Program: 1. FIND S

Step1: First create a csv file and store the training examples

Procedure to create a csv file say 1.csv:

Open Excel, Enter your data into the cells, Save the file and choose CSV as the file type when saving.

Dataset: 1.csv

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 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 |

Step 2: Type the program

import csv

num\_attributes=6

a=[]

print("\n The given training data set \n")

csvfile=open('1.csv','r')

reader=csv.reader(csvfile)

for row in reader:

a.append(row)

print(row)

print("The initial values of hypothesis ")

hypothesis=['0']\*num\_attributes

print(hypothesis)

for j in range(0,num\_attributes):

hypothesis[j]=a[0][j]

for i in range(0,len(a)):

if(a[i][num\_attributes]=='Yes'):

for j in range(0,num\_attributes):

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

hypothesis[j]='?'

else:

hypothesis[j]=a[i][j]

print("For training instance no:",i," the hypothesis is ",hypothesis)

print("The maximally specific hypothesis is ",hypothesis)

output:

The given training data set

['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']

The initial values of hypothesis ['0', '0', '0', '0', '0', '0']

For training instance no:0 the hypothesis is ['Sunny', 'Warm', 'Normal', 'Strong', 'Warm', 'Same']

For training instance no:1 the hypothesis is ['Sunny', 'Warm', '?', 'Strong', 'Warm', 'Same']

For training instance no: 2 the hypothesis is ['Sunny', 'Warm', '?', 'Strong', 'Warm', 'Same']

For training instance no: 3 the hypothesis is ['Sunny', 'Warm', '?', 'Strong', '?', '?']

The maximally specific hypothesis is ['Sunny', 'Warm', '?', 'Strong', '?', '?']



