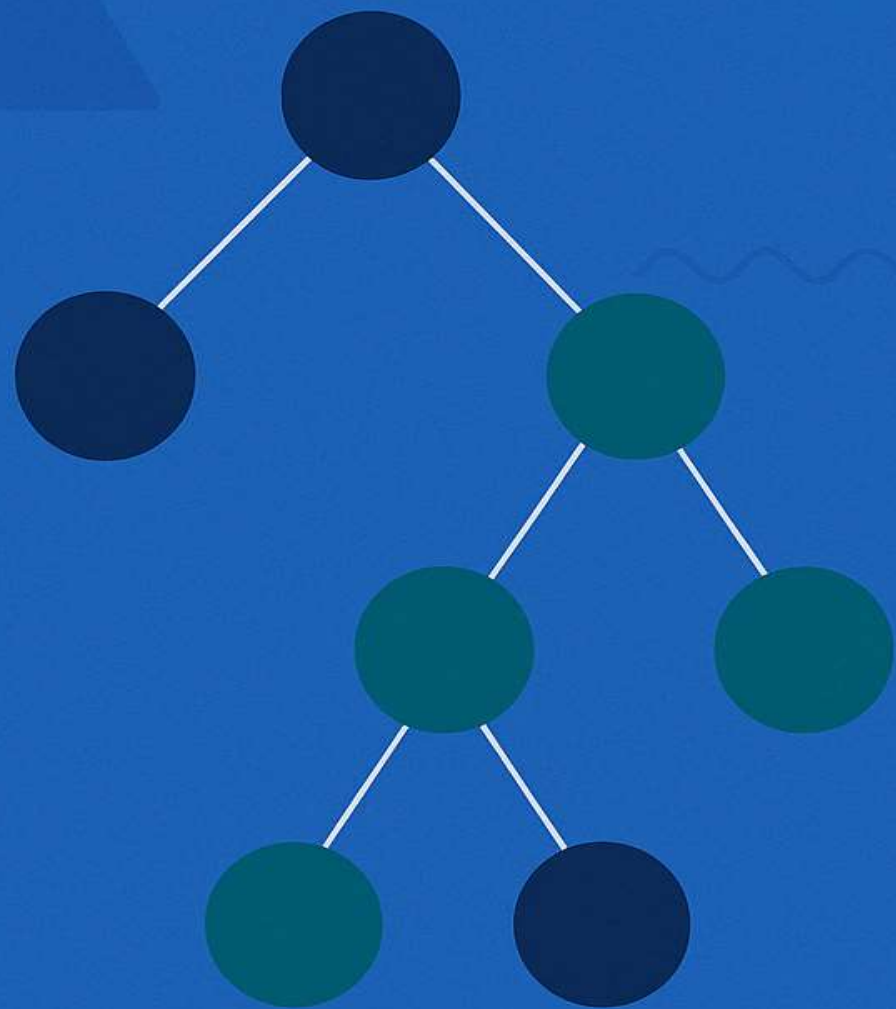# LG Boost (OR) Light Gradient Boosting Machine Algorithm

- **Light GBM** is a fast, distributed, high-performance **gradient boosting** framework that uses a **tree-based** learning algorithm.

- The word **"Light"** means this algorithm is superfast compared with other Boosting Algorithms.

- The main difference between **LightGBM** and other Boosting algorithm is the way the **tree** is **expanded.**

How Does LG Boost Work?

Leaf-wise tree growth
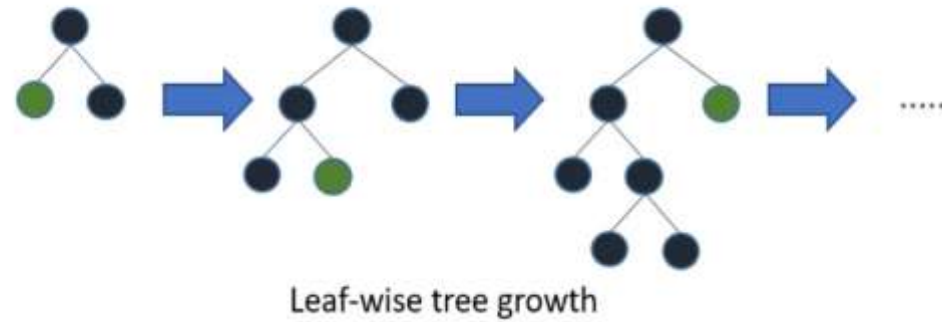
- **Light GBM** splits the tree **leaf-wise** with the best fit.

- Light GBM grows trees **vertically** while other algorithms grow trees horizontally.

- Light BGM can handle the **large size** of Data and takes **lower memory** to Run.

LG Boost Algorithm Parameters

- num_leaves - More number of Leaves means more complex model.

- max_depth - Maximum depth of a tree

- learning_rate - Shrinks the contribution of each tree

- n_estimators - Number of trees

- min_child_samples - Minimum number of data points in a leaf

Advantages of LG Boost

❑ **Faster** training speed and **higher efficiency**

❑ Lower memory usage

❑ Better **accuracy** than any other boosting algorithm

❑ Compatibility with **Large Datasets**

Disadvantages of LG Boost

❑ Sensitive to overfitting

❑ Compatibility with Datasets

❑ Complex Parameter Tuning

❑ Not Ideal for Small Datasets