

## EXPRERIMENT 1

### IMPLEMENTATION OF FIND-S ALGORITHM

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#### CODE-

```
import csv
num_attributes = 6
a = []
print("\n The Given Training Data Set \n")
with open('EnjoySport.csv', 'r') as csvfile:
    reader = csv.reader(csvfile)
    for row in reader:
        a.append (row)
        print(row)

print("\n The initial value of hypothesis: ")
hypothesis = ['0'] * num_attributes
print(hypothesis)

for j in range(0,num_attributes):
    hypothesis[j] = a[0][j]
print("\n Find S: Finding a Maximally Specific Hypothesis\n")
for i in range(0,len(a)):
    if a[i][num_attributes]=='Yes':
        for j in range(0,num_attributes):
            if a[i][j]!=hypothesis[j]:
                hypothesis[j]='?'
            else :
                hypothesis[j]= a[i][j]
        print(" For Training instance No:{0} the hypothesis is ".format(i),
hypothesis)
        print("\n The Maximally Specific Hypothesis for a given Training Ex
amples :\n")
        print(hypothesis)
```

## OUTPUT –

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Find-S Algorithm.ipynb ☆

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```
import csv
num_attributes = 6
a = []
print("\n The Given Training Data Set \n")
with open('EnjoySport.csv', 'r') as csvfile:
    reader = csv.reader(csvfile)
    for row in reader:
        a.append(row)
        print(row)
```

The Given Training Data Set

```
['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']
```

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```
print("\n The initial value of hypothesis: ")
hypothesis = ['0'] * num_attributes
print(hypothesis)
```

The initial value of hypothesis:

```
['0', '0', '0', '0', '0', '0']
```

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```
for j in range(0,num_attributes):
    hypothesis[j] = a[0][j]
print("\n Find S: Finding a Maximally Specific Hypothesis\n")
for i in range(0,len(a)):
    if a[i][num_attributes]!='Yes':
        for j in range(0,num_attributes):
            if a[i][j]!=hypothesis[j]:
                hypothesis[j]='?'
            else:
                hypothesis[j]= a[i][j]
        print(" For Training instance No:{0} the hypothesis is ".format(i,hypothesis))
        print("\n The Maximally Specific Hypothesis for a given Training Examples :\n")
        print(hypothesis)
```

Find S: Finding a Maximally Specific Hypothesis

```
For Training instance No:0 the hypothesis is  ['Sunny', 'Warm', 'Normal', 'Strong', 'Warm', 'Same']

The Maximally Specific Hypothesis for a given Training Examples :

['Sunny', 'Warm', 'Normal', 'Strong', 'Warm', 'Same']
For Training instance No:1 the hypothesis is  ['Sunny', 'Warm', '?', 'Strong', 'Warm', 'Same']

The Maximally Specific Hypothesis for a given Training Examples :

['Sunny', 'Warm', '?', 'Strong', 'Warm', 'Same']
For Training instance No:2 the hypothesis is  ['Sunny', 'Warm', '?', 'Strong', 'Warm', 'Same']

The Maximally Specific Hypothesis for a given Training Examples :

['Sunny', 'Warm', '?', 'Strong', 'Warm', 'Same']
For Training instance No:3 the hypothesis is  ['Sunny', 'Warm', '?', 'Strong', '?', '?']

The Maximally Specific Hypothesis for a given Training Examples :

['Sunny', 'Warm', '?', 'Strong', '?', '?']
```