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Fund Raiser

By

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GRADUATE CAPSTONE SEMINAR PROJECT

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For the Degree of Master of Science,

With a Major in Computer Science



Governors State University
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ABSTRACT

Using the Fund Raiser, a web tool, event administrators and organizers may raise money from a variety of sources for various events they have listed. Therefore, a fund-raising effort might be used to develop various types of campaigns, gather money, and compile a list of contributors who made contributions in a visible timeline.

Finance plays a crucial part in everything from effectively arranging an event to giving financial relief to those who have been affected by various natural disasters. Therefore, Fund Raiser may serve as a facilitator for effectively generating money for various campaigns and support activities to promote and encourage more and more people to donate and provide financial support via websites accessed over the internet.

Crowdfunding is a method of raising money for a person or group by soliciting donations online from family, friends, acquaintances, strangers, corporations, and other sources. The authorized administrator at the federal or national level will either approve or disapprove any crowdfunding campaign or event that is created. In the end, each element plays a critical role in convincing people to donate to online crowdfunding initiatives. The results of this study indicate that factors related to people's social lives may be detrimental since people tend to believe that those with a high degree of social life are more likely to choose to assist others in person as opposed to using an online platform. Roles for this application are Users who start campaigns – need to set up an account with the website, Donors – anyone who has access to the fund-raising page, Administrator – who manages users and campaigns.

Through the study of data, it has been found that social spirit in the community has a negative effect, but religious concerns, the influence of campaigns, and platform upgrades have a positive impact and also it would be a great added advantage if the application has 3 roles.

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1 Project Description

The problem we are going to study here is how funds will be collected & handled if a person or institute requires/requests funds from various sources. Through the process of fundraising, donor gifts are acquired. Through the study of data, it has been found that social spirit in the community has a negative effect, but religious concerns, the influence of campaigns, and platform upgrades have a positive impact [3]. In the end, each element plays a critical role in convincing people to donate to online crowdfunding initiatives. The results of this study indicate that factors related to people's social lives may be detrimental since people tend to believe that those with a high degree of social life are more likely to choose to assist others in person as opposed to using an online platform.

The objective of this application is to make the funding process transparent and easy for the users through an online process where the application will have multiple roles according to the type of user.

The major objectives of our project are:

- Keyword-based search box and search result listings.
- Transparent funding.
- Advanced search by category, location, etc.
- Featured campaigns on the front page.
- Notifications and alerts.

To build its information systems, this project leveraged examples from a social sector organization. The students have a duty to help make it easier for donors and candidates to provide because that is what motivated this school to be formed. For prior research, a decision-supporting information system that can also control how the company runs was constructed. The information system is made up of several parts that operate consistently and systematically to offer information that will help with decision-making and control over the course of the company or organization [2]. A website-based information system must be created so that businesses, organizations, and even members of the general public may find and produce information. We are going to use ASP.Net framework to build our application by using Microsoft SQL Server 2019 database. We will maintain sessions for more security of the application.

This application has 3 roles:

- Admin – Admin has additional access to manage users, and fund requests than other users.
- User – The user can request the new fund request and start the campaign.
- Donor - The donor has only the option to donate the funds.

1.1 Competitive Information

The main competitors for this application are GoFundMe which is a leading crowdfunding application today. But with the given requirements we are unique and can beat all the competitors in the market.

1.2 Relationship to Other Applications/Projects

This is an independent application and does not depend on any other project or source.

1.3 Assumptions and Dependencies

- All the transactions are made only in USD.
- All the displayed funds are displayed only in USD.
- Default donor access will be provided to the user when they register for the first time.
- This project does not depend on any other project or source of data.

1.4 Future Enhancements

We can further improve the security of our application and also include the acceptance of multiple currencies and transactions in all currencies. Also, we can deploy and test the application in the cloud for better performance and speed. Traffic handling can also be improved further [4].

1.5 Definitions and Acronyms

SQL – Data management and manipulation in a relational database are done using the computer language SQL (Structured Query Language). Databases, which may be used to store and retrieve massive quantities of data fast and effectively, can be created, modified, and queried using it. Using SQL, users may build tables and specify their structure, add to, delete from, and retrieve

data from these tables depending on predefined criteria. SQL is often used in business, banking, healthcare, and other sectors where managing and analyzing huge volumes of data is necessary [1].

ASP.Net – Microsoft created the web application framework known as ASP.NET to let developers build dynamic web pages, web apps, and web services. It enables programmers to create apps using languages like C# and VB.NET. Authentication, authorization, caching, and session management are just a few of the features that ASP.NET's robust collection of tools and frameworks make it simpler to build.

SSMS - Microsoft's graphical user interface (GUI) tool for managing and controlling SQL Server databases is called SSMS (SQL Server Management Studio). In addition to building and maintaining database schemas, writing and running queries, and managing database objects including tables, views, stored procedures, and functions, it offers an integrated environment for administering SQL Server databases.

2 Project Technical Description

A web tool called Fund Raiser enables users to develop and publish fundraising campaigns for a person, a project, or a cause. The program was created using the ASP.Net framework, and its database management system is Microsoft SQL Server. The integrated development environment (IDE) used to create and launch the program is called Visual Studio.

There are three user roles in the application: Donor, administrator, and user. Before starting a campaign, website users must first register for an account. Donors can visit the fundraising pages and donate to any cause they'd like. Users and campaigns are managed by administrators, who may also get a commission for their work.

Each user role has a console in the program where they may manage their accounts and campaigns. For consumers to locate campaigns they are interested in, it also features a keyword-based search box and sophisticated search filters like category and geography. The program includes campaigns on its home page to highlight well-liked and effective marketing.

2.1 Application Architecture

Presentation Layer: The user interface layer that communicates with end users is known as the presentation layer. The display layer of the Fund Raiser application was developed using the ASP.Net framework, HTML, CSS, and JavaScript. It offers customers a dynamic and intuitive user interface via which they may interact with the program.

Business Layer: The business layer manages the business logic of the program and handles user requests. The business layer of the Fund Raiser application, which communicates with the display layer and data layer, is created using the C# programming language. It takes care of user identification and authorization, campaign development, contribution processing, notifications, and alerts, as well as other business logic-related activities.

Data Layer: The data layer is in charge of overseeing database and data activities for the application. Microsoft SQL Server is used to build the data layer of the Fund Raiser application, which saves and retrieves data from the database. It communicates with the business layer and delivers the data required for the functionality of the program. The campaign, user, contribution, and other application-related data are all stored in the database structure.

2.2 Application Information flows

Below is the Use Case diagram of the application

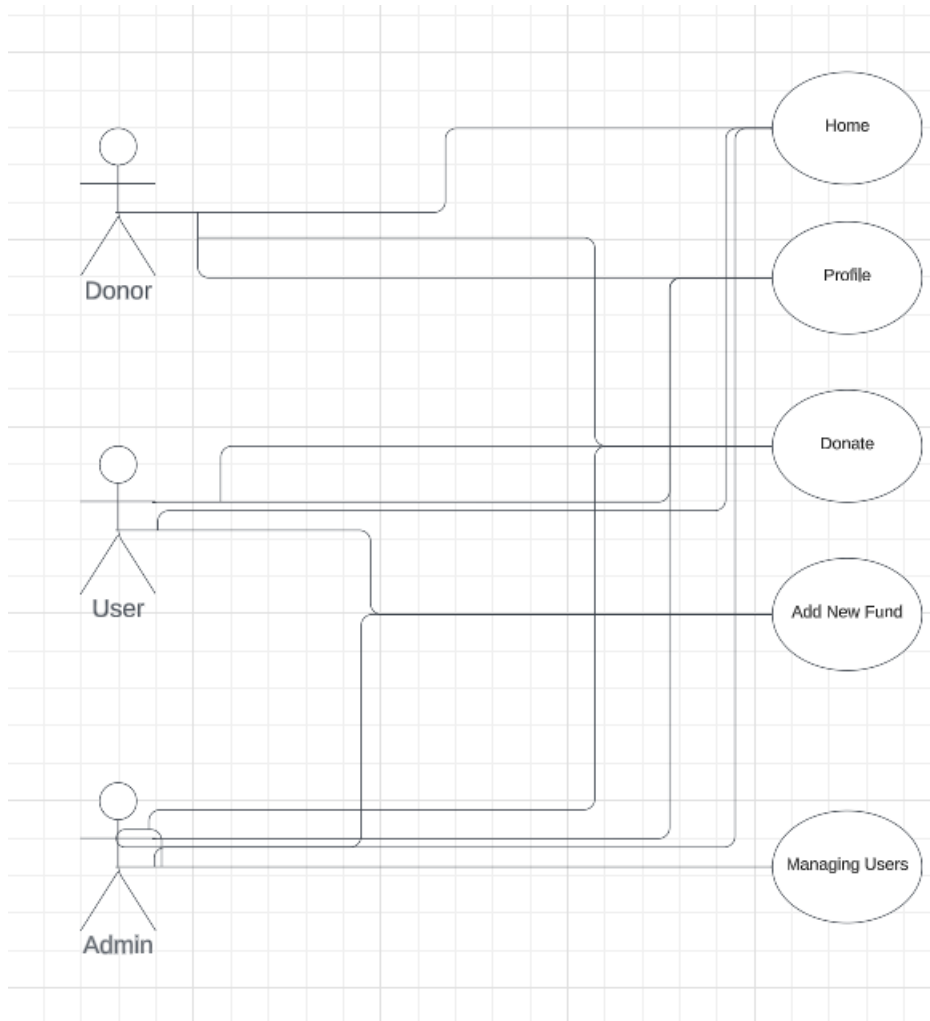


Figure 2.2.1 Use case diagram

2.3 Interactions with other Projects (if Any)

No interactions with other projects.

2.4 Interactions with other Applications

No interactions with other applications.

2.5 Capabilities

Below are the capabilities for each role:

Donor:

1. Donors can register to the application.
2. A donor can log in to the application.
3. A donor can edit the profile.
4. Donors can view the fund requests.
5. Donors can donate the funds.

User:

Apart from the above donor functionalities a user can be able to do the below functionalities:

1. Users can request the new fund request.
2. Users can track the requested fund details.

Admin:

Apart from the capabilities of donor and user, an admin can be able to do the below functionalities:

1. Admin can change the role of users at any time.

2. Admin can delete the fund request.

2.6 Risk Assessment and Management

Below are the assumed risks of this project and their planned resolutions:

1. Server down – This can be managed by keeping the backup servers available all the time.
2. Legal issues – Backing up the legal cell and taking their advice.
3. Website crash – Keeping the backup deployment and making it active.
4. Anonymous actions on the website – We are restricting by using the sessions.

3 Project Requirements

3.1 Identification of Requirements

<GSU-GS_SP2016-1 User-Capability-000100>

Registration page to register new users.

Implementation: Mandatory

<GSU-GS_SP2016-1 User-Capability-000101>

Login page to login existing users.

Implementation: Mandatory

<GSU-GS_SP2016-1 User-Capability-000102>

Home page design and featured funds should display on the home page.

Implementation: Mandatory

<GSU-GS_SP2016-1 User-Capability-000103>

Users should be able to request new funds.

Implementation: Mandatory

<GSU-GS_SP2016-1 User-Capability-000104>

Profile edit option for all users.

Implementation: Mandatory

<GSU-GS_SP2016-1 User-Capability-000105>

Donation option to all users.

Implementation: Mandatory

<GSU-GS_SP2016-1 User-Capability-000106>

Filter option to filter the fund requests based on title, category, location.

Implementation: Mandatory

<GSU-GS_SP2016-1 User-Capability-000107>

Manage users' options to admin.

Implementation: Mandatory

<GSU-GS_SP2016-1 User-Capability-000108>

Delete existing funds option to admin.

Implementation: Mandatory

3.2 Operations, Administration, Maintenance and Provisioning (OAM&P)

Operations: A web server that can support the anticipated traffic load should be used to deploy the Fund Raiser application. To guarantee the application's availability, performance, and security, it should be regularly monitored. To reduce any possible downtime or data loss, regular backups and disaster recovery procedures should be in place. The performance and health of the application may be monitored with the use of monitoring tools like Nagios or Zabbix.

Administration: To manage users and campaigns, see reports and statistics, and carry out other administrative operations, administrators need to have access to the application's back-end console. The console should give administrators a simple and easy-to-use interface to do their jobs. The security of the program should be continuously watched, and any possible flaws or

dangers should be immediately fixed. The program and its dependencies should be updated often, and patches should also be applied.

Maintenance: To guarantee the application's stability and performance, routine maintenance operations including database optimization, code review, and testing should be carried out. To guarantee compatibility and security, the JavaScript libraries, SQL Server, and .NET framework should all be upgraded to the most recent versions. The application's performance should be tuned and subjected to frequent load testing.

On a cloud-based platform like Microsoft Azure, Amazon Web Services, or Google Cloud Platform, the Fund Raiser application may be provisioned. To guarantee the performance and uptime of the application, these platforms offer scalability, availability, and security capabilities. When an application is provisioned in the cloud, resource allocation and pricing schemes are also flexible. Based on the needs and preferences of the company, the application may be deployed on a virtual machine, container, or serverless platform.

3.3 Security and Fraud Prevention

To guarantee that only authorized users may access critical information and carry out operations, the application has to have a strong authentication and authorization system. To guard against unwanted access to their accounts, users should be asked to generate strong passwords. Depending on their duties and responsibilities, administrators should have varying access levels.

SQL injection, cross-site scripting, and other widespread security vulnerabilities should be avoided by the application's code by adhering to safe coding principles, such as input validation and output encoding [5]. To make sure that any known vulnerabilities are fixed, the dependencies of the program should also be maintained up to date.

To find and fix any possible security flaws, the application should go through routine security audits and penetration tests. Both the application code and the hosting infrastructure should be examined during the audits. Any vulnerabilities should be fixed right away, and the program should be tested again to make sure the patches work.

3.4 Release and Transition Plan

Date	Status
1-30-2023	Database design, analysing existing systems.
2-6-2023	Login page design, registration page design.
2-13-2023	Home page layout design.
2-20-2023	Add a new fund request page.
2-27-2023	Profile page design & password encryption.
3-06-2023	Displaying available fund requests page design.
3-13-2023	Adding images to the fund request.
3-20-2023	Profile page edit.
3-23-2023	Adding filter options to search funds.

3-31-2023	Displaying featured funds on the home page.
4-7-2023	Deleting existing funds by admin.
4-14-2023	Tracking donations.
4-25-2023	Role-based access and bug fixes& testing.
05-10-2023	Deployment.

Table 3.4.1 Release and Transition Plan

4 Project Design Description

There are three user roles in the application: donor, administrator, and user. Before starting a campaign, website users must first register for an account. Donors can visit the fundraising pages and donate to any cause they'd like. Users and campaigns are managed by administrators, who may also get a commission for their work.

Each user role has a console in the program where they may manage their accounts and campaigns. For consumers to locate campaigns they are interested in, it also features a keyword-based search box and sophisticated search filters like category and geography. The program includes campaigns on its home page to highlight well-liked and effective marketing.

Below is the database design:

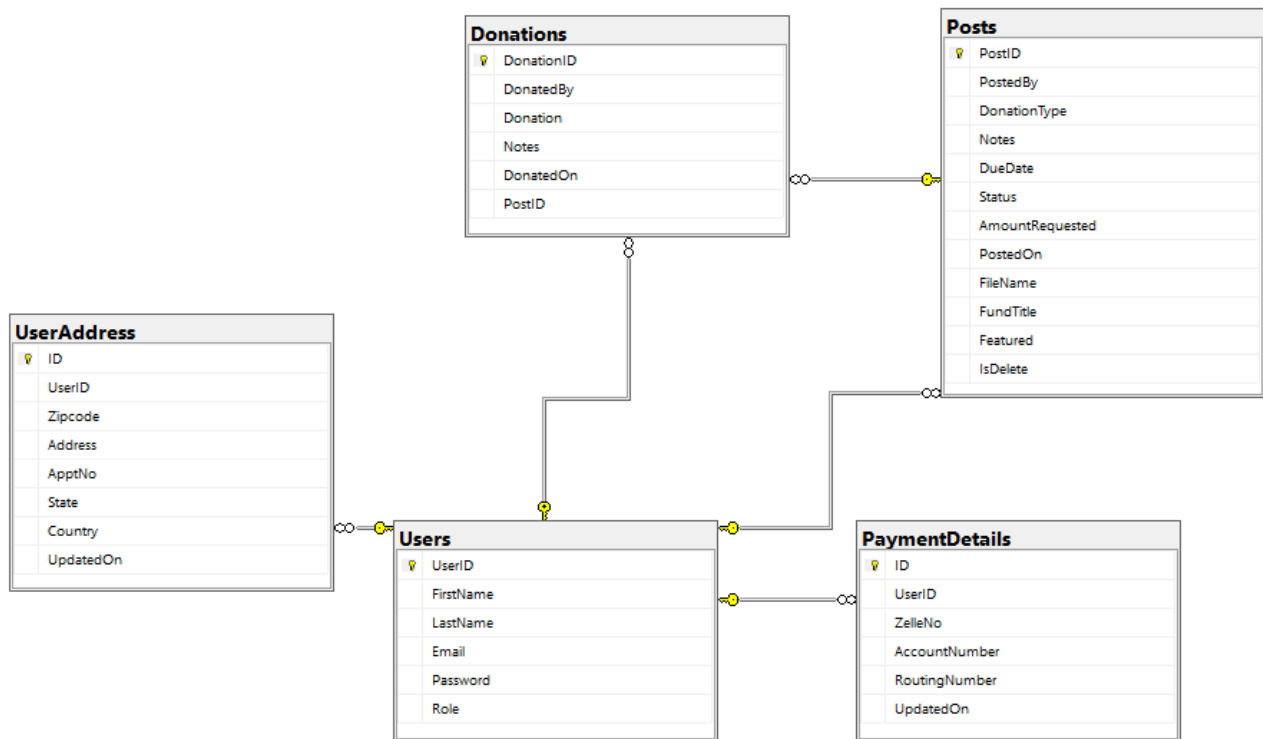


Figure 4.1 Database diagram

5 Internal/external Interface Impacts and Specification

Externally application is not connected with any other source, so the impact will be 0. Internally the application is connected to the database. The web interface will be impacted if the database or database server is down. To prevent it we will maintain the backup servers for the database as well.

6 Design Units Impacts

6.1 Functional Area A/Design Unit A

6.1.1 Functional Overview

Users of the Fund Raiser program can launch campaigns and solicit donations from both public and private sources. Using the capabilities offered by the program, users may publicize their fundraising events and develop campaign websites. Donors may explore the website, do keyword, category, and location searches for campaigns, and then give to the campaigns of their choice. Users may register, create profiles, manage their accounts, and keep track of their donations using the program. Users and campaigns may be managed by administrators, who can also monitor statistics and reports and receive commissions based on donations. Users who use the app receive notifications and alerts about new campaigns, donations that have been received, and updates on projects they have given to.

6.1.2 Impacts

Users - The software gives users a platform to generate money for their causes, endeavors, or individual needs. It enables users to advertise their campaigns to a larger audience and make use of social media's strengths. Users of the program may track their progress and manage their donations simply and safely.

Donors - The program offers a user-friendly interface so that donors may look through campaigns and give. Donors may select the campaigns they want to support and keep track of their contributions. By enabling contributors to track the advancement of the campaigns they have contributed to, the program also promotes accountability and transparency.

Administrators - The program enables administrators to oversee users and campaigns, analyze data and reports, and make money off of donations. The back-end console of the program offers administrators a user-friendly interface to help them do their responsibilities quickly.

6.1.3 Requirements

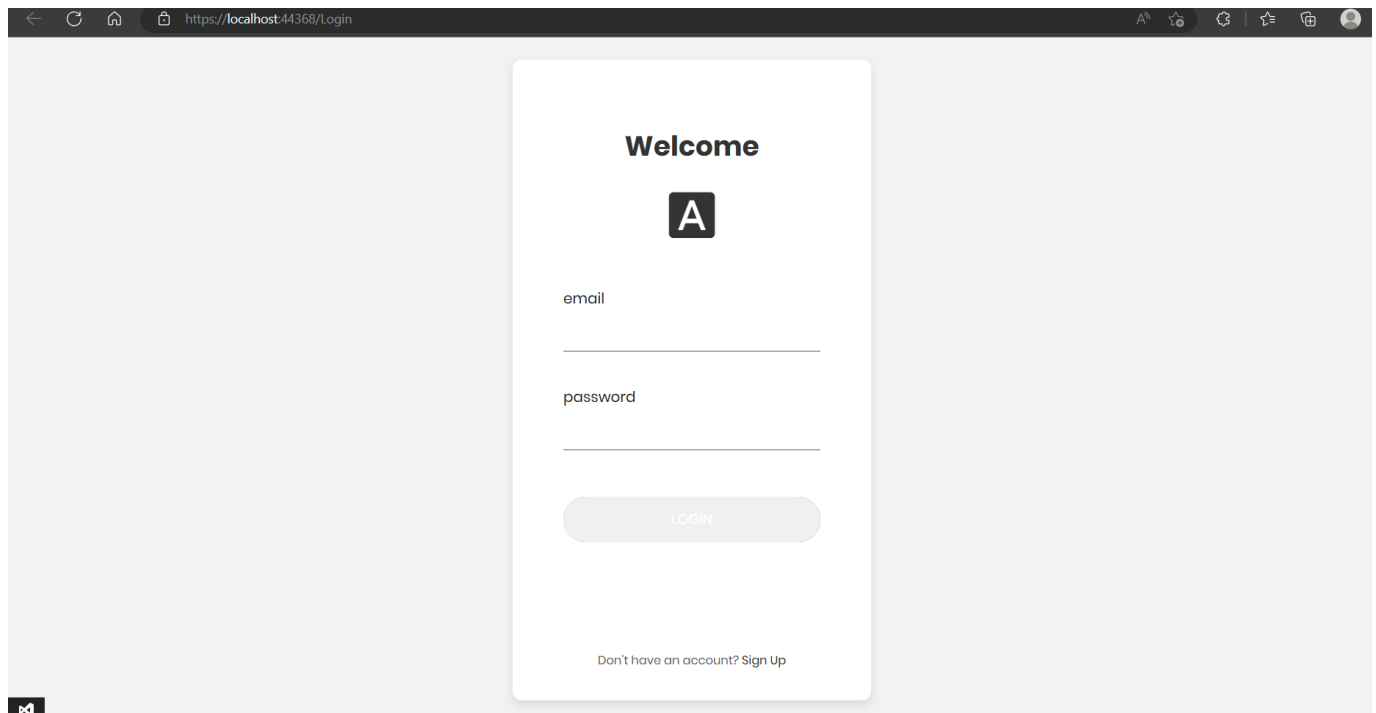


Figure 6.1.3.1 Login page

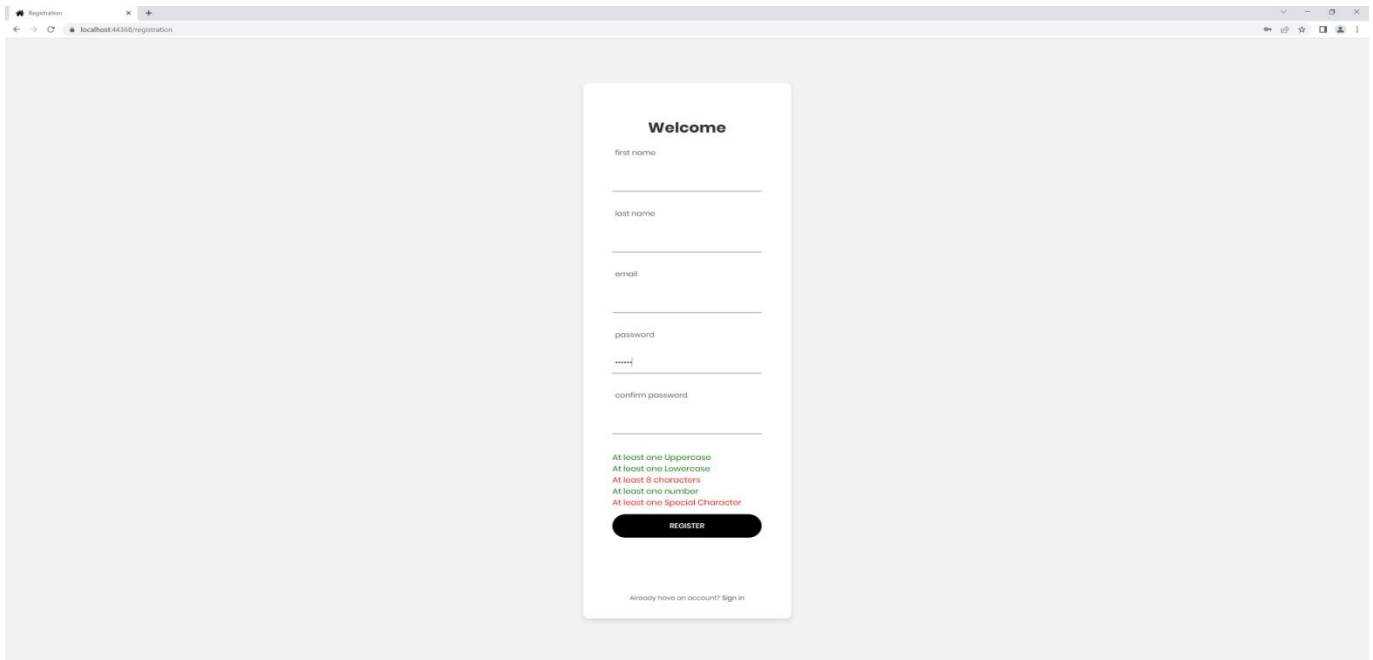


Figure 6.1.3.2 Registration page

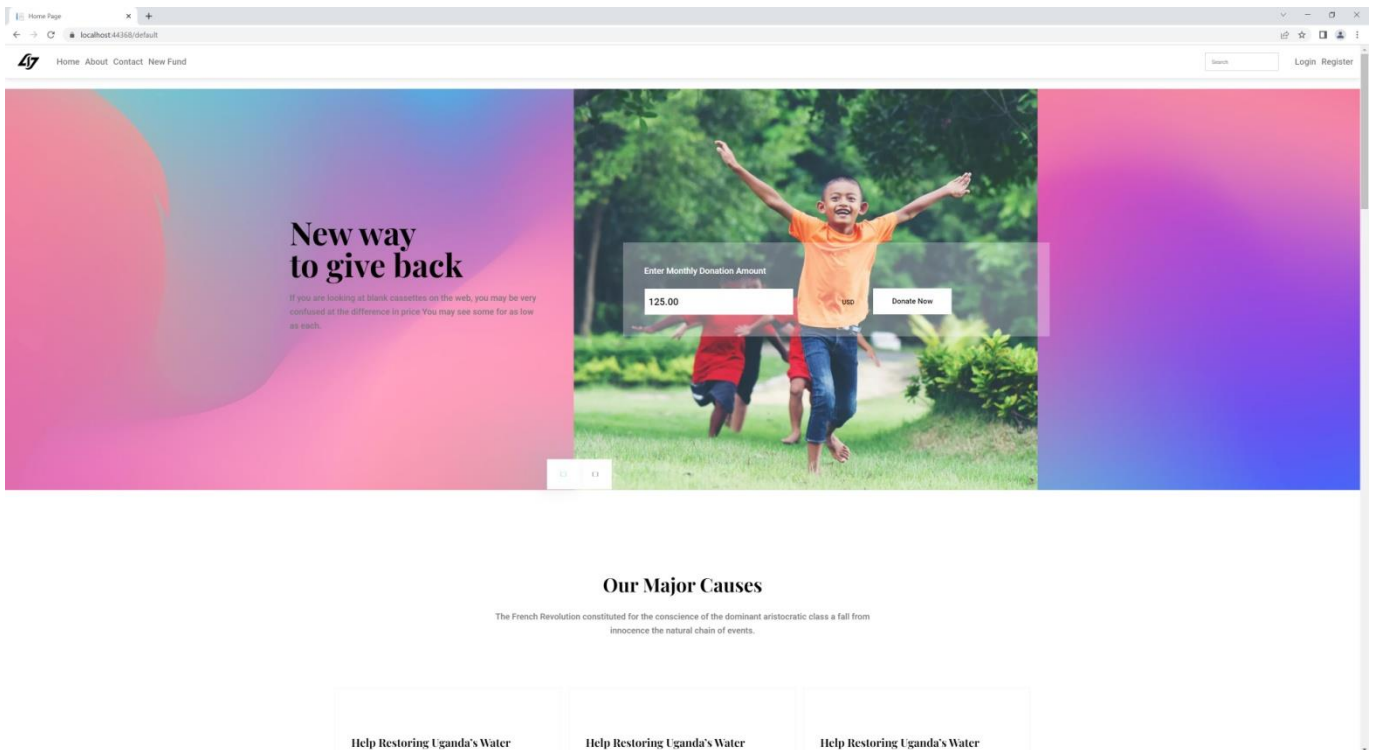


Figure 6.1.3.3 Home page

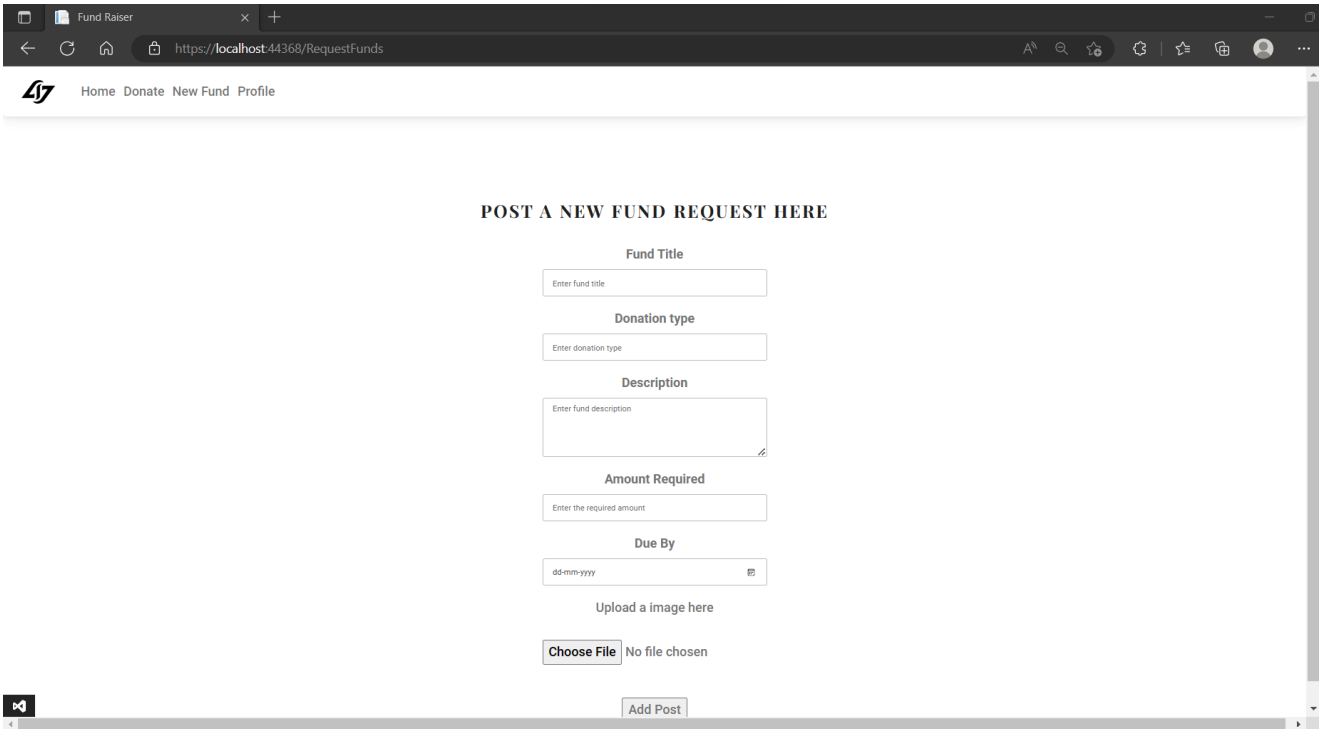


Figure 6.1.3.4 New fund request page

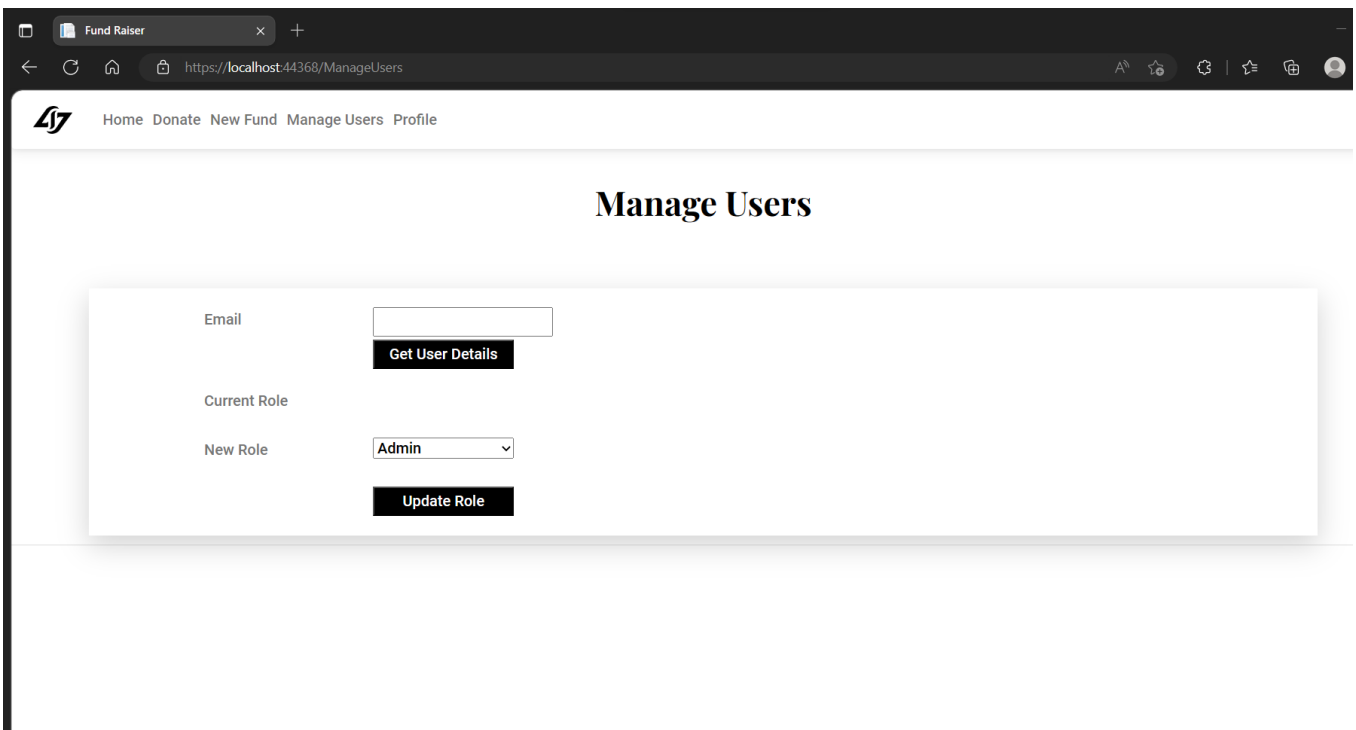


Figure 6.1.3.5 Manage uses page

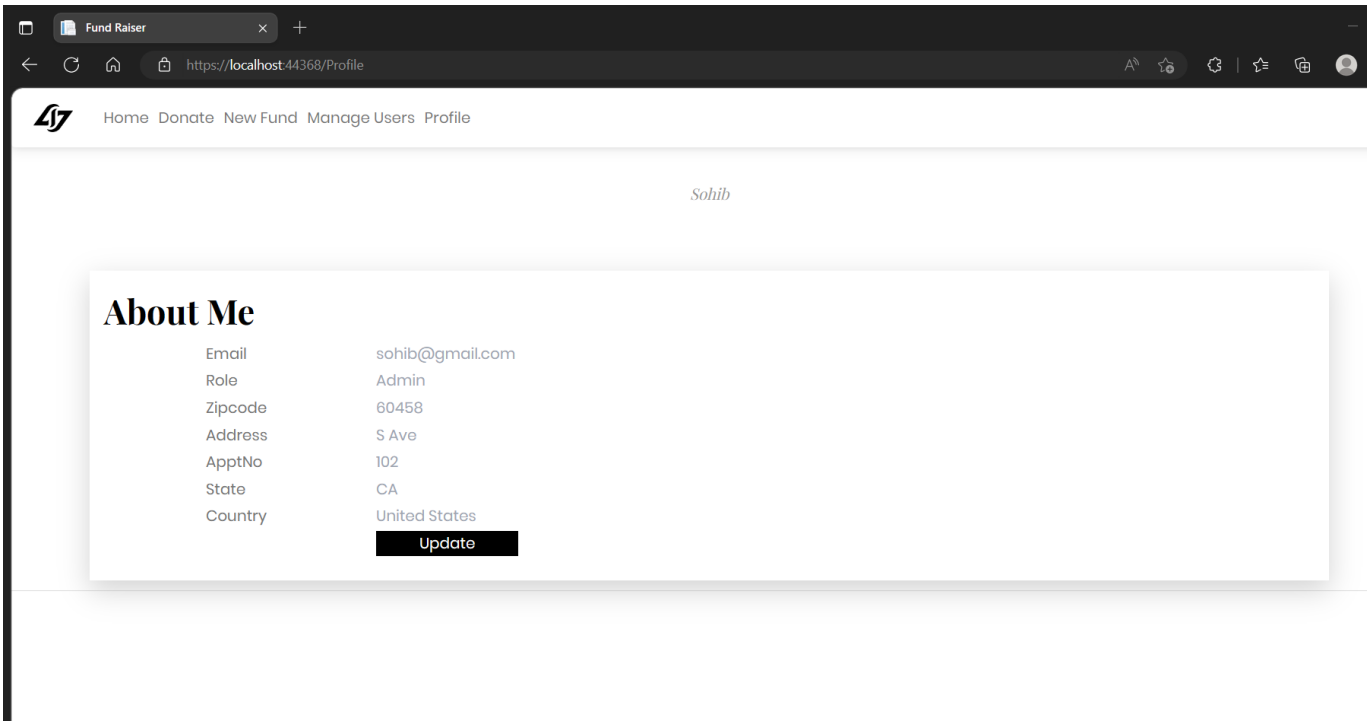


Figure 6.1.3.6 Profile page

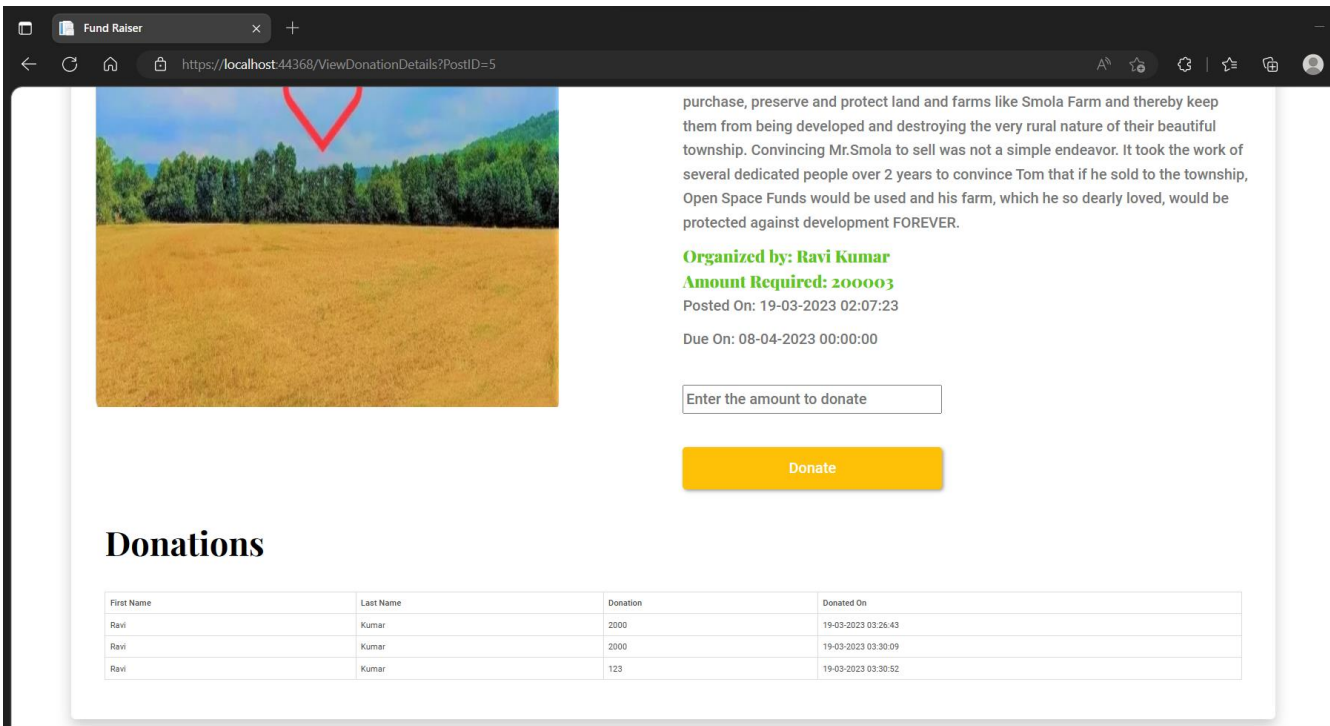


Figure 6.1.3.7 View donation details & donations

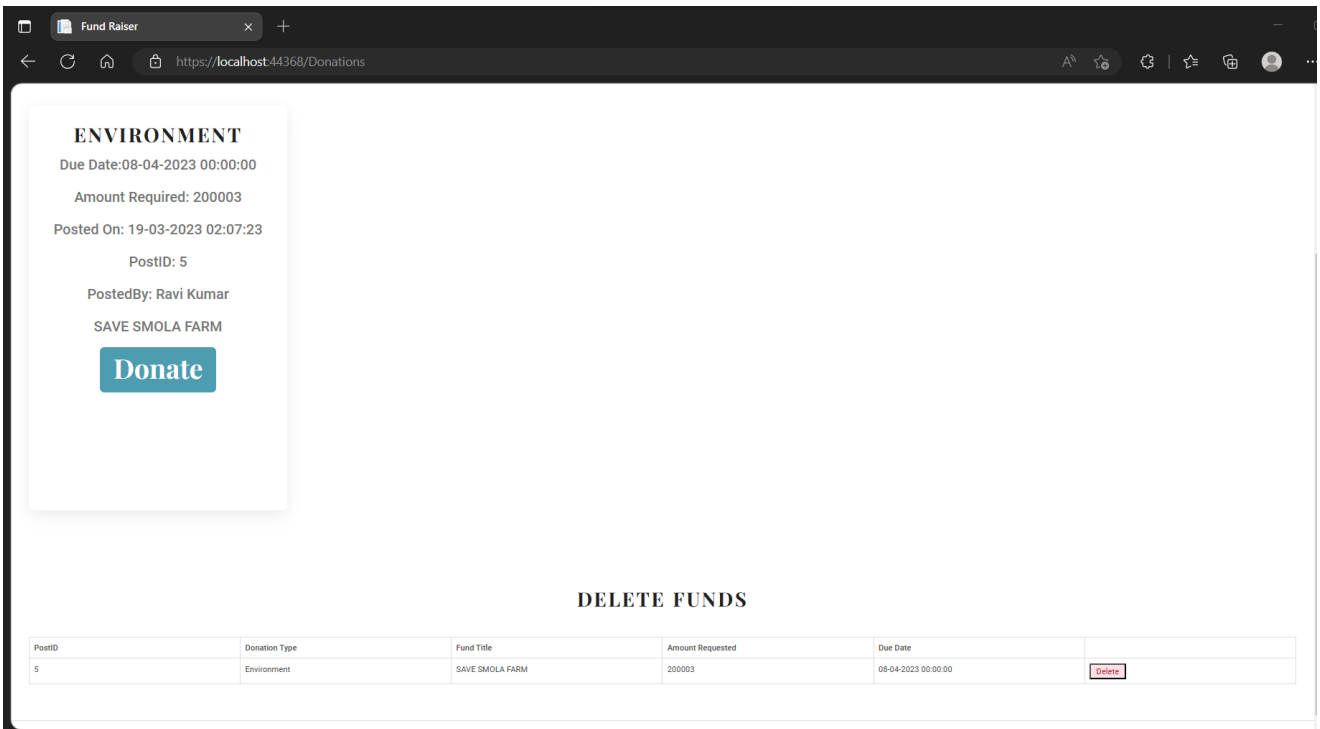


Figure 6.1.3.10 Donate page

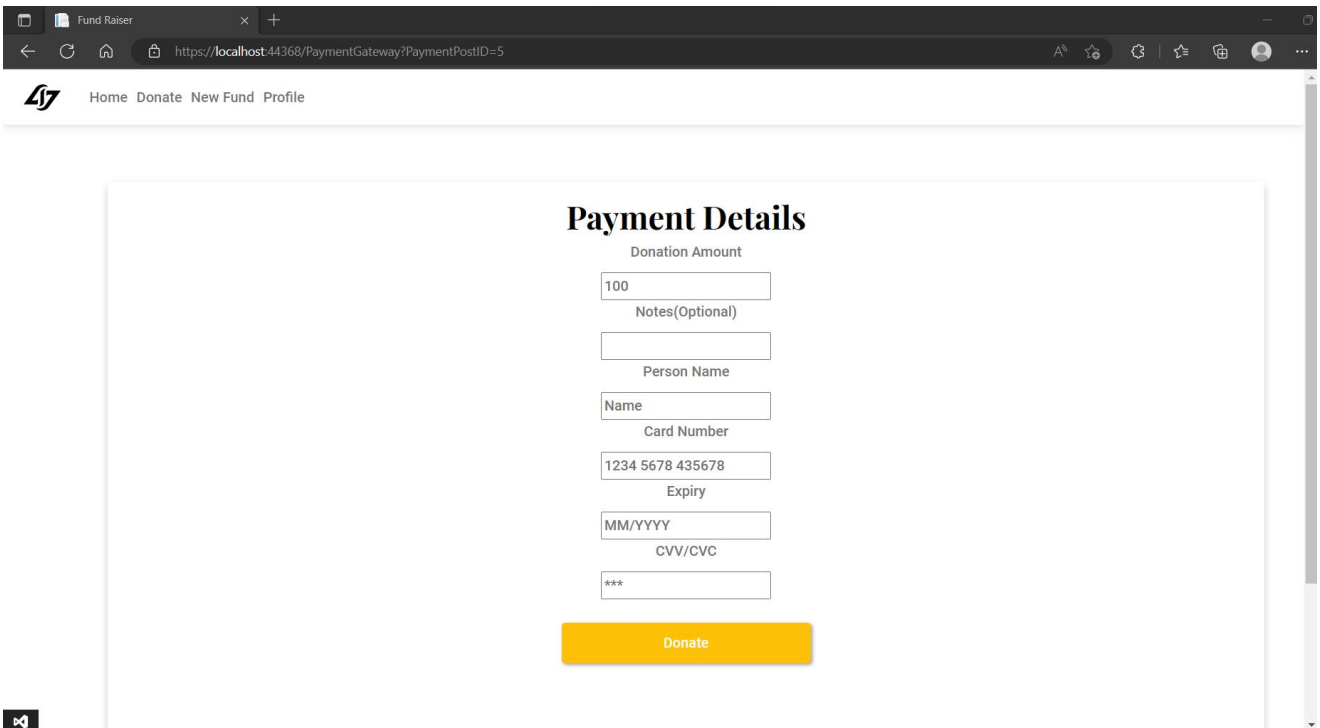


Figure 6.1.3.9 Payments page

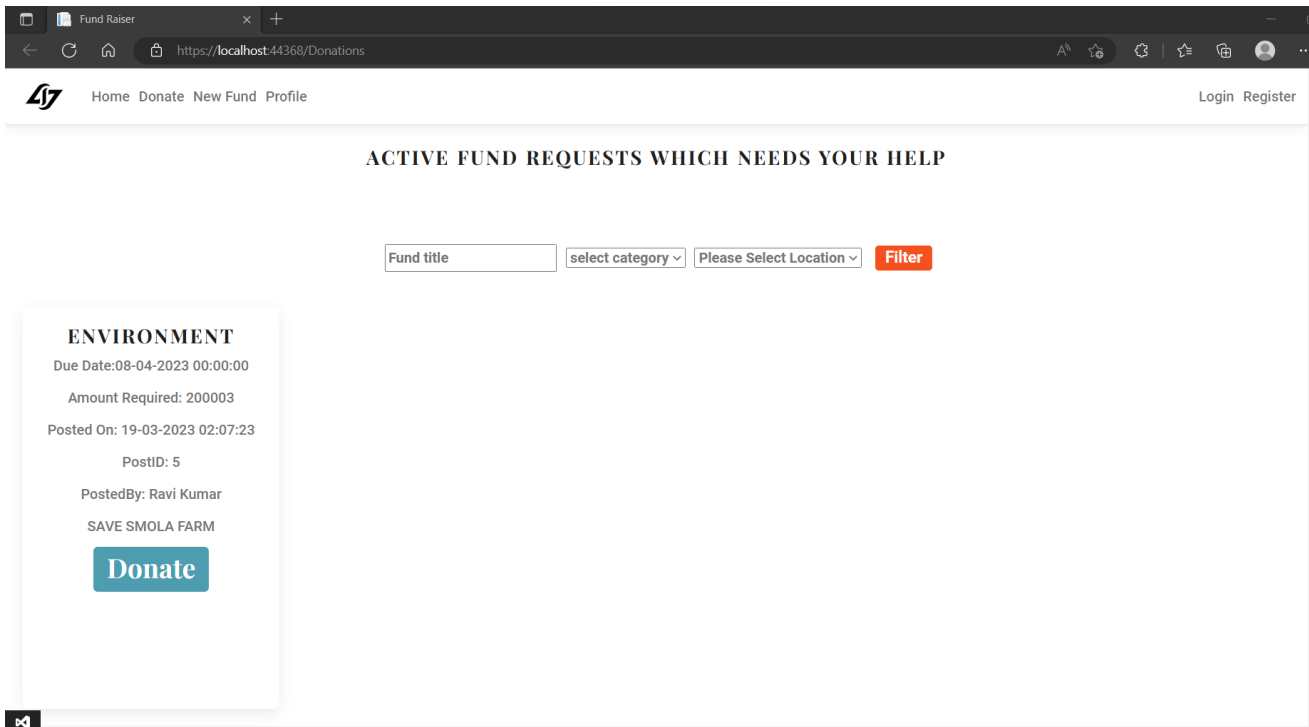


Figure 6.1.3.10 Donate page

7 Acknowledgments

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8 References

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