Project Report
for
Milestone 3

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A web application to help students ask support and other queries to IIT Madras was to be built. This application was further decomposed into smaller modules using the single responsibility principle. Further, a project and task management system was to be chosen to manage tasks and timelines.

Application Decomposition
The application was decomposed into modules described in the sections that follow.

Authentication
The Authentication module (AuthN) will be responsible for the following:
1. Signing Up of new users
2. Signing In of existing users
3. Signing Out of signed users
4. Allow signed in users to change passwords
5. Reset the passwords in case they've been forgotten

Authorization
The Authorization module (AuthZ) will be responsible for enforcing roles for signed in users. As of now, the following types of users (roles) will be supported:
1. Guests
2. Students
3. Support Staff
4. System Admins

Ticket Management

The Ticket Management module will afford the following functionality for signed in users:

For students:
1. Create New Tickets
2. Edit Existing Tickets
3. View Existing Tickets
    a. Unanswered
    b. Answered
4. Like / Dislike Tickets
5. Vote (+1) on Tickets

For support staff:
1. View Existing Tickets
    a. Unanswered
    b. Answered
2. Answer Tickets

For system admins:
1. Enroll new users
    a. Students
    b. Support Staff
2. Assign roles
3. Mark tickets to be included in FAQs

Reporting

The application will provide detailed reports that may be included in dashboards. As of now, the following features are planned:
1. Answered vs Unanswered Tickets
2. Popular Tickets (Views / Votes / Likes)
3. Average lead and solve times for support staff

Search

The search module will help users search through existing tickets that have been answered, so that new tickets are not created unnecessarily, and load on support staff is reduced.

Notifications and Mail

The notifications module will be responsible for notifying users of important events in the system like:
1. Ticket got answered
2. Password got changed

These notifications will primarily be sent by email.

Project Management

Tooling

For managing tasks and timelines for the project, the following applications were examined:
1. Trello
2. JIRA

JIRA was chosen as it allowed calendaring and timelines.

Sprints and Schedule

A seven day sprint was chosen as all activities and tests have to closed on or before April 15, 2023, with roughly a module per sprint with tests for API endpoints and the views.
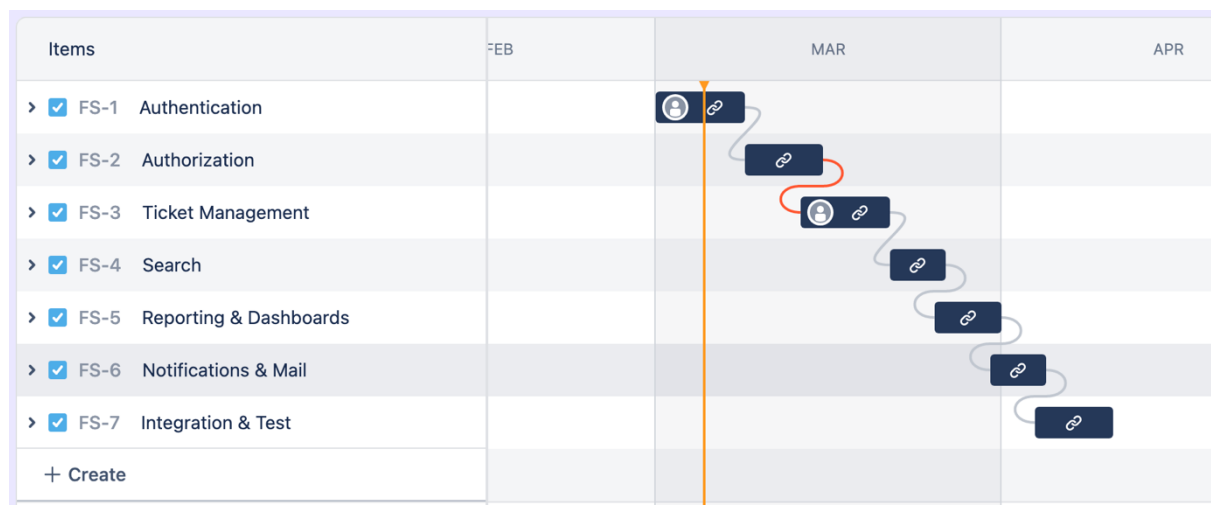

Figure 1: Gantt Chart for Project

Scrum Minutes

Here are some highlights from scrum meetings and decisions made…
1. The Web Application was decided to built using the following technologies:
   a. Python + Flask – Back End
   b. Vue.js – Front End
   c. SQLite / PostgreSQL – Database
   d. JSON – Data Exchange Format
   e. REST API Design Principles
2. Application decomposition into modules
3. Fixing module dependencies and timelines
4. Broad discussions on the User Interface
5. How to implement Search