

## Model Optimization and Tuning Phase Report

Date	5 July 2024
Team ID	740294
Project Title	Prediction Of Full Load Electrical Power Output Of a Base Load Operated Combined Cycle Power Plant Using Machine Learning
Maximum Marks	10 Marks

### Model Optimization and Tuning Phase

The Model Optimization and Tuning Phase involves refining machine learning models for peak performance. It includes optimized model code, fine-tuning hyperparameters, comparing performance metrics, and justifying the final model selection for enhanced predictive accuracy and efficiency.

### Hyperparameter Tuning Documentation (6 Marks):

Model	Tuned Hyperparameters	Optimal values
Linear Regression	-	-

Decision Tree	-	-
Random Forest	-	-

**Performance Metrics Comparison Report (2 Marks):**

<b>Model</b>	<b>Optimized Metric</b>
Decision Tree	-

Random Forest	-
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**Final Model Selection Justification (2 Marks):**

<b>Final Model</b>	<b>Reasoning</b>
Random Forest	The Random Forest model was selected for its superior performance, exhibiting high accuracy. Its ability to handle complex relationships, minimize overfitting, and optimize predictive accuracy aligns with project objectives, justifying its selection as the final model.