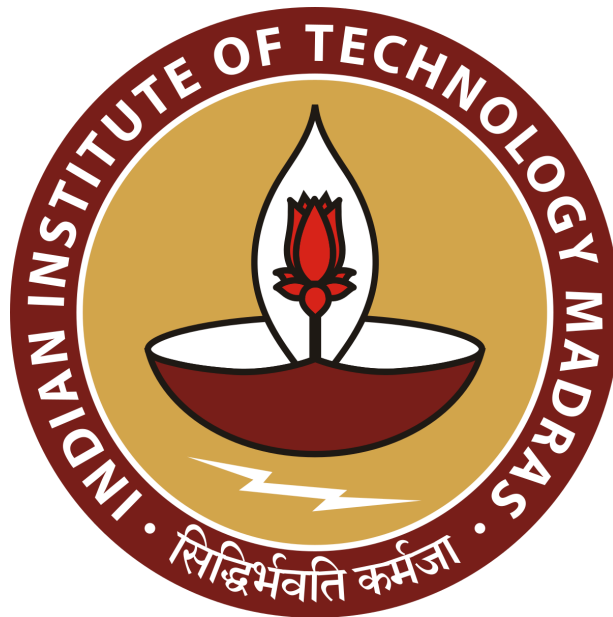CS3001- Software Engineering (Jan-May 2024)

Project Report

Group 21

- Isha Nayar : CS21B035
- Janapati Varshita Devi : CS21B036
- Kumar Kshitiz Singh : CS21B044
- Lagudu Sree Teja Vardhan : CS20B046
- Nisanth D : CS20B057

PROBLEM STATEMENT

Online support ticket system for the IITM BS degree program : Integration with Discourse and webhook.

The support team at the IITM BS degree program often gets overwhelmed with emails from students regarding queries and concerns. Your task is to create an online support ticketing system for the IITM BS degree program. Students can create a support ticket for a particular concern or query. Before they create a ticket, the system should also show a list of similar tickets, and allow users to like or +1 an already existing support ticket, so that duplicates are not created. This way popular concerns or queries can be prioritized by the support team.
After the support team addresses the concern, they can mark the ticket as resolved, and an appropriate notification should be sent to concerned users.

Another important feature of the ticketing system is dynamic FAQ updation. Many student concerns can be FAQs which will be useful for future students. If appropriate, the support query and response should be added to the FAQ section by support admins, and appropriately categorized, so that an updated FAQ will be readily available to students. The platform should allow users to enroll as students, support staff and admins.

a. ***Discourse Integration:*** *In addition to the creation and listing of tickets, your system should also have the provision to create a Discourse thread for each ticket. This will involve integrating the Discourse system with the IITM BS ticketing system. You can think of different rules and configurations to create/edit/modify Discourse threads (for example - the thread can initially be private, but then can be converted to a public topic by moderators [(link)](link)). You can also think of additional features like notifications when a thread which you created has received a reply, like etc.*

b. ***Webhooks Integration:*** *Certain tickets can be high priority and need to be addressed immediately. In such cases, the system has to integrate with webhooks to notify High Priority and Urgent tickets into GChat. This can then be used by higher authorities for handling escalations.*

LIST OF TABLES

1.1 Project Schedule

1.1.1 Task Distribution

Milestone	Sub Task	Sprint	Assigned to
1- User Requirement	User identification	1	All
	User Stories	1	All
	Report	2	Kshitiz, Isha,Varshita
2-User Interface	Wireframes	3	Varshita,Isha
	Storyboards	3	Kshitiz,Nishanth,Teja Vardhan
	Report	4	All
3- Project scheduling	Project Scheduling	5	Isha,Varshita
	Component Design	5	All
	Software design	6	Nishanth,Teja Vardhan,Kshitiz
	Scrum meetings	6	Isha,Kshitiz
	Report	6	All
4-API	Design API	7	Varshita,Isha
	Code Review	8	Nishanth,Teja Vardhan,Kshitiz
	YAML Document	9	All
5-Testing	Test case Design	10	Nishanth,Teja Vardhan,Kshitiz
	Unit testing	11	Varshita,Isha
	Report	11	All
6-Submission	Frontend Design	12	Varshita,Isha,Kshitiz
	Demo	13	Nishanth,Teja Vardhan
	Final Report	13	All
	Presentation	14	All

1.1.2 Schedule using Gantt chart

We divided the milestones into sub-tasks using the SMART guidelines and scheduled our sprint in the form of Gantt chart using the JIRA software tool.The chart is shown below
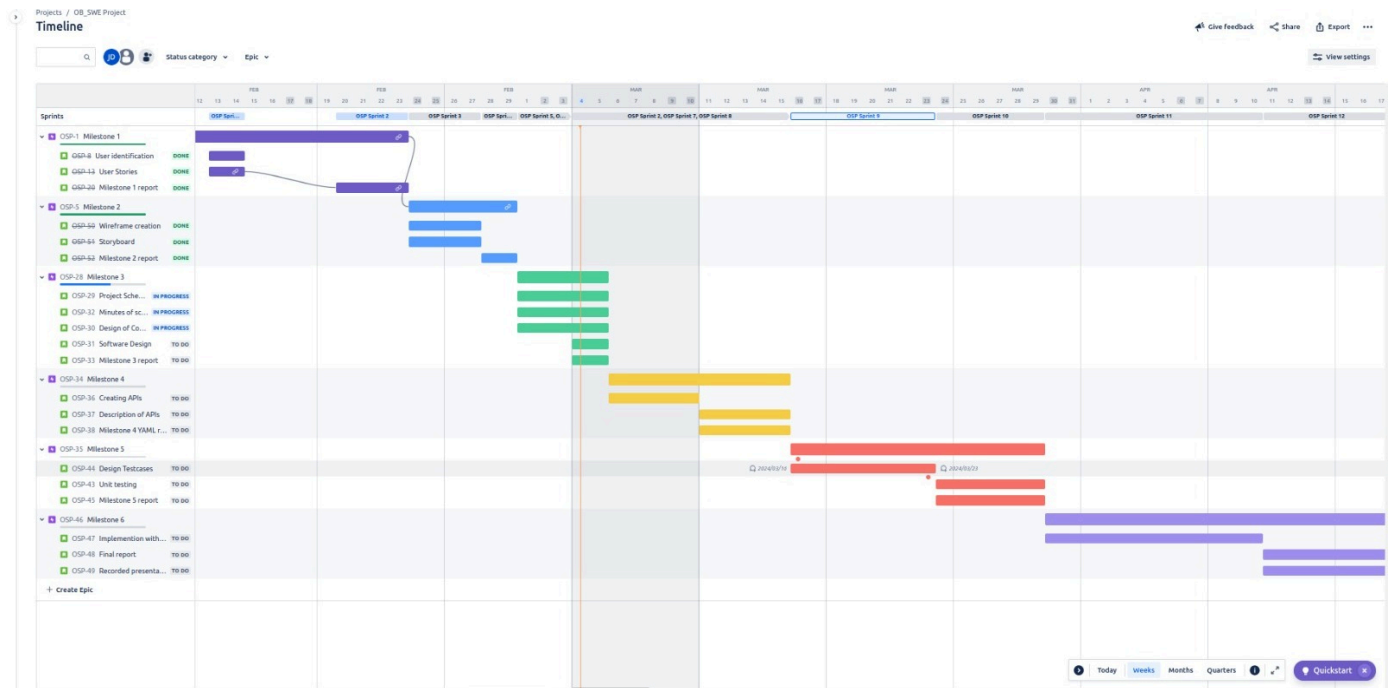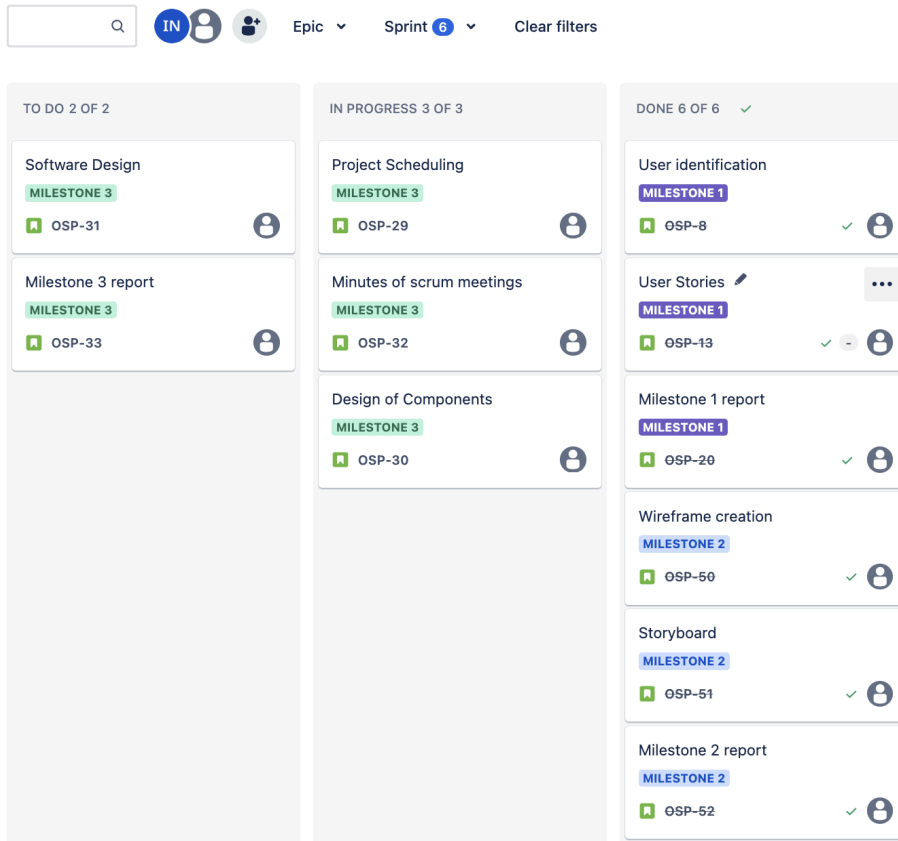

To see the zoom in image of the Gantt chart, click here.

1.1.3 Scrum board(Till Milestone 3)

Based on our Gantt chart and the sprint schedule, we've made the scrum board till Milestone 3. Our Milestone 1 and 2 is completed and Milestone 3 is in progress.

The Scrum board is shown below

All sprints

🔍	IN 👤 👤⁺	Epic ⌄	Sprint 6 ⌄	Clear filters	

TO DO 2 OF 2	IN PROGRESS 3 OF 3	DONE 6 OF 6 ✓
Software Design MILESTONE 3 🔖 OSP-31 　👤	**Project Scheduling** MILESTONE 3 🔖 OSP-29 　👤	**User identification** MILESTONE 1 🔖 OSP-8 　✓ 👤
Milestone 3 report MILESTONE 3 🔖 OSP-33 　👤	**Minutes of scrum meetings** MILESTONE 3 🔖 OSP-32 　👤	**User Stories** ✏️ 　　　⋯ MILESTONE 1 🔖 OSP-13 　✓ - 👤
	Design of Components MILESTONE 3 🔖 OSP-30 　👤	**Milestone 1 report** MILESTONE 1 🔖 OSP-20 　✓ 👤
		Wireframe creation MILESTONE 2 🔖 OSP-50 　✓ 👤
		Storyboard MILESTONE 2 🔖 OSP-51 　✓ 👤
		Milestone 2 report MILESTONE 2 🔖 OSP-52 　✓ 👤

1.2 Scrum Meetings

The scrum meetings are kept once every week to discuss the Milestones.

SCRUM MEETING FOR MILESTONE 1(User requirements)

AGENDA	DISCUSSION
● Discussing the overview of the project ● Understanding the working of discourse and webhook ● Identifying the users ● Coming up with user stories	We discussed the problem statement and came up with ideas on how we can incorporate discourse and webhook in our ticketing system. All of us discussed and came up with user stories for the primary, secondary users. In the end, Kshitiz, Varshita,Isha compiled all the stories in our report. All of us were present for the scrum meeting.

SCRUM MEETING FOR MILESTONE 2(User Interface)

AGENDA	DISCUSSION
• Discussing what wireframes and storyboards are. • Creating a template for both which will be common throughout. • Distributing the task	We saw the basic template of the storyboard and wireframes and read through our user stories to note the modifications we'll be needing in the wireframes, We then divided the work. Isha and Varshita took the responsibility of creating wireframes and Kshitiz, Nishanth, Teja worked on the storyboard script. All of us were present for the scrum meeting.

SCRUM MEETING FOR MILESTONE 3(Project Scheduling)

AGENDA	DISCUSSION
• Discuss major milestones • Divide milestones into sub tasks with SMART guidelines. • Decide feasibility and deadlines. • Discuss major components for the project. • Discuss what is a class diagram. • Distribute tasks	During the meeting, we discussed major milestones and divided into sub tasks. The deadlines were set after assigning each task to a person and a sprint. The Gantt chart given to Varshita, Isha, Teja Scrum meetings and project scheduling to Isha. All of us were present for the scrum meeting.

1.3 Components for the project

The major components of the projects are:

1. Student view of the ticketing system.
2. Support Staff view of the ticketing system.
3. Admin view of the ticketing system.
4. Webhook API.

Components Description:

1. Student view of the ticketing system:
- Create Ticket page:
    - Users can create a discourse thread while raising a ticket.
    - Users can make the thread public or private.
    - Users can escalate a ticket using webhooks integration through gchat.
- Unresolved Tickets page:

    - Users can create a discourse thread for existing tickets if not done already.

    - Users can close or reopen an existing thread.

- Home page:
    - Users can see notifications in the notification panel.

2. Support Staff view of the ticketing system:
- Unresolved Tickets page:
    - Creation of a discourse thread option button for tickets without threads to take the discussion to discourse.
    - View the discussion on the discourse option button for tickets with threads already created.
    - Close the thread after the ticket has been solved on the discourse option button.
    - Escalate the ticket by marking it as high priority.
- Home page:
    - User can see notifications in the notification panel.

3. Admin view of the ticketing system:
- Home Page:
  - Thread to Support Staff Mapping View to see tickets assigned under each support staff
  - Ticket to Thread Mapping View shows the discourse thread link for each ticket.

4. Webhook API:
- Unresolved Tickets page
  - Support staff can notify higher authorities about an urgent issue via Gchat
- Create Ticket page
  - For high priority tickets, Students can notify support staff via Gchat.

1.4 Class Diagrams