Name: Mrudula K

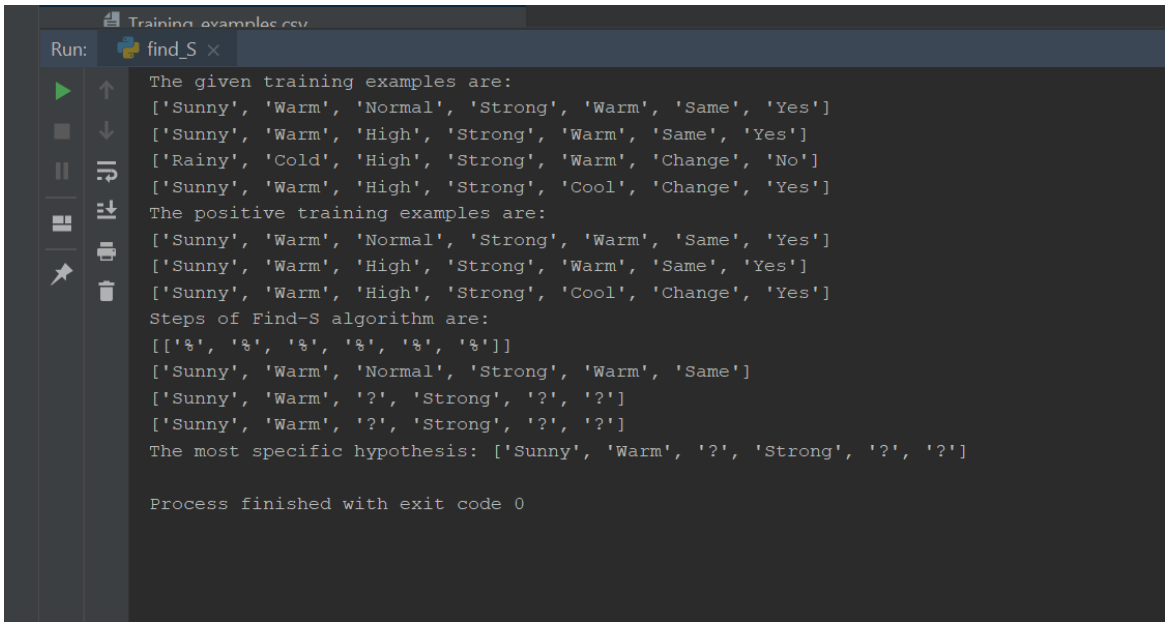
Class: 7th 'A'

USN: 1BG17CS052

1. Find-S algorithm

```
import csv

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

with open('Training_examples.csv') as csv_file:
    readcsv = csv.reader(csv_file, delimiter = ',')
    #print(readcsv)
    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]
#print(f"pos = {pos_e}")
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]}")
```

Output:


Training_examples.csv
Run:
find_S
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', '?', '?']
Process finished with exit code 0