Ideation Phase

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

Project Overview – Detailed

This project develops a Machine Learning-based fraud detection system that analyzes transaction features such as amount, transaction type, account balance, and time step to classify transactions as Fraud or Legitimate.

Technical Details:

• Dataset: PaySim (Kaggle Fraud Detection Dataset) • Algorithms Used: Logistic Regression, Random Forest, XGBoost • Handling Imbalanced Data: SMOTE technique • Evaluation Metrics: Accuracy, Precision, Recall, F1-Score

Research Questions:

1. Which ML model provides highest fraud detection accuracy? 2. How does feature scaling impact model performance? 3. Can ensemble models reduce false positives? 4. How to deploy model in real-time Flask environment?

System Flow Diagram (Textual Representation):

User → Enter Transaction → Flask Backend → Data Preprocessing → ML Model → Fraud / Not Fraud → Display Result