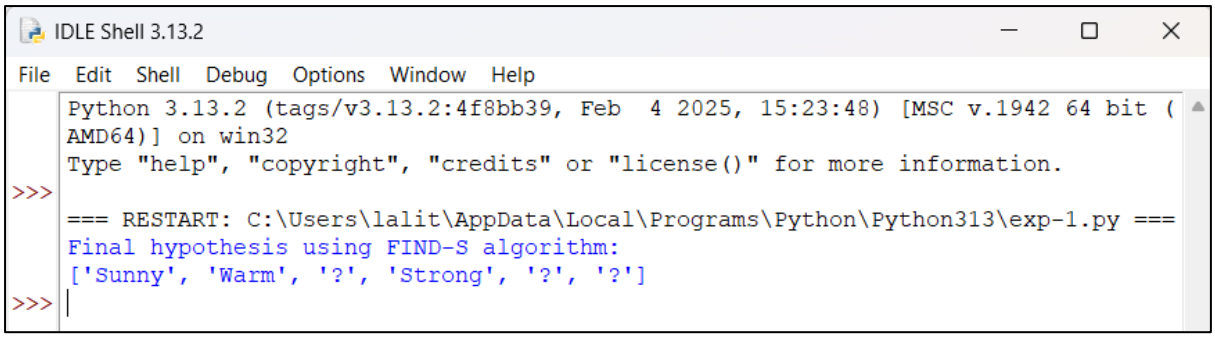
EXPERIMENT -1

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 :


IDLE Shell 3.13.2
File Edit Shell Debug Options Window Help
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', '?', '?']
>>>