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SE (7A)

Applied Machine Learning

Assignment # 4

**Question # 3**

**Code:**

dataset = [  
 [0,0,1,0,0],  
 [0,0,1,1,0],  
 [1,0,1,0,1],  
 [2,1,1,0,1],  
 [2,2,0,0,1],  
 [2,2,0,1,0],  
 [1,2,0,1,1],  
 [0,1,1,0,0],  
 [0,2,0,0,1],  
 [2,1,0,0,1],  
 [0,1,0,1,1],  
 [1,1,1,1,1],  
 [1,0,0,0,1],  
 [2,1,1,1,0]  
 ]  
mp = dict()  
for i in range(len(dataset)):  
 row = dataset[i]  
 y = row[-1]  
 if (y not in mp):  
 mp[y] = list()  
 mp[y].append(row)  
  
for label in mp:  
 print(label)  
 for row in mp[label]:  
 print(row)  
  
test = [2,1,0,1]  
  
probYes = 1  
  
count = 0  
total = 0  
for row in dataset:  
 if(row[-1] == 1):  
 count+=1  
 total+=1  
print("Total yes: "+str(count)+" / "+str(total))  
probYes \*= count/total  
for i in range(len(test)):  
 count = 0  
 total = 0  
 for row in mp[1]:  
 if(test[i] == row[i]):  
 count += 1  
 total += 1  
 print('for feature '+str(i+1))  
 print(str(count)+" / "+str(total))  
 probYes \*= count/total  
  
probNo = 1  
count = 0  
total = 0  
for row in dataset:  
 if(row[-1] == 0):  
 count+=1  
 total+=1  
probNo \*= count/total  
print("Total no: "+str(count)+" / "+str(total))  
for i in range(len(test)):  
 count = 0  
 total = 0  
 for row in mp[0]:  
 if(test[i] == row[i]):  
 count += 1  
 total += 1  
 print('for feature '+str(i+1))  
 print(str(count)+" / "+str(total))  
 probNo \*= count/total  
  
print(probYes)  
print(probNo)  
  
prob = probYes/(probYes+probNo)  
print("Probability of playing golf: "+str(prob\*100)+"%")

**Screenshot:**

