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# Helping Unity

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## Final Project Report

Software Design in Group

EEY4189

Project Name: *Helping Unity*

February 28, 2025

  
05/03/2025

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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.

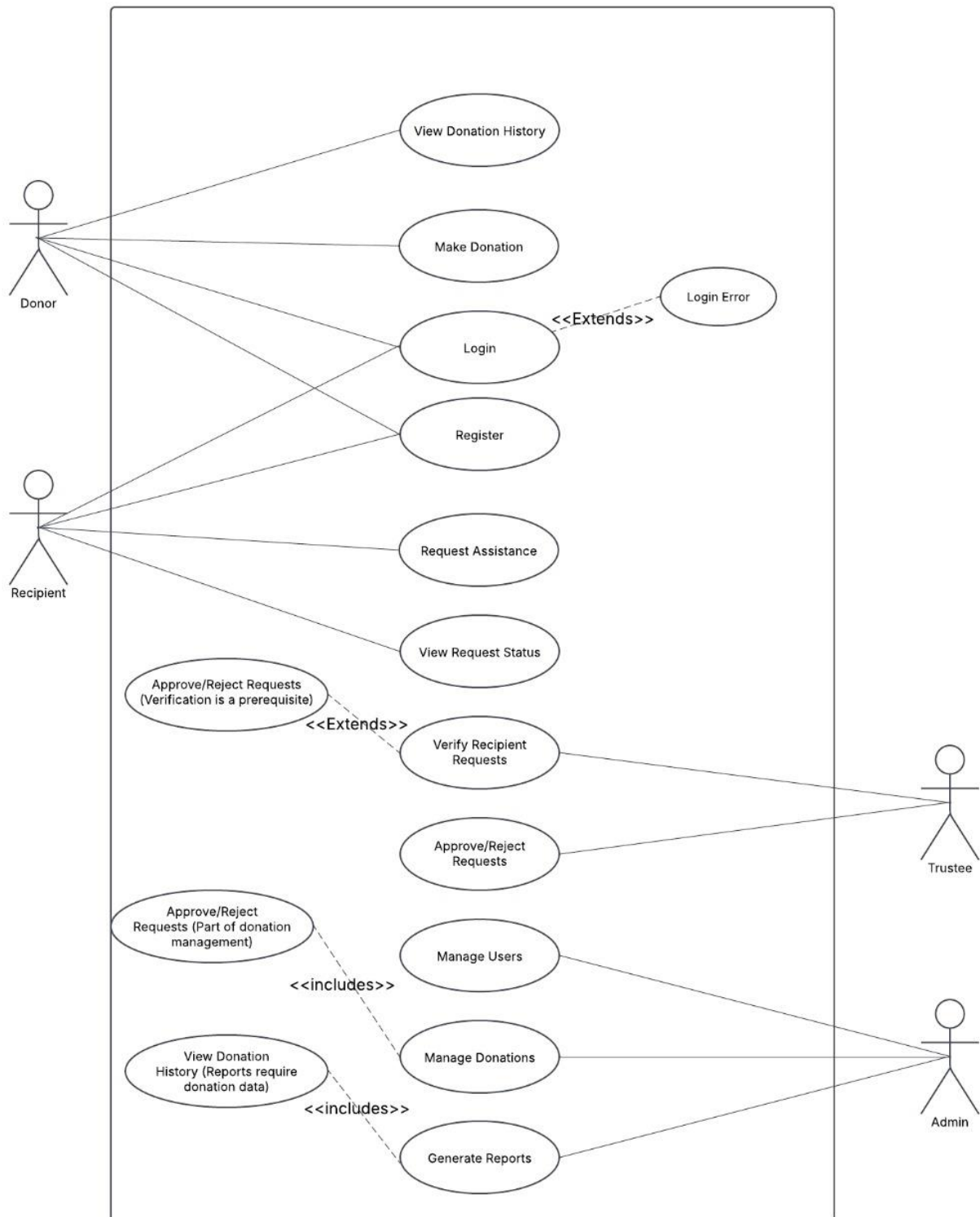
### **4. Organ Transplant Networks:**

- 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**

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

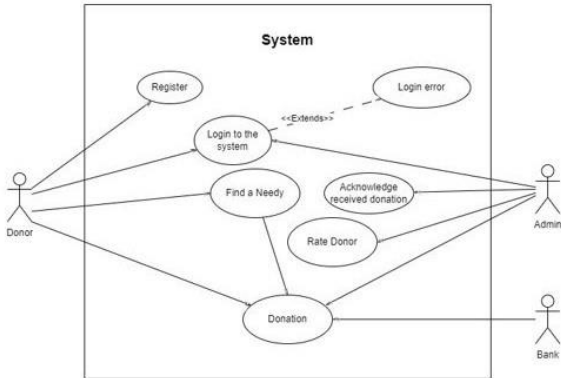
### **Frontend Technologies:**

- **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.

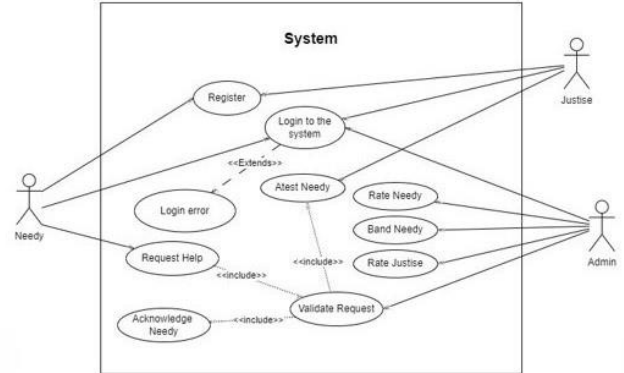
# Design Document

## Use Case Diagram

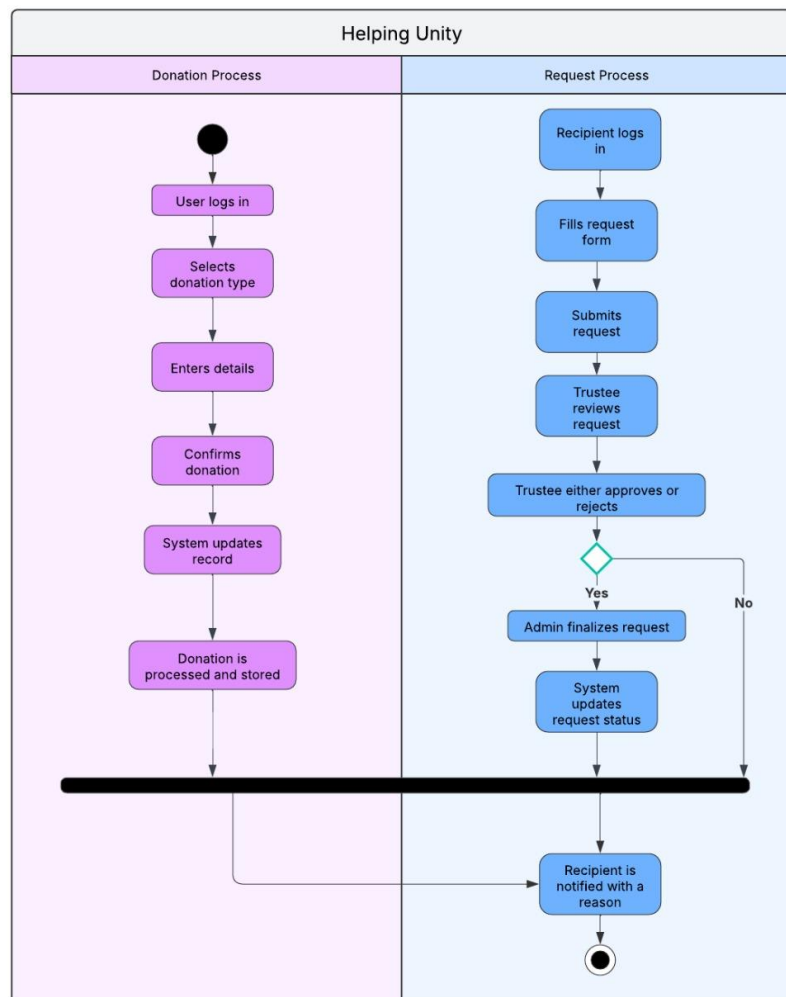
*Use Case of Donating Through the Platform*



*Use Case of Requesting Needs from the Platform*

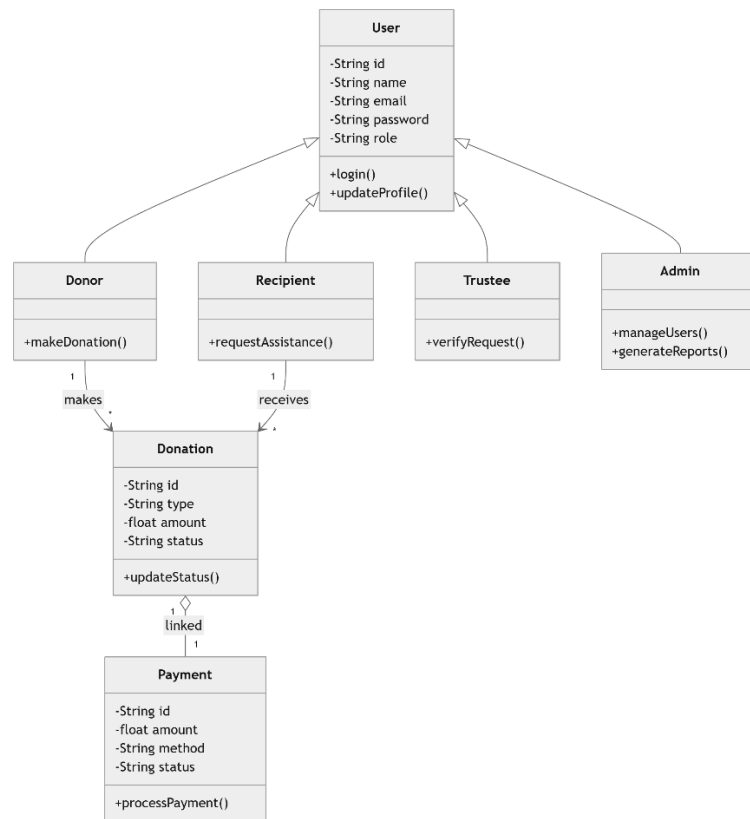


## Activity Diagram

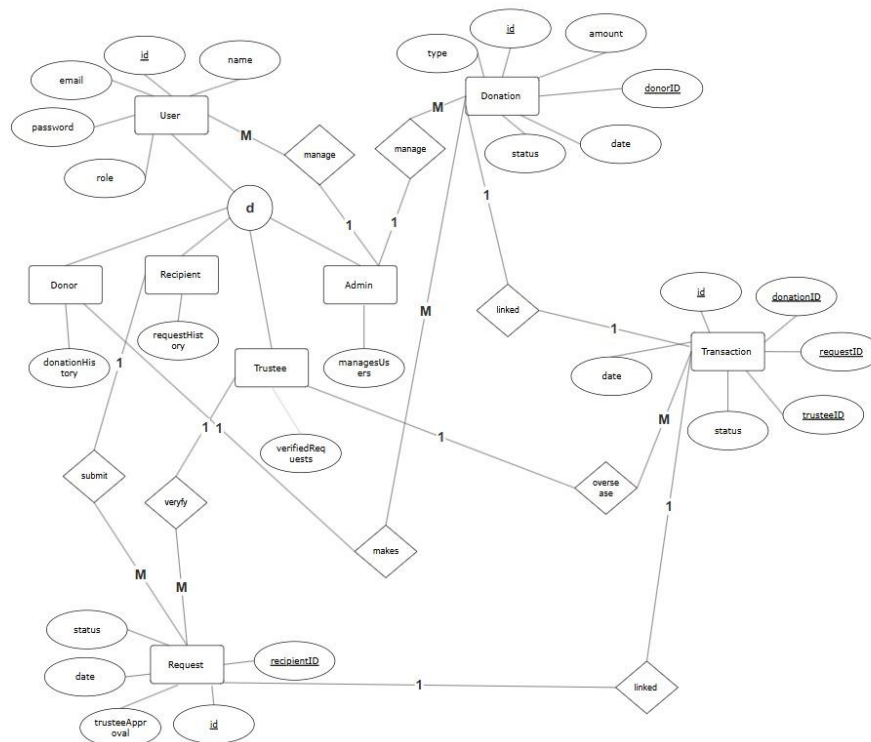




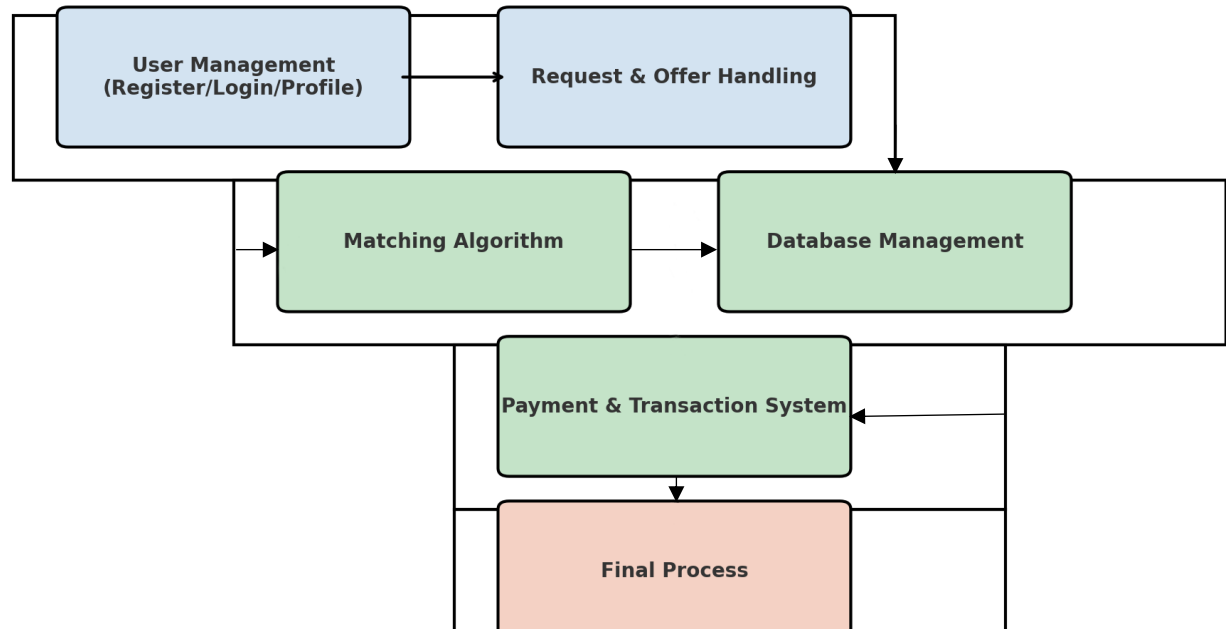
## Class Diagram



## 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\\_Luhgnodkps7Il4hw5-?usp=drive\\_link](https://drive.google.com/drive/folders/1MrFMBC49M_HE_Luhgnodkps7Il4hw5-?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](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](https://drive.google.com/file/d/1G4XGpwLhqUr68Xgw-MN4L982uS3LCJHI/view?usp=drive_link)

### Monthly Retrospective Screenshots

This is a Google Form titled "Monthly Sprint - Retrospective - 2023/24". It is designed for team members to provide feedback at the end of each month. The form includes sections for identifying oneself as a team member, adding registration and supervisor numbers, selecting the month for the retrospective (June is selected), and providing feedback on the team's performance, including what went well, what could be improved, and what needs to be done. The form is set to "Collect responses" and has a "Submit" button at the bottom.

*June Month*

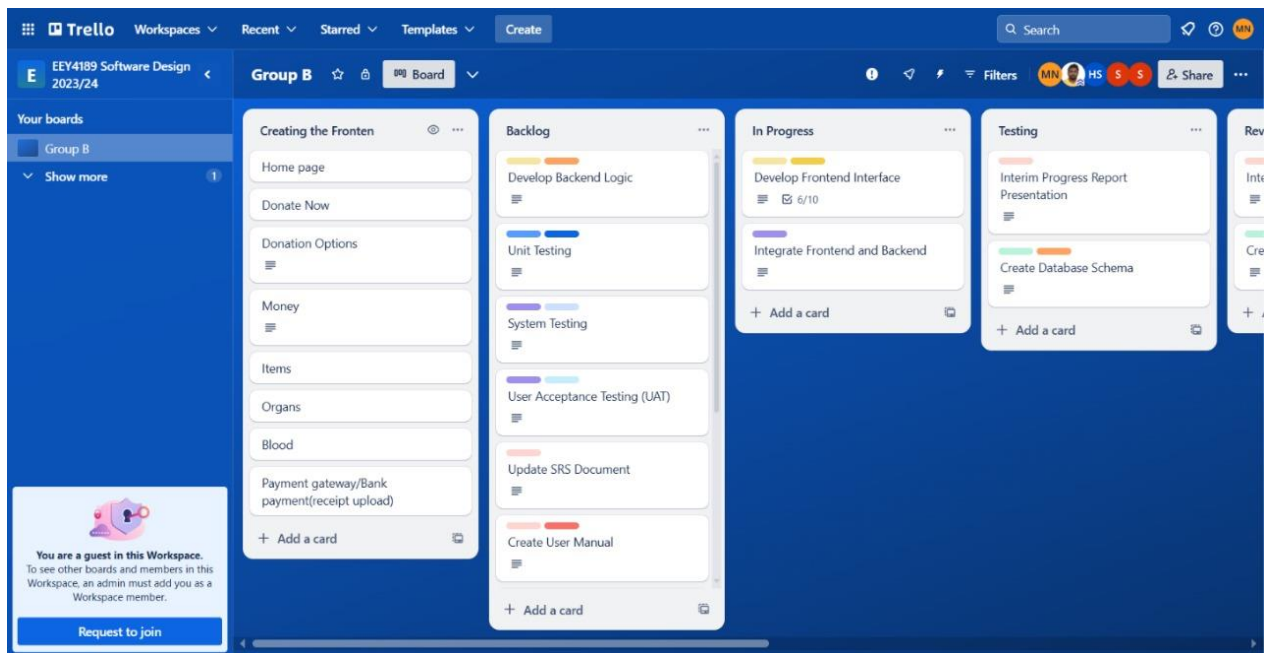
This is a Google Form titled "Monthly Sprint - Retrospective - 2023/24". It is designed for team members to provide feedback at the end of each month. The form includes sections for identifying oneself as a team member, adding registration and supervisor numbers, selecting the month for the retrospective (July is selected), and providing feedback on the team's performance, including what went well, what could be improved, and what needs to be done. The form is set to "Collect responses" and has a "Submit" button at the bottom.

*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

The screenshot displays the GitHub profile page for the 'HelpingUnity' organization. The header includes the organization's name, a search bar, and navigation links for Overview, Repositories (4), Projects (1), Packages, Teams, People (5), Insights, and Settings. The profile section shows the organization's avatar, name, and a brief description: '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'. It also lists 2 followers, location (Sri Lanka), and email (mmnaja@gmail.com). A 'Follow' button is present.

Below the profile, a section titled 'We think you're gonna like it here.' suggests tasks to help get started. These tasks are categorized into three main areas:

- Invite your people:** Includes 'Invite your first member' (Find people by their GitHub username or email address) and 'Customize members' permissions' (Set everyone's base permissions for your code).
- Collaborative coding:** Includes 'Create a pull request' (Propose and collaborate on changes to a repository) and 'Create a branch protection rule' (Enforce certain workflows for one or more branches).
- Automation and CI/CD:** Includes 'Auto-assign new issues' (Try automatically assigning work with GitHub Actions) and 'Run a continuous integration test' (Validate your code using a CI workflow).

Each category has a 'See more about...' link. At the bottom of this section is a 'Discover new GitHub features' bar with icons for Security, Client apps, Project management, Team administration, and Community.

On the right side, there is a 'View as: Public' dropdown. Below it, a message states: 'You are viewing the README and pinned repositories as a public user. You can create a README file or pin repositories visible to anyone. You can hide the tasks we've suggested on this page and bring them back later.'

The 'Discussions' section prompts the user to 'Set up discussions to engage with your community!' and provides a 'Turn on discussions' link.

The 'Repositories' section lists three repositories:

- Helping-Unity-Front-End:** JavaScript, 0 stars, Updated 5 hours ago.
- Helping-Unity-Backend:** Java, 0 stars, Updated 6 hours ago.
- demo-repository:** Private, HTML, 0 stars, Updated on Oct 26, 2024.

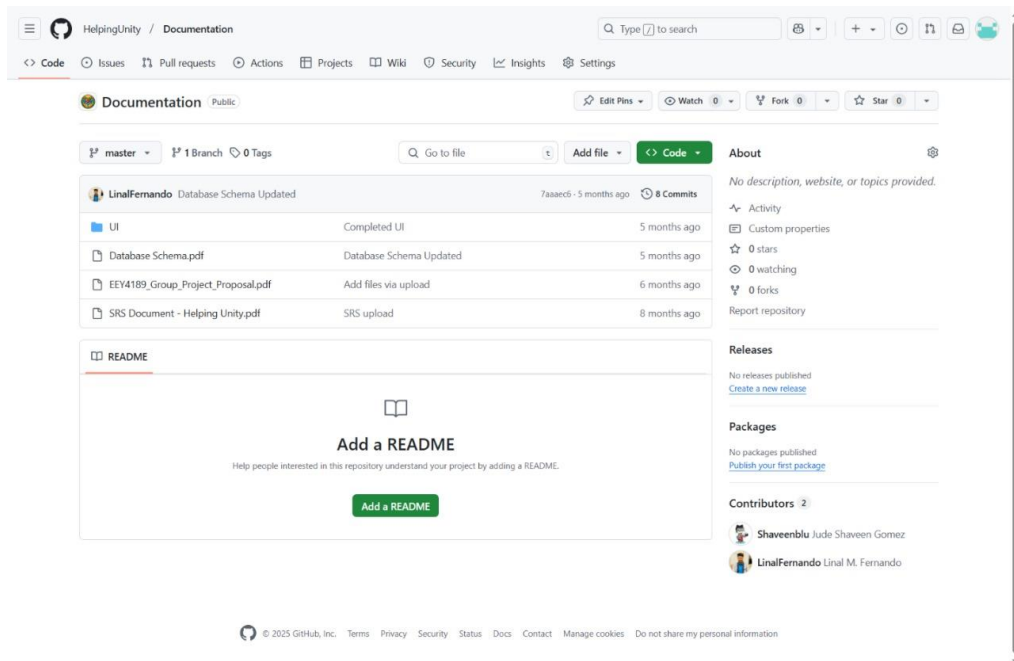
Below the repositories is a 'Documentation' section with a link to 'Documentation' (Updated on Oct 26, 2024) and buttons for 'Create new repository' and 'Import'.

The 'People' section shows a row of avatars and an 'Invite someone' button.

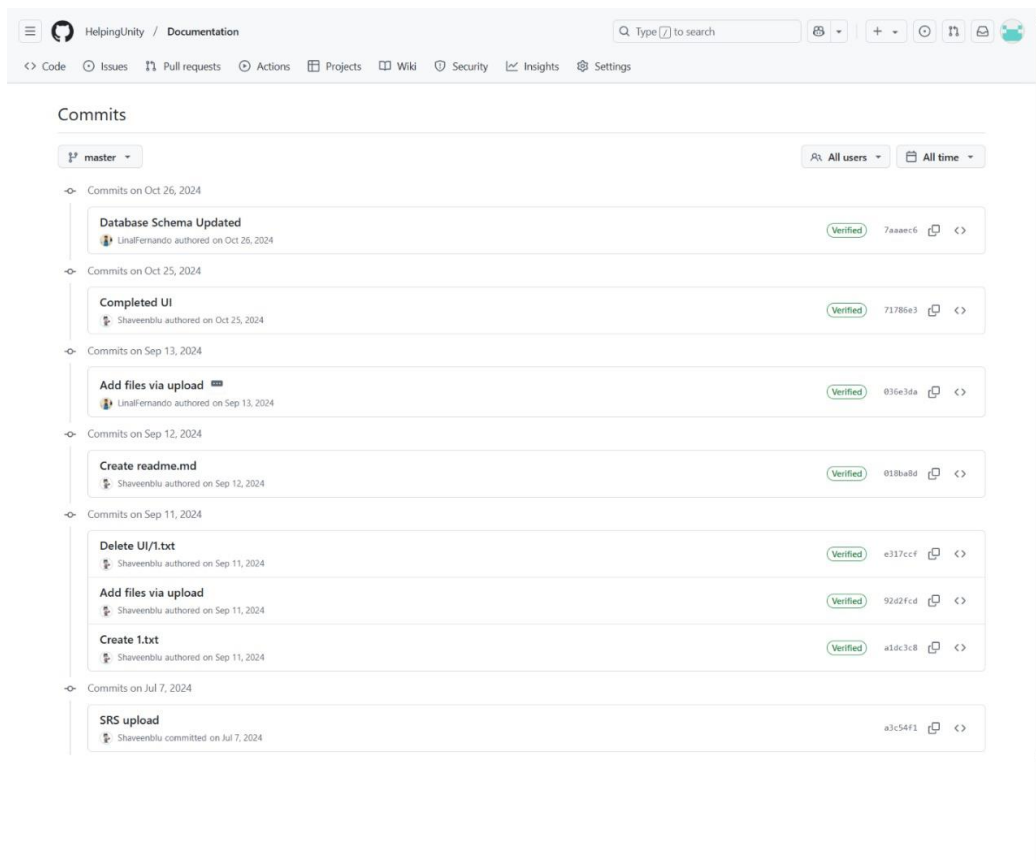
The 'Top languages' section shows a bar chart for JavaScript, Java, and HTML.

The footer contains the GitHub logo, copyright information (© 2025 GitHub, Inc.), and links for Terms, Privacy, Security, Status, Docs, Contact, Manage cookies, and Do not share my personal information.

## Helping Unity Git Organization

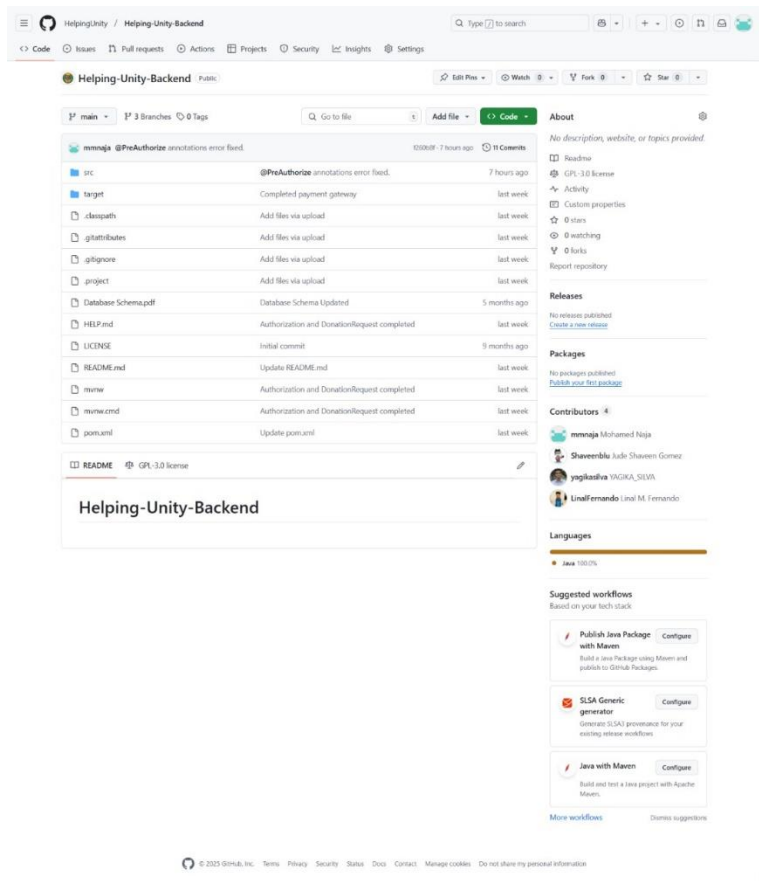


## Documentation Repo

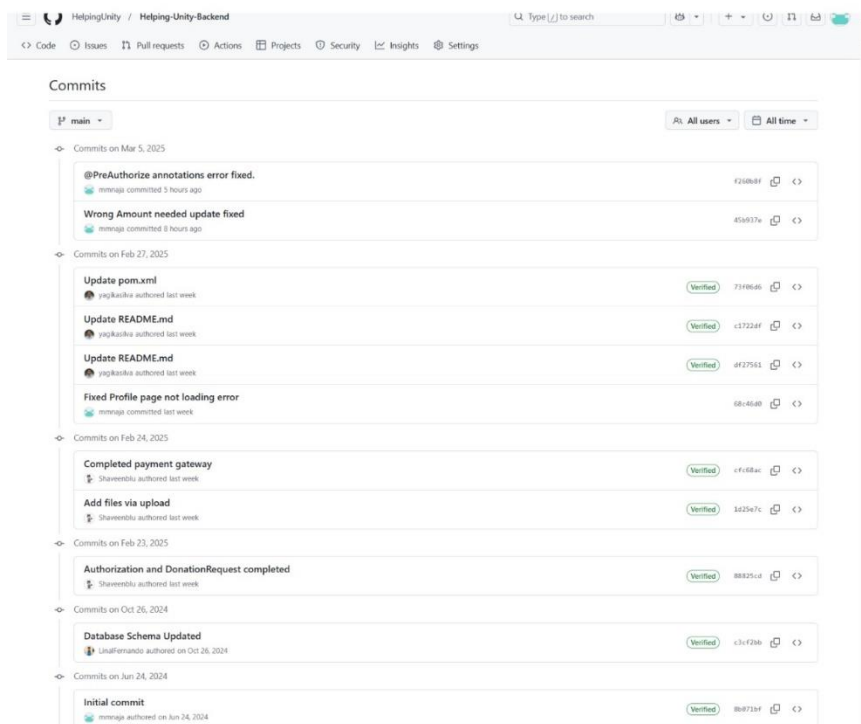


## Documentation Repo Commits

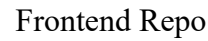




## Backend Repo



## Backend 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](https://drive.google.com/drive/folders/1nmzVGca92M1Unf0Tk83YtITV2Ah6rzJa?usp=drive_link)**