Program 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 the hypothesis consistent with the training examples.

```
import csv
with open("sample.csv") as f:
    csv_file = csv.reader(f)
    data = list(csv_file)
print(data)

s = data[1][:-1]
g = [['?' for i in range(len(s))] for i 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]
```

Teacher's Signature

```
        else:
            g[j][j] = "?"
    print("\n Steps in 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)
```

Dataset

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

Output

[['sunny', 'warm', 'normal', 'strong', 'warm', 'same',
['sunny', 'warm', 'high', 'strong', 'warm', 'same',
['rainy', 'cool', 'high', 'strong', 'warm', 'change',
['sunny', 'warm', 'high', 'strong', 'cool', 'change',

Steps of candidate Algorithm :

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

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

Final specific hypothesis :

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

Final general hypothesis :

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