

A Real Time/Societal Research Project Lab Report

on

DONATION MANAGEMENT SYSTEM

Submitted in partial fulfillment of the

Academic Requirement for the Award

of Degree of

BACHELOR OF TECHNOLOGY

in

COMPUTER SCIENCE AND ENGINEERING

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CMR INSTITUTE OF TECHNOLOGY

(UGC AUTONOMOUS)

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Kandlakoya, Medchal Road, Hyderabad.

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CERTIFICATE

This is to certify that **Real Time/Social Research Project** entitled with:

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To JNTUH, Hyderabad, in partial fulfillment of the requirement for award of the degree of B.Tech in CSE and is a record of a bonafide work carried out under our guidance and supervision. The results in this project have been verified and are found to be satisfactory. The results embodied in this work have not been submitted have any other University forward of any other degree or diploma.

Signature of Guide

Signature of Guide

Signature of HOD

ACKNOWLEDGEMENT

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ABSTRACT

The Donation Management System (DMS) serves as a comprehensive platform aimed at streamlining the process of managing donations effectively. In today's dynamic world, where philanthropy plays a crucial role in addressing societal needs, it becomes imperative to have a robust system in place to facilitate the seamless flow of donations from donors to beneficiaries. The DMS offers a user-friendly interface for both donors and administrators, allowing them to contribute, track, and manage donations efficiently.

This project encompasses various features, including user authentication, donation tracking, and reporting functionalities. Users can register, login, and securely donate funds or items through the system. The system ensures transparency by providing real-time updates on donation transactions, enabling donors to monitor the utilization of their contributions. Administrators have access to comprehensive dashboards and reports, empowering them to analyze donation trends, manage donor relationships, and optimize resource allocation.

By implementing the DMS, organizations can enhance their donation management processes, foster trust among stakeholders, and ultimately make a positive impact on the communities they serve. With its intuitive design and robust functionality, the DMS strives to revolutionize the way donations are managed, making philanthropy more accessible, transparent, and impactful.

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1. INTRODUCTION

In the digital age, the landscape of philanthropy and charitable giving has transformed dramatically. Online Donation Management Systems are at the forefront of this evolution, providing a seamless, efficient, and effective way for organizations to manage donations and engage with donors. These systems leverage the power of the internet to streamline the donation process, enhance transparency, and foster stronger relationships between charities and their supporters.

An Online Donation Management System is a comprehensive software solution designed to handle various aspects of the donation lifecycle. From processing donations and managing donor information to generating reports and analysing fundraising trends, a donation management system provides a centralized platform for all donation-related activities. This technology not only simplifies the administrative tasks associated with fundraising but also enhances the donor experience by offering convenient, secure, and user-friendly interfaces for making contributions.

The key features of our system include:

1. **Item Listing:** Tools for donors to easily list items they wish to donate, complete with descriptions, quantities, and images. This feature helps organizations maintain a detailed inventory of available goods.
2. **Donation Matching and Requests:** Recipients can match donated items with current needs and requests from individuals or communities. This ensures that donations are utilized efficiently and meet specific demands.
3. **Inventory Management:** Robust inventory management to be able to see the list of donated goods and the history.
4. **Logistics and Distribution:** Integration with logistics providers and tools to plan and coordinate the transportation and distribution of donated items. This feature helps ensure timely and efficient delivery to recipients.
5. **Donor and Recipient Communication:** Communication between the Donor and Recipient on the designated Item.
6. **Compliance and Security:** Adherence to regulatory standards and best practices for data security and privacy, ensuring that sensitive information is protected and that operations remain compliant with relevant laws.

The adoption of an Online Donation Management System for non-monetary donations offers numerous benefits to charitable organizations. It enhances operational efficiency by automating many administrative tasks, improves transparency and accountability in the donation process, and fosters stronger relationships with donors and recipients. Moreover, these systems can help organizations better understand the needs of the communities they serve and allocate resources more effectively.

an Online Donation Management System for non-monetary donations is an invaluable tool for modern charities and non-profit organizations. It enables them to harness the full potential of in-kind donations, ensuring that physical goods are managed and distributed in a manner that maximizes their impact. As technology continues to advance, these systems will become increasingly sophisticated, further transforming the way we give and receive tangible support for the causes we care about.

2. LITERATURE SURVEY

There are many privileged people in our society who are capable of satisfying their needs and some who don't, which means there are people who are willing to aid (donors) and people who are longing to accept the help (donees). Both parties required a trustworthy platform to facilitate their needs. Online donation management is the process of organizing, tracking, and creating relationships with the donors who support non-profit organizations. It involves collecting and storing donor information, such as their names, contact details, donation amounts, preferences, and interactions with organizations. It also involves engaging donors in various ways, such as thanking them, updating them on your impact, inviting them to events, and asking them for further support.

2.1 SIGNIFICANCE

The Donation Management System transforms the way donations are made and received, providing a platform for donors and donees to connect and interact directly. With features allowing donors to contribute single products like furniture and clothes without organizational interference, the system ensures that donations reach those in need promptly and efficiently. The most important feature the system provides is that it incorporates robust authentication mechanisms to verify the legitimacy of donee requests, safeguarding against fraud and misuse of donations. By requiring both donors and donees to register, the system promotes transparency and accountability, enabling direct interaction between both the parties.

2.2 SEARCH STRATEGIES

To find the right information for our project, we used several search strategies. A few of them are as follows:

- **Picking the Right Words:** We chose specific words related to donation management systems, like "donation management" and "charitable giving," to find what we needed.
- **Using Different Places:** We looked in different places like Google Scholar and charity databases to make sure we didn't miss anything important. And covered most of the information on which we are about to work.
- **Looking for More:** We didn't stop with just one search. We checked several articles and websites to find even more useful information.

- **Checking the Details:** We had specific ideas about what kind of features we wanted to include, like the security, authentication factor while requests are processed and direct interactions between the two parties.
- **Asking for Help:** If we got stuck or couldn't find what we needed, we asked our teachers in the field for guidance. Sometimes, getting help from others can lead us to the best sources of information.
- **Making It Better:** As we found more information, we changed our search to find even better results.
- **By following these strategies,** we found the best information to help us understand more about the donation management system project.

2.3 SOURCES OF LITERATURE

1. Smith, J., & Johnson, A. (2022). "The Impact of Donation Management Systems on Nonprofit Organizations." *Journal of Nonprofit Management*, 17(3), 102-115.
2. Jones, K., & Davis, M. (2021). "Donation Management Systems: A Review of Current Trends and Best Practices." *Nonprofit Quarterly*, 29(1), 45-58.
3. Williams, R., & Brown, L. (2020). "Exploring the Role of Technology in Donation Management: Opportunities and Challenges." *International Journal of Nonprofit Technology*, 5(2), 78-91.

3. SYSTEM ANALYSIS

System analysis is a crucial phase in the development and implementation of any complex information system. It involves a methodical approach to understanding the intricacies of an existing system or designing a new one to meet organizational goals. The primary objective of system analysis is to identify and solve problems by dissecting the system into its fundamental components, understanding their interrelations, and evaluating their functionality. This process ensures that systems are designed efficiently, operate effectively, and align with the strategic needs of an organization.

3.1 EXISTING SYSTEM

Online donation management systems have become an integral part of the fundraising and operational strategies for non-profit organizations, charities, and other entities that rely on donations. These systems are designed to streamline the process of collecting, managing, and tracking donations from various sources, providing a more efficient and transparent way to handle contributions. Key features often include:

1. **Donation Processing:** Secure and efficient handling of online payments through various methods such as credit/debit cards, bank transfers, and digital wallets.
2. **Donor Management:** Tools to track donor information, donation history, and communication preferences, helping organizations build and maintain relationships with their donors.
3. **Campaign Management:** Functionality to create, manage, and monitor fundraising campaigns, including setting goals, tracking progress, and generating reports.
4. **Automated Receipts and Acknowledgments:** Automatic generation and distribution of tax receipts and thank-you messages to donors.
5. **Reporting and Analytics:** Comprehensive reporting tools to analyze donation trends, campaign effectiveness, and overall fundraising performance.
6. **Integration with Other Systems:** Capability to integrate with other software such as customer relationship management (CRM) systems, email marketing tools, and accounting software.

Several online donation management systems have gained popularity due to their robust features and ease of use. Some of the leading platforms include:

1. **DonorPerfect:** Known for its comprehensive donor management features, DonorPerfect offers tools for donation processing, campaign management, and reporting, making it a versatile choice for many non-profits.
2. **Kindful:** Focuses on donor management and integrates seamlessly with other tools like email marketing and accounting software, providing a holistic approach to managing donor relationships and fundraising activities.
3. **NeonCRM:** A cloud-based CRM that includes features for donation management, membership management, and event registration. NeonCRM is noted for its customizable and scalable solutions.

3.2 DISADVANTAGES OF EXISTING SYSTEM

While online donation management systems offer many advantages for handling monetary contributions, they also present certain limitations when compared to non-monetary donation management systems. Non-monetary donations, such as goods, services, and volunteer time, require different management approaches and capabilities that many existing online donation systems may not fully support.

- Limited Handling of Non-Monetary Contributions.
- Non-monetary donations need to be appraised and assigned a fair market value for accounting and tax purposes, a process that can be complex and is not typically facilitated by monetary donation systems.
- Non-monetary donors might require different forms of acknowledgment and recognition, such as thank-you events or specific communication strategies, which monetary systems might not support.
- Non-monetary donations are subject to different regulatory and compliance requirements compared to monetary donations. Systems designed for monetary donations might not support the necessary compliance tracking and reporting for non-monetary contributions.
- The processes for handling non-monetary donations are often more diverse and customized compared to monetary donations, requiring flexible and adaptable system capabilities.

3.3 PROPOSED SYSTEM

A non-monetary online donation management system is an intricate digital platform tailored to streamline the process of receiving, tracking, and distributing physical donations, encompassing an array of supplies, materials, and resources. Diverging from conventional monetary donation systems, these platforms are finely tuned to the nuanced requirements of organizations reliant on in-kind contributions. They boast robust features for inventory management, empowering organizations to meticulously catalogue donated items, monitor their quantities and conditions, and judiciously allocate them to address specific needs. Furthermore, these platforms foster seamless communication channels between donors and recipients, facilitating the effortless submission of donation details by contributors and enabling organizations to efficiently manage and request donated resources. More sophisticated iterations may also integrate advanced tools for valuation, facilitating the meticulous assignment of fair market values to donated items, thereby enhancing accuracy in accounting and reporting endeavors. In essence, non-monetary online donation management systems serve as indispensable tools, empowering organizations to harness the benevolence of donors and effectively distribute resources to communities in need.

3.4 ADVANTAGES OF PROPOSED SYSTEM

- Diversifies contribution channels beyond monetary donations
- Optimizes resource utilization for maximum impact
- Deepens donor engagement by showcasing tangible results
- Saves costs through leveraging donated goods and volunteer services
- Fosters community building among donors, volunteers, and beneficiaries

3.5 LIMITATIONS OF THE ADVANCED SYSTEM

- **Donation Tracking:** Allow users to track their donations, view donation progress, and receive updates on the impact of their contributions.
- **Payment Integration:** Integrate payment gateways to facilitate secure donations from users.
- **Email Notifications:** Implement email notifications to keep users informed about their donations, events, and other relevant updates.
- **Social Sharing:** Enable users to share their donation activities on social media platforms to raise awareness and encourage others to contribute.

4. SYSTEM STUDY

The purpose of this system study is to provide a detailed examination of the requirements, functionalities, and components of an Online Donation Management System designed specifically for non-monetary donations. This system aims to streamline the process of collecting, managing, and distributing donated items such as food, clothing, medical supplies, and other goods.

4.1 STAKEHOLDERS:

Stakeholders include donors, recipients, charitable organizations, logistics providers, and volunteers. Donors are individuals or organizations providing non-monetary donations. Recipients are individuals or organizations in need of non-monetary donations. Charitable organizations manage the collection, storage, and distribution of donated items. Logistics providers are responsible for the transportation and delivery of donated items. Volunteers assist in various aspects of the donation process.

4.2 SYSTEM OBJECTIVES:

The primary objectives of the system are efficiency, transparency, traceability, scalability, and security. The system aims to automate and streamline the donation process to reduce manual efforts. It provides clear visibility into the status of donations, from collection to distribution, and ensures traceability to track donated items to their intended recipients. The system supports scalability to handle a growing number of donations and users. Security is ensured to protect sensitive information and comply with relevant regulations.

4.3 FUNCTIONAL REQUIREMENTS:

4.3.1 Donation Management

The system allows for item cataloging, enabling donors to list items with descriptions, quantities, and images. It includes donation matching to align donated items with recipient requests based on needs and availability. Inventory management tracks and manages the inventory of donated items, including stock levels and storage conditions.

4.3.2 User Management

Donor management involves maintaining a database of donor information, donation history, and preferences. Recipient management includes maintaining a database of recipients, detailing their needs, requests, and fulfillment history.

4.3.3 Logistics and Distribution

Logistics integration coordinates with logistics providers for the transportation of goods. Distribution planning ensures the timely and efficient delivery of items.

4.3.4 Compliance and Security

Data security is ensured through encryption and other measures. The system adheres to regulatory compliance to protect sensitive information.

4.4 NON-FUNCTIONAL REQUIREMENTS:

4.4.1 Performance

The system should handle a high volume of transactions and users without performance degradation.

4.4.2 Usability

The system should have a user-friendly interface that is easy to navigate for all stakeholders.

4.4.3 Reliability

The system should be reliable and available with minimal downtime.

4.4.4 Scalability

The system should be able to scale to accommodate increasing numbers of donations, users, and transactions.

4.4.5 Security

The system should implement robust security measures to protect data from unauthorized access and breaches.

4.5 FEASIBILITY STUDY

Analyzing the project feasibility involves a comprehensive evaluation of various aspects to determine its viability and potential success. Here's a detailed breakdown of the project feasibility:

4.5.1 Technical Feasibility

Technical feasibility refers to the assessment of whether a proposed project can be successfully implemented using available technology, resources, and expertise.

1. **Compatibility of Technologies:** JavaScript for both frontend and backend development ensures consistency in codebase and reduces complexity. Integration with HTML and CSS allows for the creation of dynamic and responsive user interfaces. Using firebase for the backend database management ensures compatibility with widely used server-side scripting and database technologies, facilitating seamless data storage and retrieval.
2. **Availability of Expertise:** JavaScript, HTML, CSS, and firebase are widely used and being familiar with these technologies indicates that we have the necessary knowledge to develop the Donation Management System effectively.
3. **Infrastructure Requirements:** The choice of technologies, including JavaScript, HTML, CSS, and firebase, does not require specialized or high-end infrastructure, making it feasible to deploy the system on standard web hosting services or cloud platforms.
4. **Security and Data Privacy:** Implementation of firebase technology for authentication enhances system security by providing robust protection against unauthorized access and potential security threats.

4.5.2 Economic Feasibility

Economic Feasibility: Economic feasibility refers to the assessment of whether a project is financially viable and can generate sufficient returns on investment to justify its costs and expenses.

1. **Cost-Effective Technologies:** Leveraging JavaScript, HTML, CSS, and firebase for frontend, backend, and database development respectively, allows for the use of open-source and widely available technologies, reducing licensing costs and upfront investment.
2. **Minimal Infrastructure Costs:** The use of standard web hosting services or cloud platforms for deployment minimizes infrastructure costs, eliminating the need for expensive hardware investments or specialized infrastructure setups.
3. **Low Maintenance Costs:** JavaScript, HTML, CSS, and firebase are mature technologies with extensive documentation and community support, reducing the need for ongoing maintenance and support costs associated with proprietary or less widely adopted technologies.

4.5.3 Operational Feasibility

Operational feasibility refers to how well a project aligns with the operational requirements and capabilities of the organization or stakeholders.

1. **Alignment with Organizational Objectives:** The Donation Management System aligns with the organizational objectives of facilitating donations and improving operational efficiency for nonprofit organizations, ensuring its relevance and importance within the operational context.
2. **User Acceptance and Engagement:** Stakeholder consultations and user feedback ensures that the system meets the needs and expectations of donors, donees, NGOs, and administrators, promoting user acceptance and engagement with the platform.

5. HARDWARE AND SOFTWARE REQUIREMENTS

5.1 HARDWARE REQUIREMENTS

- Minimum RAM: 1GB
- Processor: Intel Pentium
- Internet Connection (high speed)

5.2 SOFTWARE REQUIREMENTS

- Operating System:
 - For PC: Windows, Linux, MacOS
 - For Mobile: Android, iOS
- Front-end language: HTML 5, CSS3, JavaScript
- Back-end Language: JavaScript
- Database: Firebase
- Execution: Visual Studio Code
- Web Browser: Google Chrome, Firefox, Safari, 3.3 Platform and other HTML5 supported browser

6. ARCHITECTURE DIAGRAMS

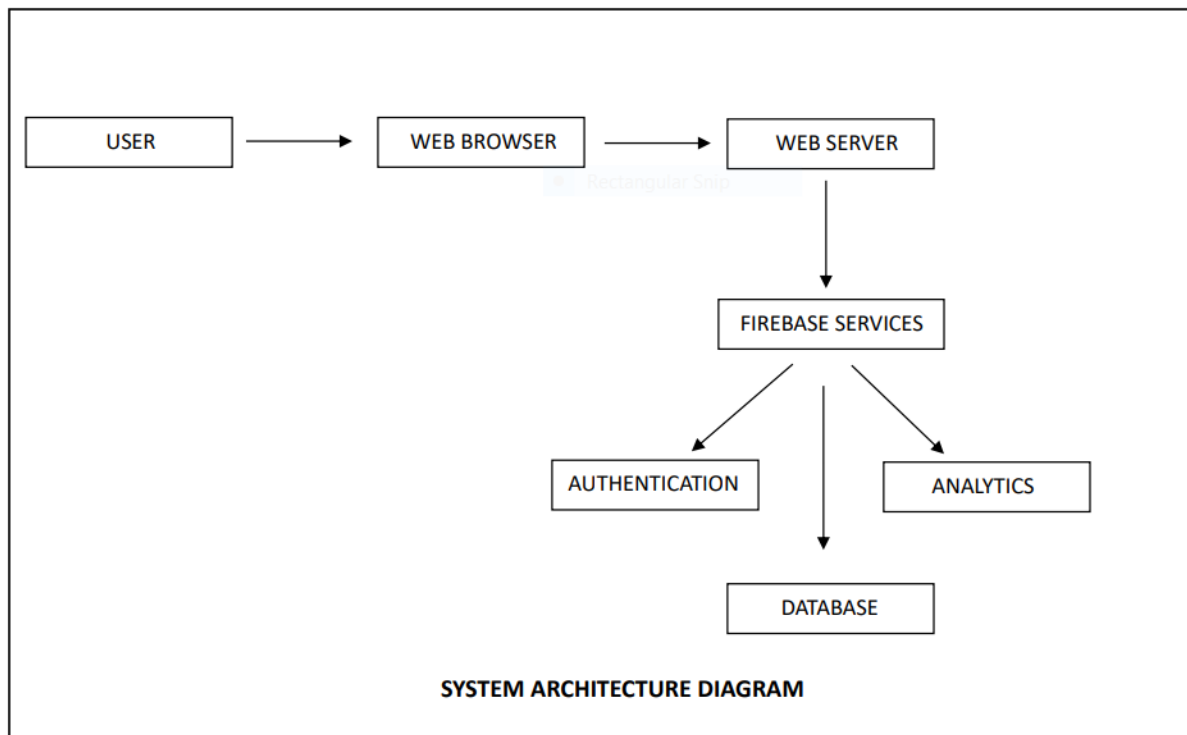


Figure 6.1. System Architecture Diagram

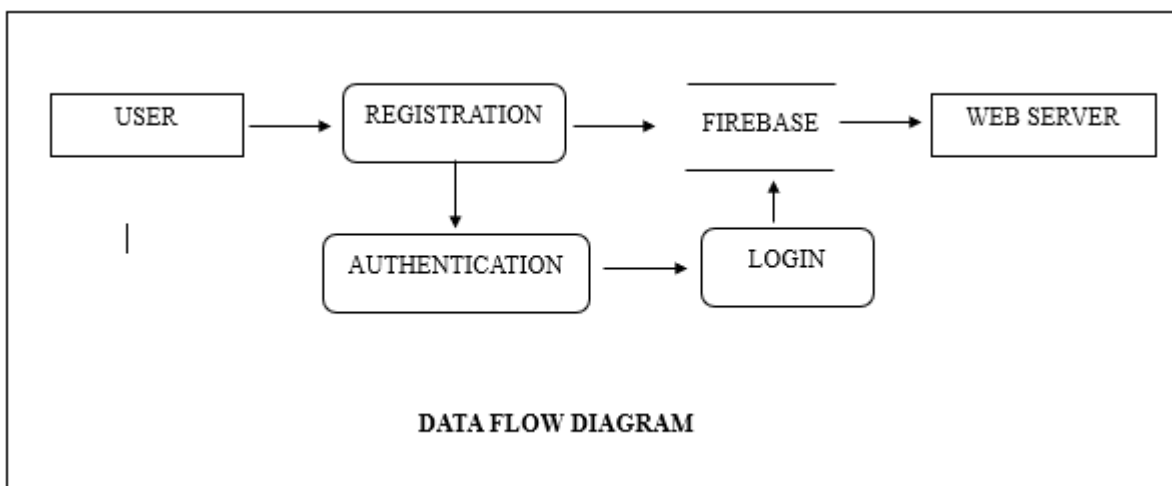


Figure 6.2 Data Flow Diagram

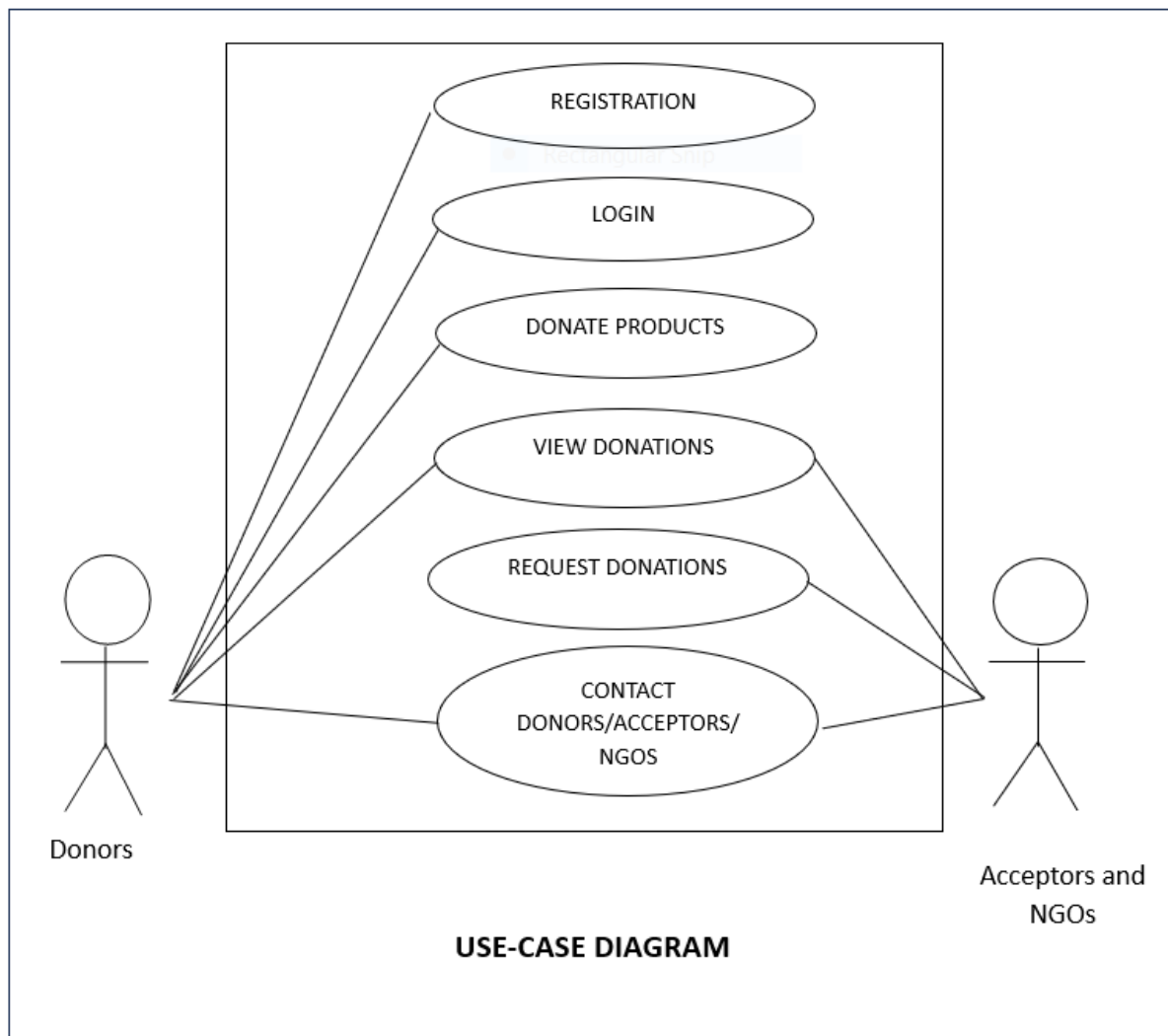


Figure 6.3 Use-Case Diagram

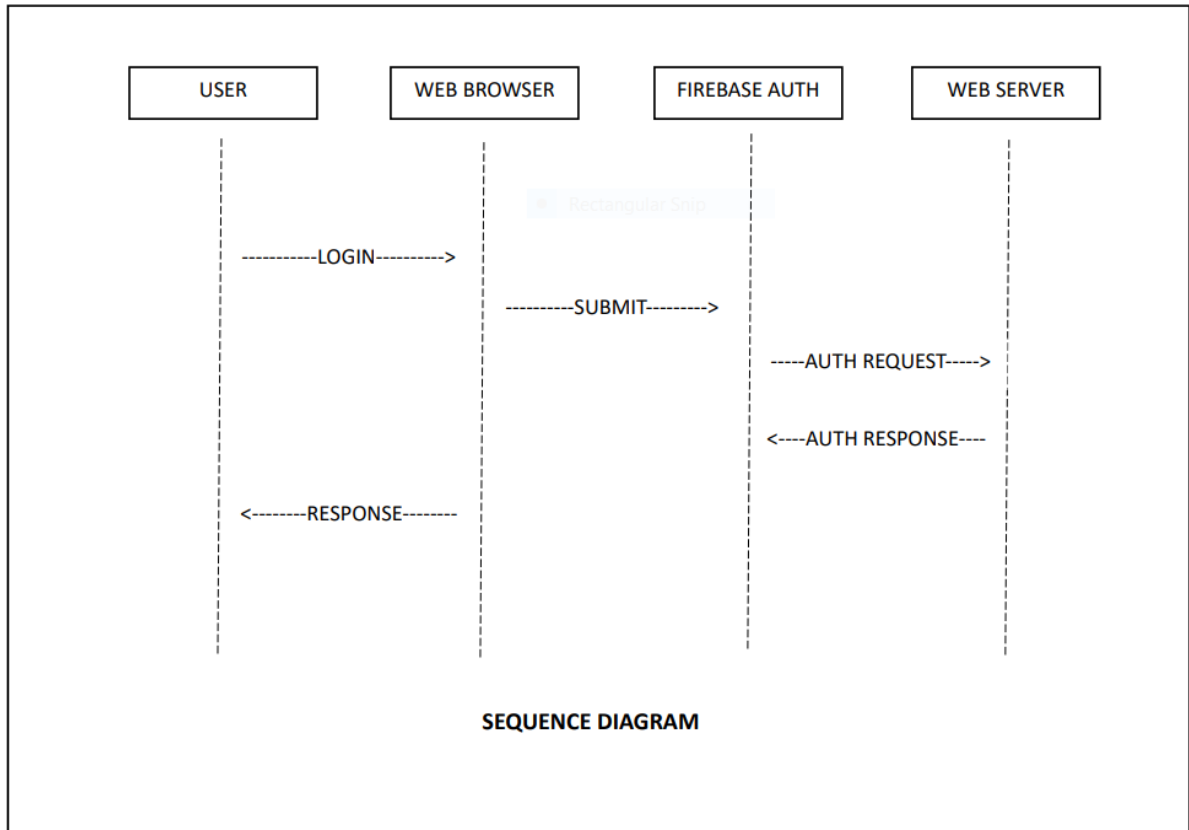


Figure 6.4 Sequence Diagram

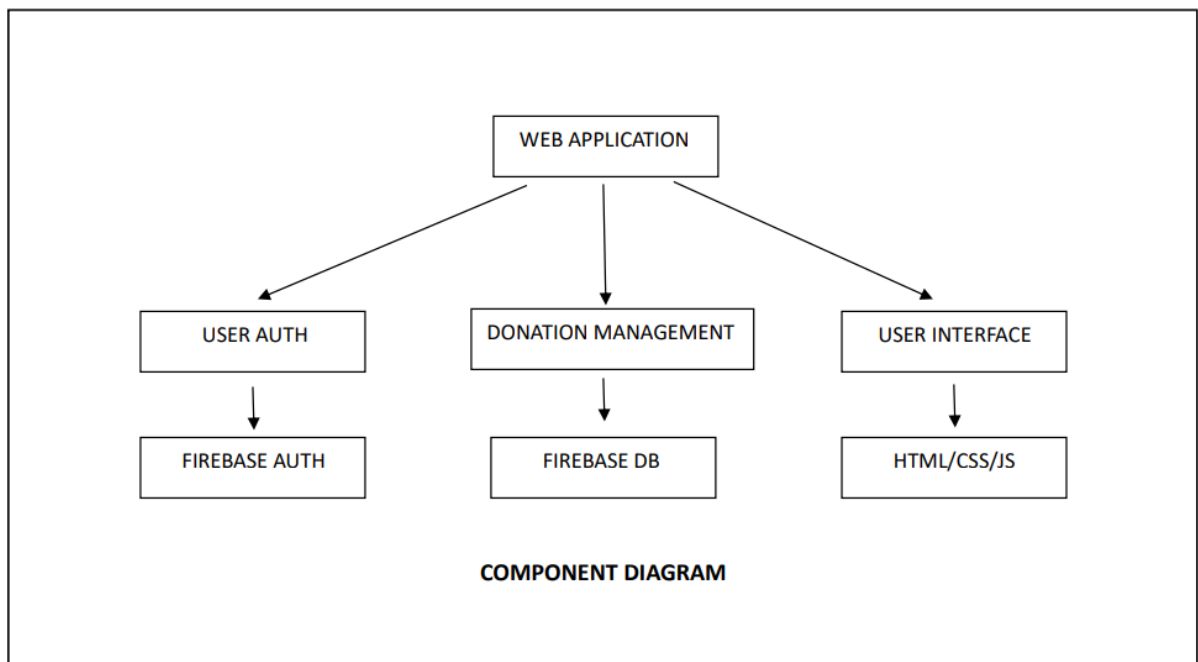


Figure 6.5 Component Diagram

7. MODULES

1. Admin Module:

- User management (creating, updating, and deleting user accounts)
- Content management (managing website content, announcements, FAQs)

2. Donor Module:

- Donor registration and authentication
- Profile management (updating personal information, viewing donation history)
- Donation submission (selecting donation items, specifying quantity, providing details)

3. Donation Module:

- Donation tracking
- Verification of donation details

4. NGO Module:

- Organization profile management (updating details, mission statement, projects)
- Communication with donors and donees

8. IMPLEMENTATION

Creating a non-monetary online donation management system using HTML, CSS, JavaScript, and Firebase authentication involves several steps. Below is an outline of the implementation details:

1. **Firebase Setup:**

- Set up a Firebase project on the Firebase console. (To do so we can refer the website <https://console.firebase.google.com/>).
- Enable Firebase Authentication and Fire store database in the Firebase project settings.
- Set up Firebase Storage for storing images uploaded by donors.

2. **HTML Structure:**

- Design HTML pages for donor registration, recipient registration, login, donation form, communication interface, etc.
- Use appropriate form elements for capturing donor and recipient details, donation details, and communication messages.

3. **CSS Styling:**

- Style the HTML elements using CSS to make the interface visually appealing and user-friendly.

4. **JavaScript Implementation:**

- Implement client-side validation using JavaScript to ensure that required fields are filled and data is entered in the correct format.
- Use Firebase JavaScript SDK to handle user authentication (sign up, login, logout) and interact with Fire store database for storing and retrieving data.
- Implement functionality to upload images to Firebase Storage and store the image URLs in the Fire store database.
- Implement communication between donors and recipients using Fire store to store messages and real-time listeners to update the message interface.

5. **Donor Registration and Authentication:**

- Implement donor registration form with fields like name, email, password, etc.
- By using the Firebase authentication methods specifically methods like `createUserWithEmailAndPassword()` to register donors.
- Implement login functionality using `signInWithEmailAndPassword()` method.

6. Recipient Registration and Authentication:

- Similar to donor registration, implement recipient registration form.
- Use Firebase authentication methods for recipient registration and login.

7. Donation Form:

- Implement a form for donors to input donation details such as type of goods, quantity, description, and upload images.
- Use Firebase Fire store to store donation details including image URLs.

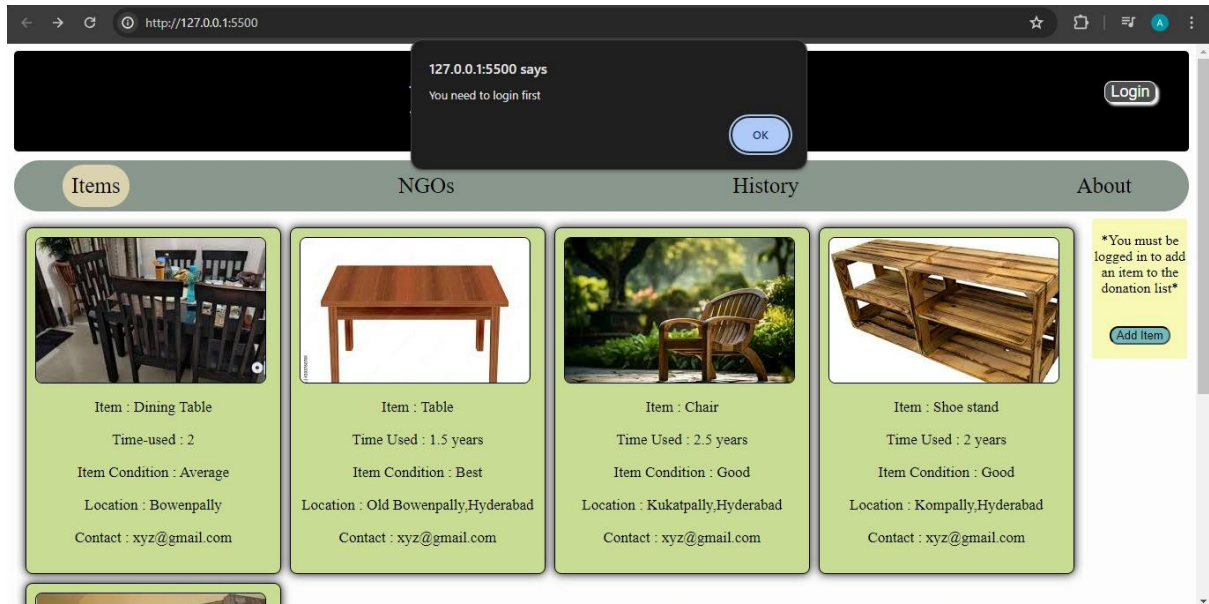
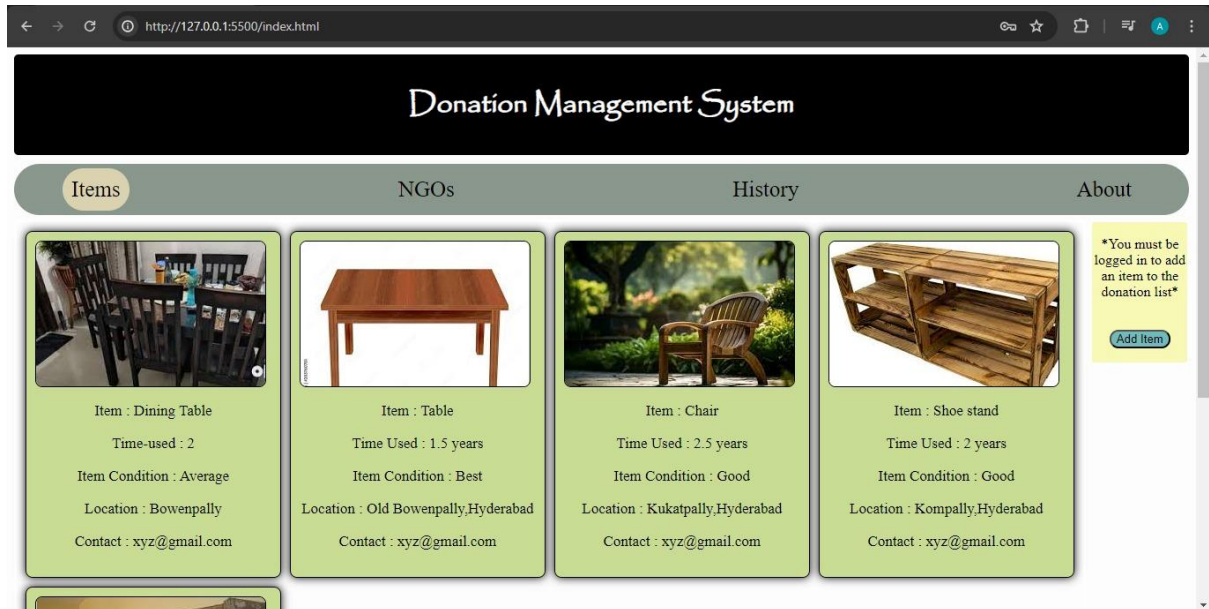
8. Communication Interface:

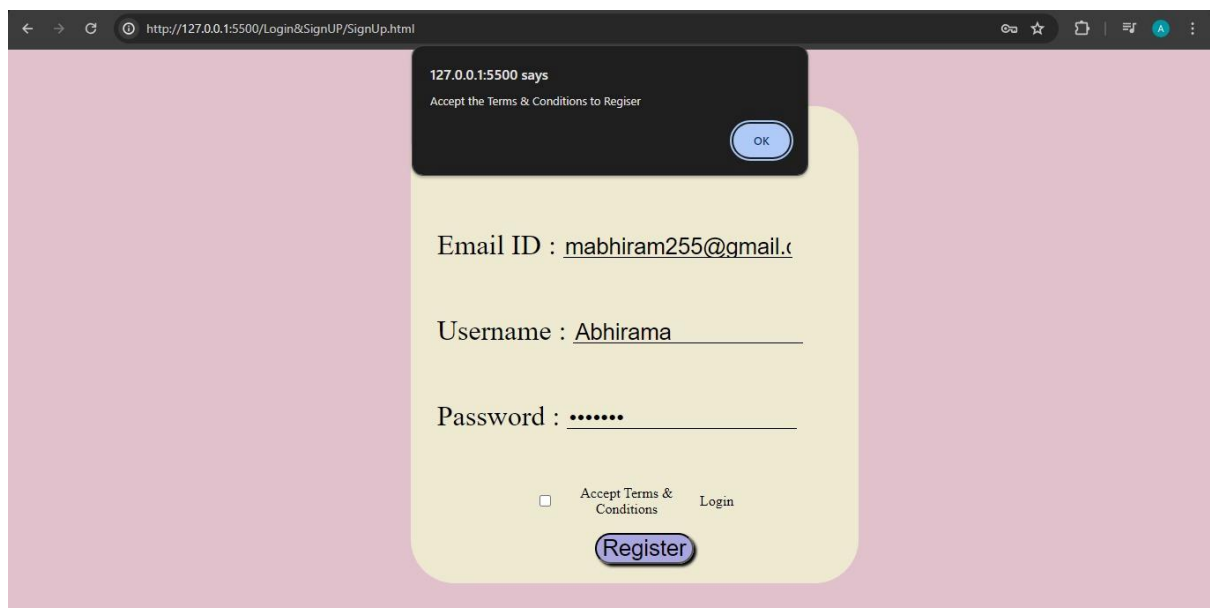
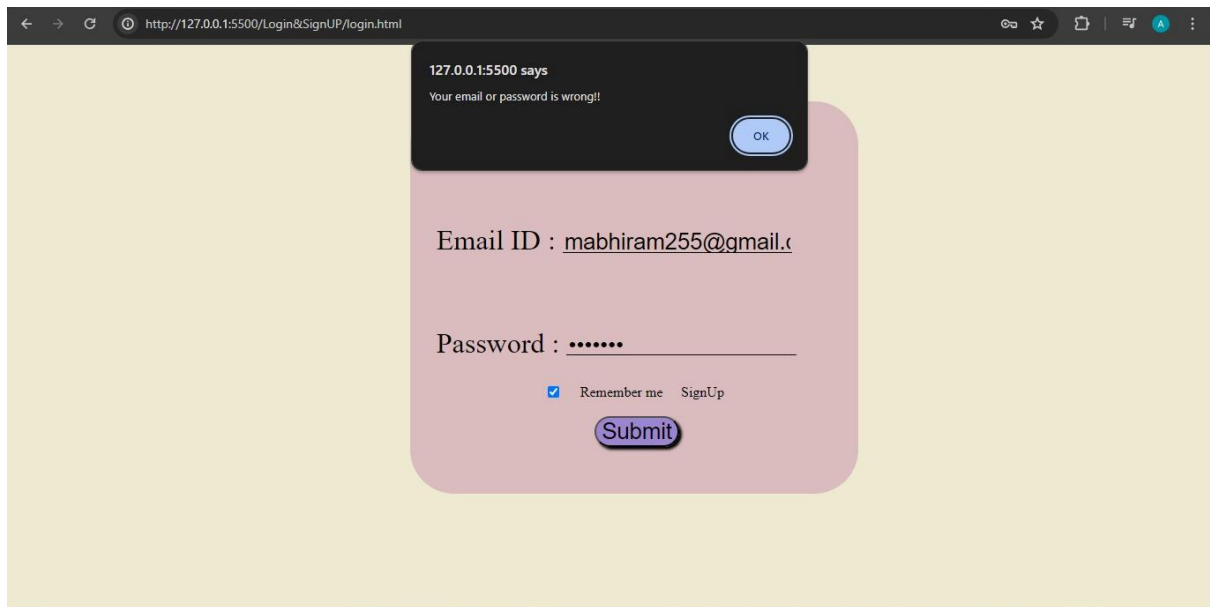
- donors and recipients can communicate with each other.

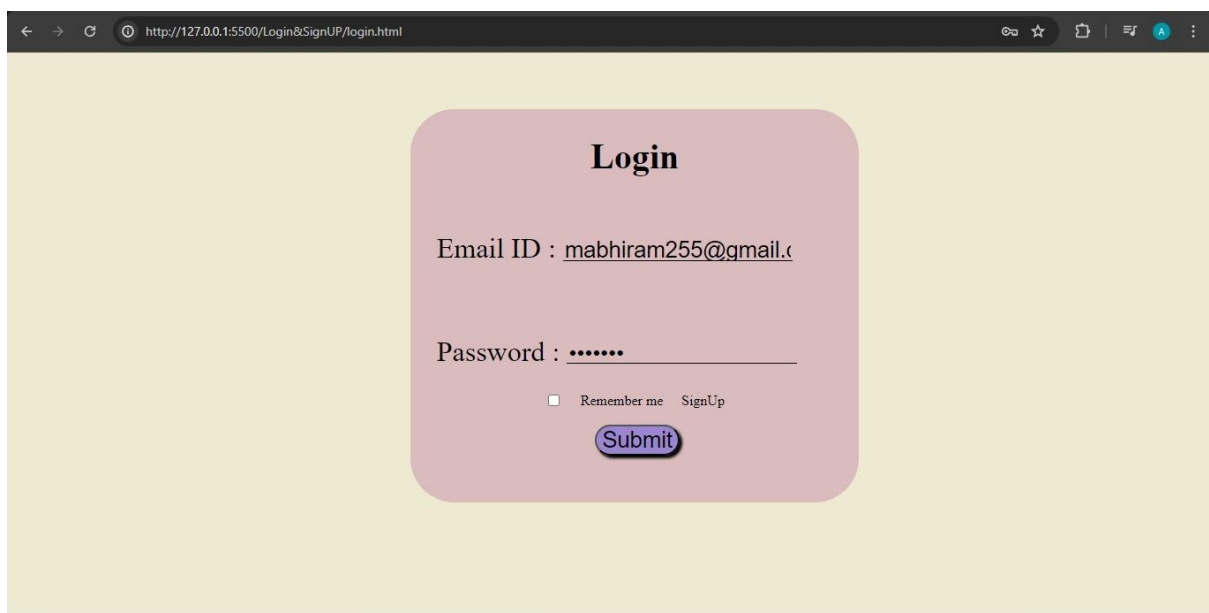
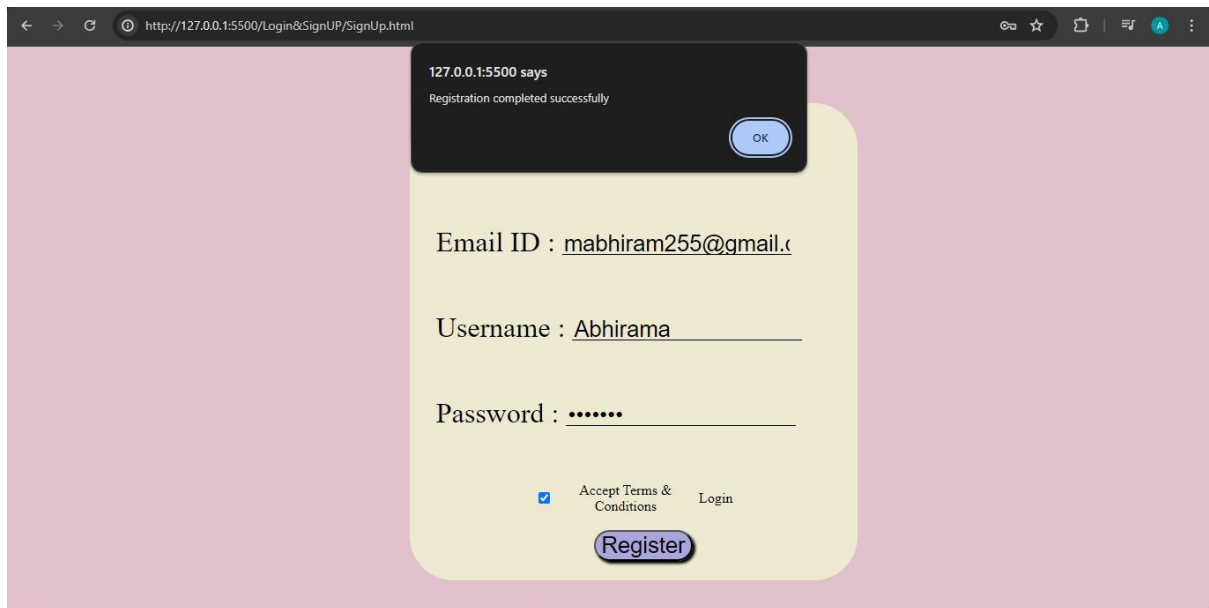
9. User Authentication and Authorization:

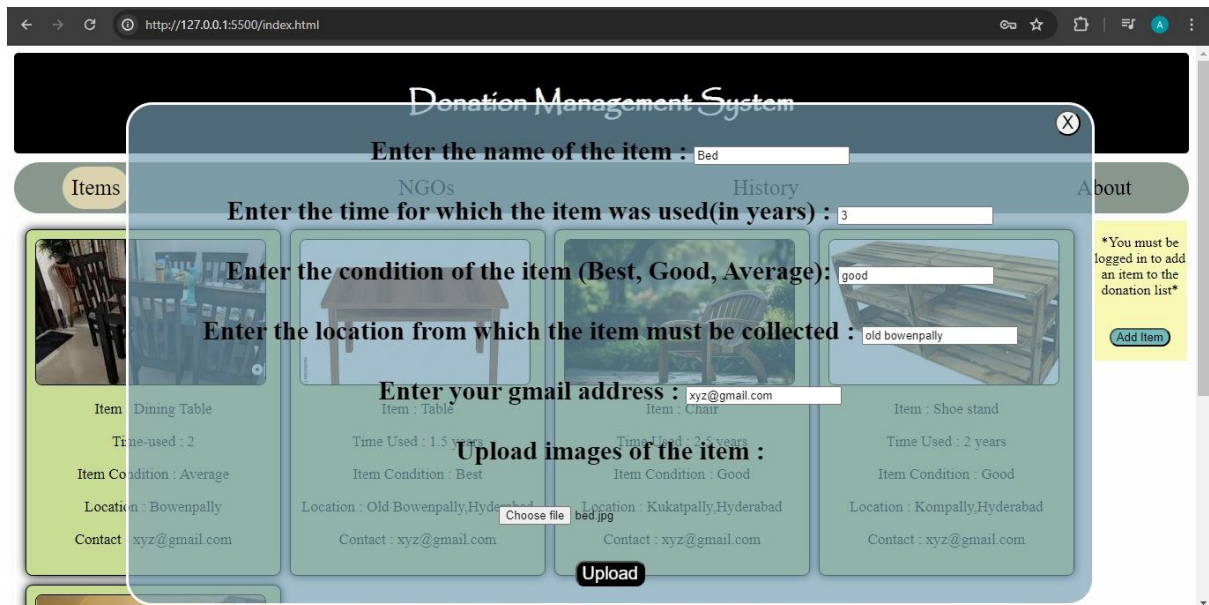
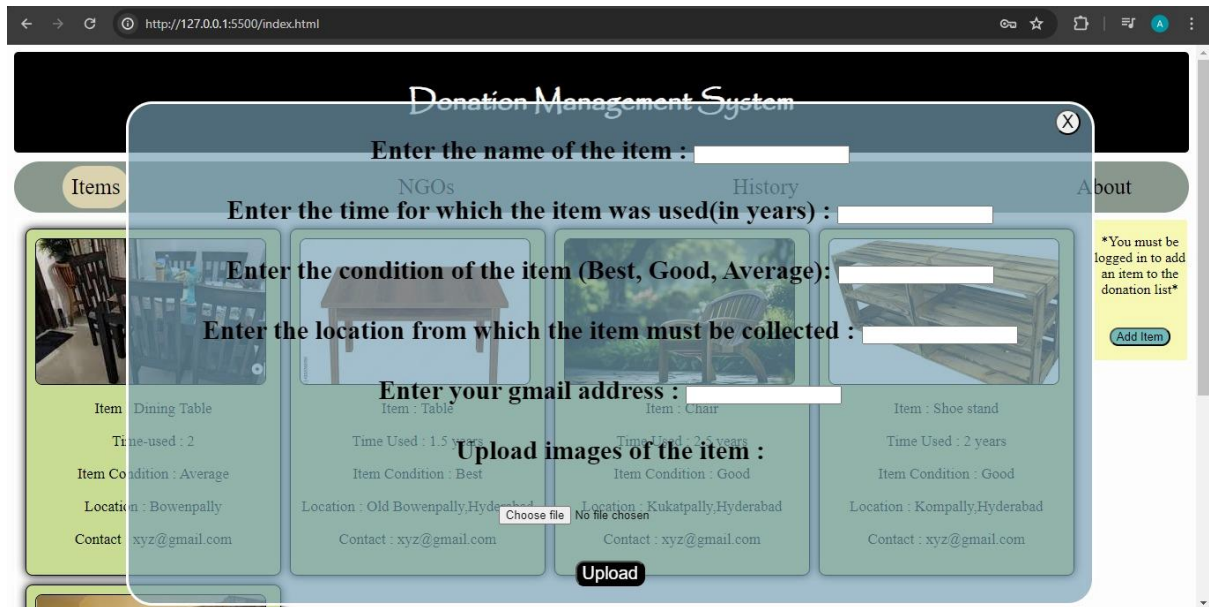
- Implement authorization rules in Firebase Fire store to restrict access to certain data based on user roles (donor or recipient).

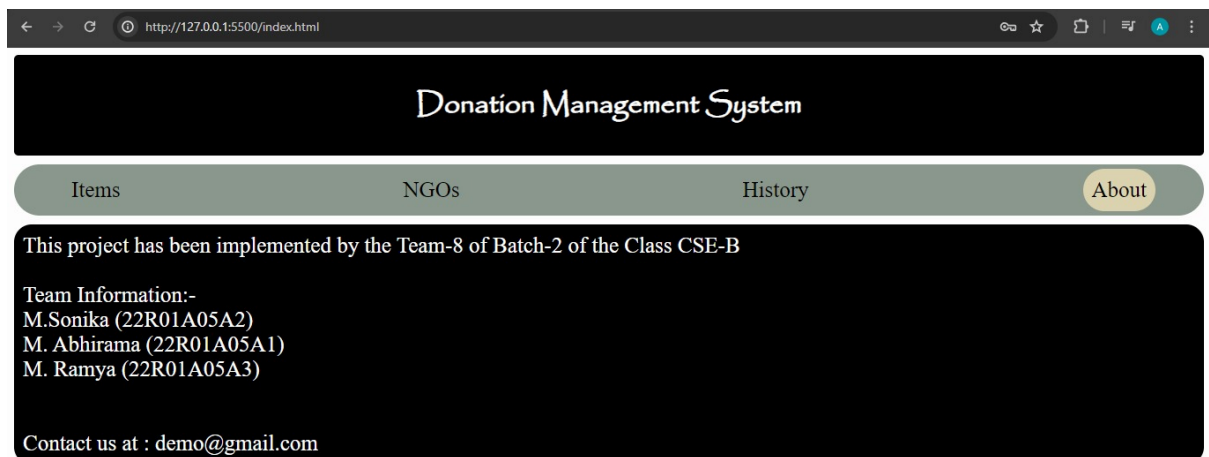
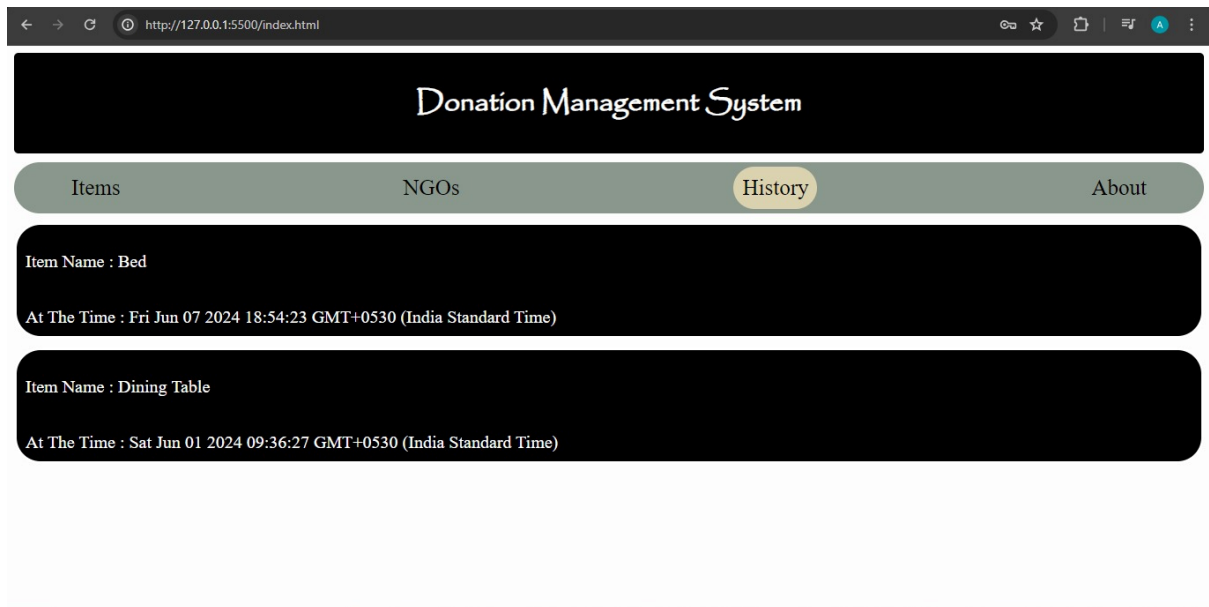
9. SCREENSHOTS

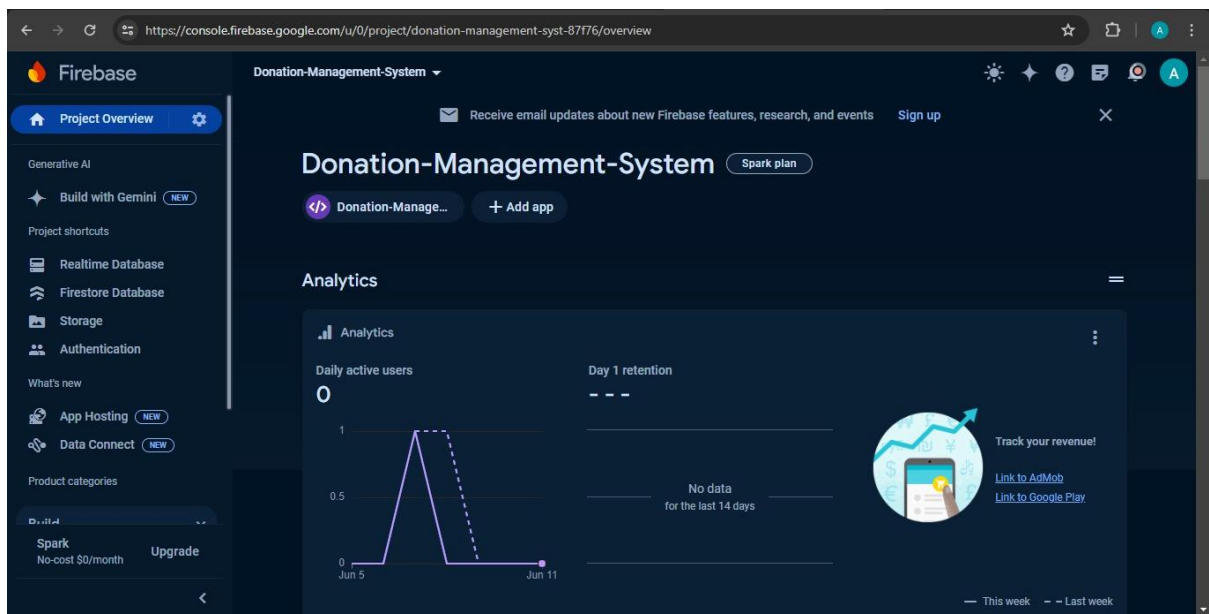
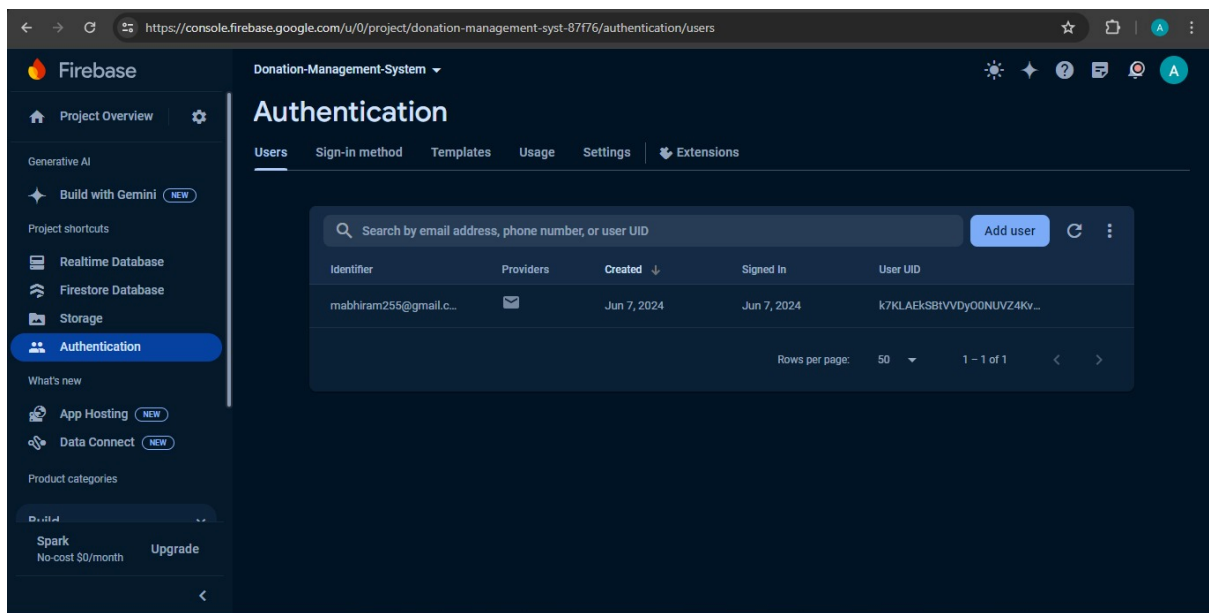












10. TESTING

10.1 Unit Testing:

- Test individual functions and components of JavaScript code to ensure they work as expected.
- Verify that Firebase authentication functions (such as user registration, login, logout) behave correctly.
- Test database interactions to ensure data is properly stored and retrieved from Fire store.

10.2 Integration Testing:

- Test the integration of different components (HTML, CSS, JavaScript) to ensure they work together seamlessly.
- Verify that user authentication and database operations are integrated properly and function as intended.

10.3 User Interface Testing:

- Test the user interface (UI) for responsiveness, accessibility, and compatibility across different devices and browsers.
- Verify that forms are easy to use and validate user input properly.
- Test UI elements such as buttons, links, and navigation menus for correct behaviour.

10.4 End-to-End Testing:

- Perform end-to-end testing of user workflows from registration and login to donation submission and communication.
- Test each step of the donation process, including donor registration, recipient registration, donation submission, and communication between donors and recipients.
- Verify that data is accurately transmitted between the client and the server.

10.5 Security Testing:

- Test the security of user authentication mechanisms to ensure they are resistant to common security threats such as brute force attacks, XSS (Cross-Site Scripting), and CSRF (Cross-Site Request Forgery).
- Verify that sensitive user data (such as passwords and personal information) is properly encrypted and stored securely.
- Test Firebase security rules to ensure that only authorized users have access to specific data and functionalities.

10.6 Performance Testing:

- Test the performance of the application under various load conditions to ensure it can handle multiple concurrent users without significant slowdowns.
- Measure the response times of different operations (such as user authentication, database queries) to identify potential bottlenecks and optimize performance.

10.7 Cross-Browser and Cross-Device Testing:

- Test the application on different browsers (such as Chrome, Firefox, Safari, Edge) and devices (desktops, laptops, tablets, smartphones) to ensure compatibility and consistent behaviour across platforms.

10.8 User Acceptance Testing (UAT):

- Involve stakeholders and potential users in the testing process to gather feedback on usability, functionality, and overall user experience.
- Address any issues or suggestions raised during UAT to improve the quality of the application.

10.9 Regression Testing:

- Perform regression testing after making any changes or updates to the application to ensure that existing functionalities are not affected.
- Re-run previous tests to verify that new changes do not introduce new bugs or break existing features.

10. CONCLUSION

In summary, the implementation of a non-monetary online donation management system utilizing HTML, CSS, JavaScript, and Firebase authentication provides a robust platform for efficient and secure donation facilitation. Through Firebase authentication, donors can securely register and access the system, ensuring trust in donation activities. The system incorporates a form for uploading detailed donation information, including images, enhancing the donation process. Firebase Fire store seamlessly stores and retrieves donation details and images, facilitating effective donation record management.

The user-friendly interface, built with HTML and CSS, simplifies the donation submission process for donors, while JavaScript enables dynamic interactions and real-time updates. Firebase authentication not only ensures secure access but also fosters transparency and trust between donors and recipients, enhancing the donation experience. Overall, this system represents a valuable tool for promoting charitable initiatives, streamlining donation processes, and fostering meaningful connections within communities, showcasing the potential of technology to drive positive social impact.

11. REFERENCES

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