Project Design Phase-II

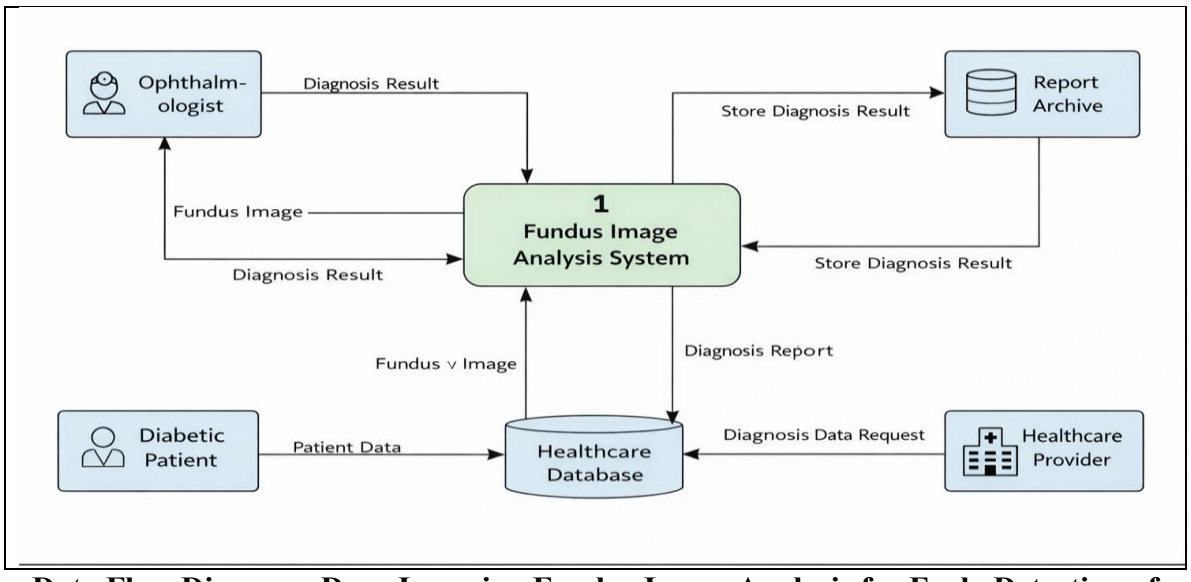
Data Flow Diagram & User Stories

Date	12 February 2026
Team ID	LTVIP2026TMIDS88398
Project Name	Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy
Maximum Marks	4 marks

Data Flow Diagram:

The Data Flow Diagram (Level 0) illustrates the overall interaction between external entities and the Deep Learning Fundus Image Analysis System. The Diabetic Patient uploads a fundus retinal image and provides required data to the system. The system processes the image using the trained Xception deep learning model and generates a Diabetic Retinopathy (DR) stage classification result.

The diagnosis result is then displayed to the Ophthalmologist or Healthcare Provider and simultaneously stored in the Healthcare Database and Report Archive for future reference. This context diagram provides a high-level overview of data input, processing, storage, and output within the system without detailing internal processing steps.



Data Flow Diagram -Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance Criteria	Priority	Release
Diabetic Patient (Web User)	Registration	USN-1	As a user, I can register by entering name, email and password.	Account created successfully and redirected to login.	High	Sprint-1
Diabetic Patient (Web User)	Login	USN-2	As a user, I can login using registered email and password.	User accesses dashboard after successful login.	High	Sprint-1
Diabetic Patient (Web User)	Image Upload	USN-3	As a user, I can upload fundus retinal image for detection.	Image uploaded and displayed on prediction page.	High	Sprint-1
Diabetic Patient (Web User)	Prediction	USN-4	As a user, I can receive DR stage prediction.	System displays correct DR classification result.	High	Sprint-1
Diabetic Patient (Web User)	Logout	USN-5	As a user, I can logout securely from application.	Session ends and redirects to login page.	High	Sprint-1
Ophthalmologist	Diagnosis Review	USN-6	As a doctor, I can review predicted DR stage.	Diagnosis result clearly displayed with stage name.	High	Sprint-2
Healthcare Provider	Data Storage	USN-7	As a provider, I can store diagnosis result in database.	Prediction result saved successfully.	Medium	Sprint-2
Administrator	User	USN-8	As an	Admin can	Medium	Sprint-

	Management		admin, I can manage user accounts.	view and manage user records.		3
System	Model Integration	USN-9	System processes image using trained Xception model.	Model loads and predicts without error.	High	Sprint-1
System	Data Security	USN-10	System stores passwords using hashing.	Passwords encrypted in database.	High	Sprint-1