

JyotBuch_9_Assn2b-Candidate Elimination

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[ ]: import numpy as np
import pandas as pd

data = pd.read_csv('data.csv')
concepts = np.array(data.iloc[:,0:-1])
print("\nInstances are:\n",concepts)
target = np.array(data.iloc[:,-1])
print("\nTarget Values are: ",target)

def learn(concepts, target):
    specific_h = concepts[0].copy()
    print("\nInitialization of specific_h and general_h")
    print("\nSpecific Boundary: ", specific_h)
    general_h = [["?" for i in range(len(specific_h))] for i in
    range(len(specific_h))]
    print("\nGeneric Boundary: ",general_h)

    for i, h in enumerate(concepts):
        print("\nInstance", i+1 , "is ", h)
        if target[i] == "yes":
            print("Instance is Positive ")
            for x in range(len(specific_h)):
                if h[x] != specific_h[x]:
                    specific_h[x] = '?'
                    general_h[x][x] = '?'

        if target[i] == "no":
            print("Instance is Negative ")
            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 Boundary after ", i+1, "Instance is ", specific_h)
    print("Generic Boundary after ", i+1, "Instance is ", general_h)
    print("\n")
```


Instance 3 is ['rainy' 'cold' 'high' 'strong' 'warm' 'change']
 Instance is Negative
 Specific Bunday after 3 Instance is ['sunny' 'warm' '?' 'strong' 'warm' 'same']
 Generic Boundary after 3 Instance is [['sunny', '?', '?', '?', '?', '?'],
 ['?', 'warm', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'],
 'same']]

Instance 4 is ['sunny' 'warm' 'high' 'strong' 'cool' 'change']
 Instance is Positive
 Specific Bunday after 4 Instance is ['sunny' 'warm' '?' 'strong' '?' '?']
 Generic Boundary after 4 Instance is [['sunny', '?', '?', '?', '?', '?'],
 ['?', 'warm', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'],
 '?']]

Final Specific_h:
 ['sunny' 'warm' '?' 'strong' '?' '?']
 Final General_h:
 [['sunny', '?', '?', '?', '?', '?'], ['?', 'warm', '?', '?', '?', '?']]