

## Model Optimization and Tuning Phase Report

Date	15 June 2024
Team ID	739820
Project Title	Predicting the Unpredictable :A Look into the World of Powerlifting
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):

Linear Regression	-	-
Random Forest	-	-

Decision Tree	-	-
XGboost	-	-

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

Model	Optimized Metric
LinearRegression	-
Random Forest	-
Decision Tree	-
XGBoost	-

**Final Model Selection Justification (2 Marks):**

Final Model	Reasoning
XGBoost	The XGBoost model was selected for its superior performance, exhibiting high accuracy during hyperparameter tuning. Its ability to handle complex relationships, minimize overfitting, and optimize predictive accuracy aligns with project objectives, justifying its selection as the final model.