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

Date	26 June 2025
Team ID	LTVIP2025TMID39901
Project Name	Hematovision – Advanced Blood Cell Classification using Transfer Learning
Maximum Marks	4 Marks

Functional Requirements:

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	UI should be clean, intuitive, and easy to use for medical personnel
NFR-2	**Security**	Only images should be accepted; handle exceptions and invalid inputs safely
NFR-3	**Reliability**	Model should give consistent and accurate predictions for blood cell types

NFR-4	**Performance**	Inference time should be < 3 seconds per image

Following are the functional requirements of the proposed solution.

FR No.	**Functional Requirement (Epic)**	**Sub Requirement (Story / Sub-Task)**
FR-1	Image Upload & Preprocessing	Upload blood cell image Validate image format (e.g., JPG/PNG) Resize and normalize image for model
FR-2	Blood Cell Classification (Model Inference)	Load pretrained MobileNetV2 model Run prediction Display output with confidence score
FR-3	Result Logging & Storage	Save image and prediction locally (e.g., SQLite or CSV) Record timestamp and result
FR-4	User Interface	Simple web interface using Flask Upload button and result display Show loading/processing status

Non-functional Requirements:

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

NFR-5	**Availability**	Should work offline or on local system (e.g., via Flask)
NFR-6	**Scalability**	Should support future upgrades (e.g., more cell types, cloud integration)