

Project Milestone 2 - Functional Requirements & Preliminary Design

The Group: "Software Development Group III"

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1. Review of Progress Since Previous Milestone

What has been completed so far (3/16/25):

- Completed Basic UI wireframes
- Implemented basic backend database structure?
- UML designs?

Since our previous milestone, we have made significant progress in our Homework Tracker project. For the front-end component, we have completed the preliminary design for the UI frameworks and are moving toward the next phase of work, including finalizing the themes for light mode and dark mode. For the back-end component, we explored how to incorporate databases and SQL servers into the project. Furthermore, we made progress in UML for different classes in the backend, basing them on images and implied functionality from the preliminary UI designs.

2. Revised Schedule and Plan for Remainder of Project

The chart shown below is the schedule which we have developed for our Homework Tracker project. The chart shows the high-level tasks to be completed, the duration of how long it is anticipated to take, and the progress status for each task. Each task is subject to change, depending on how long it will take to complete the task. Since we are following an agile workflow, we will update our tasks accordingly.

Task	Duration	Start Date	End Date	Status
Database formation and planning	7 days	3/24/25	3/30/25	Planned
Backend UML Diagrams	5 days	3/17/25	3/23/25	In progress
Timer making	7 days	3/31/25	4/06/25	Planned
Home page	7 days	3/17/25	3/24/25	Planned
Functional Requirements	7 days	3/17/25	3/24/25	In progress
UML Diagrams	7 days	3/17/25	3/24/25	Planned
Home page Feedback	5 days	3/24/25	3/29/25	Planned

3. Preliminary Project Documentation

a. Agile Process Model Artifacts

- We currently have a sprint board in Trello with items for our backlog. We are planning our next sprint soon and will create new tickets for our tasks.
- We are planning to get user stories from our two clients soon. We will discuss this in our next team meeting.

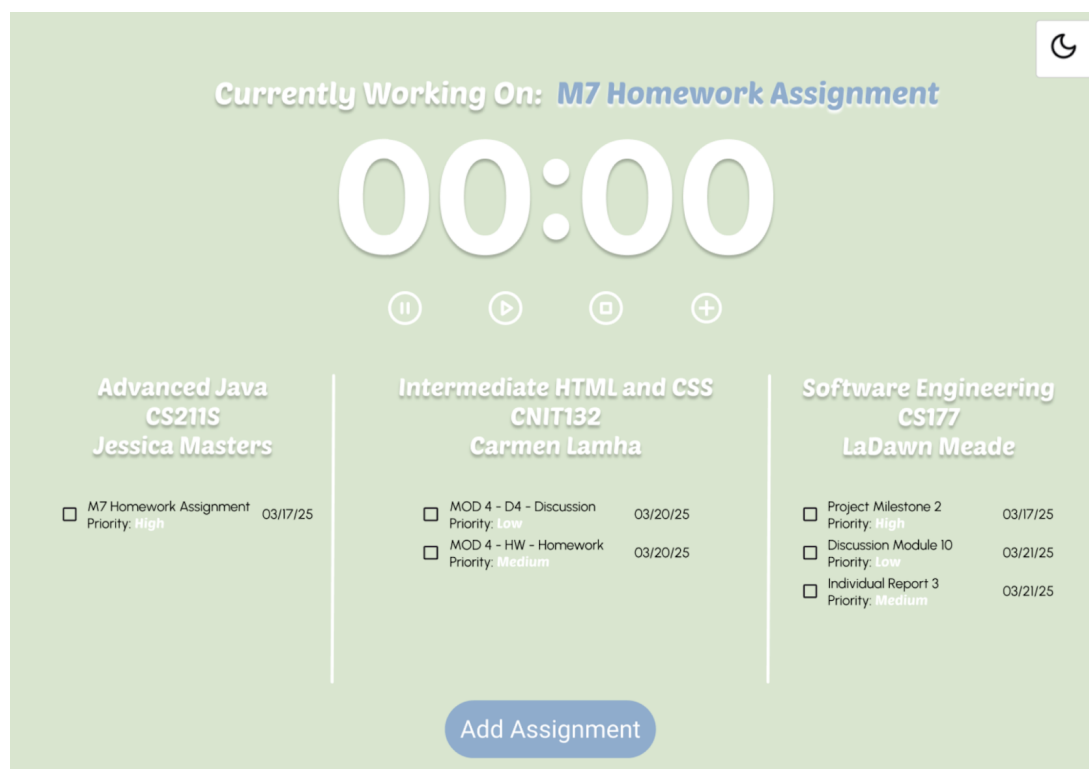
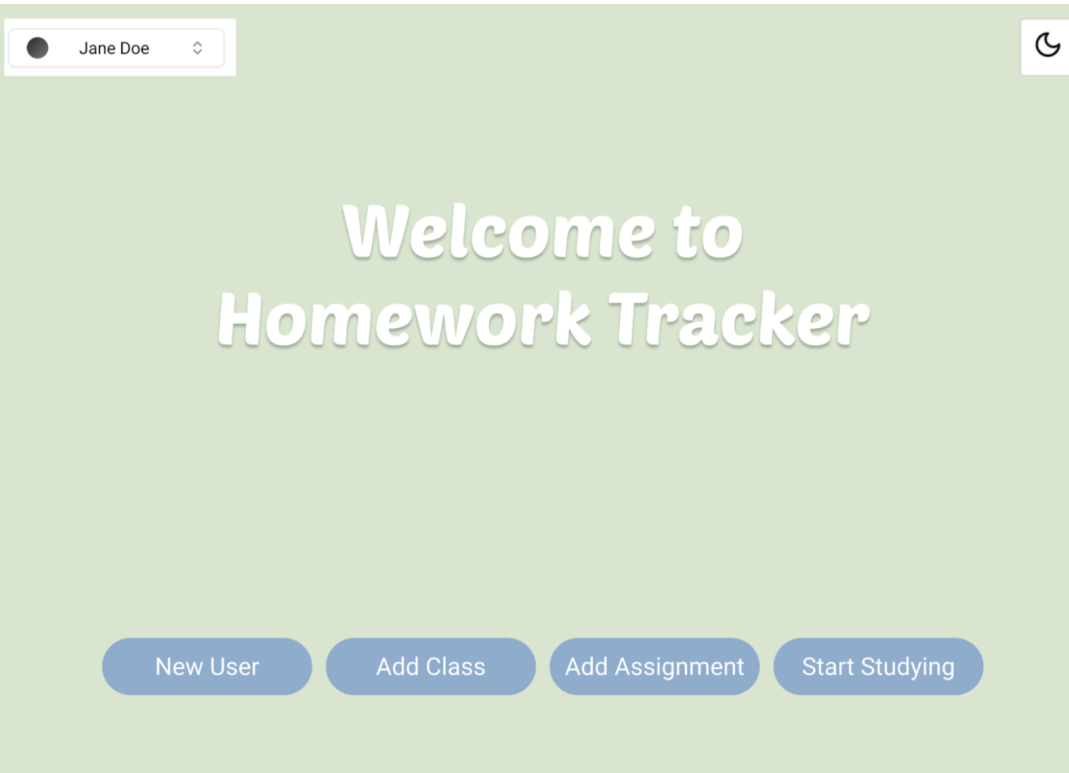
b. Functional Requirements

From the client perspective, we currently have the following functional requirements:

1. User Login and Selection
 - The system would allow users to select their profile from a dropdown menu.
2. Theme Toggle Functionality
 - The system will provide an option to toggle between light and dark mode with a visible button.
3. Timer Functionality
 - The application will allow the user to have real-time tracking for the length the user studies, with features to start, stop, and pause the timer.
4. Welcome Page
 - When accessing the application, the system displays a welcome message customized for the homepage.
5. User Management
 - The system will allow users to create a new profile throughout the “New User” button.
6. Class Management
 - The system will allow users to add new classes using the “Add Class” button.
7. Assignment Management
 - The system should allow users to add new assignments through the “Add Assignment” button.
8. Study Mode
 - The system will provide a study interface when the “Start Studying” button is selected, allowing the user to begin their study session.
9. Navigation Buttons
 - Each function (New User, Add Class, Add Assignment, and Start Studying) will be accessible from the main homepage with clearly labeled buttons.

c. Requirements Modeling

Below are our preliminary visual models created from Figma, to represent our early stage design concepts for the application’s user interface and functionality. These mockups are intended to illustrate how we anticipate our users will interact with the system and how our features will be structured. These models serve to help clarify the user experience and provide a foundation for us to develop our requirements further in the near future.





Create a New User Profile

Name

Email

Preferred Study Time

Profile Color ☐ ☐ ☐ ☐

Create Profile



Add a New Assignment

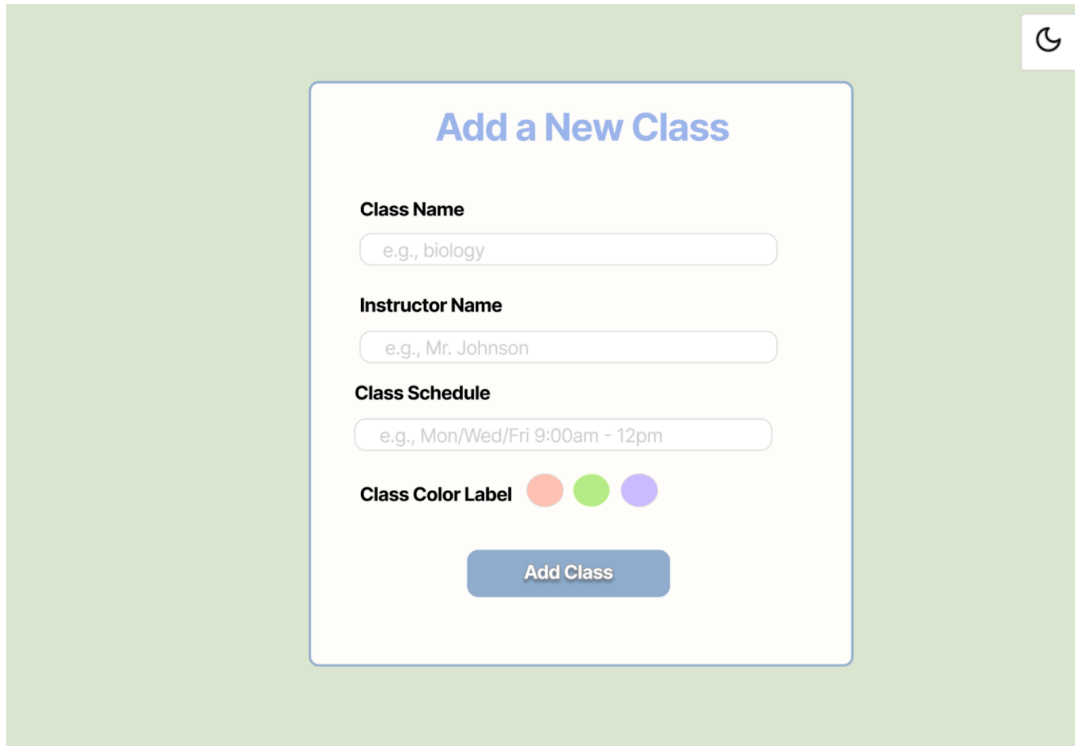
Assignment Title

Select Class

Due Date

Priority Level

Add Assignment



d. Component Level Design

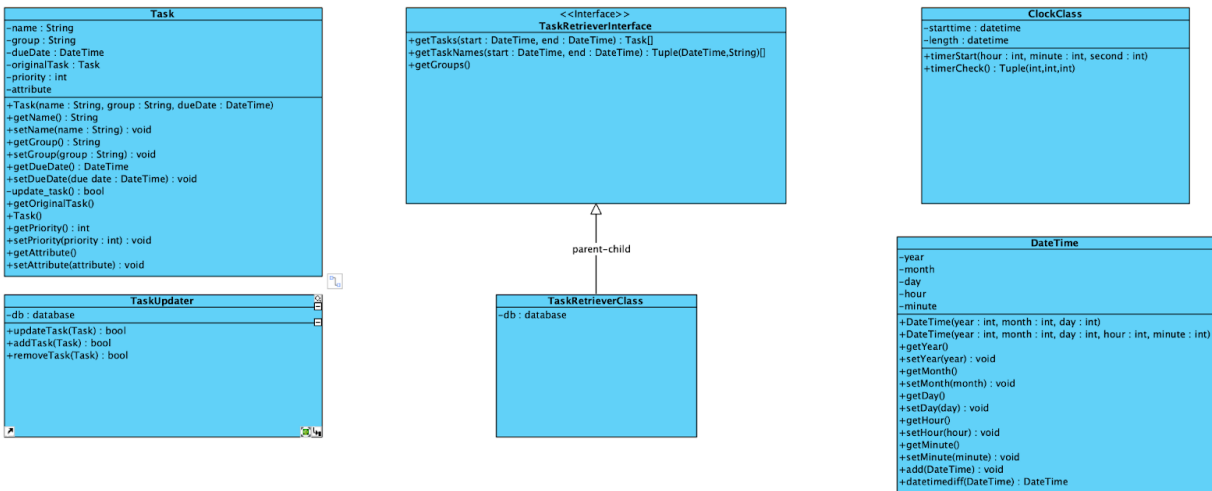
We plan to have system architecture organized into modular, reusable components to reflect core functionalities outlined in our Figma mockups and project goals. Each component is designed to support a clear user interaction flow and will be integrated into the application's structure through a responsive and intuitive interface.

The key components include:

- a navigation bar to include a potential authentication feature and a dark/light mode button
- A 'New User' button that will guide the user to a form to enter details needed to create the user in the system.
- An 'Add Class' button which takes the user to a form to enter class details and add a new class to the database.
- An 'Add Assignment' button to take the user to a form to enter details about their assignment and add this data to the system.
- A timer to stop, pause, and start to keep track of the time the user spends studying.

e. Class Level Design

We have a set of classes and interfaces we intend to use for this project. These are based on the component level design and serve to facilitate the use of said components. We have used Visual Paradigm to create said UML diagram. Each class or interface is designed for easy operation, to best allow multiple programmers to work on a project at once, and to allow programmers of the frontend environment to easily program placeholder classes that can easily be swapped out when backend classes are completed.



4. Requirements Prioritization

Professor's Requirement:

- The report must be understandable by the client
- The requirements must be the client's, and must be specified in sufficient detail to test against the implementation.
- Design concepts must be clearly separated from requirements.
- Requirements may be partitioned into those that must be met by the first release and those that are optional.

As per the client's requests, the requirements will be prioritized as follows:

1. Add more assignments to calendar
2. Adjustable timer for staying focused on assignment
3. Adjustable timer for breaks
4. Ability to pause timer for working on assignment if need to step away for a moment (for example, to use the restroom)
5. If possible, ability to color code assignments or add a tag to each assignment to organize them by classes I am taking