GALWIN BRITO 4MT17CS039

PAGE NO : 3
DATE : 6/10/20
EXP.NO. : 2

2. For given set of training examples stored in a .csv file, implement & demonstrate the candidate elimination algorithm to output a description of the set of all hypothesis consistent with training examples.

```
→ import csv
with open("lab2.csv") as f:
    csv_file = csv.reader(f)
    data = list(csv_file)
print(data)
s = data[1][:-1]
print(s)
g = [['?' for i in range(len(s))]
        for j in range(len(s))]
for i in data:
    if i[-1] == "Yes":
        for j in range(len(s)):
            if i[j] != s[j]:
                s[j] = '?'
                g[j][j] = '?'
    elif i[-1] == "no":
        for j in range(len(s)):
            if i[j] != s[j]:
                g[j][j] = s[j] :
            else
                g[j][j] = "?"
```

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```
print("steps of candidate elimination algorithm", data.index(i)+1)
print(s)
print(g)
gh=[]
for i in g:
    for j in i:
        if j!='?':
            gh.append(i)
            break
print("\n Final specific hypothesis:\n", s)
print("\n Final general hypothesis:\n", gh)
```

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Output:

```
[['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']]

['sunny','warm','high','strong','warm',
'same']
steps of candidate elimination algorithm
1:
['sunny','warm','?','strong','warm',
'same']
[['?','?','?','?','?','?'],['?','?','?','?','?','?']
['?','?','?','?','?','?'],['?','?','?','?','?','?']
['?','?','?','?','?','?'],['?','?','?','?','?','?']]

steps of candidate elimination algorithm
2:
['sunny','warm','?','strong','warm',
'same']
[['?','?','?','?','?','?'],['?','?','?','?','?','?']
['?','?','?','?','?','?'],['?','?','?','?','?','?']
['?','?','?','?','?','?'],['?','?','?','?','?','?']]
```

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steps of candidate elimination algorithm

3:

['sunny', 'warm', '?', 'strong', 'warm', 'same']
[['sunny', '?', '?', '?', '?', '?'], ['?', 'warm', '?', '?', '?', '?'],
[?, ?, ?, ?, ?, ?], ['?', '?', '?', '?', '?', 'same']]

steps of candidate elimination algorithm

4:

['sunny', 'warm', '?', 'strong', '?', '?']
[['sunny', '?', '?', '?', '?', '?'], ['?', 'warm', '?', '?', '?', '?'],
['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'],
['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?']]

Final Specific Hypothesis
['sunny', 'warm', '?', 'strong', '?', '?']

Final General Hypothesis
[['?', 'sunny', '?', '?', '?', '?'], ['?', 'warm', '?', '?', '?', '?']