jupyter Untitled1 Last Checkpoint: 3 hours ago (unsaved changes)

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Trusted | Python 3

Run Code

In [60]:
```
import numpy as np
import pandas as pd
data = pd.read_csv('dataset.csv') #same as first program dataset
concepts = np.array(data.iloc[:,0:-1])
target = np.array(data.iloc[:,-1])

print("\n",concepts)
print("\n",target)


def learn(concepts, target):
    pos = [x for x in range(len(target)) if target[x] == 'Y']
    specific_h = concepts[pos[0]].copy()
    general_h = [["?" for i in range(len(specific_h))] for j in range(len(specific_h))]
    for i, h in enumerate(concepts):
        if target[i] == 'Y':
            for x in range(len(specific_h)):
                if h[x] != specific_h[x]:
                    specific_h[x] = '?'
                    general_h[x][x] = '?'
        if target[i] == 'N':
            for x in range(len(specific_h)):
                if h[x] != specific_h[x]:
                    general_h[x][x] = specific_h[x]
                else:
                    general_h[x][x] = '?'
        print("\nGeneral Hypothesis ",i,": ",general_h)
        print("\nSpecific Hypothesis ",i,": ",specific_h)

        indices = [i for i, val in enumerate(general_h) if val == ['?', '?', '?', '?', '?', '?']]
    for i in indices:
        general_h.remove(['?', '?', '?', '?', '?', '?'])
    return specific_h, general_h



s_final, g_final = learn(concepts, target)

print('Final S: ', s_final, sep="\n")
print('Final G: ', g_final, sep="\n")

data.head()
```

```
 [['Sunny' 'Warm' 'Normal' 'Strong' 'Warm' 'Same']
 ['Sunny' 'Warm' 'High' 'Strong' 'Warm' 'Same']
 ['Rainy' 'Cold' 'High' 'Strong' 'Warm' 'Change']
 ['Sunny' 'Warm' 'High' 'Strong' 'Cool' 'Change']]

 ['Y' 'Y' 'N' 'Y']

General Hypothesis  0 :  [['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?',
'?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?']]

Specific Hypothesis  0 :  ['Sunny' 'Warm' 'Normal' 'Strong' 'Warm' 'Same']

General Hypothesis  1 :  [['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?',
'?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?']]

Specific Hypothesis  1 :  ['Sunny' 'Warm' '?' 'Strong' 'Warm' 'Same']

General Hypothesis  2 :  [['Sunny', '?', '?', '?', '?', '?'], ['?', 'Warm', '?', '?', '?', '?'], ['?', '?', '?', '?', '?',
'?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', 'Same']]

Specific Hypothesis  2 :  ['Sunny' 'Warm' '?' 'Strong' 'Warm' 'Same']

General Hypothesis  3 :  [['Sunny', '?', '?', '?', '?', '?'], ['?', 'Warm', '?', '?', '?', '?'], ['?', '?', '?', '?', '?',
'?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?']]

Specific Hypothesis  3 :  ['Sunny' 'Warm' '?' 'Strong' '?' '?']
Final S:
['Sunny' 'Warm' '?' 'Strong' '?' '?']
Final G:
[['Sunny', '?', '?', '?', '?', '?'], ['?', 'Warm', '?', '?', '?', '?']]
```

Out[60]:

	sky	airtemp	humidity	wind	water	forecast	enjoysport
0	Sunny	Warm	Normal	Strong	Warm	Same	Y
1	Sunny	Warm	High	Strong	Warm	Same	Y
2	Rainy	Cold	High	Strong	Warm	Change	N
3	Sunny	Warm	High	Strong	Cool	Change	Y