Model Optimization and Tuning Phase Report

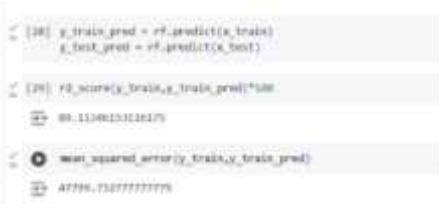
Date	15 July 2024
Team ID	740054
Project Title	Doctors Annual Salary Prediction
Maximum Marks	10 Marks

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
Linear Regression	

Random Forest	
Decision Tree	
XGBRegressor	

Performance Metrics Comparison Report (2 Marks):

Linear Regression	

Random Forest	
Decision Tree	
XGBRegressor	

Final Model Selection Justification (2 Marks):

Final Model	Reasoning
Decision Tree	Decision trees can be a good starting point for predicting doctors' annual salaries due to their interpretability and ability to handle non-linear relationships. By carefully tuning hyperparameters and evaluating performance, you can build a robust model. For better generalization, consider using ensemble methods like random forests or gradient boosting if decision trees alone do not provide satisfactory results.