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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Business analytics and data mining  
Modeling using R (course)



## Course outline

How does an NPTEL online course work? ()

Week 0 ()

Week 1 ()

Week 2 ()

Week 3 ()

Week 4 ()

Week 5 ()

Week 6 ()

Week 7 ()

Week 8 ()

● Lecture 36  
CLASSIFICATION  
AND  
REGRESSION

# Week 8: Assignment 8

The due date for submitting this assignment has passed.

Due on 2023-03-22, 23:59 IST.

Assignment submitted on 2023-03-21, 12:41 IST

1) Which of the following partitions are utilized by pruning steps of decision trees? **1 point**

- ☐ Training partition
- ☒ Validation partition
- ☐ Test partition
- ☐ Any part of the data

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Validation partition*

2) Which of the following statements is not true about recursive partitioning steps of decision trees? **1 point**

- ☐ Recursive partitioning results in non-overlapping multi-dimensional rectangles
- ☐ Recursive partitioning results in smaller and smaller rectangular regions
- ☒ Recursive partitioning continues till heterogeneous groups are reached
- ☐ Recursive partitioning results in zero error

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Recursive partitioning continues till heterogeneous groups are reached*

TREES (unit?  
unit=70&lesson=71)

Lecture 37  
CLASSIFICATION  
AND  
REGRESSION  
TREES PART-  
2 (unit?  
unit=70&lesson=72)

Lecture 38  
CLASSIFICATION  
AND  
REGRESSION  
TREES PART-  
3 (unit?  
unit=70&lesson=73)

Lecture 39  
CLASSIFICATION  
AND  
REGRESSION  
TREES PART-  
4 (unit?  
unit=70&lesson=74)

Lecture 40  
CLASSIFICATION  
AND  
REGRESSION  
TREES PART-  
5 (unit?  
unit=70&lesson=75)

Quiz: Week 8:  
Assignment 8  
(assessment?  
name=131)

Solution for  
week 8 :  
Assignment 8  
(unit?  
unit=70&lesson=76)

Week 9 ()

Week 10 ()

Week 11 ()

Week 12 ()

Download  
Videos ()

3) What will be the gini index value when there are two classes with equal representation of each class?

1 point

- ☐ 0  
☐ 1  
☐ -1  
☒ 0.5

Yes, the answer is correct.  
Score: 1

Accepted Answers:  
0.5

4) How many terminal nodes will be estimated in a decision tree with 'n' number of decision nodes?

1 point

- ☐ n  
☐ (n-1)  
☒ (n+1)  
☐ Can't say

Yes, the answer is correct.  
Score: 1

Accepted Answers:  
(n+1)

5) Which of the following R functions can be used to filter overlapping observations in training and validation partitions?

1 point

- ☐ replace  
☒ intersect  
☐ rpart.control  
☐ split

Yes, the answer is correct.  
Score: 1

Accepted Answers:  
intersect

6) Which of the following is used as the basis for finding a suitable split-value of a predictor?

1 point

- ☐ Impurity increase  
☒ Impurity reduction  
☐ size  
☐ None of the above

Yes, the answer is correct.  
Score: 1

Accepted Answers:  
Impurity reduction

**Weekly  
Feedback ()****Text  
Transcripts ()**

7) Which of the following data mining tasks can be modeled using decision trees? **1 point**

- ☐ Classification task only
- ☐ Prediction task only
- ☒ Both classification and prediction task
- ☐ None of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Both classification and prediction task*

8) Which of the following steps is used to fit the decision tree to the predictors' information and not to the noise? **1 point**

- ☐ Splitting
- ☒ Pruning
- ☐ Partitioning
- ☐ None of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Pruning*

9) Compute the entropy measure value for the following case: **1 point**  
There are 12 students who had taken a test. But only 9 students could pass the test and the remaining failed.

- ☐ 0.727
- ☐ 1.20
- ☐ 0.189
- ☒ 0.811

Yes, the answer is correct.

Score: 1

Accepted Answers:

*0.811*

10) While growing decision trees, nodes are formed for each recursive partition within the multi-dimensional space of predictors. The final nodes of fully grown decision tree corresponding to the final homogenous groups are referred as: **1 point**

- ☐ Decision nodes
- ☐ Root node
- ☒ Terminal nodes
- ☐ None of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Terminal nodes*