**3. Candidate-Elimination**

**import** csv

**with** open("trainingexamples.csv") **as** f:

csv\_file **=** csv**.**reader(f)

data **=** list(csv\_file)

specific **=** data[0][:**-**1]

general **=** [['?' **for** i **in** range(len(specific))] **for** j **in** range(len(specific))]

**for** i **in** data:

**if** i[**-**1] **==** "Yes":

**for** j **in** range(len(specific)):

**if** i[j] **!=** specific[j]:

specific[j] **=** "?"

general[j][j] **=** "?"

**elif** i[**-**1] **==** "No":

**for** j **in** range(len(specific)):

**if** i[j] **!=** specific[j]:

general[j][j] **=** specific[j]

**else**:

general[j][j] **=** "?"

print("\nStep " **+** str(data**.**index(i)**+**1) **+** " of Candidate Elimination Algorithm")

print(specific)

print(general)

gh **=** [] *# gh = general Hypothesis*

**for** i **in** general:

**for** j **in** i:

**if** j **!=** '?':

gh**.**append(i)

**break**

print("\nFinal Specific hypothesis:\n", specific)

print("\nFinal General hypothesis:\n", gh)

Output:

Step 1 of Candidate Elimination Algorithm

['Sunny', 'Warm', 'Normal', 'Strong', 'Warm', 'Same']

[['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?']]

Step 2 of Candidate Elimination Algorithm

['Sunny', 'Warm', '?', 'Strong', 'Warm', 'Same']

[['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?']]

Step 3 of Candidate Elimination Algorithm

['Sunny', 'Warm', '?', 'Strong', 'Warm', 'Same']

[['Sunny', '?', '?', '?', '?', '?'], ['?', 'Warm', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', 'Same']]

Step 4 of Candidate Elimination Algorithm

['Sunny', 'Warm', '?', 'Strong', '?', '?']

[['Sunny', '?', '?', '?', '?', '?'], ['?', 'Warm', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?']]

Final Specific hypothesis:

['Sunny', 'Warm', '?', 'Strong', '?', '?']

Final General hypothesis:

[['Sunny', '?', '?', '?', '?', '?'], ['?', 'Warm', '?', '?', '?', '?']]