## **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:

Velocity=Total Story PointsNo. of Sprints=242=12 Story Points/Sprint\text{Velocity} = \frac{Total\ Story\ Points}{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.