BINDIYA C.M., 4MT17CS028

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2. 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 of all hypothesis consistent with the 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] = "?"
print("Steps of candidate elemination algorithm",
      data.index(i)+1)
print(s)
```

ARUN'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:-

[['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']

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

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