Project Planning Phase

Project Planning Template (Product Backlog, Sprint Planning, Stories, Story points)

Date	15 February 2026
Team ID	LTVIP2026TMIDS80318
Project Name	Weather-Based Prediction of Wind Turbine Energy Output: A Next-Generation Approach to Renewable Energy Management
Maximum Marks	5 Marks

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

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Data Collection	USN-1	As a developer, I can collect and load wind turbine and weather datasets from reliable sources into Google Colab.	3	High	Lakshmi Jahnavi
Sprint-1	Data Preprocessing	USN-2	As a developer, I can handle missing values and inconsistencies in the dataset.	5	High	Lakshmi Jahnavi
Sprint-1	Data Preprocessing	USN-3	As a developer, I can create required fields and prepare data for analysis.	3	Medium	Lakshmi Jahnavi
Sprint-2	Data Visualization	USN-4	As a user, I can view bar charts and pie charts for wind speed and power distribution analysis.	4	Medium	Lakshmi Jahnavi
Sprint-2	Data Visualization	USN-5	As a user, I can view line charts to analyze wind speed trends over time.	2	Medium	Lakshmi Jahnavi
Sprint-2	Model Development	USN-6	As a developer, I can train and evaluate a machine learning model to predict wind energy output.	5	High	Lakshmi Jahnavi
Sprint-2	Web Application	USN-7	As a user, I can enter a city name and view real-time weather conditions using an API.	3	High	Lakshmi Jahnavi
Sprint-2	Web Application	USN-8	As a user, I can view predicted wind turbine energy output on a web interface.	5	High	Lakshmi Jahnavi

Project Tracker, Velocity & Burndown Chart: (4 Marks)

Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
20	6 Days	27 Jan 2026	01 Feb 2026	20	01 Feb 2026
20	6 Days	03 Feb 2026	08 Feb 2026	20	08 Feb 2026
20	6 Days	10 Feb 2026	15 Feb 2026	20	15 Feb 2026
20	6 Days	17 Feb 2026	22 Feb 2026	20	22 Feb 2026

Velocity:
Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

$$AV = \frac{sprint\ duration}{velocity} = \frac{20}{10} = 2$$

Burndown Chart:

A burn down chart is a graphical representation of work left to do versus time. It is often used in agile software development methodologies such as Scrum. However, burn down charts can be applied to any project containing measurable progress over time.