

Functional & Performance Testing

Online Payments Fraud Detection using Machine Learning

Date: 20 Feb 2026

Team ID: LTVIP2026TMIDS65668

Project Name: Online Payments Fraud Detection using Machine Learning

Maximum Marks: 4 Marks

Test Scenarios & Results – Online Payments Fraud Detection

Test Case ID	Scenario (What to test)	Test Steps (How to test)	Expected Result	Actual Result	Pass/Fail
FT-01	Input Validation – Transaction Details	Enter valid and invalid values (amount, balances, type)	Valid numeric inputs accepted; error shown for invalid or empty fields	Validation working correctly	Pass
FT-02	Fraud Prediction Output	Enter valid transaction details and click “Predict”	System displays Fraud / Not Fraud correctly	Prediction generated successfully	Pass
FT-03	Model Integration	Submit transaction data via Flask app	Backend model processes input and returns prediction	Model integrated successfully	Pass
FT-04	Error Handling	Enter empty fields or non-numeric values	Application displays “Invalid Input” message	Proper error message displayed	Pass
FT-05	Transaction Type Encoding	Select different transaction types (TRANSFER, CASH_OUT, etc.)	Correct encoding applied before prediction	Encoding handled correctly	Pass
PT-01	Response Time Test	Measure time taken after clicking “Predict”	Prediction generated	Average response time ≈ 1.5 sec	Pass

Test Case ID	Scenario (What to test)	Test Steps (How to test)	Expected Result	Actual Result	Pass/Fail
			within 3 seconds		
PT-02	Model Load Test	Run 50–100 consecutive predictions	System handles requests without crash	No performance degradation observed	Pass
PT-03	Concurrent User Test	Simulate multiple user inputs simultaneously	System remains stable	Stable under moderate load	Pass
PT-04	UI Functionality	Navigate between home page and prediction dashboard	Pages load correctly; buttons function properly	UI working as expected	Pass
PT-05	Security Validation	Try invalid data injection in input fields	System prevents malicious input	Input sanitization successful	Pass

Performance Summary

- Prediction Time: ~1.5 seconds
 - Model Stability: Stable under moderate load
 - Error Handling: Proper validation implemented
 - System Reliability: High
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Conclusion

The Online Payments Fraud Detection System successfully passed both functional and performance testing. The application:

- Accurately predicts fraudulent transactions
- Handles invalid inputs effectively
- Maintains fast response time
- Remains stable under multiple requests

The system is ready for final deployment and submission.