EX.NO: 4	Find-S Algorithm
DATE: 29.03.2022	

AIM:

To study and implement Find-S Algorithm.

Algorithm

Step 1: Start
Step 2: Import the required modules such as pandas.
Step 3: Create data set and save it as pandas DataFrame.
Step 4: Initialize h with most specific hypothesis.
Step 5: Implement Find-S algorithm to find the most general hypothesis
Step 6: Display the maximally hypothesis
Step 7: Stop

The Dataset

```
import pandas as pd

f = pd.read_csv('data.csv') f.head(10)
```

0	Sunny	Warm	Normal	Strong	Warm.1	Same	Yes
1	Sunny	Warm	High	Strong	Warm	Same	Yes
2	Rainy	Cold	High	Strong	Warm	Change	No
3	Sunny	Warm	High	Strong	Cool	Change	Yes

Reading the file and creating hypothesis array

```
import pandas as pd

f = pd.read_csv('data.csv')

le = len(f.columns) hypothesis =
[0]*(le-1)

print("Hypothesis at beginning")
print(hypothesis)

arr = []
f = open('data.csv', 'r')
for i in f.readlines():
    arr.append(i.split(','))

Hypothesis at
beginning[0,0,0,0,0,0]
```

Copying X1 to the hypothesis

```
for i in range(0, len(arr[0])-1): hypothesis[i] =
    arr[0][i]

print(hypothesis)
```

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

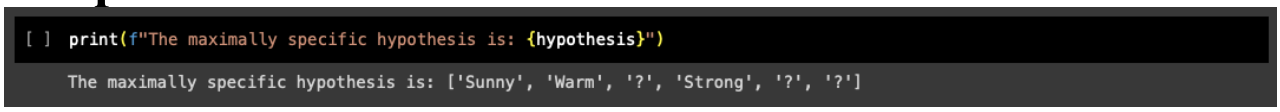
Implementation of find-s algorithm

```
        for i in range(0, len(arr)):
            if arr[i][-1] != 'No\n':
                for j in range(0, len(arr[i])-1):
                    if hypothesis[j] == arr[i][j]:
                        pass
                    else:
                        hypothesis[j] = '?'
    else:
        pass

print(f"The maximally specific hypothesis is: {hypothesis}")
```

The maximally specific hypothesis is: ['Sunny', 'Warm', '?', 'Strong', '?', '?']

Output:



RESULT:

Find-S Algorithm has been studied and implemented successfully.