

TITLE: 1. S Algorithm

Expt. No.: I

Date: 16.09.2020.

Program:

```
import csv.
```

```
h = [[-1, -1, -1, -1, -1, -1]]
```

```
examples = []
```

```
with open('Training-examples.csv') as csv-file:
```

```
    readcsv = csv.reader(csv-file, delimiter=',')
```

```
    examples = list(readcsv)
```

```
print("The given training examples are: ")
```

```
for i in examples:
```

```
    print(i)
```

```
print("The +ve training examples are: ")
```

```
for i in examples:
```

```
    if i[-1] == 'Yes':
```

```
        print(i)
```

```
print("Steps of RindS Algorithm are: ")
```

```
print(h)
```

```
pos-e = []
```

```
for i in examples:
```

```
    if i[-1] == 'Yes':
```

```
        pos-e = examples[i:-1]
```

MARSH R JAIN

18617C1031

Marks :

Staff :

for x in examples:

if x[-1] == 'Yes':

$\hat{f} = 0$
h = examples[h]

print(h[-1])

for i in range(0, 6):

if h[i] != examples[i][i]:

h[i] = '?'

else:

$f = 1$

else:

continue.

print(f "The most specific hypothesis: {h[-1]}")

Output:

The two training examples are:

["Sunny", "warm", "Normal", "Strong", "warm", "Same", "Yes"]

['Sunny', 'warm', 'Strong', 'warm', 'Same', 'Yes']

['Sunny', 'warm', 'High', 'Strong', 'Cool', 'Change', 'Yes']

Steps of Find-S Algorithm are:

[["?", "?", "?", "?", "?", "?"],

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

['Sunny', 'warm', '?', 'Strong', '?', '?']

['Sunny', 'warm', '??', 'Strong', '??', '?']

The most specific hypothesis: ['Sunny', 'warm', '?', 'Strong', '?', '?']

Find-S Algorithm

By Harsh R - 1BG17CS031

1. Program:

```
import csv

h = [['%', '%', '%', '%', '%', '%']]

examples = []

with open('Training_examples.csv') as csv_file:
    readcsv = csv.reader(csv_file, delimiter = ',')
    examples = list(readcsv)

print("The given training examples are: ")

for i in examples:
    print(i)

print("The positive training examples are: ")

for i in examples:
    if i[-1] == 'Yes':
        print(i)

print("Steps of Find-S algorithm are: ")

print(h)

#initialise h to the most specific hypothesis

pos_e = []

for i in examples:
    if i[-1] == 'Yes':
        pos_e = examples[: -1]

for x in examples:
    if x[-1] == 'Yes':
        j = 0
```

```

        h = examples[j]

        print(h[:-1])

        for i in range(0,6):

            if h[i] != examples[j][i]:

                h[i] = '?'

            else:

                j += 1

        else:

            continue

print(f"The most specific hypothesis: {h[:-1]}")

```

2. Output

The image shows two side-by-side windows from a Windows desktop. The left window is titled 'Python 3.8.2 Shell' and displays the output of a Python script. The right window is titled 'script.py - D:\7th Sem\ML Lab\Session 2\script.py (3.8.2)' and shows the source code of the script.

Left Window Output:

```

Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\7th Sem\ML Lab\Session 2\script.py =====
The given training examples are:
[['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']]
The positive training examples are:
[['Sunny', 'Warm', 'Normal', 'Strong', 'Warm', 'Same', 'Yes'],
 ['Sunny', 'Warm', 'High', 'Strong', 'Warm', 'Same', 'Yes'],
 ['Sunny', 'Warm', 'High', 'Strong', 'Cool', 'Change', 'Yes']]
Steps of Find-S algorithm are:
[['?', '?', '?', '?', '?', '?']]
[['Sunny', 'Warm', 'Normal', 'Strong', 'Warm', 'Same']]
[['Sunny', 'Warm', '?', 'Strong', '?', '?']]
[['Sunny', 'Warm', '?', 'Strong', '?', '?']]
The most specific hypothesis: ['Sunny', 'Warm', '?', 'Strong', '?', '?']
>>>

```

Right Window Source Code:

```

script.py - D:\7th Sem\ML Lab\Session 2\script.py (3.8.2)
File Edit Format Run Options Window Help
import csv
h = [['?', '?', '?', '?', '?', '?']]
examples = []
with open('Training_examples.csv') as csv_file:
    readcsv = csv.reader(csv_file, delimiter=',')
    examples = list(readcsv)
print("The given training examples are: ")
for i in examples:
    print(i)
print("The positive training examples are: ")
for i in examples:
    if i[-1] == 'Yes':
        print(i)
print("Steps of Find-S algorithm are: ")
print(h)
#initialise h to the most specific hypothesis
pos_e = []
for i in examples:
    if i[-1] == 'Yes':
        pos_e = examples[-1]
for x in examples:
    if x[-1] == 'Yes':
        j = 0
        h = examples[j]
        print(h[:-1])
        for i in range(0,6):
            if h[i] != examples[j][i]:
                h[i] = '?'
            else:
                j += 1
        else:
            continue
print(f"The most specific hypothesis: {h[:-1]}")

```