

Planning Logic

The planning of the project was done using **Agile Scrum methodology**, focusing on iterative development, estimation accuracy, and continuous delivery of functional components. The overall project was divided into **2 Sprints of 5 working days each**, aligned with task complexity and delivery milestones.

1. Task Breakdown Approach

- The complete project was decomposed into **Epics** such as:
 - Data Collection & Preprocessing
 - Model Building
 - Deployment
- Each Epic was further broken down into smaller **User Stories** (tasks) that are feasible to complete within a single sprint.

2. Effort Estimation using Story Points

- Tasks were estimated using **Story Points**, based on the **Fibonacci sequence** (1, 2, 3, 5).
- Estimations were made based on the **effort, complexity, and time** required to complete each story.
- Definition:
 - **1 Point** → Very Easy Task (e.g., loading data)
 - **2 Points** → Easy Task (e.g., encoding categorical data)
 - **3 Points** → Moderate Task (e.g., testing model)
 - **5 Points** → Difficult Task (e.g., Flask integration or deep learning model training)

3. Sprint Allocation Logic

- Tasks were **grouped into Sprints** such that the total story points per sprint were balanced and achievable within 5 days.
- Sprint 1 focused on **data preparation**, which is foundational and enables further development.
- Sprint 2 included **model development and deployment**, building upon the preprocessed data.

4. Velocity-Based Planning

- After completing both sprints, the total effort measured in story points was **24** (8 in Sprint 1 + 16 in Sprint 2).
- The team's **velocity** was calculated as:

$$\text{Velocity} = \frac{\text{Total Story Points}}{\text{No. of Sprints}} = \frac{24}{2} = 12 \text{ Story Points/Sprint}$$

- This velocity acts as a **benchmark** for future sprint planning and indicates the team's average delivery capacity.

5. Benefits of the Planning Logic

- Ensures **clear prioritization** of tasks based on complexity.
- Facilitates **realistic sprint goals** and timely delivery.
- Improves team coordination and accountability.
- Enables **predictable progress tracking** using story points and velocity.