Model Optimization and Tuning Phase Report

Date	18 JULY 2024
Team ID	739829
Project Title	Unveiling Airbnb price patterns: machine learning for forecasting
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 regressor	-	-

Catboost regreesor	-	-
Polynomial regressor	-	-
Random	-	-
Xgboost	-	-

Gradient Boosting	-	-

Performance Metrics Comparison Report (2 Marks):

catboost regessor	-

Model	**Optimized Metric**

xgboost	
Polynomial regressor	-

Random Forest	-
Linear regressor	-
Gradient Boosting	-

Final Model Selection Justification (2 Marks):

Final Model	Reasoning
catboost	CatBoost is a powerful gradient boosting algorithm developed by Yandex, specifically optimized for categorical feature handling. It excels in reducing overfitting and providing high accuracy with fast training and prediction times.