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**Cloud Computing for Data Analysis**

**VIDEO CASE 09 : Decision Trees**

Watch following videos:

**Video 1:** <https://youtu.be/RG4FYHfAQJQ>

**Video Case Questions:**

1. **What are the purposes of decision trees?**

* The main purpose of the decision tree is to create a model that predicts the value of the target variable by learning the decision rules. These rules are inferred from the data features.
* The decision trees are a supervised learning method which can be used for classification and regression. They are non-parametric supervised learning method.
* It can also be used to identify feature importance.

1. **What are some disadvantages that you see in decision trees when built for larger datasets?**

One of the disadvantages of decision trees is the concept of overfitting which might occur due to large datasets and is considered a cardinal sin in terms of analytics. The decision trees also have other disadvantages. They are

* The tree structure is prone to sampling which might produce not so great results.
* Tree splitting is locally greedy i.e. the decision tree is typically built locally optimal and not globally optimal.
* It is sensitive to any changes made in the process.
* Optimal decision tree is NP complete problem.
* It is memory intensive.
* Calculations can get very complex if the values are uncertain and/or if many outcomes are linked to each other.

1. **Mention some other applications of decision trees.**

Some of the applications of decision trees include,

* Improving the first call resolution
* Improving customer satisfaction rate.
* It helps in predicting the library book use.
* It also helps to develop a relationship between octane numbers and molecular sub structures.
* It helps with ecommerce to see if a customer is genuinely probable to buy a product.
* In insurance companies to find the risky and profitable customers.
* In characterization of tumor belonging to a certain category.