Project Planning Phase

(Product Backlog, Sprint Planning, User Stories, Story Points)

Date:	02 Feb 2026
Team ID:	LTVIP2026TMIDS75194
Project Name:	Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy
Maximum Marks:	5 Marks

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

The project is planned using **Agile Scrum methodology**, where the entire development is divided into multiple sprints. Each sprint focuses on a specific functional requirement (Epic), which is further broken down into user stories and tasks. Story points are assigned based on the complexity and effort required.

Sprint-wise Product Backlog

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Data Collection & Preprocessing	USN-1	Collection of retinal fundus images, data loading, data cleaning, handling missing or corrupted images	9	High	Vishnu, Charan, Kiran
Sprint-2	Exploratory Data Analysis & Feature Engineering	USN-2	Exploratory image analysis, normalization, augmentation, feature extraction preparation	7	High	Vishnu, Charan, Kiran
Sprint-3	Model Development	USN-3	CNN model building, hyperparameter tuning, model	13	Low	Vishnu, Charan, Kiran

			evaluation and validation			
Sprint -4	Model Deployment	USN-4	Flask API creation, frontend UI using HTML/CSS/JS for image upload and result display	8	Medium	Vishnu, Charan, Kiran
Sprint -5	Testing & Final Deployment	USN-5	Full system testing, cloud deployment, documentation	13	High	Vishnu, Charan, Kiran

Sprint-wise Task Breakdown and Story Point Allocation

Sprint 1: Data Collection & Preprocessing (2 Days)

Epic: Data Collection & Preprocessing

- Collection of retinal fundus images – **2 points**
- Loading image dataset into environment – **1 point**
- Handling missing or corrupted images – **3 points**
- Image resizing and normalization – **3 points**

Total Story Points (Sprint 1): 9

Sprint 2: Exploratory Data Analysis & Feature Engineering (2 Days)

Epic: Feature Engineering

- Exploratory image analysis and visualization – **4 points**
- Image encoding and normalization – **1 point**
- Data augmentation and feature preparation – **2 points**

Total Story Points (Sprint 2): 7

Sprint 3: Model Development (3 Days)

Epic: Model Development

- CNN model architecture design – **5 points**
- Hyperparameter tuning – **2 points**
- Model evaluation using accuracy, precision, recall, F1-score – **2 points**
- Model validation – **1 point**
- Testing model performance – **3 points**

Total Story Points (Sprint 3): 13

Sprint 4: Model Deployment (2 Days)

Epic: Deployment

- Development of working HTML pages – **3 points**
- Flask backend API deployment – **5 points**

Total Story Points (Sprint 4): 8

Sprint 5: Testing & Final Deployment (3 Days)

Epic: Testing & Final Deployment

- Cloud deployment (onrender.com, netlify.app) – **5 points**
- Full system testing – **5 points**
- Documentation preparation – **3 points**

Total Story Points (Sprint 5): 13

Project Tracker, Velocity & Burndown Chart (4 Marks)

Sprint Tracker Table

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed	Sprint Release Date

Sprint -1	9	2 Days	02-02-2026	03-02-2026	9	03-02-2026
Sprint -2	7	2 Days	04-02-2026	05-02-2026	7	05-02-2026
Sprint -3	13	3 Days	06-02-2026	08-02-2026	13	08-02-2026
Sprint -4	8	2 Days	09-02-2026	10-02-2026	8	10-02-2026
Sprint -5	13	3 Days	11-02-2026	13-02-2026	13	13-02-2026

Velocity Calculation

Velocity represents the average number of story points completed per sprint.

- **Total Story Points Completed:**
 9 + 7 + 13 + 8 + 13 = **50**
- **Number of Sprints:** 5

Velocity=Total Story PointsNumber of Sprints=505=10\textbf{Velocity} = \frac{\text{Total Story Points}}{\text{Number of Sprints}} = \frac{50}{5} = 10Velocity=Number of SprintsTotal Story Points=550=10

Team Velocity

My team velocity is 10 Story Points per Sprint.

This indicates consistent sprint execution and effective workload distribution across the project timeline.

Burndown Chart Explanation

A burndown chart visually represents the remaining work (story points) against time during the sprint duration. It helps track project progress and ensures timely completion of tasks.

In this project:

- Story points decrease steadily across sprints

- All planned story points are completed within the sprint timelines
- No sprint spillover occurred

This demonstrates efficient sprint planning and execution.