Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	11 February 2026
Team ID	LTVIP2026TMIDS54415
Project Name	Online Payment Fraud Detection using Machine Learning
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration & Authentication	Registration through Email & Password Secure Login with Username & Password Two-Factor Authentication (OTP Verification)
FR-2	Transaction Processing	Capture transaction details (amount, location, device info) Validate transaction input data Store transaction in database
FR-3	Fraud Detection	Extract transaction features for analysis Apply trained ML model for fraud prediction Classify transaction as Fraud / Legitimate
FR-4	Alert & Notification System	Send real-time fraud alert to user Allow user to confirm or reject flagged transaction
FR-5	Fraud Reporting & Logging	Store prediction results in fraud logs Maintain transaction history
FR-6	Admin Dashboard	Monitor fraud statistics (accuracy, precision, recall)
Fr-7	Model Management	Retrain model using updated dataset Compare model performance metrics Update deployed model

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

NFR No.	Non-Functional Requirement	Description
NFR-1	Usability	The system should have a simple and user-friendly interface for customers and administrators.
NFR-2	Security	All transaction data must be encrypted. OTP-based authentication and secure APIs must be implemented.
NFR-3	Reliability	The fraud detection system must provide accurate and consistent predictions with minimal false positives.
NFR-4	Performance	Fraud prediction must be generated within milliseconds to support real-time transaction processing.
NFR-5	Availability	The system should be available 24/7 with minimal downtime.
NFR-6	Scalability	The system should handle increasing transaction volume without performance degradation.
NFR-7	Maintainability	The model and system should allow easy updates and retraining.
NFR-8	Auditability	All transactions and fraud decisions must be logged for auditing and review purposes.