

## **DAILY ONLINE ACTIVITIES SUMMARY**

|                                     |                                     |                 |                   |
|-------------------------------------|-------------------------------------|-----------------|-------------------|
| <b>Date:</b>                        | <b>21 MAY 2020</b>                  | <b>Name:</b>    | <b>Rani M.D</b>   |
| <b>Sem &amp; Sec</b>                | <b>VI &amp; B</b>                   | <b>USN:</b>     | <b>4AL17CS075</b> |
| <b>Online Test Summary</b>          |                                     |                 |                   |
| <b>Subject</b>                      | <b>Operating System</b>             |                 |                   |
| <b>Max. Marks</b>                   | <b>30</b>                           | <b>Score</b>    | <b>29</b>         |
| <b>Certification Course Summary</b> |                                     |                 |                   |
| <b>Course</b>                       | <b>Machine learning with python</b> |                 |                   |
| <b>Certificate Provider</b>         | <b>Cognitiveclass</b>               | <b>Duration</b> | <b>10 hours</b>   |
| <b>Coding Challenges</b>            |                                     |                 |                   |

|   |                     |
|---|---------------------|
| <p>Problem Statement:</p> <p>JAVA Program4-RR</p> <p>java program to implement round robin scheduling algorithm.Calculate AVG WT AND TAT.<br/>INPUT:NO OF PROCESSES,BURST TIME AND TIME QUANTUM.</p> <p>JAVA Program5</p> <p>a simple applet java program to check whether the given number is armstrong number or not.</p> <p>JAVA program1</p> <p>Java Program to Demonstrate a Basic Calculator using Applet Problem Description We have to write a program in Java such that it creates a calculator which allows basic operations of addition, subtraction, multiplication and division.</p> <p>PYTHON Program6</p> <p>Python program in number right angled triangle</p> <p>sample output</p> <p>enter the number of rows</p> <p>5 4 3 2 1</p> <p>4 3 2 1</p> <p>3 2 1</p> <p>2 1</p> <p>1</p> <p>SLL C Program2</p> <p>C Program to create Singly Liked List with n elements and reverse the elements</p> <p>SLL C Program3</p> <p>C program to construct a singly linked list by removing duplicate elements in the sorted linked list</p> <p>Sample output:</p> <p>Given list {1,2,2,3,3,3,4}</p> <p>Resulting list{4,3,2,1}</p> |                     |
| <b>Status:DONE</b>  |                     |
| <b>Uploaded the report in Github</b>  | <b>YES</b>          |
| <b>If yes Repository name</b>   | <b>DAILY STATUS</b> |
| <b>Uploaded the report in slack</b>   | <b>YES</b>          |

**Online Test Details: (Attach the snapshot and briefly write the report for the same)**

Sign in | Slack | Slack | cse\_third\_year\_2019\_20 | Largest Tech Community | Hacka | +

techgig.com/challenge/result/mcq/bjFndzRIWjFUNDNJeTd3eHJmK1VVUT09

ranimd141998@gmail.com Logout

## Test Completed!

You have successfully participated in CSE-17CS64-OS-IA1.

**Rate this Test**  
Your Rating: ★★★★★ Click to Rate

Results Analytics

MCQ

Your Score **29** / 30

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09:41  
21-05-2020

**Certification Course Details: (Attach the snapshot and briefly write the report for the same)**

Sign in | Slack | Slack | cse\_third\_year\_2019\_20 | Intro to Decision Trees (402) | +

Not secure | courses.cognitiveclass.ai/courses/course-v1:CognitiveClass+ML0101ENV3+2018/courseware/76d637cbe8024e509dc445df847e6c3a/8560edc77418...

## Decision tree learning algorithm

```

graph TD
    Age[Age] --> Young[Young]
    Age --> Middle-age[Middle-age]
    Age --> Senior[Senior]
    Young --> Sex[Sex]
    Sex --> F[F]
    Sex --> M[M]
    F --> A1((A))
    M --> B1((B))
    Middle-age --> B2((B))
    Senior --> Cholesterol[Cholesterol]
    Cholesterol --> High[High]
    Cholesterol --> Normal[Normal]
    High --> A2((A))
    Normal --> B3((B))
  
```

can see, decision trees are about testing an attribute and branching the cases, based on the result of the test. Each internal node corresponds to a test. And each branch corresponds to a result of the test. And each leaf node assigns a patient to a class.

Now the question is how can we build such a decision tree? Here is the way that a decision tree is built.

**A decision tree can be constructed by considering the attributes one by one.**

First, choose an attribute from our dataset.

Calculate the significance of the attribute in the splitting of the data.

In the next video, we will explain how to calculate the significance of an attribute, to see if it's an effective attribute or not.

Next, split the data based on the value of the best attribute.

Then, go to each branch and repeat it for the rest of the attributes.

After building this tree you can use it to

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Sign in | Slack | Slack | cse\_third\_year\_2019\_20 | Building Decision Trees (10:06) |

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# Entropy

- Measure of randomness or uncertainty

$$\text{Entropy} = -p(A)\log(p(A)) - p(B)\log(p(B))$$

The lower the Entropy, the less uniform the distribution, the purer the node.

1 Drug A  
7 Drug B

Entropy is Low

✓

3 Drug A  
5 Drug B

Entropy is high

✗

0 Drug A  
8 Drug B

Entropy = 0

✓

4 Drug A  
4 Drug B

Entropy = 1

✗

either Drug A or Drug B, then the entropy is zero, but if half of the data are Drug A and other half are B, then the entropy is one.

You can easily calculate the entropy of a node using the frequency table of the attribute

through the Entropy formula, where P is for the proportion or ratio of a category, such as Drug A or B. Please remember, though, that you don't

have to calculate these, as it's easily calculated by the libraries or packages that you use.

As an example, let's calculate the entropy of the dataset before splitting it.

We have 9 occurrences of Drug B and 5 of Drug A.

You can embed these numbers into the Entropy formula to calculate the impurity of the target attribute before splitting it.

In this case, it is 0.94.

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Speed 1.0x HD 10:18 21-05-2020

Sign in | Slack | Slack | \* cse\_third\_year\_2019\_20 | Lab: Decision Trees | Lab: Decisi |

courses.cognitiveclass.ai/courses/course-v1:CognitiveClass+ML0101ENv3+2018/courseware/76d637cbe8024e509dc445df847e6c3a/e7c36d2c4c6840fe8b81b97147ea...

## Modeling

We will first create an instance of the **DecisionTreeClassifier** called **drugTree**.

Inside of the classifier, specify **criterion="entropy"** so we can see the information gain of each node.

```
[ ]: drugTree = DecisionTreeClassifier(criterion="entropy", max_depth = 4)
drugTree # it shows the default parameters
***
```

Next, we will fit the data with the training feature matrix **X\_trainset** and training response vector **y\_trainset**

```
[ ]: drugTree.fit(X_trainset,y_trainset)
***
```

## Prediction

Let's make some **predictions** on the testing dataset and store it into a variable called **predTree**.

```
[ ]: predTree = drugTree.predict(X_testset)
***
```

You can print out **predTree** and **y\_testset** if you want to visually compare the prediction to the actual values.

```
[ ]: print (predTree [0:5])
print (y_testset [0:5])
***
```

Support

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Today I learnt about Intro to decision tress, Building decision tress and performed lab programs of decision tree.

**Coding Challenges Details: (Attach the snapshot and briefly write the report for the same)**

```
input
Enter the total number of elements : 7

Enter the sorted linked list : 1 2 2 3 3 3 4

Linked list before removing duplicates : 4 3 3 3 2 2 1

Linked list after removing duplicates : 4 3 2 1

...Program finished with exit code 0
Press ENTER to exit console.
```

```
95     print( n )
96 }

input
Enter data into the list
Enter number: 6
Do you wish to continue [1/0]: 1
Enter number: 5
Do you wish to continue [1/0]: 1
Enter number: 4
Do you wish to continue [1/0]: 1
Enter number: 3
Do you wish to continue [1/0]: 1
Enter number: 2
Do you wish to continue [1/0]: 1
Enter number: 1
Do you wish to continue [1/0]: 0

Displaying the nodes in the list:
6      5      4      3      2      1
Enter the number N to reverse first N node: 4
Reversing the list...
Displaying the reversed list:
3      4      5      6      2      1

...Program finished with exit code 0
Press ENTER to exit console.
```

```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:09359112e, Jul 8 2019, 19:29:22) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\Pranavl\AppData\Local\Programs\Python\Python37-32\tr.py =
enter number of rows 6
6 5 4 3 2 1
5 4 3 2 1
4 3 2 1
3 2 1
2 1
1
>>> |
```

```
Console
<terminated> GFG [Java Application] C:\Program Files\Java\jre1.8.0_221\bin\javaw.exe (21-May-2020, 1:2
Enter no. of processes:4
Enter burst time:10 6 8 4
Enter time quantum:3
Processes Burst time Waiting time Turn around time
1 10 18 28
2 6 12 18
3 8 19 27
4 4 18 22
Average waiting time = 16.75
Average turn around time = 23.75
```

Enter a number:  Result

armstrong number

Enter a number:  Result

Number is not armstrong