

## Model Development Phase

Date	2 July 2024
Team ID	740147
Project Title	Power Consumption Analysis for Households
Maximum Marks	6 Marks

### Model Selection Report

In the forthcoming Model Selection Report, various models will be outlined, detailing their descriptions, hyperparameters, and performance metrics, including Accuracy or F1 Score. This comprehensive report will provide insights into the chosen models and their effectiveness.

### Model Selection Report:

Model	Description	Hyperparameters	Performance Metrics
Linear Regression	Models the relationship between a dependent variable and one or more independent variables by fitting a linear equation. Useful for predicting global active power.	-	Mean Squared Error = 0.001823 R2 Score = 99.83

Random Forest Regressor	An ensemble method that builds multiple decision trees and merges them to get a more accurate and stable prediction. Predicting global active power with high accuracy using multiple trees.	-	Mean Squared Error = 0.001259 R2_Score = 99.88
Decision Tree Regressor	An ensemble technique that builds trees sequentially, where each tree corrects errors made by the previous one.	-	Mean Squared Error = 0.001256 R2_score = 99.85
Gradient Boost Regressor	captures complex non-linear relationships between features and the target variable.	-	Mean Squared Error = 0.001567 R2_Score = 99.89