Find S

# -\*- coding: utf-8 -\*-

"""

Spyder Editor

This is a temporary script file.

"""

# coding: utf-8

# # Find-S Algorithm:

# ## Algorithm:

# 1. Initialize h to the most specific hypothesis in H

# 2. For each positive training instance x

# i. For each attribute constraint a i in h :

# a. If the constraint a i in h is satisfied by x Then do nothing

# b. Else replace a i in h by the next more general constraint that is satisfied by x

# 3. Output hypothesis h

#

# In[1]:

import csv

# ### Read File:

# Load the csv file and asign each row to a data frame

# Also print the row to see the dataset (optional)

# In[ ]:

a=[]

with open('/home/soetcse/VTU-ML-Lab-Manual-master/Program-1/enjoysports.csv') as csfile:

reader = csv.reader(csfile)

for row in reader:

a.append(row)

print(row)

num\_attributes=len(a[0])-1

# 1. The most general hypothesis is represented by:

# ```['?', '?', '?', '?', '?', '?']```

# 2. The most specific hypothesis is represented by:

# ```['0', '0', '0', '0', '0', '0']```

# In[ ]:

print("The most general hypothesis:",["?"]\*num\_attributes)

print("The most specific hypothesis:",["0"]\*num\_attributes)

# ### Algorithm Implementation:

# Implementation of the above algorithm by updaing the hypothesis at each iteration and output the final hypothesis.

# In[ ]:

hypothesis=a[0][:-1]

print("\n Find S: Finding a maximally specific hypothesis")

for i in range (len(a)):

if a[i][num\_attributes] == "1":

for j in range(num\_attributes):

if a[i][j]!=hypothesis[j]:

hypothesis[j]='?'

print("The taining example no:",i+1," the hyposthesis is:",hypothesis)

print("\n The maximally specific hypohthesis for training set is")

print(hypothesis)