

User Acceptance Testing (UAT)

Online Payments Fraud Detection using Machine Learning

Date: 20 Feb 2026

Team ID: LTVIP2026TMIDS65668

Project Name: Online Payments Fraud Detection using Machine Learning

Testing Period: 15 Feb 2026 – 20 Feb 2026

Project Overview

Project Description:

A machine learning–based fraud detection system that predicts whether an online payment transaction is fraudulent or legitimate using historical transaction data. The project integrates an XGBoost classification model with a Flask web application to provide real-time fraud prediction.

Testing Scope

Features & Functionalities Tested:

- Data preprocessing (handling missing values, encoding categorical variables, balancing dataset)
 - Model training and classification accuracy
 - Fraud prediction functionality
 - Flask dashboard functionality
 - Visualization outputs (bar charts, correlation heatmaps)
 - Input validation and error handling
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User Stories / Requirements Tested:

- As a user, I can input transaction details (amount, type, balances) to check fraud status.
- As a user, I can view fraud prediction results on the dashboard.

- As a user, I receive proper error messages for invalid inputs.
 - As a project owner, I can review model performance metrics and reports.
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Testing Environment

- URL/Location: Localhost (Flask Server) – <http://127.0.0.1:5000/>
 - Credentials: Not required (open access during testing)
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Test Cases Summary

Test Case ID	Test Scenario	Expected Result	Status
TC-001	Input Validation	Valid inputs accepted; invalid rejected	Pass
TC-002	Fraud Prediction	Correct Fraud/Not Fraud output	Pass
TC-003	Model Integration	Backend returns accurate prediction	Pass
TC-004	Error Handling	Proper “Invalid Input” message displayed	Pass
TC-005	Dashboard Navigation	Pages load correctly and function properly	Pass

Bug Tracking Summary

Bug ID	Description	Severity	Status	Resolution
BG-001	Prediction error on empty input	Medium	Closed	Improved validation
BG-002	UI refresh issue after prediction	Low	Closed	Session handling fixed
BG-	Incorrect encoding for rare	Low	Closed	Encoding logic

Bug ID	Description	Severity	Status	Resolution
003	transaction type			updated

UAT Conclusion

The Online Payments Fraud Detection System (v1.0) successfully passed User Acceptance Testing.

- **Model predictions are accurate and reliable.**
- **Input validation and error handling are functioning properly.**
- **Dashboard UI is stable and user-friendly.**

The system is approved for final submission and deployment