Helping Unity

Final Project Report

Software Design in Group

EEY4189

Project Name: *Helping Unity*

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Introduction

The web application aims to bridge the gap between donors and those who in need. Donations can include used items, money, services, blood, or even human organs. The platform provides a trustworthy environment where donors can securely contribute, and knowing their donations will not reach to wrong hands.

For those who in need, the platform provides a reliable source to meet their urgent requirements. While they may depend on others' help, they still wish to maintain their dignity and live like everyone else. The platform ensures this by keeping their personal information confidential, sharing it only with the necessary parties.

Background

In today's society, many generous donors are willing to contribute their wealth to support social welfare and community development. However, the lack of a reliable platform to identify genuine needs and deserving individuals often discourages them from engaging in charitable activities. Existing donation channels may lack transparency, security, and proper curation, making it difficult for donors to ensure their contributions reach the right beneficiaries.

This project aims to bridge that gap by providing a secure and trustworthy platform that connects donors with those in genuine need. The platform will enhance donor confidence by verifying requests, curating causes, and offering recognition if desired. At the same time, it will provide peace of mind to individuals who require assistance but may hesitate to seek help due to social stigma.

Additionally, the platform will incorporate mechanisms to discourage fraudulent requests. It will track and analyze user behavior to identify individuals who repeatedly seek aid without making efforts to improve their situation. By implementing a rating system, the platform will help donors make informed decisions, ensuring that their contributions are directed toward those who truly need support.

This initiative ultimately aims to create a more efficient, transparent, and impactful charitable ecosystem.

Problem Statement and Project Objectives

Problem Statement

In today's society, there is a significant gap between potential donors and individuals in need. Many generous donors are willing to contribute money, used items, services, blood, or human organs for charitable causes, but they often lack reliable, trustworthy platforms to ensure their donations reach the right hands. On the other hand, needy individuals, despite their desperate situations, often feel reluctant to seek help due to concerns about privacy and pride. They require a platform where their personal information is protected, and their dignity is maintained. Additionally, there is a need to identify and discourage individuals who exploit charitable systems for personal gain without genuine need, ensuring resources are directed to those truly in need.

1. **Secure Donation Environment:**
    - **Explanation:** Make sure the platform checks both donors and recipients to stop misuse or fraud. This way, donors can give with confidence, knowing their donations go to the right people.

2. **Privacy Protection:**
    - **Explanation:** Respect recipients' privacy by limiting who can see their personal information. Only people who are allowed should have access to keep their dignity intact.

3. **Trust Building:**
    - **Explanation:** Build trust by being clear about how donations are used. Give regular updates and be accountable to boost donor confidence.

4. **Abuse Prevention:**
    - **Explanation:** Find and stop people who try to misuse the system. This makes sure donations go to those who really need help.

5. **Diverse Donation Options:**
    - **Explanation:** Provide different ways to donate, so donors can choose what they like best and recipients get what they need.

Introduction to similar type of Systems

1. Crowdfunding Platforms:

- Websites like Kickstarter, GoFundMe, and Indiegogo allow individuals to raise funds for various causes, projects, or personal needs.
- Donors contribute money, and recipients share their stories to attract support.
- These platforms often provide transparency by showing progress, updates, and how funds are used.

2. Food Banks and Distribution Networks:

- Organizations like food banks collect surplus food from donors (individuals, businesses, or farms) and distribute it to those in need.
- They ensure efficient allocation of resources, preventing waste and addressing hunger.

3. Blood Donation Systems:

- Blood banks and donation centers collect blood from voluntary donors.
- The blood is then distributed to hospitals for medical treatments.
- These systems prioritize safety, traceability, and equitable distribution.

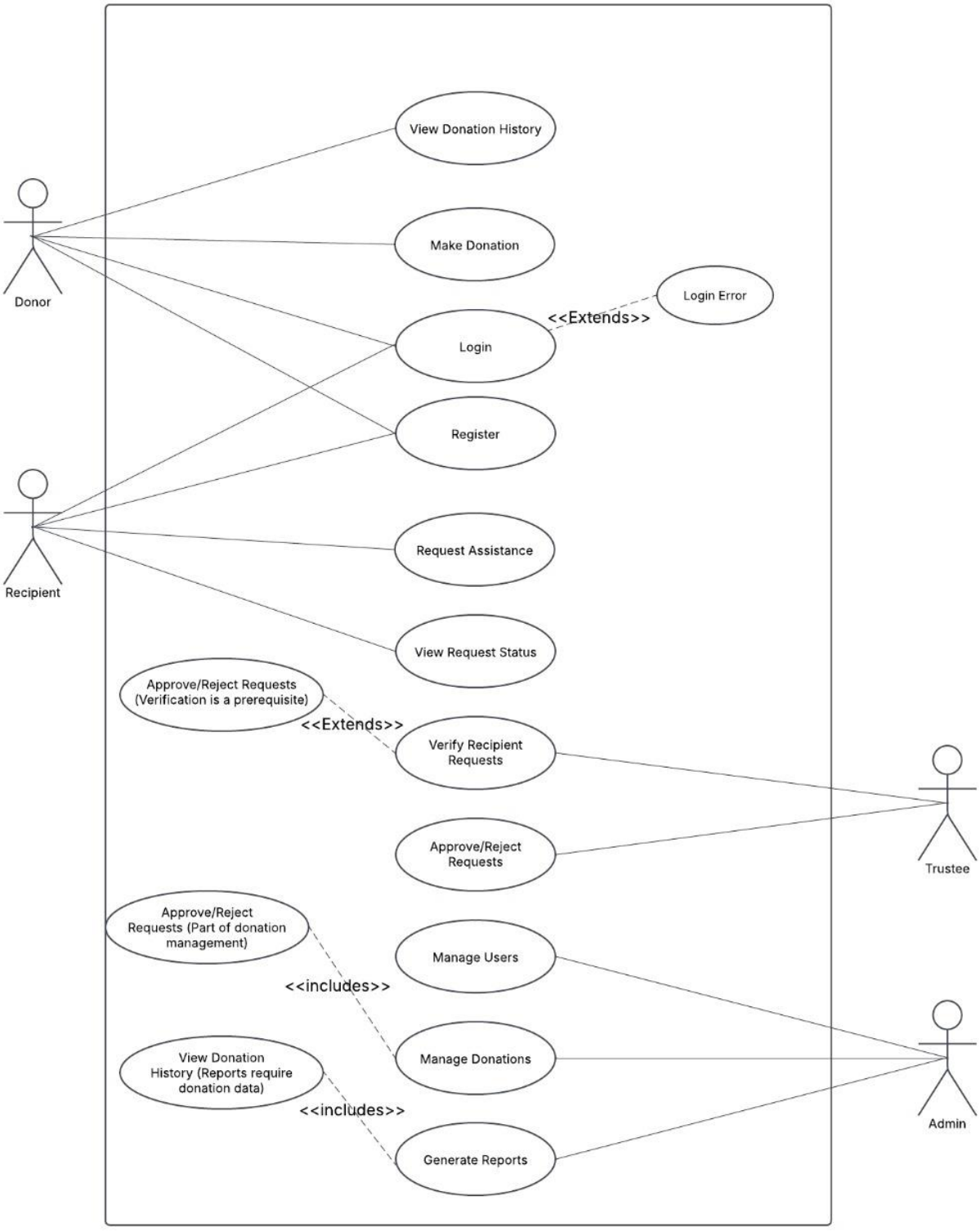
4. Organ Transplant Networks:

- Networks connect organ donors (living or deceased) with recipients in need of transplants.
- Rigorous protocols ensure fairness, confidentiality, and timely allocation.

5. Community-Based Mutual Aid Networks:

- Grassroots initiatives where community members support each other.
- Examples include neighborhood groups, mutual aid societies, and local charity drives.

Project Solution (Main Use Case Diagram)



Technology Used

UI Design Tool	-	Figma
IDE	-	VS Code / IntelliJ IDE
Version Controller	-	Git Hub
Project Management Tool	-	Trello
Database	-	My SQL
Backend Technologies	-	JAVA (Spring Boot) Restful API

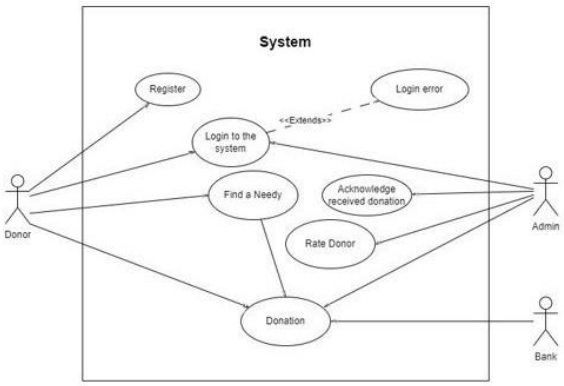
Frontend Technologies:

- **HTML**
- **CSS**
- **Frameworks and Libraries:**
  - **ReactJS and Vite** - popular frontend frameworks for building dynamic web applications.
- **Package Managers and Tools:**
  - **NPM** (Node Package Manager) manages JavaScript packages and dependencies.

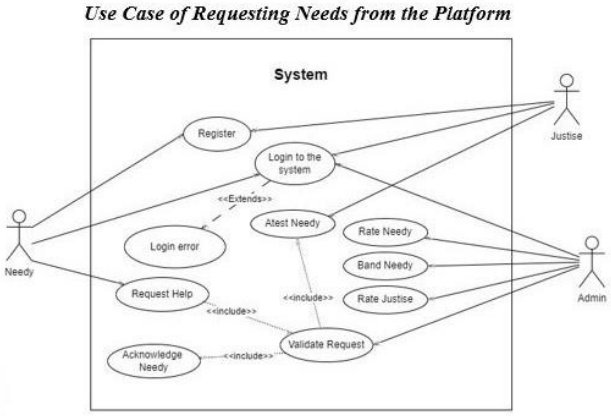
Design Document

Use Case Diagram

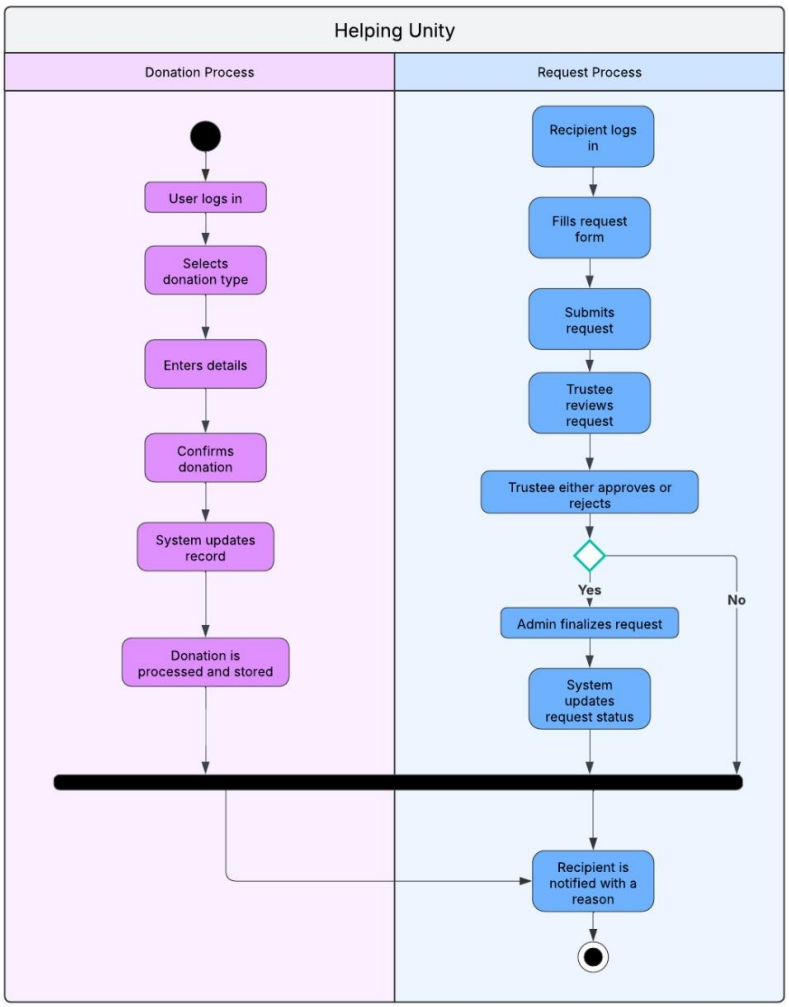
Use Case of Donating Through the Platform



Use Case of Requesting Needs from the Platform

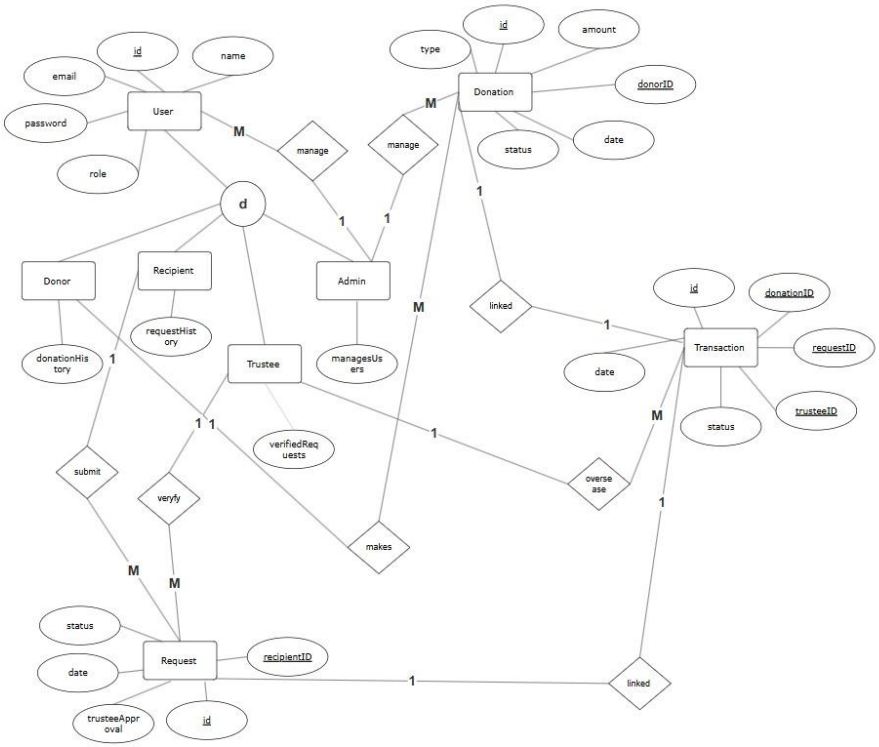


Activity Diagram

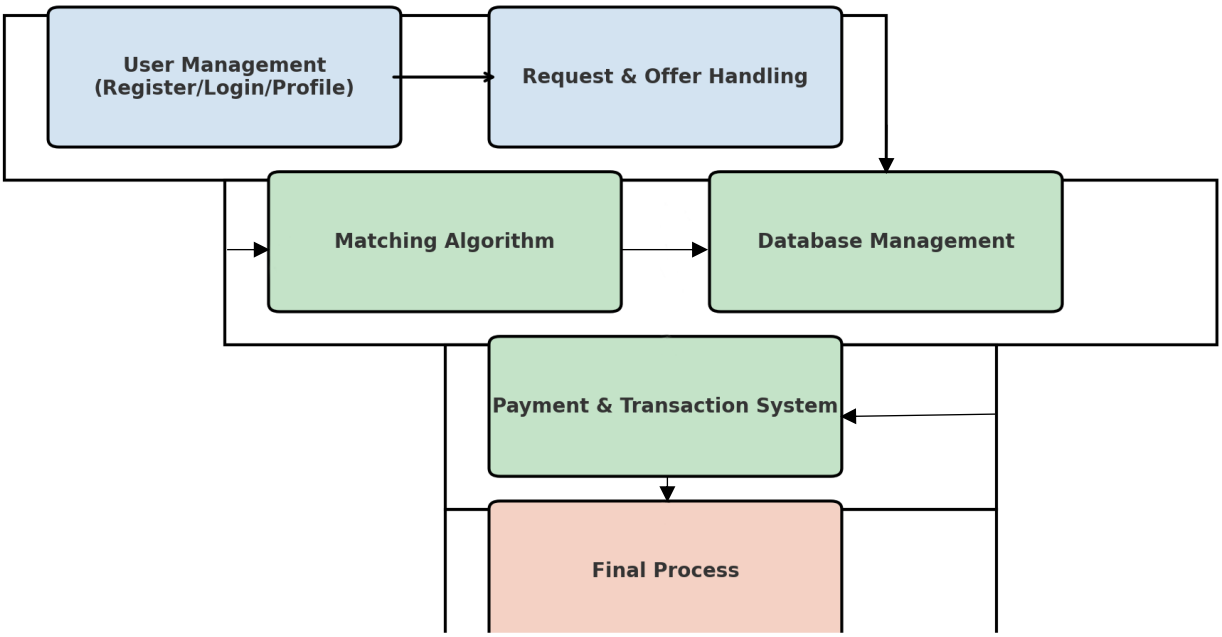


Class Diagram

ER Diagram



Overall Architecture-Block Diagram



Test Case Document and Test Results

Document has uploaded to the Google Drive by following link:

https://drive.google.com/drive/folders/1MrFMBC49M_HE_Luhgnodkpns7ll4hw5-?usp=drive_link

Project Limitations and Conclusion

Project Limitations

1. **Only Main Functionalities Are Working:** The platform is functional but limited to core features, with advanced or secondary functionalities not yet implemented.

2. **Monetary Donations Only:** The platform currently supports only monetary donations, excluding other forms of assistance (e.g., in-kind donations, volunteering).

3. **Only Logged-In Users Can See Donation Requests:** Donation requests are visible only to logged-in users, which may limit visibility and engagement.

4. **Donation Requests Are Not Weighted by Trustee Comments:** Donation requests are displayed without any prioritization or weighting based on trustee comments or feedback.

5. **Privacy Concerns:** While Helping Unity emphasizes maintaining recipient privacy, implementing secure encryption and data protection mechanisms for sensitive information remains challenging.

6. **Verification Delays**: The process of verifying donor and recipient details through Trustees and Admins can slow down the platform's responsiveness.

7. **Scalability Issues**: As the platform grows, handling a large volume of donations and requests while maintaining performance and reliability may require significant resource upgrades.

8. **Resource Dependency**: Integration with third-party services like payment gateways or external databases introduce dependency risks, including service downtimes or changes in terms of use.

Conclusion

Helping Unity is a groundbreaking project aiming to provide a secure, transparent, and dignified platform for various types of donations. Despite current limitations, the project showcases the potential of technology to address pressing social needs. Through continuous development and user feedback, the team is committed to overcoming challenges and delivering a robust solution that bridges the gap between donors and recipients. The collaborative effort, driven by technological innovation and social responsibility, promises a meaningful impact on communities in need.

Project Demonstration

Uploaded to the following Google Drive Link:

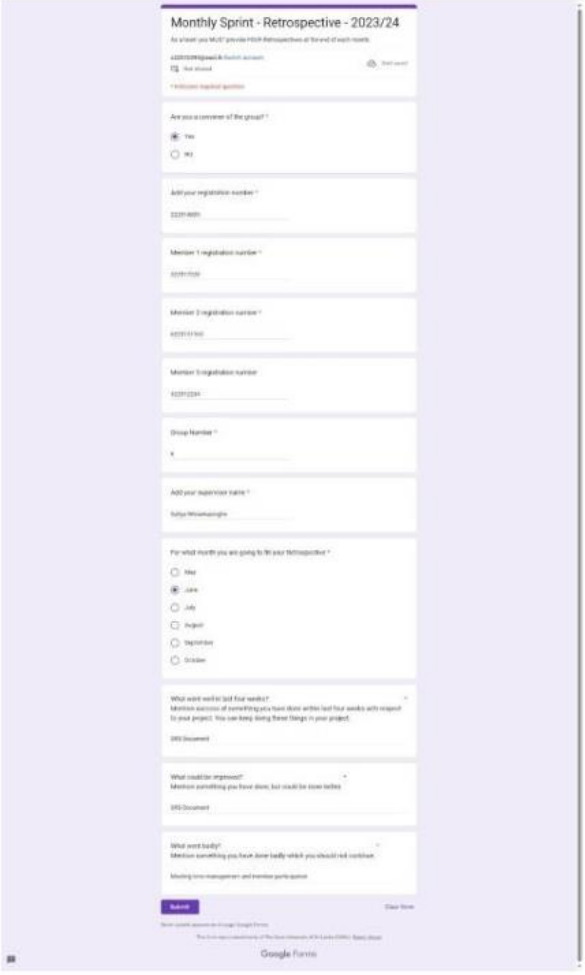
https://drive.google.com/drive/folders/1rgFTkOw6CYEExBn0w6zQ6JwY6oWxr5JC?usp=drive_link

Appendix

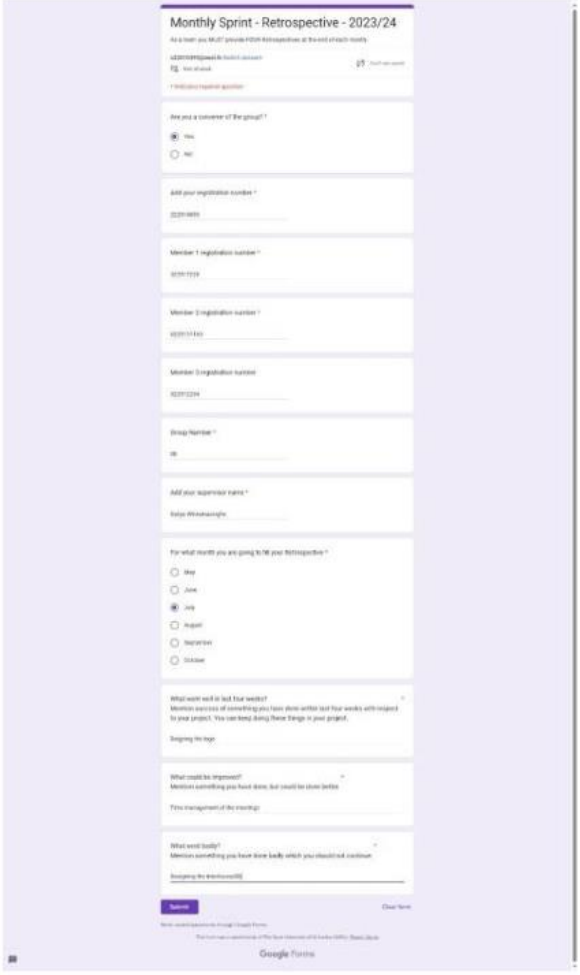
Updated SRS Google Drive Link:

https://drive.google.com/file/d/1G4XGpwLhqUr68Xgw-MN4L982uS3LCJHI/view?usp=drive_link

Monthly Retrospective Screenshots



June Month

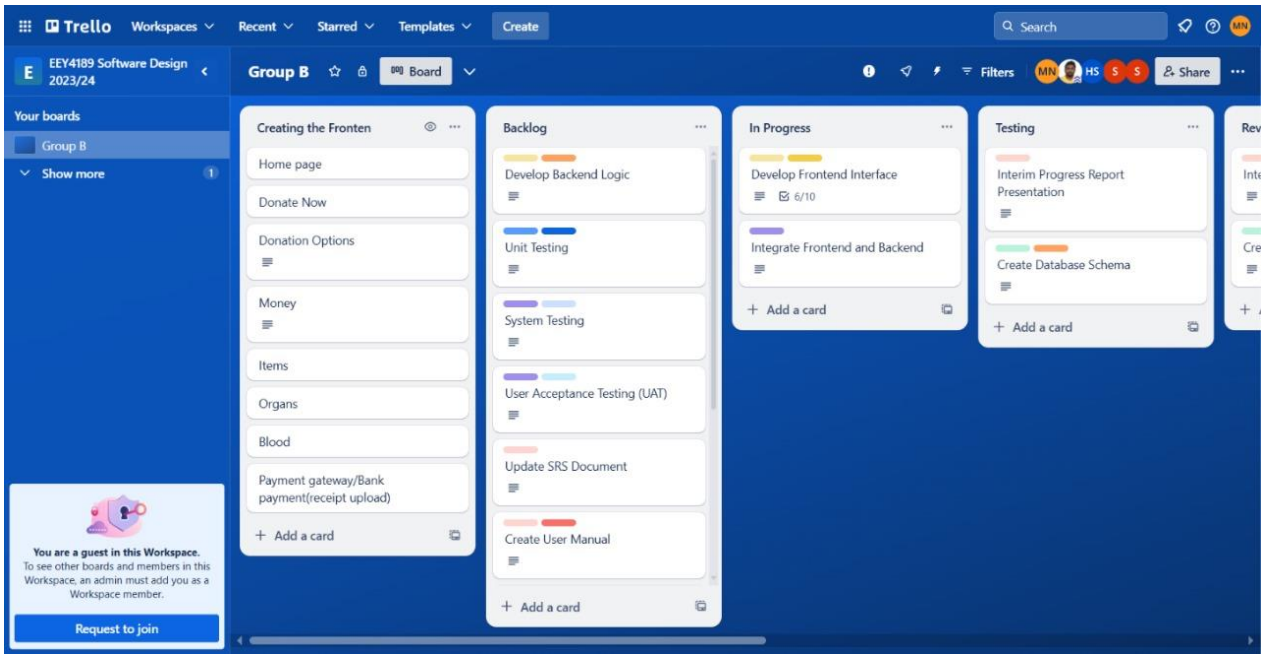


July Month

Already Submitted the Google Form on LMS.

Evidence for the use of Project governance tool & GIT account

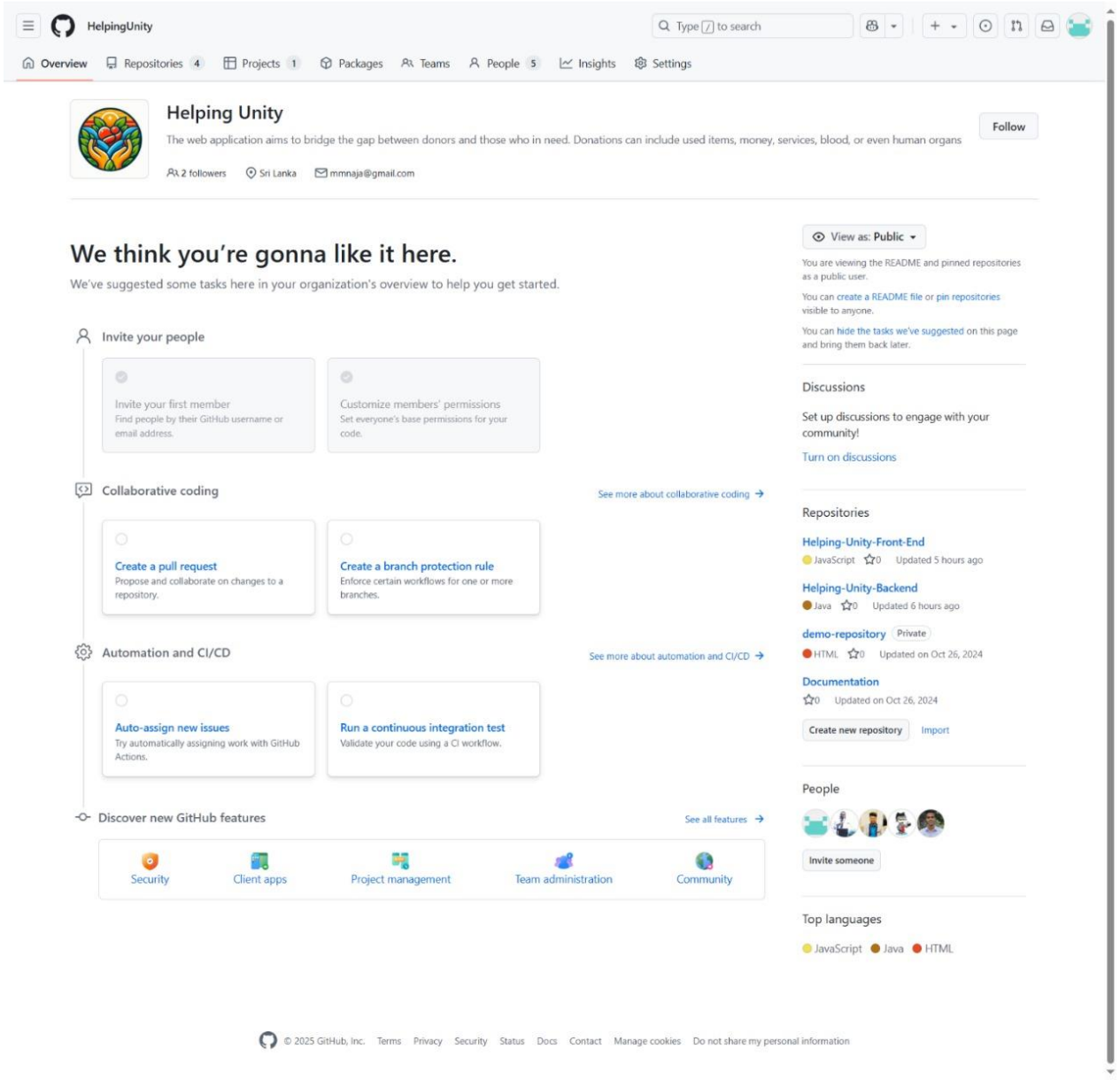
Project governance tool (Trello) Screenshots



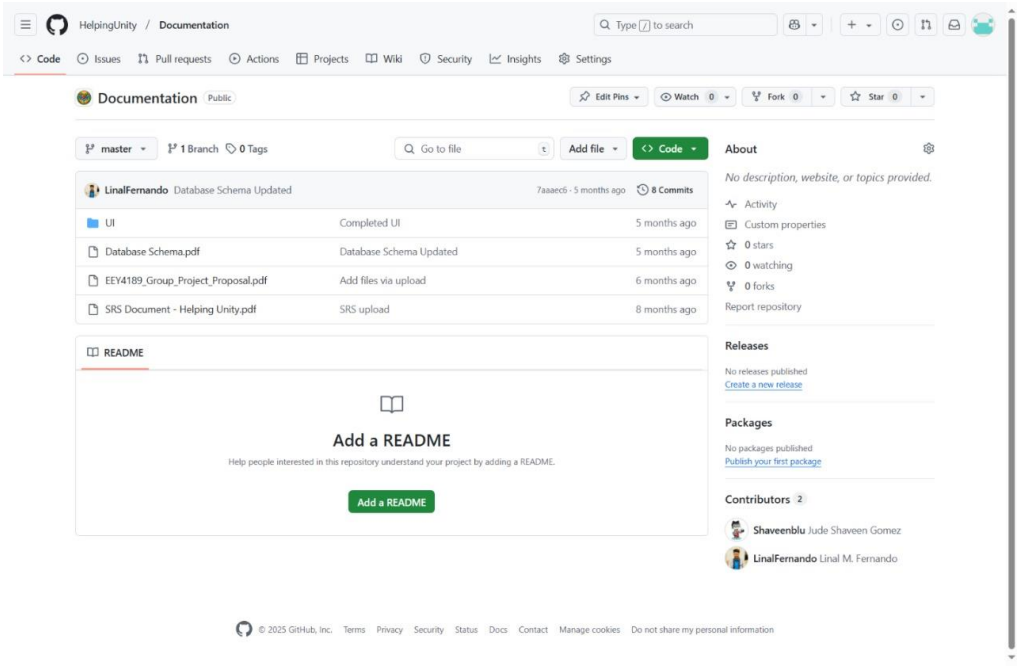
Link to Access Trello Board:

https://trello.com/b/mZomB4ye/group-b

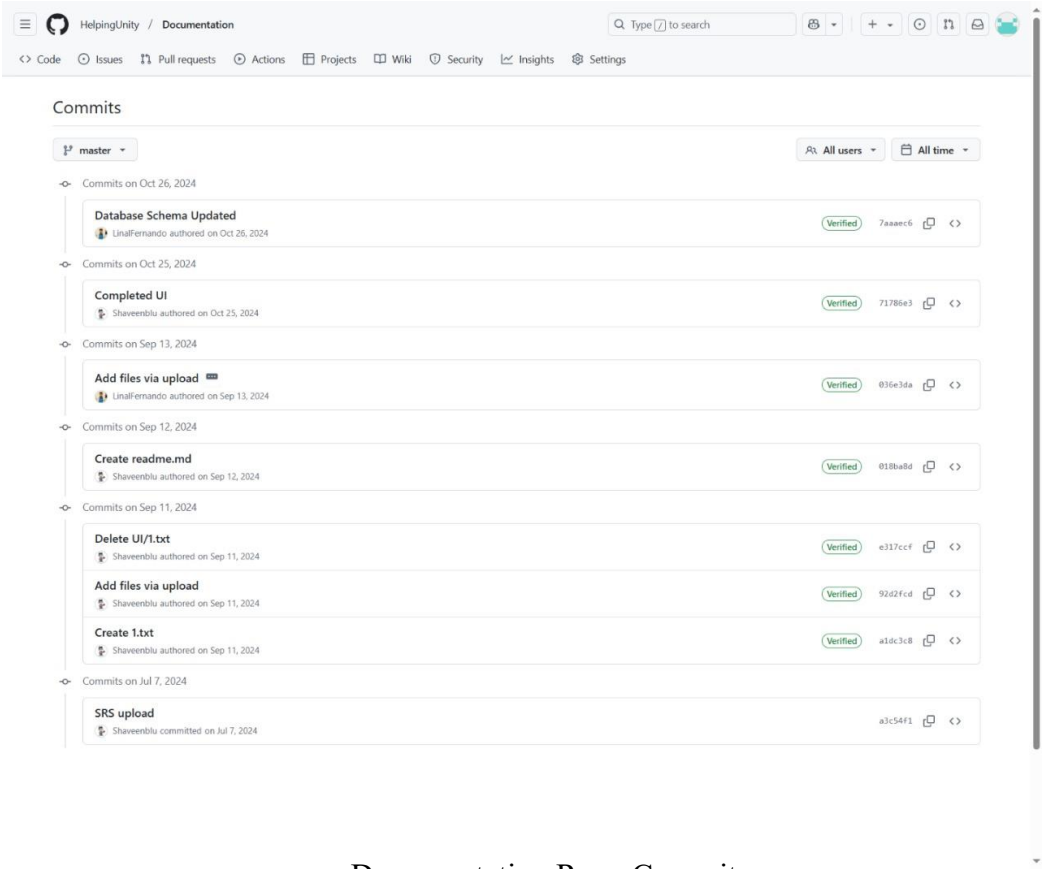
GIT Account and Repositories Screenshots



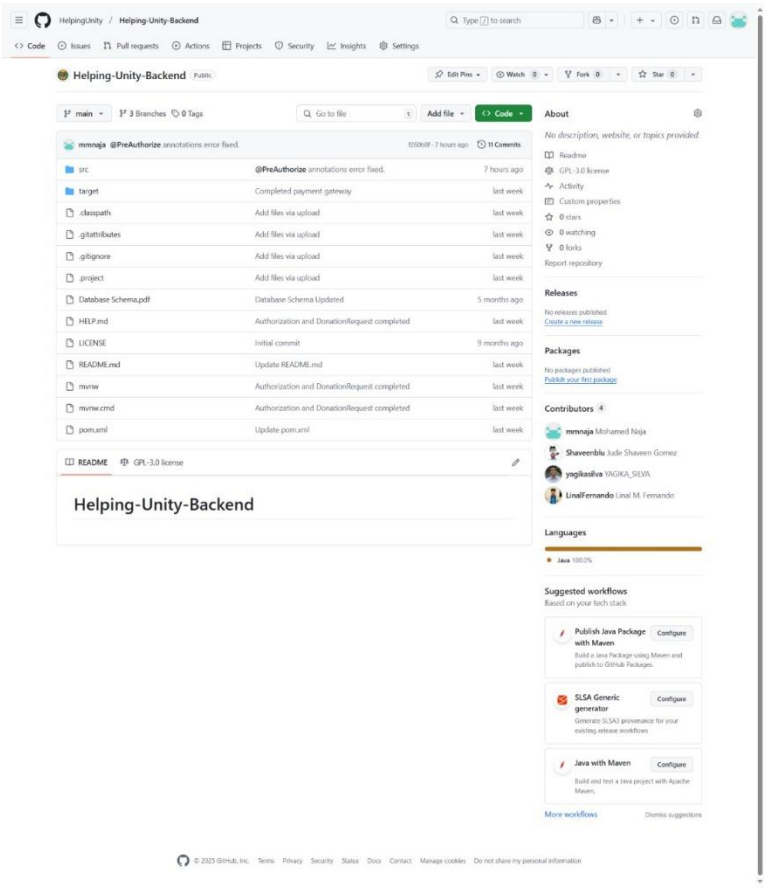
Helping Unity Git Organization



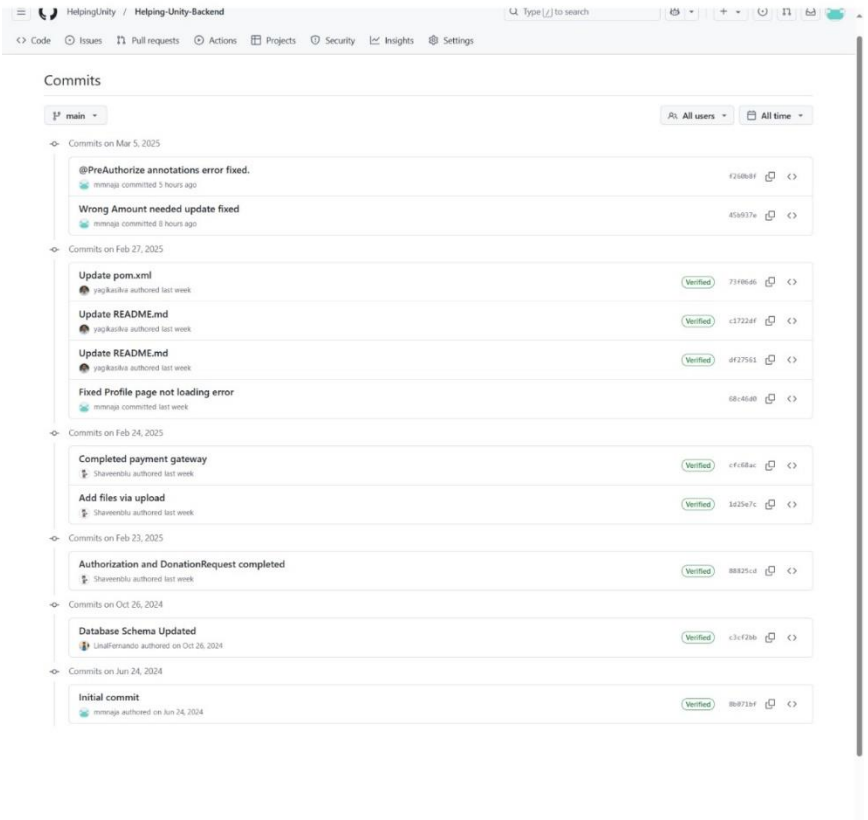
Documentation Repo



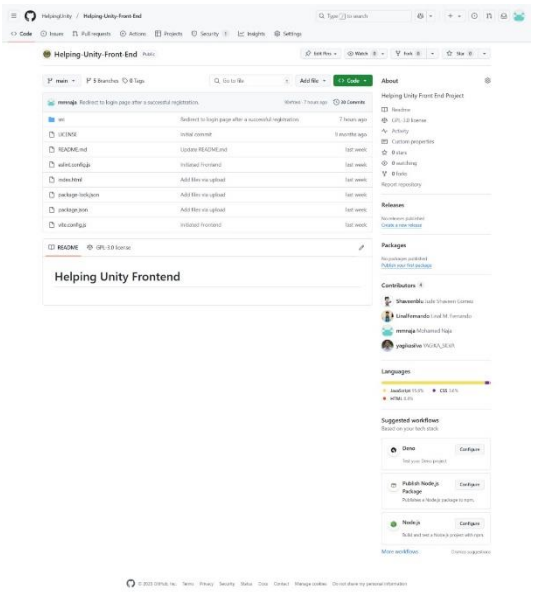
Documentation Repo Commits



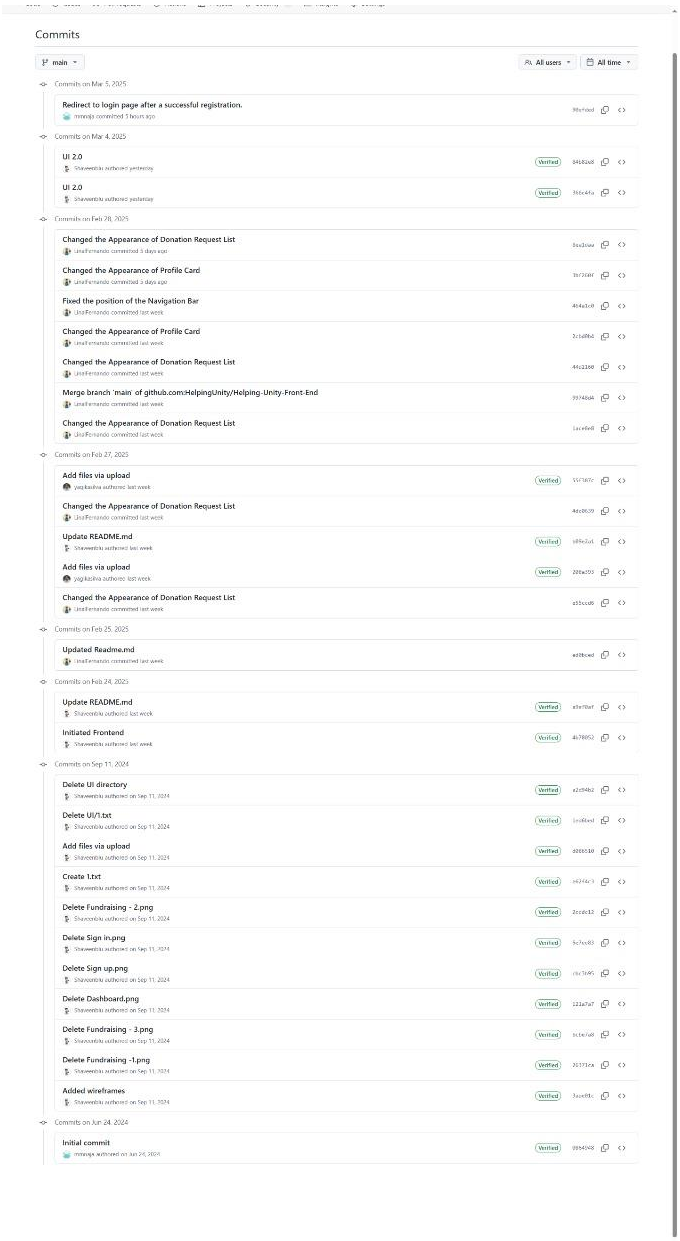
Backend Repo



Backend Repo Commits



Frontend Repo



Frontend Repo Commits

Git Account and Repos Links:

- GIT Organization Account (Main Account) - https://github.com/HelpingUnity
- Documentation Repository - https://github.com/HelpingUnity/Documentation
- Front-End Repository - https://github.com/HelpingUnity/Front-End
- Back-End Repository - https://github.com/HelpingUnity/Helping-Unity-Backend

CMMI Meeting Minutes

Documents Uploaded to the following Google Drive Link:

https://drive.google.com/drive/folders/1nmzVGca92M1Unf0Tk83YtITV2Ah6rzJa?usp=drive_link