Model Optimization and Tuning Phase Template

Date	15 July 2024
Team ID	740148
Project Title	Number Oracle:Big Mart Sales Predictive Analysis
Maximum Marks	10 Marks

Model Optimization and Tuning Phase

Model	Baseline Metric	Optimized Metric
Random Forest	Accuracy: 0.607	Accuracy: 0.607
XGBOOST	Accuracy: 0.617	Accuracy: 0.617

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

| Random Forest | n_estimators, max_depth, min_samples_split | 7 |
| XGBOOST | max_depth | 3 |

Performance Metrics Comparison Report (2 Marks):

Final Model Selection Justification (2 Marks):

Final Model	Reasoning
XGBOOST	Chosen for its higher accuracy (0.61) compared to Random Forest (0.60) and simplicity.