

Project Planning Phase

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

Date	10 February 2026
Team ID	LTVIP2026TMIDS84120
Project Name	Weather-Based Prediction of Wind Turbine Energy Output: A Next-Generation Approach to Renewable Energy Management
Maximum Marks	2 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	User Interface Setup	USN-1	As a user, I can open the web application homepage.	1	High	UI Dev
Sprint-1	User Interface Setup	USN-2	As a user, I can enter weather parameters in input fields.	2	High	UI Dev
Sprint-1	User Interface Setup	USN-3	As a user, I can submit inputs to predict energy output.	2	High	UI Dev
Sprint-1	Backend Setup	USN-4	As a system, I can receive user inputs via Flask backend.	3	High	Backend Dev
Sprint-2	Data Processing	USN-5	As a system, I can preprocess weather and turbine data.	5	High	ML Dev
Sprint-2	Model Training	USN-6	As a system, I can train ML model on historical dataset.	8	High	ML Dev
Sprint-2	Model Training	USN-7	As a system, I can evaluate model accuracy.	3	Medium	ML Dev
Sprint-3	Prediction Service	USN-8	As a system, I can load trained model for prediction.	3	High	Backend Dev
Sprint-3	Prediction Service	USN-9	As a user, I can see predicted wind energy output.	2	High	Backend + UI

Sprint-3	Integration	USN-10	As a system, I can connect UI with ML prediction API.	5	High	Full Team
Sprint-4	Testing	USN-11	As a tester, I can verify prediction results accuracy.	3	Medium	QA
Sprint-4	Testing	USN-12	As a tester, I can validate user input handling.	2	Medium	QA
Sprint-4	Deployment	USN-13	As a system, I can deploy the application locally/cloud.	5	High	DevOps
Sprint-4	Documentation	USN-14	As a team, we can prepare user & technical documentation.	3	Medium	All

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

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	01 Mar 2026	06 Mar 2026	20	06 Mar 2026
Sprint-2	20	6 Days	08 Mar 2026	13 Mar 2026	18	14 Mar 2026
Sprint-3	20	6 Days	15 Mar 2026	20 Mar 2026	19	21 Mar 2026
Sprint-4	20	6 Days	22 Mar 2026	27 Mar 2026	20	27 Mar 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)

$$\text{Average Velocity} = \text{Sprint Duration} / \text{Velocity}$$

$$= (20 + 18 + 19 + 20) / 4$$

$$= 19.25 \approx 19 \text{ SP per sprint}$$

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.

