1. AdaBoost Regression (Adaptive Boosting)

- Idea: Combines many weak models (usually small decision trees) to form a strong model.
- How it works:
    - Train the first weak model on the data.
    - Check where it made errors (wrong predictions).
    - Give more weight to those wrong samples.
    - Train the next model to focus on the mistakes of the previous one.
    - Combine all models' predictions.

2. XGBoost Regression (Extreme Gradient Boosting)

- Idea: A faster and optimized version of gradient boosting.
- How it works:
    - Builds trees sequentially, each trying to fix errors from the previous one.
    - Uses gradient descent to minimize errors.
    - Adds regularization (controls overfitting).
    - Very efficient, parallelized, and handles missing data well.
    - Best for large datasets and high accuracy.

3. LightGBM Regression (Light Gradient Boosting Machine)

- Idea: Similar to XGBoost but faster and lighter.
- How it works:
    - Uses leaf-wise tree growth (more complex branches where needed).
    - Handles large-scale data efficiently.
    - Uses less memory and is faster than XGBoost.
    - Best when you have big data and need speed + accuracy.

Algorithm	Key	Speed	Best For

AdaBoost	Focus on previous errors (adaptive weights)	Medium	Small to medium datasets
XGBoost	Gradient boosting with optimization	Fast	Large data, high accuracy
LGBoost	Leaf-wise boosting, memory-efficient	Very Fast	Very large datasets