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# Online Charity Management System

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**Abstract - A Charity Management System (CMS) is a digital web-based platform designed to streamline donation tracking, donor management, and charitable campaign administration. Traditional charity organisations face challenges including data opacity, manual record-keeping errors, and limited accessibility for donors. This project proposes a comprehensive web application that enables donors to contribute funds or resources, while administrators manage campaigns, track donations, and generate reports efficiently. The system incorporates modules for user registration, donation management, campaign administration, NGO document verification, and query handling. Real-time updates and accurate record maintenance ensure operational transparency. Secure payment integration and a robust relational database further enhance system trustworthiness and reliability for all stakeholders.**

**Key Words: Charity Management System, Donation Management, NGO, Resource Allocation, Web Application, Transparency, PHP, MySQL, ASP.NET, Role-Based Access Control**

## 1. INTRODUCTION

Technology is rapidly transforming every sector, including non-profit and charitable organisations. Many NGOs and charity bodies still rely on manual, paper-based processes for managing donations and resources, leading to data duplication, poor transparency, and significant operational inefficiency.

An Online Charity Management System (CMS) addresses these gaps by providing a unified digital platform for all charity-related operations. It empowers donors to discover campaigns, contribute funds, and track their contributions; while giving administrators the tools to manage campaigns, monitor donations, handle NGO registrations, and produce analytical reports. By centralising these functions, the CMS improves accountability, builds donor trust, and accelerates operational efficiency for charitable organisations.

### 1.1 Problem Statement

Most charity organisations operate with fragmented, manual workflows. Data duplication, poor record accuracy, and the absence of real-time visibility create operational bottlenecks. Donors often have no means to verify how their contributions are being utilised, which erodes trust and reduces participation. These limitations underscore the urgent need for a structured, transparent digital solution.

### 1.2 Objectives

- Provide an accessible web platform for donors, volunteers, and administrators.
- Enable real-time donation tracking and campaign management.
- Ensure data integrity and security through a structured relational database.
- Streamline NGO registration with document upload and admin verification.
- Support transparent reporting, audit trails, and communication between stakeholders.

## 2. LITERATURE REVIEW

Existing literature on non-profit management systems consistently highlights the need for digital transformation. Laudon and Laudon (2018) established that information systems significantly improve organisational efficiency by automating routine tasks and enabling data-driven decision making [1].

Pressman (2014) emphasised structured software engineering practices for building reliable, maintainable web applications [2]. Open-source NGO platforms such as CiviCRM exist but require complex server configuration and technical expertise beyond the capacity of small local charities.

Turban et al. (2018) confirmed that web-based management systems reduce administrative overhead and improve donor engagement through transparency features [3]. Sommerville (2016) further reinforced the importance of modular, requirements-driven design in building trustworthy systems [4]. The proposed CMS builds upon these findings by delivering a purpose-built, lightweight system tailored for small-to-medium charitable organisations.

## 3. SYSTEM DESIGN AND ARCHITECTURE

### 3.1 Architecture Overview

The Online CMS follows a classic three-tier client-server architecture. The presentation layer delivers the user interface via HTML5, CSS3, Bootstrap, and JavaScript, ensuring a responsive, browser-compatible experience. The application logic tier, implemented in PHP/ASP.NET with C#, handles

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business rules, authentication workflows, and data processing. The data tier uses a relational MySQL/SQL Server database to persist all records securely.

The architecture diagram (Fig. 1) illustrates the interaction between the front-end modules, the backend API layer, the database, and external services such as the payment gateway and email notification service.

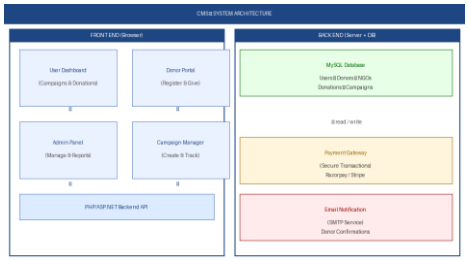

*Fig. 1: Online CMS — System Architecture*

### 3.2 Technology Stack

| Layer | Technology |
|---|---|
| Front-End | HTML5, CSS3, Bootstrap, JavaScript |
| Back-End | PHP / ASP.NET with C# |
| Database | MySQL / SQL Server |
| Authentication | Session login, role-based access |
| Payment | Razorpay / Stripe (planned) |
| Server | Apache / IIS Web Server |

*Table 1: Technology Stack*

### 3.3 Data Model

The relational database comprises five core entities: Users (donors, volunteers, admins), NGOs (with registration metadata and verification status), Campaigns (goal, description, dates, funding progress), Donations (donor ID, campaign ID, amount, timestamp), and Queries (sender, subject, message, status). Foreign key constraints enforce referential integrity across all entities, and indexed fields on email and campaign ID ensure fast query performance.

## 4. CORE MODULES

The CMS is composed of five functional modules that collectively manage all system operations from onboarding through reporting.

### 4.1 Registration and Authentication Module

This module handles onboarding for three user types: donors, volunteers, and NGOs. All users provide their name, contact number, and email address. NGOs additionally submit their registration number and official documents for admin verification. The module enforces unique email constraints, validates all required fields, and uses session-based authentication. Passwords are stored as hashed values; role-based access control ensures each user type sees only the features relevant to them.

### 4.2 Document Upload and Verification Module

NGOs upload registration certificates and supporting documentation (PDF format) during registration. The system validates file type and enforces size limits. Valid documents are stored securely. Administrators review uploaded documents through the admin panel before approving NGO accounts. This verification step prevents fraudulent registrations and builds donor confidence in the platform's credibility.

### 4.3 Donation and Participation Module

Donors can browse active campaigns and contribute any amount to chosen causes. The donation workflow captures donor ID, campaign ID, amount, and timestamp. Volunteers can register for campaign events. Real-time funding progress indicators on each campaign card provide immediate visual feedback on donation impact, encouraging continued engagement.

### 4.4 Campaign Management Module

Administrators create and manage campaigns with a title, description, funding goal, and active date range. The system automatically tracks cumulative donations per campaign and updates progress in real time. Admins can pause, extend, or close campaigns; expired campaigns are automatically locked against new donations. Campaign listings on the user dashboard maximise donor visibility.

### 4.5 Communication and Query Module

Users submit queries via a structured form (name, email, subject, message). Submissions are persisted to the database and the user receives a confirmation notice. Administrators can view and respond to all queries from the admin panel. This module creates a reliable, auditable communication channel between donors, NGOs, and platform administrators.

## 5. RESULTS AND DISCUSSION

The Online CMS was tested across Google Chrome, Mozilla Firefox, and Microsoft Edge on desktop and mobile devices. All core modules functioned correctly in every tested environment. Database persistence was verified — donor records, campaign data, and donation histories were retained accurately across browser sessions.

The system correctly enforced role-based access, preventing donors from accessing admin-only features. Concurrent registrations were handled without data duplication. Campaign progress indicators updated in real time following each donation. The following table summarises the functional test results:

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| Test Case | Expected Result | Status |
|---|---|---|
| User Registration | Account created successfully | **Pass** |
| Donor Login | Authentication successful | **Pass** |
| Create Campaign | Campaign listed for donors | **Pass** |
| Make Donation | Donation recorded and confirmed | **Pass** |
| View History | Accurate donation history shown | **Pass** |
| Admin Manage Users | CRUD operations work correctly | **Pass** |
| Generate Report | Report generated correctly | **Pass** |
| Contact / Query Form | Message saved, confirmation shown | **Pass** |

*Table 2: Functional Test Results*

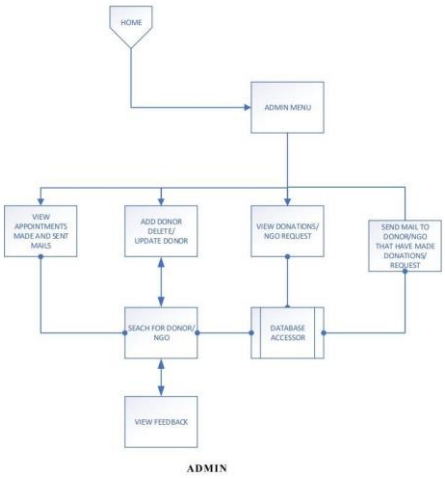


*Fig. 2: Donor Registration Page*

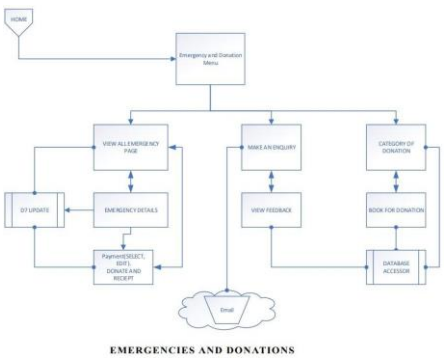


*Fig. 3: Campaign Dashboard*


*Fig. 4: Admin Panel — Donation Overview*

## 6. FUTURE SCOPE

The CMS has significant potential for expansion. Planned enhancements include:

- Multi-language support to reach donor and volunteer communities across regional languages.
- A native mobile application (Android/iOS) with push notifications for campaign updates and donation confirmations.
- Advanced data analytics to surface donation trends and campaign performance insights for NGO administrators.
- Automated tax-exemption certificate generation for eligible donor contributions.
- AI-powered anomaly detection to flag irregular donation patterns and protect platform integrity.
- Progressive Web App (PWA) support to enable offline access and home-screen installation on mobile devices.

## 7. CONCLUSION

The Online Charity Management System is a comprehensive web-based platform that meaningfully improves transparency, efficiency, and accessibility in charitable operations. By digitalising donor registration, campaign management, donation tracking, NGO verification, and stakeholder communication into a single unified system, the CMS eliminates the fragmentation and opacity that characterise traditional manual charity administration.

The system architecture — built on HTML5, Bootstrap, PHP/ASP.NET, C#, and MySQL — is modular, maintainable, and scalable. Role-based access control, document verification, and relational data integrity safeguards make the platform secure and trustworthy for all participants. With planned future enhancements including mobile applications, multilingual interfaces, and intelligent analytics, the CMS is positioned to become a robust tool that connects donors effectively with the communities that depend on charitable support.

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supervision throughout the design, development, and documentation of this project.

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## BIOGRAPHIES

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