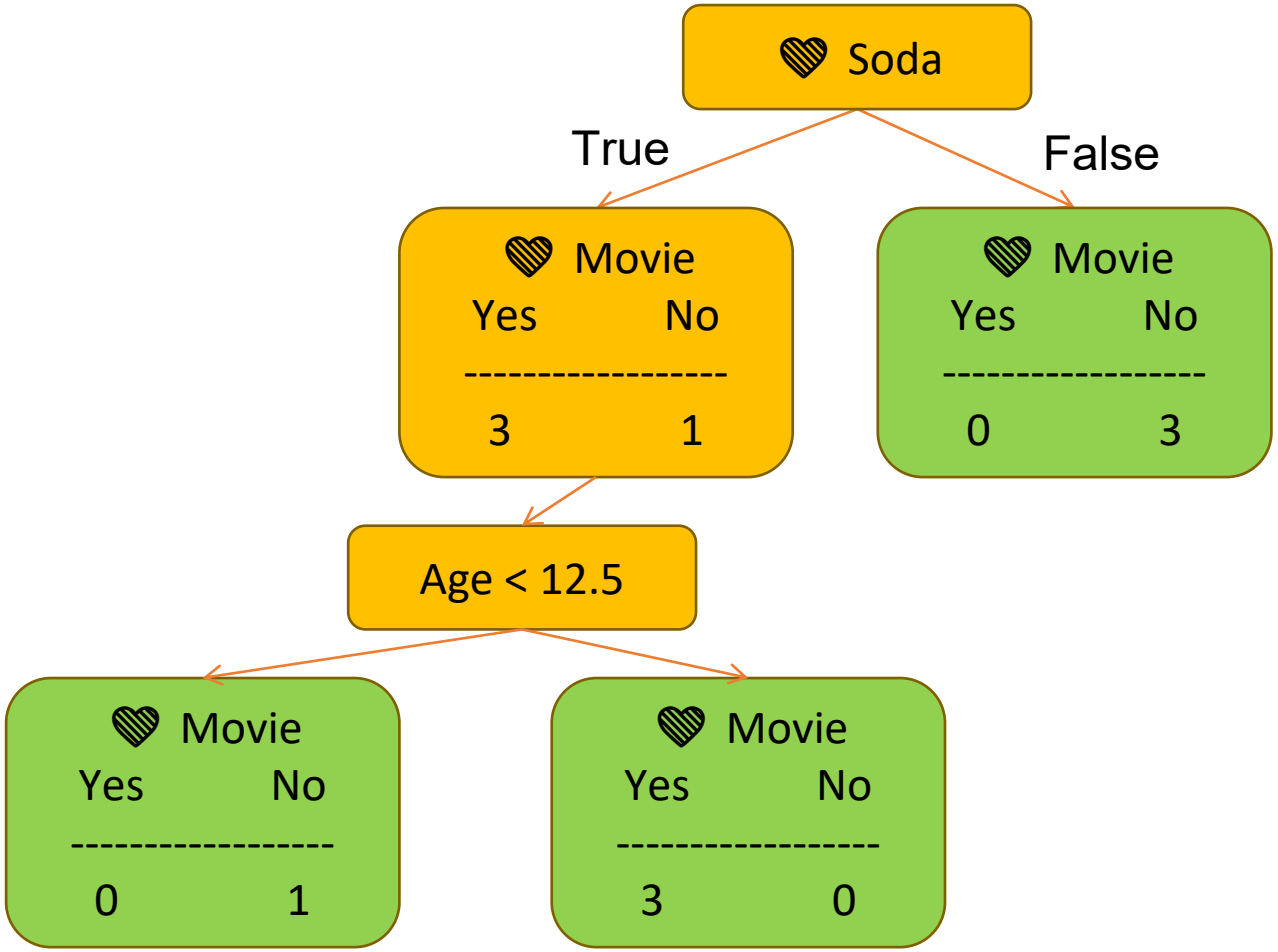
Decision Trees – Final Remarks

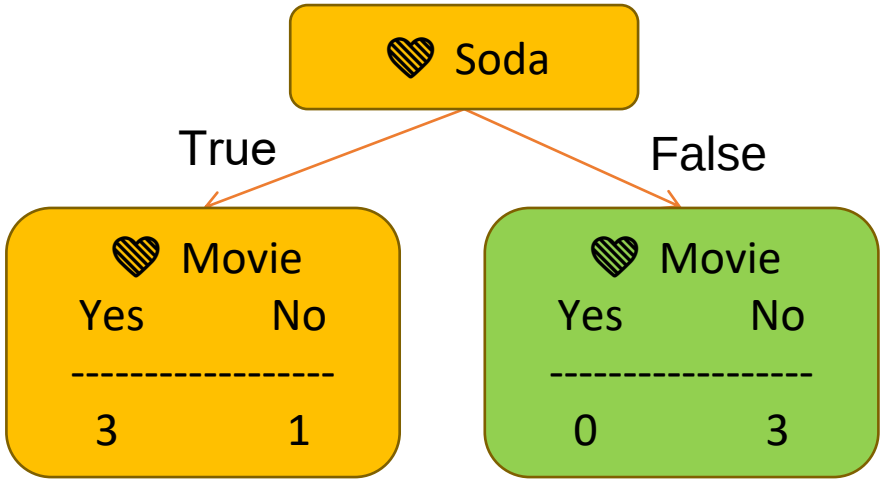
Dr. Muhammad Wasim

Overfitting in Decision Trees



- There is only one example in the left most leaf node. So, we have less confidence if there will be any more such cases.
- Also, the model will have 100% accuracy on the training dataset and may not offer high accuracy on the test set. Hence, decision trees without any pruning do overfitting.

Handling Overfitting



- We can put limits on how much to grow our tree, for example to a depth of 1.

Strengths and Weakness of Decision Trees

- Strengths:
  - The model can be easily visualized by any non-expert. Such a model is called explainable.
  - Algorithm is completely invariant to scaling of the data.
- Weaknesses:
  - They are prone to overfitting even when the depth limit is set.