```python
import numpy as np
import pandas as pd
def learn(concepts, target):
    specific_h = concepts[0].copy()
    print("initialization of specific_h :")
    print (specific_h)
    print ("initialization of general_h :")
    general_h = [["?" for i in range(len(specific_h))] for i in
range(len(specific_h))]
    print(general_h)

    for i, h in enumerate(concepts):
        if target[i] == 1:
            for x in range(len(specific_h)):
                #print("x=",x)
                if h[x] != specific_h[x]:
                    #print("h[x]",h[x])
                    specific_h[x] = '?'
                    general_h[x][x] = '?'



        if target[i] == 0:
            for x in range(len(specific_h)):
                if h[x] != specific_h[x]:
                    general_h[x][x] = specific_h[x]
                else:
                    general_h[x][x] = '?'

    print("Specific Hypothesis :")
    print(specific_h)
    print("General_h :")
    print(general_h)
    indices = [i for i, val in enumerate(general_h) if val == ['?', '?',
'?', '?', '?','?']]
    for i in indices:
        general_h.remove(['?', '?', '?', '?', '?', '?'])
    return specific_h, general_h


data = pd.read_csv('/content/drive/MyDrive/My_csv_files/ce.csv')
data = pd.DataFrame(data)
print("DataSet : \n",data)
concepts = np.array(data.iloc[:,0:-1])
target = np.array(data.iloc[:,-1])


print("concepts :\n",concepts)
print("Target : \n",target)
```

```
s_final, g_final = learn(concepts, target)
print("Final Specific_h:", s_final)
print("Final General_h:", g_final)
```

DataSet :
```
      sky airTemp humidity     wind water forecast  enjoySport
0  Sunny    Warm   Normal  Strong  Warm     Same           1
1  Sunny    Warm     High  Strong  Warm     Same           1
2  Rainy    Cold     High  Strong  Warm   Change           0
3  Sunny    Warm     High  Strong  Cool   Change           1
```
concepts :
```
 [['Sunny' ' Warm' ' Normal' 'Strong' 'Warm' 'Same']
 ['Sunny' ' Warm' ' High' 'Strong' 'Warm' 'Same']
 ['Rainy' ' Cold' ' High' 'Strong' 'Warm' 'Change']
 ['Sunny' ' Warm' ' High' 'Strong' 'Cool' 'Change']]
```
Target :
```
 [1 1 0 1]
```
initialization of specific_h :
```
['Sunny' ' Warm' ' Normal' 'Strong' 'Warm' 'Same']
```
initialization of general_h :
```
[['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?',
'?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?',
'?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?']]
```
Specific Hypothesis :
```
['Sunny' ' Warm' '?' 'Strong' '?' '?']
```
General_h :
```
[['Sunny', '?', '?', '?', '?', '?'], ['?', ' Warm', '?', '?', '?',
'?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'],
['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?']]
```
Final Specific_h: ['Sunny' ' Warm' '?' 'Strong' '?' '?']
Final General_h: [['Sunny', '?', '?', '?', '?', '?'], ['?', ' Warm',
'?', '?', '?', '?']]