1. Implement and demonstrate 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('Cab1.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)

Output:

sl no.	sky	Air temp.	Humidity	wind	water	fore cast	Enjoy sport
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 specific hypothesis is:
['sunny', 'warm', '?', 'strong', '?', '?']