Model Optimization and Tuning Phase Template

Date	15 July 2024
Team ID	739766
Project Title	**SDSS galaxy classification 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
Decision Tree	-	-
Random Forest	-	-
Logistic Regression	-	-

Performance Metrics Comparison Report (2 Marks):

Model	Baseline Metric	Optimized Metric
Random Forest	Baseline value	Optimized value
Decision Tree	-	-
Logistic Regression	-	-

Final Model Selection Justification (2 Marks):

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