

# Machine Learning (WiSe 2025/2026)

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## Assignment 4 Task 4.1

A decision tree looks like an inverted tree. It looks like how the roots of a plant/tree start out at the top (i.e. in a single place) then they branch out towards the bottom. Each branch may split into further branches as well.

A decision tree is used for classification by having a node where a decision is made to split data based on a rule. All data points are placed in the root node, then they are split on the basis of a chosen condition on a feature. This splits data into two or more halves depending on how they satisfy the condition. The data at each node is then further split on other features and conditions until all the data can be placed into a node.