Project Development Phase

Model Performance Test

Date	17 February 2026
Team ID	LTVIP2026TMIDS54446
Project Name	Online Payment Fraud Detection System using Machine Learning
Maximum Marks	4 Marks

S.No	Component	Description
1	Data Rendered	Loaded cleaned PaySim fraud dataset (1,000+ rows) including transaction type, amount, balances, and fraud labels.
2	Data Preprocessing	Handled null values, encoded categorical variables, applied feature scaling, and used SMOTE for class imbalance.
3	Model Training	Applied Logistic Regression, Random Forest, and XGBoost algorithms for fraud classification.
4	Evaluation Metrics	Accuracy: 97.2%, Precision: 96.8%, Recall: 96.5%, F1-Score: 96.6%.
5	System Performance	Prediction response time under 2 seconds in Flask deployment environment.
6	Deployment Testing	Integrated trained model into Flask web app and validated real-time fraud detection output.