

Tree-based models/

Identifying missing data

Using imputation to handle missing data

Video: Imputation  
1 min

Video: Mean Imputation  
4 min

Video: Regression Imputation  
2 min

Video: Calculate Imputed Values  
2 min

Lab: Imputation  
1h

Quiz week 2

Practice Quiz: Week 2 Quiz  
10 questions

Assessment: Tree based models, missing data, and imputation



Congratulations! You passed!

TO PASS 80% or higher

Keep Learning

GRADE  
100%

## Week 2 Quiz

## Week 2 Quiz

TOTAL POINTS 10

1. Which decision boundary corresponds to the following decision tree?

1 / 1 point

Try again

In the options, red indicates high risk, blue indicates low risk.



Receive grade

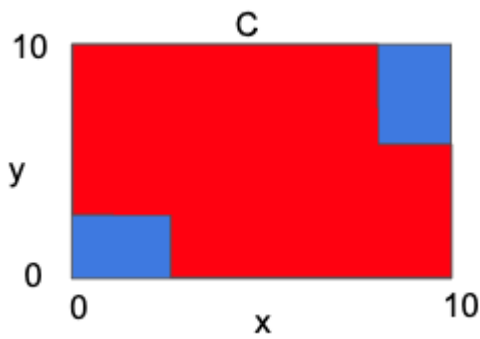
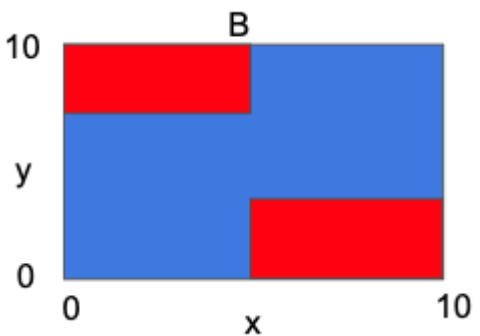
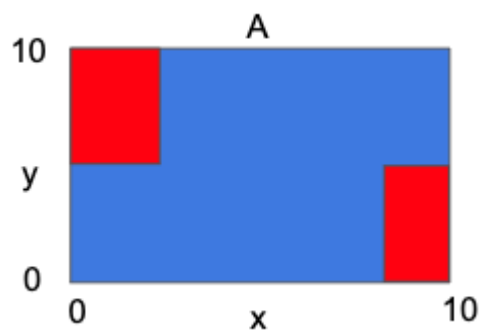
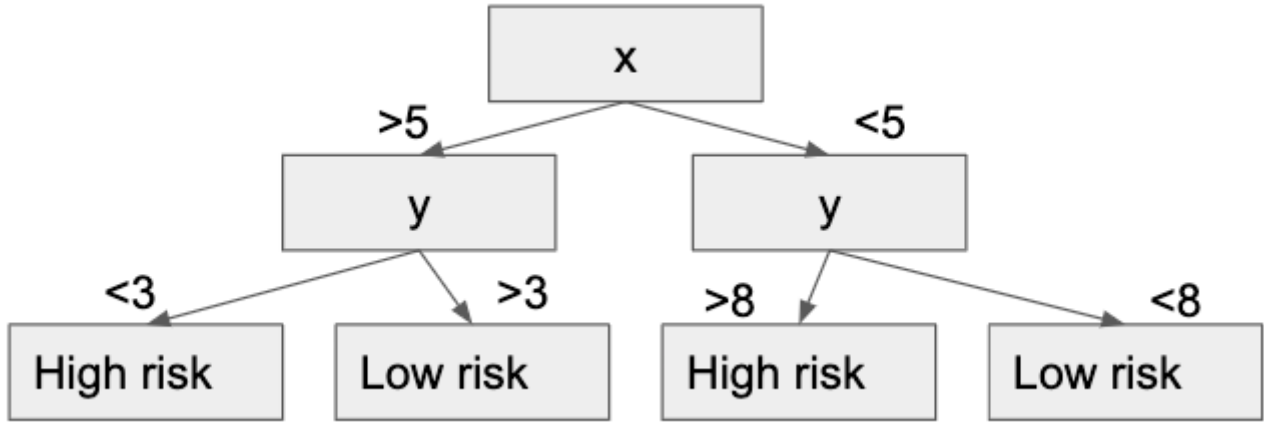
TO PASS 80% or higher

Grade

100%

View Feedback

We keep your highest score



Correct

One way to approach this is to work your way back up from the leaves to see the regions that are classified as high risk. Doing this, we see that one high risk area is where  $x > 5$  and  $y > 3$ , and where  $x < 5$  and  $y > 8$ . This corresponds to the two rectangles shown here.

2. True or False: A tree of depth 1 is more expressive than a classical linear model.

1 / 1 point



True



False



Correct

Most of the time, a tree has a more flexible decision boundary. However, a tree of depth one can just threshold on one of the features, which a linear model can do as well by making the coefficients of all other features zero. The linear model can also get non-axis aligned boundaries by using combinations of covariates, so in this case, the linear model has a larger hypothesis space.

3. One way to aggregate predictions from multiple trees is by a majority vote. Using this aggregation rule, select the prediction of the following trees on the data point ( $x=4$ ,  $y=7$ ,  $z=2$ ):

1 / 1 point

