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Expt. No. 02

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* For a given set of training data examples stored in a .csv file implement and demonstrate the Candidate Elimination algorithm to output a description of the set all hypothesis consistent with the training example.

*

```
import csv
with open('C:/Users/Mili/Onedrive/Desktop/Mite/4MT17CS058_Milind/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[i][j] =s[j]
                else:
                    g[j][j] = '?'
```

Teacher's Signature

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```
print("steps of Candidate elimination algorithms", cdata.index(i)+1)
print(s)
print(g)
gh=[]
for i in g:
    for j in c:
        if j!='?':
            gh.append(i)
            break
print("/n Final Specific hypothesis is. /n ",s)
print("/n Final ground hypothesis \n",gh)
```

* **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.

[ ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'],
  ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?']
  ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?']]

Steps of candidate elimination algorithm 2:

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

 [['?', '?', '?', '?', '?', '?'] ,['?', '?', '?', '?', '?', '?']
  ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?']
  ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?']]
```

Steps of Candidinate 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', '?', '?', '?', '?']]