Implement and demonstrate the FIND-S algorithm for finding the most specific
3 hypothesis based on a given set of training data samples. Read the training data from
  a.CSV file.
```

In [8]:

```
1 import csv
2 print("\n The most General hypothesis is:['?', '?', '?', '?', '?', '?']")
3 print("\n The most Specific hypothesis is:['0', '0', '0', '0', '0', '0']")
```

The most General hypothesis is:['?', '?', '?', '?', '?', '?']

The most Specific hypothesis is:['0', '0', '0', '0', '0', '0']

In [9]:

```
1 a=[]
2 with open('trainingdata.csv', 'r') as csvFile:
3     reader=csv.reader(csvFile)
4     for row in reader:
5         a.append(row)
6         print(row)
```

['Sunny', 'Warm', 'Normal', 'Strong', 'Warm', 'Same', 'Yes']

['Sunny', 'Warm', 'High', 'Strong', 'Warm', 'Same', 'Yes']

['Rainy', 'Cold', 'High', 'Strong', 'Warm', 'Change', 'No']

['Sunny', 'Warm', 'High', 'Strong', 'Cool', 'Change', 'Yes']

In [10]:

```
1 num_attr=len(a[0])-1
2 print('the Initial value of hypothesis is:\n')
3 hypo=['0']*num_attr
4 print(hypo)
```

the Initial value of hypothesis is:

['0', '0', '0', '0', '0', '0']

In [13]:

```
1 for j in range(0,num_attr):
2     hypo[j]=a[0][j]
3 for i in range(0,len(a)):
4     if a[i][num_attr]!='Yes':
5         for j in range(0,num_attr):
6             if a[i][j]!=hypo[j]:
7                 hypo[j]='?'
8             else:
9                 hypo[j]=a[i][j]
10     print("For Training Example No {0} the hypothesis :\n".format(i),hypo)
11 print("\nThe Maximally Specific Hypothesis is :",hypo)
```

For Training Example No 0 the hypothesis :

['Sunny', 'Warm', 'Normal', 'Strong', 'Warm', 'Same']

For Training Example No 1 the hypothesis :

['Sunny', 'Warm', '?', 'Strong', 'Warm', 'Same']

For Training Example No 2 the hypothesis :

['Sunny', 'Warm', '?', 'Strong', 'Warm', 'Same']

For Training Example No 3 the hypothesis :

['Sunny', 'Warm', '?', 'Strong', '?', '?']

The Maximally Specific Hypothesis is : ['Sunny', 'Warm', '?', 'Strong', '?', '?']

In []:

1