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

Date	18th Febraury 2026
Team ID	LTVIP2026TMIDS57900
Project Name	Online Payments 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	Transaction Data Submission	-System shall allow online payment web user to enter transaction details -System shall validate mandatory fields before submission. -System shall prevent submission of incomplete or invalid data.
FR-2	Fraud Detection & Prediction	-System shall preprocess transaction data before prediction. -System shall load the trained XGBoost model automatically at system startup. -System shall analyze transaction details and classify them as Fraud or Legitimate. -System shall display prediction results in real time.
FR-3	Transaction Monitoring & Review	-System shall allow bank fraud monitoring officer to view flagged transactions. -System shall display transaction details along with prediction results.
FR-4	Prediction Logging & Record Management	-System shall store transaction inputs and prediction results for future review. -System shall maintain logs of detected fraudulent transactions.
FR-5	Model Management	-System shall allow administrator to update or replace the trained fraud detection model. -System shall ensure updated model is used for future predictions without system interruption.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Performance**	System shall generate fraud prediction results within 2 seconds per transaction.
NFR-2	**Accuracy**	System shall maintain high fraud detection accuracy (approximately 99% based on trained model performance).
NFR-3	**Security**	System shall protect transaction data from unauthorized access and misuse.

NFR-4	**Reliability**	System shall function without crashes during continuous transaction processing.
NFR-5	**Scalability**	System shall handle increasing number of transactions without performance degradation.
NFR-6	**Usability**	System interface shall be simple and easy to use for entering transaction details.
NFR-7	**Maintainability**	System shall allow easy model updates and future enhancements.
NFR-8	**Availability**	System shall be available to users whenever fraud prediction services are required.