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

```
from pandas import DataFrame
data = DataFrame.from_csv('C:/Users/user1/Desktop/
                          ML Lab/book3.csv')
columnLength = data.shape[1]
print(data)
h = ['0'] * (columnLength - 1)
hp = []
hn = []
for trainingExample in data.values:
    if trainingExample[-1] != 'no':
        hp.append(list(trainingExample))
    else:
        hn.append(list(trainingExample))
for i in range(len(hp)):
    for j in range(columnLength-1):
        if (h[j] == '0'):
            h[j] = hp[i][j]
        if (h[j] != hp[i][j]):
            h[j] = '?'
        else:
            h[j] = hp[i][j]
print("\n The positive hypothesis are: ",hp);
print("\n The negative hypothesis are: ",hn);
print("\n The maximally specific hypothesis is: ",h);
```

Teacher's Signature : _____

output :-

SL.No	Sky	Air Temp	Humidity	Wind	Water	Forecast	Enjoy Spot
1.	Sunny	warm	normal	strong	warm	Same	yes
2.	Sunny	warm	high	strong	warm	Same	yes
3.	Rainy	Cold	high	strong	warm	change	No
4.	Sunny	warm	high	strong	cool	change	yes

The positive hypothesis are :

[['sunny', 'warm', 'normal', 'strong', 'warm', 'same', 'yes'], ['sunny', 'warm', 'high', 'strong', 'warm', 'same', 'yes'], ['sunny', 'warm', 'high', 'strong', 'cool', 'change', yes']]

The negative hypothesis are :

[['rainy', 'cold', 'high', 'strong', 'warm', 'change', 'no']]

The maximally hypothesis is :

['sunny', 'warm', '?', 'Strong', '?', '?']