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1 Implement & demonstrate FIND-S algorithm for finding the most specific hypothesis based on a given set of training data samples Read training data from .csv file

```
import random
import csv
attributes = [['Sunny', 'Rainy'],
              ['warm', 'cold'],
              ['Normal', 'High'],
              ['strong', 'weak'],
              ['warm', 'cool'],
              ['same', 'change']]
print(attributes)
num_attributes = len(attributes)
print(num_attributes)
print("\n The most general hypothesis: ['?', '?', '?',
                                        '?', '?', '?']\n")
print("\n The most specific hypothesis: ['0', '0', '0',
                                         '0', '0', '0']\n")

a = []
print("\n The given training data set is: \n")
with open('C:\\Users\\PVBhat\\Desktop\\csvfiles\\
          Sampledata1.csv', 'r') as csvFile:
    reader = csv.reader(csvFile)
    for row in reader:
        a.append(row)
        print(row)
```

```
print("\n The initial value of hypothesis :")
h = ['0'] * num_attributes
print(h)
for i in range(0, len(a)):
    if a[i][num_attributes] == 'yes':
        for j in range(num_attributes):
            if h[j] == '0' or h[j] == a[i][j]:
                h[j] = a[i][j]
            else:
                h[j] = '?'
print("\n For training examples : {0} the hypothesis\n",
                                    format(i+1), h)
```

Dataset :

Sky	AirTemp	Humidity	Wind	Wate	Forecast	Enjoy-Spost
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

Output :

[['Sunny', 'Rainy'], ['warm', 'cold'],
['strong', 'weak'], ['warm', 'cool'], ['same', 'change']]

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The most general hypothesis ['?', '?', '?', '?', '?', '?']

The most specific hypothesis ['0', '0', '0', '0', '0', '0']

The given training data set is :

['Sky', 'AirTemp', 'Humidity', 'wind', 'wate', 'Forecast', 'EnjoySpost']

['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 initial value of hypothesis :

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

For training example 5 the hypothesis is

['Sunny', 'warm', '?', 'strong', '?', '?']