

# CS 462: Senior Software Engineering Project

## Sprint Report 1

Prototype a web-based tool for creating and executing task-delineated,  
collaborative, AI-assisted assignments

Group 28

### Team Roles

Name	ONID	Role
Oliver Zhou	zhouo	Project Manager
Trent Matsumura	matsumut	Developer - Backend
Ethan Lu	luet	Developer - AI Integration
Collin Kimball	kimbacol	Developer - Web UI
Sai Meenakshisundaram	meenkass	Documentation

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# 1. Sprint Overview

## Planned for the Sprint

For this sprint, we aimed to establish a foundational structure for our web-based tool by setting up a basic database, initiating front-end development, and beginning AI integration. Specifically, we planned for Trent to implement an initial database setup, Collin to start on the front-end design using React, and Ethan to work on AI chatbot integration and sidebar functionalities. The goal was to build a preliminary version of the system to test essential components and validate their interoperability.

## Accomplished During the Sprint

During this sprint, Trent successfully pushed a basic database along with a script to test its usability. This provided a foundation for handling data storage within the application. Collin worked on the website's front-end using React, developing initial layouts and user interface elements. In addition to this, Collin has also created a course page and an assignment page to enhance the user experience and to provide navigation for students and teachers. However, Ethan has not yet begun AI integration. Instead, he has focused on preliminary groundwork for chatbot interaction. Overall, we managed to make significant progress in establishing the structural components of the project.

## Issues Faced and How They Were Addressed

One major challenge encountered was structuring the database to appropriately tie student inputs to chatbot responses while also managing the necessary credentials for students and integrating teacher functionalities. Trent faced difficulties in designing a schema that properly accounts for these relationships. To address this, we initiated discussions to refine the database structure and determine the best approach for associating student inputs, chatbot responses, and teacher oversight.

On the front-end side, Collin experienced issues with rendering dynamic content in React, which was resolved by debugging component state management and refining the data flow structure. Ethan had some issues in regards to how the chatbot and the sidebar would look and how he can make it very user friendly. By adhering to established software engineering principles, he focused on creating an interface that supports seamless student interactions.

## Planned for the Next Sprint

For the next sprint, we plan to further develop the core functionalities of the tool. Trent will work on refining the database schema to better handle student and teacher interactions, and interactions between the students and the chatbot and the chatbot to the students. Collin will refine the UI, implementing additional front-end features to enhance user experience. Ethan will begin AI integration, focusing on implementing chatbot functionalities and ensuring its interactions align with user expectations. Additionally, we plan to conduct preliminary testing to evaluate system performance and address any emerging issues. Documentation efforts will also continue to ensure proper tracking of development progress.

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## 2. Individual Contributions

While individual contributions were mentioned in the sprint overview, this part we intended to clearly lay out a summary of each member's contributions for clarity and organization.

### **Collin:**

- Designing initial layouts and frontend structure in React.
- Created course pages and navigation for students and teachers.

### **Trent:**

- Working on the database and database testing.
- Contributed to the backend of the frontend developed by Collin.

### **Sai:**

- Documenting the sprint process and planning sprint.
- Contributed to the design and layout of the website.

### **Ethan:**

- Worked on preliminary testing of AI-integration.
- Testing out inputs with the bots.

### **Oliver:**

- Organizing project work, small edits and code review.
  - Communicating and speaking with the project mentor.
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