**5. Project Planning & Scheduling**

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| Date | 28 June 2025 |
| Team ID | LTVIP2025TMID35678 |
| Project Name | Pattern Sense: Classifying Fabric Patterns using Deep Learning |
| Maximum Marks | 5 Marks |

**5.1 Project Planning**The Project Planning Phase lays out a structured roadmap for developing the *Pattern Sense* system using Agile methodology. The development is divided into 2 sprints, each with a fixed duration of 5 days, and includes well-defined Epics, Stories, and Story Points to estimate effort.

**Product Backlog, Sprint Schedule, and Estimation**✅ Sprint 1: Data Collection & Preprocessing (5 Days)

This sprint focuses on gathering, loading, and cleaning the fabric pattern dataset to prepare it for model training. Tasks include:

* Collecting fabric pattern images from online sources.
* Importing the dataset into the development environment.
* Handling missing values and encoding categorical labels.

Each story was estimated based on team experience, with a total of 8 story points for this sprint. The goal is to complete a clean, usable dataset for model training in the next sprint.

✅ Sprint 2: Model Development & Deployment (5 Days)

This sprint involves training the deep learning model and integrating it into a working web application. Major components include:

* Designing and building the Convolutional Neural Network (CNN).
* Evaluating model accuracy and refining the architecture.
* Developing a simple frontend (HTML pages) for user interaction.
* Deploying the model using Flask to handle image uploads and predictions.

Sprint 2 has a higher complexity, assigned 16 story points, and includes critical tasks that result in a working MVP (Minimum Viable Product).

| **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 will collect fabric pattern images from open datasets | | 2 | High | J. Neelaveni |
| Sprint-1 | |  | | --- | |  |  |  | | --- | | Data Collection | | USN-2 | As a developer, I will load the dataset into the workspace for preprocessing | 1 | High | G. Sai Neelesh |
| Sprint-1 | |  | | --- | |  |  |  | | --- | | Data Preprocessing | | USN-3 | As a developer, I will handle missing values in the dataset | 3 | Low | G. Manikanta |
| Sprint-1 | Data Preprocessing | USN-4 | As a developer, I will encode categorical labels (patterns) for model compatibility | 2 | Medium | D. Siva Teja |
| Sprint-2 | Model Development | USN-5 | As a developer, I will build a CNN model to classify fabric images | 5 | High | J. Neelaveni |
| Sprint-2 | Model Evaluation | USN-6 | As a developer, I will test and evaluate the model accuracy and performance | 3 | High | D. Siva Teja |
| Sprint-2 | |  | | --- | |  |  |  | | --- | | Frontend Interface | | USN-7 | As a user, I will upload an image and view predicted pattern in a web UI | 3 | Medium | G. Sai Neelesh |
| Sprint-2 | Deployment | USN-8 | |  | | --- | |  |  |  | | --- | | As a developer, I will deploy the trained model using Flask backend | | 5 | High | J. Neelaveni |

**Project Tracker, Velocity & Burndown Chart:**

| **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 | 8 | 5 Days | 15 June 2025 | 20 June 2025 | 8 | 20 June 2025 |
| Sprint-2 | 16 | 5 Days | 21 June 2025 | 25 June 2025 | 16 | 25 June 2025 |

📊 Velocity and Tracking

The Velocity of the team is calculated by dividing the total story points by the number of sprints:

* Total Story Points = 24
* Sprints = 2
* Velocity = 24 / 2 = 12 Story Points per Sprint

This metric helps estimate how much work the team can handle in future iterations and ensures efficient delivery within the project timeline. With consistent sprint execution, the team has maintained a healthy and predictable development pace**.**