

# SW Engineering CSC 648-848 Fall 2024

**Tutoring Platform:** GatorAid

## **Team 04:**

André Shannon (Team Lead, [ashannon1@sfsu.edu](mailto:ashannon1@sfsu.edu))

Fernando Malca (Back-End Lead)

Anh Tran (Front-End Lead)

Geetarth Meduri (GitHub Master)

Aditya Sharma (Full-Stack Member)

## **Milestone 2 Part I**

Date Submitted	Date Revised
October 20, 2024	October 26, 2024

## **Executive Summary:**

We present GatorAid, a website tutoring platform designed exclusively for the San Francisco State University (SFSU) community. It takes time to look for and connect with tutors specific to certain class material, time that takes away from focusing on a demanding course or even completely bars someone from looking for assistance. This platform aims to provide a streamlined, accessible way for SFSU students to connect with fellow students, recent graduates, or other SFSU-affiliated tutors, ensuring that the tutoring is tailored specifically to SFSU's curriculum. While a generic tutoring platform may have a bigger community, it will not have course-specific tutors for individual universities. GatorAid aims to fill this gap by offering a unique, SFSU-specific resource for academic tutoring.

GatorAid provides an interface where tutees can search for available tutors based on specific courses offered at SFSU in addition to other standard search functions. By ensuring that tutors are knowledgeable about the same course material and expectations, students can receive relevant and precise academic guidance. Upon finding an appropriate tutor, tutees can message the tutor internally through the platform to get in touch. On the tutor side of things, GatorAid provides a platform for tutors to list their ability to help with specific courses and receive messages from interested tutees. Having all the tutors and tutees affiliated with SFSU and the tutors searchable by course, the platform serves to streamline the process of connecting tutors and tutees.

The developers behind GatorAid are a team of five students at SFSU enrolled in Software Engineering CSC 648-848 in Fall 2024 taught by Dr. Draguntin Petkovic and his teaching assistant Anthony Souza. We hope to gain experience building a product end-to-end and collaborating as a team in an imitation of a small startup.

# List of main data items and entities:

## User Types

- **UnregisteredUsers:**
  - **Description:** Visitors who are browsing the platform but have not registered.
  - **Privileges:**
    - Browse available tutors.
    - View tutor information (e.g., profiles, ratings).
    - Search tutors by SFSU course name/number or subject.
- **RegisteredUsers:**
  - **Description:** Users who have registered (SFSU students, graduate students, and alumni)
  - **Privileges:**
    - All capabilities of unregistered users.
    - Able to send a message to tutors/students.
    - Access to a personal dashboard where sent messages and potential tutee messages are visible.
    - Able to apply to become a tutor.
- **Admins:**
  - **Description:** Platform staff or authorized individuals responsible for overseeing the tutor approval process and content moderation.
  - **Privileges:**
    - Review and approve/reject all tutor profiles and associated content (e.g., pictures, bios) before they go live.
    - Remove tutor profiles from the platform
    - Remove registered users from the platform

## Main Data Entities

- **RegisteredUsers:**
  - **Description:** Contains essential information for registered users

- **Attributes:**
  - user\_id (Mandatory, unique for each user)
  - first\_name (Mandatory, to be displayed on dashboard on messages)
  - last\_name (Mandatory)
  - username (Mandatory, used for login)
  - password (Mandatory, used for login)
- **Usage:** Will be used to check login credentials, User ID and Username will be Unique to each user.
- **TutorProfiles**
  - **Description:** Contains specific information for tutors that any user can view
  - **Attributes:**
    - tutor\_id (Mandatory, unique for each tutor profile)
    - user\_id (Mandatory, associated registered User ID)
    - subject\_id (Mandatory, element of subject table)
    - courses (Mandatory, SFSU Course Expertise, course name, course number, and abbreviation, e.g., CSC 415 - Operating Systems).
    - profilepic (Optional)
    - bio (Optional)
    - cv (Optional, resume or CV)
    - hrly\_rate (Mandatory, \$ per hour, will sort results by this)
    - video (Optional, pointer to video)
    - video\_description (Optional, free text field to give description of video)
    - tutor\_rating (Optional, out of 5 stars)
    - num\_ratings (Optional, to recalculate ratings given a new rating)
    - status (Mandatory, approved or pending review, the tutor profile is not live until admin reviews and updates the status)
    - timestamp (Mandatory, so we can display most recent on homepage)
  - **Usage:** Contains searchable info for tutor profiles and the info to be displayed for tutor profiles
- **Messages**

- **Description:** Stores messages sent by registered user (tutee) to registered user with associated tutor profile (tutor).
- **Attributes:**
  - message\_id (Optional, unique to each message, don't really need now, but probably will be nice for priority 3 features like reporting things to admin)
  - user\_id (Mandatory, user\_id of message sender)
  - tutor\_id (Mandatory, tutor\_id of corresponding tutor profile sent to)
  - contactinfo (Mandatory, separate field on message so the user won't forget it and easy for tutor to find)
  - message (Mandatory, body of the message, tutee can describe their situation)
  - timestamp (Mandatory)
- **Usage:** Record of messages, can be used to display to registered user's dashboards.
- **Subjects**
  - **Description:** Database of subjects
  - **Attributes:**
    - subject\_id
    - subject\_name (Mandatory, ex Mathematics, Computer Science, Physics)
  - **Usage:** Will be used as a possible filter for the search and as an attribute for tutor profiles

## Functional Requirements - prioritized:

### Priority 1:

#### UnregisteredUsers

1. Users shall be able to register
2. Users shall be able to browse the tutors
3. Users shall be able to view tutor info

4. Users shall be able to search the tutors by subject and tutor name
5. Users shall be able to search the tutors by SFSU class name/number
6. Users shall be able to sort tutors by price range

#### **RegisteredUsers**

7. RegisteredUsers shall inherit all the capabilities of unregistered users
8. RegisteredUsers shall be able to apply to become a tutor
9. RegisteredUsers shall be able to send messages to tutors
10. The RegisteredUsers' dashboard shall display messages received from tutees
11. The RegisteredUsers' dashboard shall display any of the user's tutor profiles

#### **Admins**

12. Admins shall inherit all the capabilities of registered users
13. Admins shall be required to approve or reject tutor postings before they go live
14. Admins shall be able to remove postings
15. Admins shall be able to remove users

### **Priority 2:**

#### **UnregisteredUsers**

16. Users shall be able to view "About Us/Me" pages

#### **RegisteredUsers**

17. RegisteredUsers shall be capable of uploading videos to the site
18. The RegisteredUsers' dashboard shall display messages sent to tutors
19. RegisteredUsers shall be able to rate tutors
20. RegisteredUsers shall be able to delete any of their tutor profiles

#### **Admins**

21. Admins shall be able to reset user's ratings

### **Priority 3:**

#### **UnregisteredUsers**

#### **RegisteredUsers**

22. RegisteredUsers shall be able to update any of their tutor profiles
23. RegisteredUsers shall be able to report problems to Admins

24. RegisteredUsers shall be able to filter messages received by subject

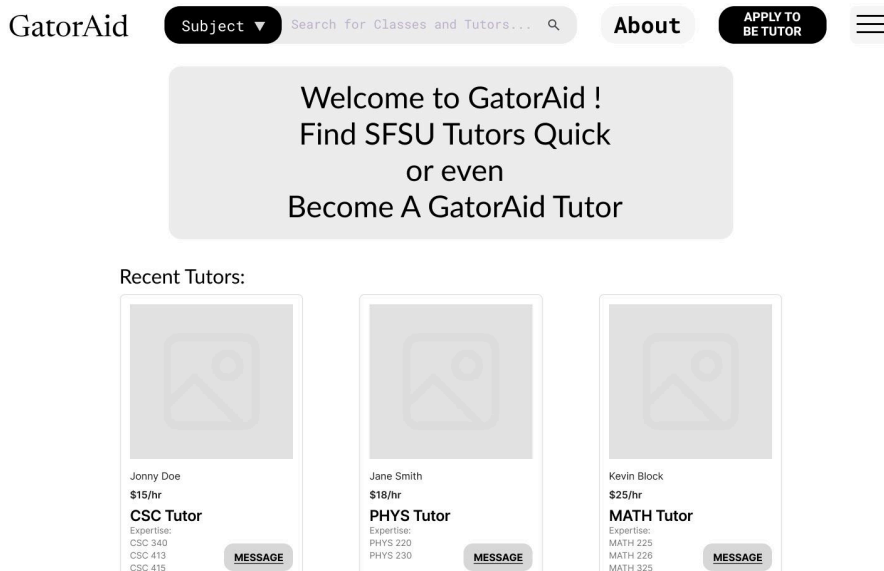
## Admins

## UI Storyboards for each main use case:

### Use Case 1: Looking for Tutor

Jonny is struggling in his Abstract Algebra class and needs to pass it as a requirement for his math major. The professor includes a more advanced unit on group theory than a typical Abstract Algebra course and Jonny wants to find a tutor that can help him with Abstract Algebra as well as the advanced group theory portion. He goes online to look for a tutor and finds the GatorAid site. On the site he finds he can search tutors not only by subject, but also by specific SFSU courses. He searches for his specific Abstract Algebra class and proceeds to browse the profiles of tutors that have completed the exact course he is taking. Jonny then writes a message to send to one of the tutors through the GatorAid site and is prompted to make an account before sending the message.

*Jonny lands on Homepage:*



Jonny searches for Math subject and his MATH 335 Abstract Algebra course and gets:

**GatorAid**


ALL ▾ Math 335 Algebra 🔍

About

APPLY TO BE TUTOR

☰

Available Tutors:



Joseph Doe

**\$15/hr**

**MATH Tutor**

Expertise:  
MATH 335  
MATH 226  
MATH 325

I am a Senior in Mathematics at SFSU with years of experience tutoring in Calculus, Algebra, and Linear Algebra. If you need help in the listed classes I'd be happy to help!

MESSAGE

Jonny likes Joseph Doe's profiles and clicks on the message button.

**GatorAid**

ALL ▾ Math 335 Algebra 🔍

About

APPLY TO BE TUTOR

☰

Available Tutors:



Joseph Doe

**\$15/hr**

**MATH Tutor**

Expertise:  
MATH 335  
MATH 226  
MATH 325

I am a Senior in Mathematics at SFSU with years of experience tutoring in Calculus, Algebra, and Linear Algebra. If you need help in the listed classes I'd be happy to help!

MESSAGE

To: Joseph Doe

Contact at: JonnyInAlgebra@mail.com

Hello Joseph I am a struggling Student in Algebra and I need to pass this class for my math requirement can you please help me study I am free on Zoom/on campus Wednesday to Sunday anytime between 9am and 9pm for a couple 1-2 hr tutoring sessions. Please let me know if those times work for you.

SEND!



He composes his message, clicks send and is prompted to login or create an account to send the message

## SIGN IN

USERNAME:

PASSWORD:

Create a new account

Forgot password?

Cancel

Jonny clicks on “create a new account” and enters his info.

## NEW ACCOUNT

FIRST NAME\*

LAST NAME\*

STUDENT EMAIL\*

USERNAME\*

PASSWORD\*

CREATE A NEW ACCOUNT

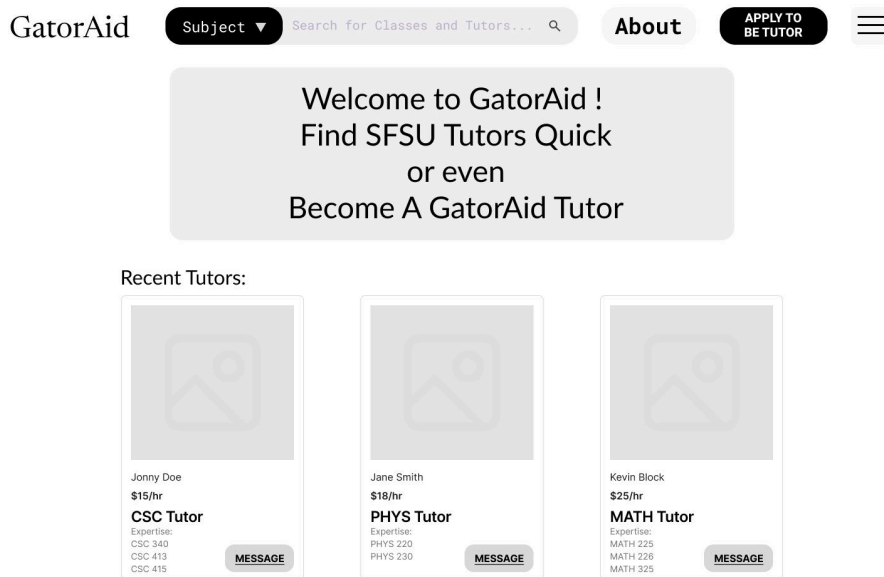
ALREADY HAVE AN ACCOUNT? SIGN IN

CANCEL

## Use Cases 2: Viewing Prospective Tutees

Kevin is a junior student at SFSU. Since San Francisco is a bit much expensive, he needs a part-time job to help out with expenses and has previously applied to become a tutor on GatorAid and was accepted. He logs into his GatorAid account and navigates to his dashboard where he sees he has two new messages from prospective tutees. The messages both contain a preferred contact method for the tutees and he uses the respective method to get in touch with each of the tutees.

*Kevin lands on Homepage:*



*Kevin clicks the three dash lines at the top right corner to see the menu. Then, he goes to the area that says sign in.*

## SIGN IN

**USERNAME:**

**PASSWORD:**




[Create a new account](#)  
[Forgot password?](#)

[Cancel](#)

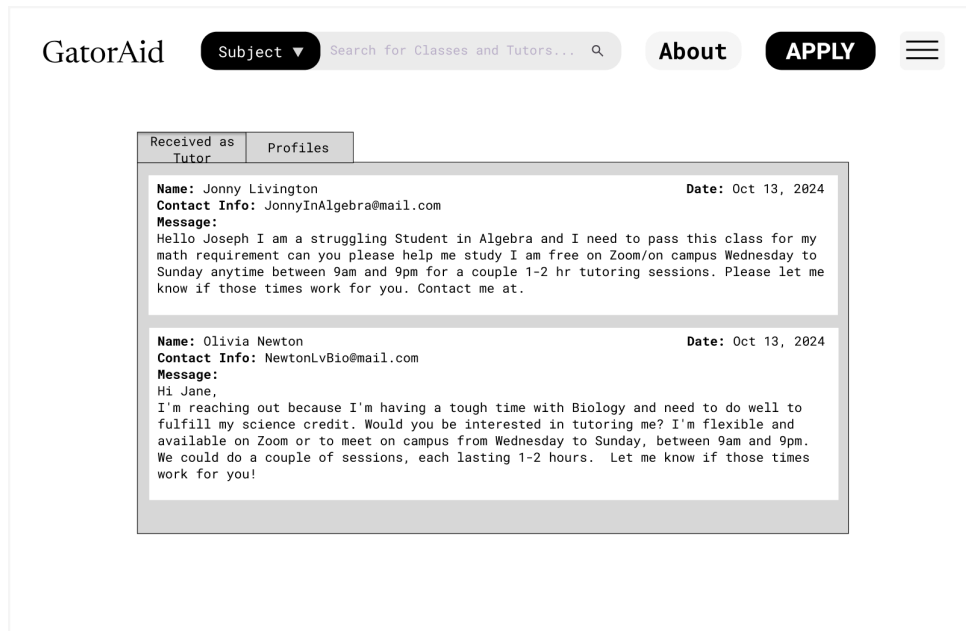
After signing in Kevin goes to the three bars on the right corner and clicks it then the drop down menu appears. In the list on the drop-down menu he'll click the dashboard icon. This will send them to his dashboard.

Welcome to GatorAid !  
Find SFSU Tutors Quick  
or even  
Become A GatorAid Tutor

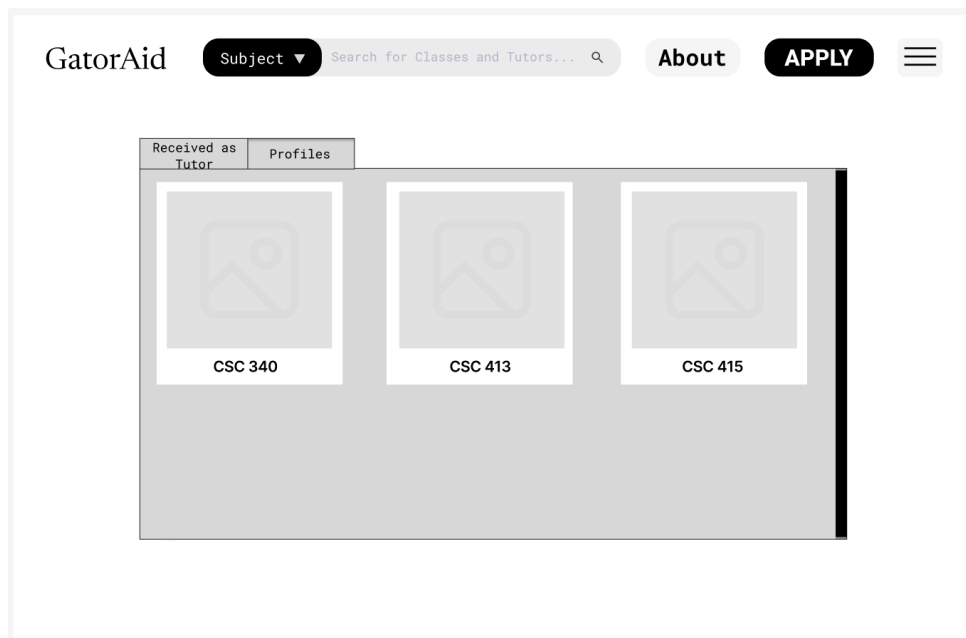
## Recent Tutors:

 <p><b>Jonny Doe</b> \$15/hr <b>CSC Tutor</b> Expertise: CSC 340 CSC 413 CSC 415</p> <a href="#">MESSAGE</a>	 <p><b>Jane Smith</b> \$18/hr <b>PHYS Tutor</b> Expertise: PHYS 220 PHYS 230</p> <a href="#">MESSAGE</a>	 <p><b>Kevin Block</b> \$25/hr <b>MATH Tutor</b> Expertise: MATH 225 MATH 226 MATH 325</p> <a href="#">MESSAGE</a>
---	---	---

This is Kevin's dashboard where he receives tutor requests and the contact information of the tutees.



*This version of the dashboard is where he sees all his profiles that he created for each class.*



### Use Case 3: Rating a tutor

Charles wanted to explore some basics of computer science so he is taking a data structures course which is proving to be quite difficult for him. He had previously made an account on the GatorAid account and sent a message to a tutor. He was later contacted by the tutor and successfully set up a tutoring arrangement with them (externally from the GatorAid site). After several great tutoring sessions, he logs back onto the GatorAid platform, searches for his tutor by

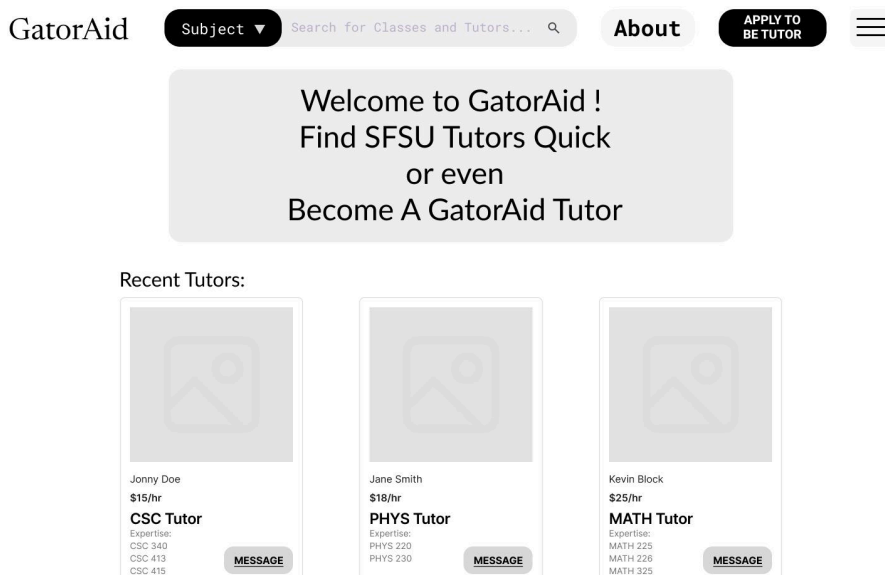
name and subject, and upon finding them, gives them a five out of five rating.

Priority 2

## Use Cases 4: Applying to be a tutor

George is a SFSU graduate student who could not find a job in the real world. So, he decided to come back to school and apply to be a tutor for this time being. He navigates to the GatorAid site. He browses on the platform and sees that he can apply to become a tutor. He navigates to the application and has to fill out the application with his information and which subjects he is comfortable to work with and submit it. Upon the submission, it asks him to create an account. George creates an account, the application is sent, and George receives a notification that his the application is pending review.

*George navigates to the GatorAid site.*



*George clicks the apply button and is sent to this form*

## TUTOR APPLICATION

First Name\*



Last Name\*

Subject Plan To Apply\* (One subject at the time, if you want to apply more than one subject, please make another application form)



Course plan to apply\* (Can list more than one with a grade B and up. These courses must be eligible for the subject you applying)

Ex: CSC 41S - Operating System, CSC 210 - Introduction of Java, etc.

Profile picture\*

Introduction video (Upload a video introducing yourself. Around 1 minute)

Short description about the video

Upload your resume/CV

Rate\* (How much would you like to get paid?)

Tell us more about yourself\*

SUBMIT

CANCEL

*He fills out the application, clicks submit, and is prompted to login or create an account.*

GatorAid **Subject** Search for Classes and Tutors... **About** **APPLY TO BE TUTOR** ≡

## SIGN IN

USERNAME:

PASSWORD:

[Create a new account](#)  
[Forgot password?](#)

[Cancel](#)

*George clicks on create and account.*

GatorAid **Subject** Search for Classes and Tutors... **About** **APPLY TO BE TUTOR** ≡

## NEW ACCOUNT

FIRST NAME\*

LAST NAME\*

STUDENT EMAIL\*

USERNAME\*

PASSWORD\*

[CREATE A NEW ACCOUNT](#)  
ALREADY HAVE AN ACCOUNT? SIGN IN

[CANCEL](#)

*George is notified that it may take up to 24 hours for his tutor profile to be approved*

### **Use case 5: Reviewing tutor profile application**

Beerman is responsible for managing the overall operation of the tutoring platform. Their role involves overseeing tutor profiles, approving new tutor applications, and ensuring that tutor profiles (e.g., pictures, bios, and videos) do not contain inappropriate content before they go live. He looks at any tutor profiles that are pending review and approves or rejects them.

The admin will use WorkBench to edit the database directly.

## **High-level Architecture, Database Organization summary only:**

### **DB organization:**

There will be four database tables; their titles and columns are listed below.

Table title: **RegisteredUsers**

Columns:

- user\_id
- first\_name
- last\_name
- username
- password

Table title: **TutorProfiles**

Columns:

- tutor\_id
- user\_id
- subject\_id
- courses
- profilepic
- cv



- bio
- hrly\_rate
- video
- video\_description
- tutor\_rating
- num\_ratings
- status
- timestamp

Table title: **Messages**

Columns:

- message\_id
- user\_id
- tutor\_id
- contactinfo
- message
- timestamp

Table title: **Subjects**

Columns:

- subject\_id
- subject\_name

## **Media Storage:**

Images and videos will be kept in file systems.

## **Search/filter architecture and implementation:**

There will be a subject filter applied to the subject within the tutor profiles ANDed with a search using %like on Name, Courses, and CV.

## **Significant non-trivial algorithm:**

For the rating we are storing the current rating and the number of ratings, so to calculate a new rating being added, we can take the current rating, multiply it by the number of ratings, add the

new rating, update the number of ratings by 1, divide by the new number of ratings, and update the current rating.

## **SW tools and frameworks:**

No change

## **Identify actual key risks for your project at this time:**

Currently, our team is facing a significant risk related to teamwork, particularly due to the challenge of maintaining consistent communication with one of our members. This individual has been largely unresponsive and absent from critical team meetings, making it difficult to collaborate effectively. While the team leader has made efforts to manage the project remotely by utilizing platforms like Discord and Trello to break down assignments and keep everyone informed, it remains essential to hold personal or virtual meetings where everyone can actively participate in discussions and exchange ideas. The lack of involvement from this member has led to gaps in the discussion and decision-making process, placing additional pressure on the rest of the team to fill the void.

In addition to the teamwork issue, we are also facing a skill risk. One of the core technologies we are using for the project is Handlebars, a templating engine with which most of the team has limited experience. The unfamiliarity with this tool could lead to some challenges as we work through the more technical aspects of the project. We anticipate a learning curve, which might slow down progress initially and require extra time for troubleshooting or learning. However, we are confident in our ability to tackle this challenge through collaboration and knowledge-sharing, and we are committed to supporting one another as we gain proficiency with the tool. If necessary we can reduce the scope of the project.

Given the issues surrounding team participation and the potential technical hurdles, there is a risk of scheduling disruptions. If the absenteeism continues or if the team struggles to adapt quickly to new technologies, project deadlines might be affected. To mitigate this, we may need to adjust our internal timelines, allocate tasks more flexibly, and ensure that we are regularly revising our progress to account for any delays. Despite these risks, we remain optimistic about our ability to complete the project successfully, provided we address these challenges proactively. If necessary we can reduce the scope of the project.

## **Project management:**

We have been using discord to manage tasks so far, but we will be moving to Trello during M2 and for future tasks. Originally we had a specific discord channel where the team lead would post everyone's tasks and deadlines. On Trello, we plan to assign tasks with names and deadlines and also divide them up into lists of Team-Tasks, Front-End Tasks, and Back-End Tasks. On Trello, the cards can have checklists to further subdivide tasks and keep track of progress. Once a task is complete, it can be Archived.

## **Use of GenAI Tools:**

### **ChatGPT(GPT-4o)**

- Cleaning up DB entities via. asking it to generate useful/necessary attributes in our already established entities
- Listing potential key risks that could come with our project, giving us examples/definitions of these risks

**Overall Usefulness:** Not that Useful (wasn't used much for this milestone)

**Drawbacks:** When generating entities, it kept on repeating some attributes that it already generated. This got annoying and it wouldn't correct itself even after asking it to double-check its generation.

## **Team Lead Checklist:**

- So far all team members are fully engaged and attending team sessions when required
  - **ISSUE** - Still having trouble with the engagement of one teammate. Assigned them the user dashboard for this milestone and the rest to better keep tabs on their work. Had slightly more engagement this week, but still not enough.

- Team ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing
  - **ON TRACK**
- Team reviewed suggested resources before drafting Milestone 2
  - **ISSUE** - Still had problems that stemmed from not reading instructions
- Team lead checked Milestone 2 document for quality, completeness, formatting and compliance with instructions before the submission
  - **ISSUE** - Some of the UI Storyboards were not fully completed.
- Team lead ensured that all team members read the final Milestone 2 document and agree/understand it before submission
  - **ISSUE** - Was quite a bit of last minute editing that not everyone was a part of and saw right before the submission.
- Team shared and discussed experience with genAI tools among themselves
  - **DONE**