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

Date	31 January 2025
Team ID	LTVIP2026TMIDS52481
Project Name	Dog Breed Identification using Transfer 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	Registration through Form Registration through Gmail
FR-2	User Login & Authentication	Registered users can **log in using username and password** Session management for secure access
FR-3	Dog Image Upload	? User can **upload a dog image** from local device ? System supports **common image formats (JPG, PNG, JPEG)** ? Uploaded image preview displayed before prediction
FR-4	Dog Breed Prediction	? System preprocesses uploaded image ? **MobileNetV2 deep learning model** performs classification ? Predicted **dog breed name and confidence score** displayed
FR-5	Prediction History Management	User can view **previous prediction history**
FR-6	System Deployment & Access	? Web application accessible via **browser interface** ? Hosted using **cloud platform (Hugging Face Spaces)** ? Enables **real-time dog breed prediction**

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	? Simple and intuitive **web interface** ? Easy image upload and clear prediction display
NFR-2	**Security**	Secure **user authentication and password protection**
NFR-3	**Reliability**	? Stable prediction results using **trained MobileNetV2 model**

		? Proper error handling for invalid uploads
NFR-4	**Performance**	? **Fast image preprocessing and prediction** ? Lightweight MobileNetV2 ensures **low latency inference**
NFR-5	**Availability**	? Cloud deployment ensures **24/7 accessibility** ? Users can access prediction service anytime
NFR-6	**Scalability**	? Architecture supports **future dataset expansion and model upgrades**