North South University

Department of Electrical & Computer Engineering

Final Report
CSE299, Section- 9
Faculty: Muhammad Shafayat Oshman (MUO)

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Project Name: Donor Management System.

Group member:

Name	ID
Md. Nurnobi Islam	2021803042
Nahiyan Nazah Ridita	2012610642

GitHub Link: https://github.com/Nur35982/CSE299_Project.git

Introduction:

In a world marked by growing social disparities and an urgent need for effective resource distribution, the Donation Management System (DMS) emerges as a pivotal solution to streamline the process of donations. With a focus on addressing the challenges faced by organizations and NGOs, this system harnesses the capabilities of modern technology to track donors, manage volunteers, and record donation transactions efficiently. This report delves into the social and technical problems driving the necessity of the project, offering a comprehensive project description, a visual representation of the project flowchart, insights into the employed technologies, and a detailed cost analysis for real-world implementation.

Problem Statement:

In the context of Bangladesh, a country grappling with widespread poverty and an abundance of surplus but unused products, the Donation Management System (DMS) aims to tackle the social issue of underutilized resources. Bangladesh, as a third-world nation, faces the challenge of efficiently distributing new and unused products that could significantly improve the quality of life for many individuals. The primary social problem addressed by our project is the existence of surplus, yet unused, products that could serve as valuable resources for those in need. These unused items, if properly distributed, have the potential to alleviate the hardships faced by marginalized communities. However, the lack of an organized system for managing and channeling these products often results in their underutilization and, ultimately, contributes to unnecessary waste.

The technical challenge lies in creating an efficient platform, the Donation Management System, that can systematically catalog, manage, and distribute these surplus products to maximize their impact. By connecting donors with recipients and coordinating the logistics of distribution, the DMS seeks to bridge the gap between surplus resources and the pressing needs of the community.
The overarching goal of the project is to transform the surplus of unused products into a valuable resource that directly benefits those in need. Through effective donation management, the DMS aims to ensure that these products reach the hands of individuals and communities who can benefit the most, thus fostering a more equitable distribution of resources and reducing unnecessary waste.
In summary, the Donation Management System seeks to address the social and technical challenges associated with surplus but unused products in Bangladesh, envisioning a scenario where these resources are effectively redirected to make a positive impact on the lives of the less fortunate.
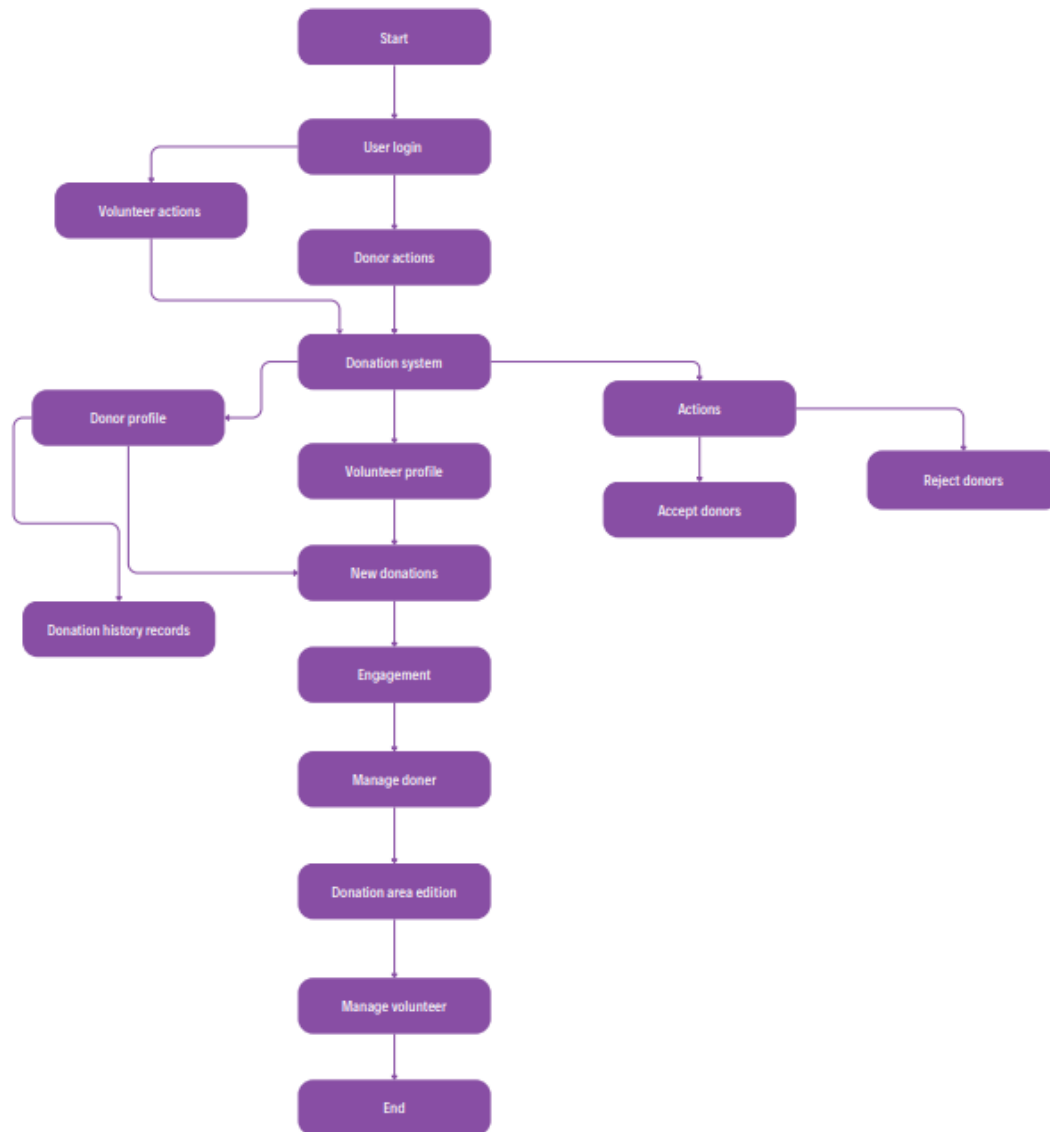
Project Description:

The DMS aims to streamline donation management processes and enhance donor engagement by providing a centralized, user-friendly platform. The system encompasses the following key features:

• Donor Management: Create and maintain comprehensive donor profiles, including contact information, donation history, and communication preferences.
• Donation History Records: Track donations in real-time, including donation amount, date, payment method, and associated campaigns.
• Volunteer Management: Manage volunteer registration, assign tasks, track volunteer hours, and maintain volunteer profiles.
• Donation Collection Request: Enable donors to submit online donation requests, specifying the amount, purpose, and any special instructions.
• Collection Received, Not Received, Delivered: Track the status of donations from the time they are received until they are delivered to the intended recipients.
• Volunteer Assignment: Effectively assign volunteers to tasks based on their skills, availability, and preferences.
• Volunteer Profile: Maintain detailed volunteer profiles, including contact information, skills, availability, and volunteer history.
• Admin Registration: Create and manage administrator accounts with access control permissions for managing the system.
• Donation Acceptance: Process donation requests and accept donations from donors.
• New Donation: Add new donations to the system, including donor information, donation amount, and associated campaigns.
• Manage Donor: Update donor profiles, track donation history, and engage with donors through personalized communication.
• Manage Volunteer: Update volunteer profiles, assign tasks, track volunteer hours, and send volunteer notifications.
• New Volunteer: Register new volunteers, add them to the volunteer database, and assign initial tasks.
• Accept Volunteer: Accept new volunteer applications and assign them to appropriate roles.
• Reject Volunteer: Decline volunteer applications and provide feedback to applicants.
• Donation Area Addition and Management: Add and manage donation areas, specifying the purpose, target beneficiaries, and funding requirements.

Project Flowchart:

The following flowchart illustrates the transition between each component of the Donation Management System:

```
                        ┌──────────┐
                        │  Start   │
                        └────┬─────┘
                             │
                        ┌────┴─────┐
         ┌──────────────┤ User login│
         │              └────┬─────┘
  ┌──────┴────────┐          │
  │Volunteer actions│        ┌────┴─────┐
  └──────┬────────┘          │Donor actions│
         │                   └────┬─────┘
         └──────────┐             │
                    ┌─────────────┴────────┐
         ┌──────────┤   Donation system    ├──────────────┐
         │          └──────────┬───────────┘              │
  ┌──────┴──────┐              │                     ┌─────┴─────┐
  │Donor profile│         ┌────┴─────┐               │  Actions  │
  └──┬───────┬──┘         │Volunteer profile│        └─────┬─────┘
     │       │            └────┬─────┘            ┌─────────┴────────┐
     │       │                 │             ┌────┴─────┐      ┌──────┴──────┐
     │       └──────┐     ┌────┴─────┐        │Accept donors│    │Reject donors│
     │              │     │New donations│     └──────────┘      └─────────────┘
  ┌──┴────────────┐ │     └────┬─────┘
  │Donation history│ │         │
  │   records     │ │    ┌────┴─────┐
  └───────────────┘ │    │Engagement │
                    │    └────┬─────┘
                    │         │
                    │    ┌────┴─────┐
                    │    │Manage doner│
                    │    └────┬─────┘
                    │         │
                    │    ┌────┴─────┐
                    │    │Donation area edition│
                    │    └────┬─────┘
                    │         │
                    │    ┌────┴─────┐
                    │    │Manage volunteer│
                    │    └────┬─────┘
                    │         │
                    │    ┌────┴─────┐
                    │    │   End    │
                    │    └──────────┘
```

Technologies Used:

The DMS utilizes a modern technology stack to ensure scalability, reliability, and ease of use:

• Backend: Python Programming Language, Django Framework

• Frontend: HTML, CSS, Bootstrap, JavaScript

• Database: SQLite

Cost Analysis:

The estimated cost of implementing the Donation Management System in a real-world scenario is as follows:

• Personnel: 200,000 BDT (assuming a 4-month project timeline)

• Infrastructure and Hosting: 60,000 BDT (assuming a 4-month project timeline)

• Software and Tools: 10,000 BDT

• Documentation and Training: 10,000 BDT

• Contingency: 10,000 BDT

Grand Total: 290,000 BDT

Conclusion:

The Donation Management System stands at the forefront of innovation, providing a sophisticated and comprehensive solution to the intricate challenges associated with donation management and volunteer coordination. Built upon the robust foundation of Python, Django, and an intuitive frontend, the system offers a seamless experience for donors, volunteers, and administrators alike. The judicious cost analysis presented reflects a reasonable investment that promises substantial societal impact and operational efficiency.

In closing, the Donation Management System not only serves as a practical tool for efficient donation management but also embodies the spirit of community engagement and collaboration. This project, a fusion of modern technology and social responsibility, is poised to make a meaningful difference by ensuring that surplus and unused products find their way to those who can benefit the most. The Donation Management System stands as a testament to the transformative power of technology in addressing real-world challenges and fostering a more equitable distribution of resources within our communities.