

exp2.py

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1  # This Python code snippet is implementing the Candidate Elimination Algorithm. Here's a
  # breakdown of
2  # what each part of the code is doing:
3  import csv
4
5  with open("tennis.csv") as f:
6      csv_file=csv.reader(f)
7      data=list(csv_file)
8
9      s=data[1][:-1]
10     g=[['?'] for i in range(len(s))] for j in range(len(s))]
11
12     for i in data:
13         if i[-1]=="Yes":
14             for j in range(len(s)):
15                 if i[j]!=s[j]:
16                     s[j]='?'
17                     g[j][j]='?'
18
19             elif i[-1]=="No":
20                 for j in range(len(s)):
21                     if i[j]!=s[j]:
22                         g[j][j]=s[j]
23                     else:
24                         g[j][j]="?"
25             print("\nSteps of Candidate Elimination Algorithm",data.index(i)+1)
26             print(s)
27             print(g)
28         gh=[]
29         for i in g:
30             for j in i:
31                 if j!='?':
32                     gh.append(i)
33                     break
34             print("\nFinal specific hypothesis:\n",s)
35
36             print("\nFinal general hypothesis:\n",gh)
37
38     '''output:
39     Steps of Candidate Elimination Algorithm 1
40     ['Sunny', " 'Warm'", " 'High'", " 'Strong'", " 'Warm'", "'Same'"]
41     [['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'],
42     ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'],
43     ['?', '?', '?', '?', '?', '?']]
44
45     Steps of Candidate Elimination Algorithm 2
46     ['Sunny', " 'Warm'", " 'High'", " 'Strong'", " 'Warm'", "'Same'"]
47     [['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'],
48     ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'],
49     ['?', '?', '?', '?', '?', '?']]
50
51     Steps of Candidate Elimination Algorithm 3
52     ['Sunny', " 'Warm'", " 'High'", " 'Strong'", " 'Warm'", "'Same'"]
53     [['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'],
54     ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'],
55     ['?', '?', '?', '?', '?', '?']]
56
57     Steps of Candidate Elimination Algorithm 4
58     ['Sunny', " 'Warm'", " 'High'", " 'Strong'", " 'Warm'", "'Same'"]

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53  [[ '?', '?', '?', '?', '?', '?'], [ '?', '?', '?', '?', '?', '?'], [ '?', '?', '?', '?', '?', '?',  
    '?'], [ '?', '?', '?', '?', '?', '?'], [ '?', '?', '?', '?', '?', '?'], [ '?', '?', '?', '?', '?', '?',  
    '?', '?']]  
54  
55  Final specific hypothesis:  
56  ["'Sunny'", " 'Warm'", " 'High'", " 'Strong'", " 'Warm'", "'Same'"]  
57  
58  Final general hypothesis:  
59  []  
60  
61  ''
```