

Question: Candidate-Elimination algorithm to output a description of the set of all hypotheses consistent with the training examples

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"""

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import numpy as np
import pandas as pd
data=pd.read_csv('elim.csv')
concepts=np.array(data.iloc[:,0:-1])
target=np.array(data.iloc[:,-1])
def learn(concepts,target):
    specific_h=concepts[0].copy()
    print("initialization of sepcific_h and general_h")
    print(specific_h)
    general_h=["?" for i in range(len(specific_h))]
    print (general_h)
    for i, h in enumerate(concepts):
        if target[i]=="Yes":
            for x in range(len(specific_h)):
                if h[x]!=specific_h[x]:
                    specific_h[x]="?"
                    general_h[x][x]="?"
        if target[i]=="No":
            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 ("steps of candidate elimination algorithm",i+1)
    print ("specific_h",i+1,"\n")
    print ("specific_h")
```

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print ("general_h",i+1,"\n")
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
s_final,g_final=learn(concepts,target)
print("Final Specific_h",s_final,sep="\n")
print("Final General_h",g_final,sep="\n")

```

Input:

Sky	Airtemp	Hum	wind	water	Fore	enjoy
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