Ideation Phase
Brainstorm & Idea Prioritization

Date	13 February 2026
Team ID	LTVIP2026TMIDS54062
Project Name	Online Payments Fraud Detection Using Machine Learning

Step-1: Team Gathering, Collaboration and Problem Statement Selection

The team collaboratively reviewed online transaction datasets and analyzed current challenges in digital payment systems, including credit card fraud, UPI fraud, phishing-based transactions, and false transaction declines.

After discussing fraud trends, customer pain points, and banking security requirements, the following problem statement was selected:

"There is a need to design and implement a real-time machine learning-based fraud detection system that accurately identifies fraudulent online payment transactions while minimizing false positives and ensuring a seamless customer experience."

Step-2: Brainstorm, Idea Listing and Grouping

Grouping Category	Ideas Generated
Transaction Pattern Analysis	Analyze transaction amount, time, frequency, and location
Behavioral Analysis	Detect unusual spending behavior and new device usage
Machine Learning Models	Implement Random Forest, XGBoost, Logistic Regression
Risk Scoring System	Assign fraud probability score to each transaction
Real-Time Monitoring	Develop API-based real-time fraud detection
Alert Mechanism	Trigger SMS/Email alerts for suspicious transactions
Explainable AI	Use SHAP to explain why a transaction was flagged
Fraud Analyst Dashboard	Build dashboard to monitor flagged transactions

Security Enhancement	Enable auto card freeze and OTP verification
Future Enhancements	Integrate deep learning models and behavioral biometrics

Step-3: Idea Prioritization

Priority Level	Idea
High	Develop ML model (Random Forest/XGBoost) for fraud detection
High	Implement real-time risk scoring and alert system
High	Apply feature engineering for behavioral deviation detection
Medium	Create fraud analyst monitoring dashboard
Medium	Integrate SHAP for model explainability
Low	Implement deep learning-based fraud detection
Low	Integrate advanced behavioral biometrics and blockchain security