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

Date	28 June 2025
Team ID	LTVIP2025TMID35333
Project Name	Revolutionizing Liver Care : Predicting Liver Cirrhosis using Advanced Machine Learning Techniques
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 Checking	Checking through Form Checking through fill the fields in website
FR-2	User Confirmation	Confirmation via YES Confirmation via NO

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	• User Interface (UI). • Minimal technical expertise. • Efficiency (early treatment planning). • Accessibility (Available 24/7 for emergency, **secure multi-user functionality** (doctors, technicians, data scientists). • Adaptability(data confidentiality).
NFR-2	**Security**	• Data Privacy and Confidentiality(**HIPAA** (Health Insurance Portability and Accountability Act) and/or **GDPR** regulations. • Secure User Authentication(Passwords are **hashed and salted** before storage). • Data Integrity(All data entries and model predictions are stored with **timestamped logs)**. • ML Model Security(Logs are maintained for all **model inputs, outputs, and retraining activities**).
NFR-3	**Reliability**	• High Prediction Accuracy (he system uses **advanced machine learning algorithms** (e.g., Random Forest, XGBoost, Neural Networks). • System Uptime and Availability(**cloud-based infrastructure).**

		• Fault Tolerance(Unexpected input **Edge cases Extreme data volumes).**
NFR-4	**Performance**	• Fast Prediction Time(**predictions within seconds, reduce diagnostic delays).** • Low Latency • High Throughput • Performance Metrics Monitoring(Model inference time, System load, Prediction success/failure rates
NFR-5	**Availability**	• High System Uptime(The system is designed to maintain **99.9% or higher uptime**, ensuring it's available to medical staff at all times). • Redundancy and Failover Support • Scalable Infrastructure • 24/7 Access • Availability Monitoring • Disaster Recovery and Backup
NFR-6	**Scalability**	• Horizontal and Vertical Scalability • (Horizontal scaling (adding more servers/machines) • **Vertical scaling** (increasing server capacity) • Scalable ML Model Infrastructure • Database Scalability • Cloud-Based Deployment • Multi-Institution Expansion • API Scalability • User & Role Management