

EXPERIMENT -1

Implement and demonstrate the FIND-S algorithm for finding the most specific hypothesis based on a given set of training data samples.

CODE :

```
# FIND-S Algorithm Implementation
```

```
training_data = [  
    ['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']  
]
```

```
num_attributes = len(training_data[0]) - 1
```

```
hypothesis = ['Ø'] * num_attributes
```

```
for example in training_data:
```

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

```
        hypothesis = example[:-1]
```

```
        break
```

```
for example in training_data:
```

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

```
        for i in range(num_attributes):
```

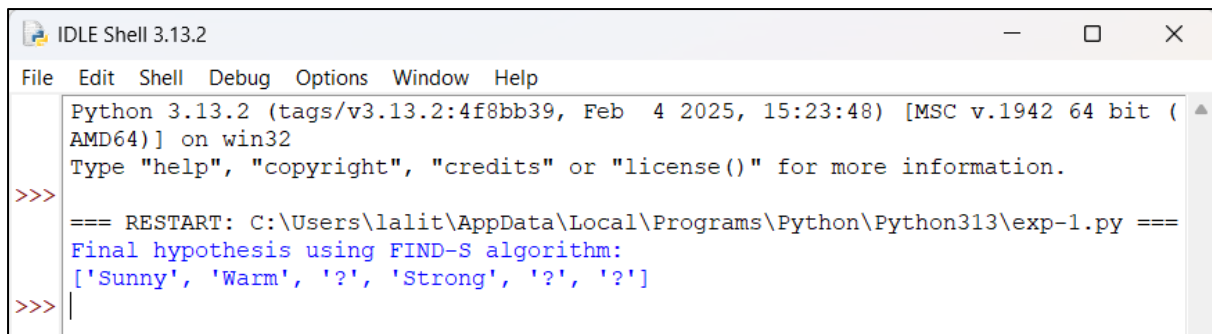
```
            if hypothesis[i] != example[i]:
```

```
                hypothesis[i] = '?'
```

```
print("Final hypothesis using FIND-S algorithm:")
```

```
print(hypothesis)
```

OUTPUT :

A screenshot of a Python IDLE Shell window. The title bar reads "IDLE Shell 3.13.2". The menu bar includes "File", "Edit", "Shell", "Debug", "Options", "Window", and "Help". The shell area shows the following text: "Python 3.13.2 (tags/v3.13.2:4f8bb39, Feb 4 2025, 15:23:48) [MSC v.1942 64 bit (AMD64)] on win32", "Type \"help\", \"copyright\", \"credits\" or \"license()\" for more information.", a prompt ">>>" followed by "=== RESTART: C:\Users\lalit\AppData\Local\Programs\Python\Python313\exp-1.py ===", "Final hypothesis using FIND-S algorithm:", and a list ["Sunny", "Warm", "?", "Strong", "?", "?"] on the next line. A second prompt ">>>" is followed by a vertical cursor bar on the next line.

```
Python 3.13.2 (tags/v3.13.2:4f8bb39, Feb 4 2025, 15:23:48) [MSC v.1942 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
=== RESTART: C:\Users\lalit\AppData\Local\Programs\Python\Python313\exp-1.py ===
Final hypothesis using FIND-S algorithm:
['Sunny', 'Warm', '?', 'Strong', '?', '?']
>>> |
```