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

Date	31 January 2025
Team ID	LTVIP2026TMIDS65625
Project Name	Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy
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	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Fundus Image Upload	Upload fundus retinal image (JPG/PNG format) Validate image format and size Store image securely in database/server Display uploaded image preview
FR-4	Deep Learning Analysis	Preprocess image (resize, normalization) Apply trained CNN/Deep Learning model Classify DR stage (No DR / Mild / Moderate / Severe / Proliferative) Generate prediction confidence score
FR-5	Result Display & Report Generation	Display DR detection result how severity level Generate downloadable medical report (PDF) Show recommendation (Consult Ophthalmologist if severe)

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Simple and user-friendly interface Easy image upload process Clear result display
NFR-2	**Security**	Secure login authentication Encrypted user data Secure storage of medical images
NFR-3	**Reliability**	Accurate prediction with high precision Stable system without crashes
NFR-4	**Performance**	Image processing time < 5 seconds Fast response time
NFR-5	**Availability**	System available 24/7 Minimal downtime
NFR-6	**Scalability**	Can handle multiple users simultaneously Cloud-based deployment support