

## Model Optimization and Tuning Phase Report

Date	10 July 2024
Team ID	739709
Project Title	A Comprehensive Measure Of Well-Being: A Human Development Index 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):**

Model	Optimized Metric
Decision Tree	-

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

Final Model	Reasoning
Linear Regression	The Linear Regression 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.