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**Roll No:- 42**

**Practical no:- 2**

**Practical Name:- Implemente the candidate elimination inductive learning algorithm.**

import csv

with open("/ml2.csv") as f:

    csv\_file=csv.reader(f)

    data=list(csv\_file)

    s=data[1][:-1]

    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]="?"

        print("\nSteps 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("\nFinal specific hypothesis:\n",s)

    print("\nFinal general hypothesis:\n",gh)

**Output:-**

Steps of Candidate Elimination Algorithm 1

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

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

Steps of Candidate Elimination Algorithm 2

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

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

Steps of Candidate Elimination Algorithm 3

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

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

Steps of Candidate Elimination Algorithm 4

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

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

Steps of Candidate Elimination Algorithm 5

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

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

Final specific hypothesis:

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

Final general hypothesis:

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