



Internship Report

MERN STACK

DLithe Consultancy Services Pvt. Ltd.



Internship Report

Trainee/Intern Name : Nagesh K, Sumanth A

Period : 15 Weeks

Job Assignment : Charity Management System

Organization : DLithe Consultancy Services Pvt. Ltd.

Supervisor's Name : Purushottam Pattanashetty

Observations :

- The Charity Management System (CMS) simplifies the management of volunteers, donors, events, and contact suggestions through a centralized web interface.
- Key modules include Volunteer Management, Donor Tracking, Event Scheduling, Contact/Suggestion Handling, and Admin-level Analytics.
- Real-time balance tracking and Excel export features add transparency and utility to the system.
- The system could be enhanced in future with automated receipts, role-based access control, and deployment to cloud platforms for better scalability.

Submitted to

Signature of Training Supervisor

Date:

Signature of Co-ordinator

Date:



Letter of Transmittal

To,

Program Co-ordinator

DLithe Consultancy Services

Bengaluru

Dear Sir,

We are writing to submit our report on the development of a **Charity Management System (CMS)** using the **MERN stack (MongoDB, Express.js, React.js, and Node.js)**. This project has been a valuable experience that allowed me to apply full-stack web development skills in a practical setting with a socially relevant purpose.

The development process involved identifying and implementing the key requirements of a charity organization's day-to-day operations, including **donor management, volunteer registration, event coordination, contact form handling, and admin-level analytics**.

Throughout the project, I focused on building a responsive and user-friendly application that enables the organization to manage its operations effectively while maintaining transparency and accountability.

By leveraging modern web technologies, this CMS provides streamlined workflows, automated record-keeping, and visual reporting through an intuitive dashboard. These features support the organization's efforts to engage more effectively with donors and volunteers, improving overall efficiency.

I believe that the knowledge and experience gained from this internship will continue to benefit me in future development roles. I hope this report provides useful insights into the development process and showcases how web technologies can be utilized to create meaningful, real-world solutions.

Sincerely,

Name : Nagesh K, Sumanth A.

Interns at DLithe Consultancy Services

Table of Contents

Introduction	5
Literature survey	6-7
Proposed work	8-9
Implementation	10-22
Conclusion	23
References	24



1. INTRODUCTION

Charitable organizations play a vital role in addressing various social, economic, and environmental challenges by mobilizing resources, coordinating volunteers, and supporting community-based initiatives. As these organizations grow, managing their daily operations manually becomes increasingly difficult due to challenges like data fragmentation, poor transparency, and inefficient workflows.

In response to these challenges, this project introduces a comprehensive Charity Management System (CMS)—a web-based platform designed to streamline and digitize the core operations of nonprofit organizations. The system focuses on automating essential modules including donor management, volunteer tracking, event coordination, financial monitoring, and stakeholder communication.

The CMS is developed using the MERN stack—MongoDB, Express.js, React.js, and Node.js—which ensures a robust, scalable, and responsive application architecture. This modern technology stack supports seamless front-end and back-end integration, enhancing the user experience while maintaining performance and scalability.

Key features include secure role-based access control, Excel export capabilities for transparency, real-time bar chart analytics for financial visualization, and a centralized dashboard for administrators. The system also integrates features for managing suggestions, logging income deductions, and ensuring accountability through audit trails.

This system not only reduces the dependency on manual paperwork but also enhances operational efficiency and fosters transparency between stakeholders—namely administrators, donors, and volunteers. By digitizing these processes, the CMS empowers nonprofits to make data-driven decisions, engage meaningfully with supporters, and scale their impact effectively.

2. LITERATURE SURVEY

The increasing demand for transparency, efficiency, and real-time data access in nonprofit operations has driven many organizations to adopt digital solutions. This section reviews existing technologies, frameworks, and practices that have shaped the design and development of charity management platforms.

2.1 Digital Transformation in the Nonprofit Sector

Digitization is revolutionizing nonprofit operations by replacing manual processes with centralized, web-based systems. Studies show that digital adoption improves transparency, operational efficiency, and stakeholder engagement. Tools that support donor tracking, volunteer coordination, and financial reporting are becoming essential for modern nonprofits.

2.2 Existing Charity Management Solutions

Platforms such as GiveWP, Donorbox, and Kindful offer core functionalities like donation forms, donor CRM, and fundraising campaign tools. However, these platforms often come with limitations such as high subscription costs, limited customizability, and dependency on third-party tools. Smaller charities may find them unaffordable or too complex for localized needs.

2.3 Use of NoSQL Databases

The flexibility and scalability of NoSQL databases, particularly MongoDB, make them ideal for dynamic and evolving datasets. In the context of charities, MongoDB enables efficient storage and retrieval of donor information, volunteer profiles, event data, and financial logs without strict schema constraints.

2.4 Security & Access Management

Security is critical when handling sensitive data such as donation amounts and user contact information. Industry-standard practices like JWT-based authentication, role-based access control (RBAC), and secure API endpoints are necessary to ensure that only authorized personnel can access or manipulate sensitive data.

2.5 Front-End Technologies and Accessibility

User-centric design plays a vital role in increasing adoption rates of digital tools. Libraries like React.js offer the ability to build responsive, interactive user interfaces that are accessible across devices. Features such as form validations, intuitive navigation, and role-specific dashboards cater to users with varying levels of technical expertise.



2.6 Reporting and Data Export Capabilities

Transparent reporting is a legal and ethical necessity for charitable organizations. Tools like Chart.js for visualizations and XLSX libraries for Excel export enable nonprofits to present data effectively and maintain accurate documentation. These features support financial audits and build donor trust.

2.7 Limitations in Existing Systems

Despite the availability of platforms, many nonprofits struggle with issues such as inflexible architectures, lack of customization, and steep learning curves. There is a growing demand for open-source or custom-built systems that balance functionality with ease of use and affordability.

2.8 Future Directions

Research suggests future trends in charity tech may include integration with AI-driven analytics, fraud detection systems, personalized donor engagement, and automated receipt generation. While these were not within the scope of the current CMS, the modular design allows for potential expansion.

3. PROPOSED WORK

The objective of this project is to design and develop a centralized, modular, and scalable Charity Management System (CMS) that addresses the real-world challenges faced by nonprofit organizations. The system is built using the MERN stack—MongoDB, Express.js, React.js, and Node.js—to create a modern, full-stack web application capable of efficiently managing donations, volunteers, events, communication, and financial records.

This initiative was undertaken in alignment with the use case provided by the host organization, which emphasized three primary areas: donor information tracking, volunteer management, and financial reporting. The proposed system was structured to fulfill these core operational needs through the following interconnected modules:

3.1 Authentication and Role-Based Access Control

A robust authentication system using JWT (JSON Web Tokens) is implemented to distinguish between Admin and Volunteer roles. Admins have full access to management features, while volunteers have limited access to ensure data security and proper access segregation.

3.2 Donor Management Module

A dedicated module captures donor profiles, including name, contact details, donation amount, and date. This data is filterable and exportable to Excel for transparent reporting. Additionally, the system supports donation tracking over time, contributing to financial insights and organizational transparency.

3.3 Volunteer Management System

Volunteers can register through a public-facing form, which is processed by the admin. The admin can view, approve, or reject volunteer entries. This system ensures efficient task allocation, volunteer tracking, and team coordination for events and ongoing activities.

3.4 Event Coordination and Management

The system supports event categorization as Upcoming or Completed. Admins can create, update, and delete events while viewing summarized event data on the dashboard. Event-wise task lists and completion status help streamline planning and execution.

3.5 Contact and Suggestion Handling

To enhance community engagement, the CMS provides forms for users to submit contact messages or suggestions. These submissions are visible in the admin dashboard and can be exported as Excel sheets for review and follow-up, supporting better communication between the organization and

stakeholders.

3.6 Audit Logs and Financial Tracker

In line with the use case's emphasis on financial reporting, the CMS features an audit logging system that tracks income deductions. Admins can enter deduction entries with a reason and amount, which automatically updates the overall balance. The logs are date-stamped and exportable for audit purposes.

3.7 Admin Dashboard and Real-Time Analytics

The admin dashboard includes:

- A bar chart showing monthly donation income using Chart.js.
- Scrollable panels for ongoing tasks and completed events.
- A live financial summary that updates based on donor entries and audit logs.

3.8 Integration Strategy

The system uses Axios for API calls, React Context API for state management, and structured RESTful APIs for modular back-end development. This architecture ensures scalability and allows for the integration of third-party services in future iterations, such as email tools, payment gateways, or analytical engines.

3.9 Scalability and Future Scope

While the current version focuses on core CMS functions, the architecture allows future enhancements such as:

- Automated receipt generation
- Third-party payment integration
- Role-specific notifications
- AI-based donation forecasting

4. IMPLEMENTATION

The implementation phase involved translating the project design into a functional, full-stack web application using the MERN stack (MongoDB, Express.js, React.js, and Node.js). The Charity Management System (CMS) was built with a focus on modularity, usability, role-based control, and real-time data handling, ensuring it meets the organization's objectives of managing donations, volunteers, events, and financial reporting efficiently.

4.1 Technology Stack and Tools Used

Category	Tools / Technologies
Frontend	React.js, HTML5, CSS3, JavaScript (ES6+), Tailwind CSS
Backend	Node.js, Express.js
Database	MongoDB Atlas (cloud-hosted NoSQL database)
Authentication	JSON Web Token (JWT), React Context API
APIs	RESTful APIs via Express.js
Data Export	XLSX (for Excel export functionality)
Data Visualization	Chart.js (bar chart for donation analysis)
Version Control	Git, GitHub
Development Tools	VS Code, Postman, Notion (task tracking), Google Sheets

4.2 Key Functional Modules and Implementation Details:

A. User Roles and Secure Authentication

JWT-based authentication was implemented to distinguish between Admin and Volunteer roles. Secure login and protected routes ensure that sensitive administrative functionalities are restricted to authorized personnel only.

B. Responsive Frontend Design

The frontend, built using React.js and styled with Tailwind CSS, is responsive across devices. The UI includes user-friendly forms, dashboards, and interactive charts, ensuring smooth user experience for both public users and admins.



C. Donor Management

Admins can access donor profiles with details like name, email, donation amount, and timestamp. Donations made through the form are automatically recorded and displayed in the admin panel. Data is filterable and exportable to Excel using the XLSX library.

D. Volunteer Handling Workflow

Volunteers register through a dedicated public form. Their applications are stored in MongoDB and displayed in the admin dashboard where admins can approve or reject them. The system ensures real-time updates and state changes for each volunteer record.

E. Event Management

Admins can add, view, edit, or delete events. Events are divided into “Upcoming” and “Completed,” with details such as title, description, and date. The admin dashboard reflects a live overview of ongoing activities and completed milestones.

F. Dashboard with Analytics

The dashboard is equipped with:

- A bar chart using Chart.js to visualize monthly donation trends.
- Scrollable sections for viewing current tasks (from ongoing events).
- A snapshot of recently completed events for quick reference.

G. Contact & Suggestion System

Public users can submit contact messages or suggestions through a form. The data is stored securely and shown in the admin interface, along with an export option for administrative review and record-keeping.

H. Financial Tracking and Audit Logs

A custom audit log module allows the admin to record income deductions along with the reason and date. Each new entry updates the balance, which is displayed in real-time. All audit logs are stored chronologically and can be exported as Excel files for compliance and transparency.

I. API Integration and State Management

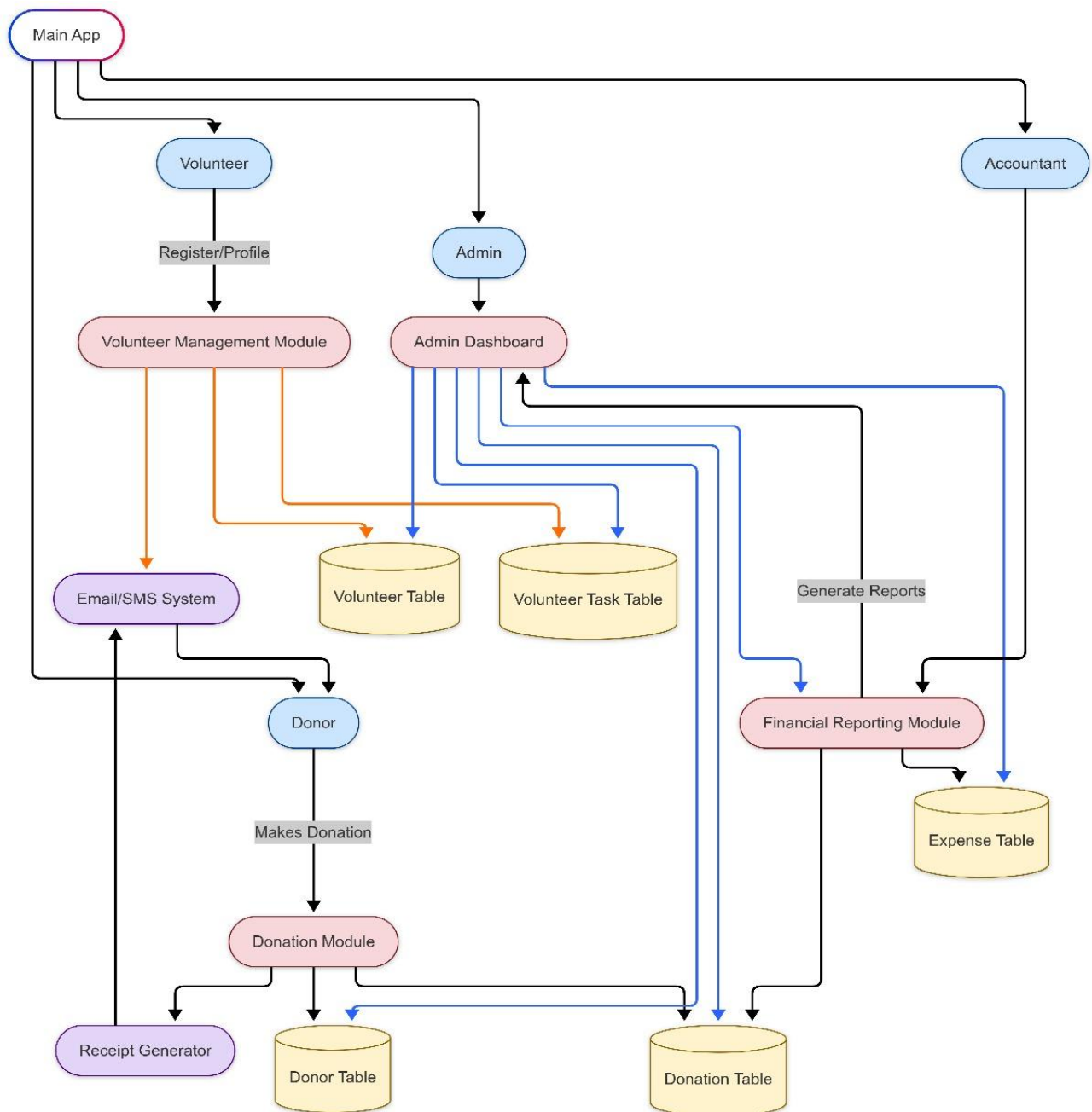
RESTful APIs were designed for modular data interaction between client and server. React Context API manages global state such as user authentication and dashboard content, ensuring efficient component rendering and data flow.

J. Version Control and Collaboration

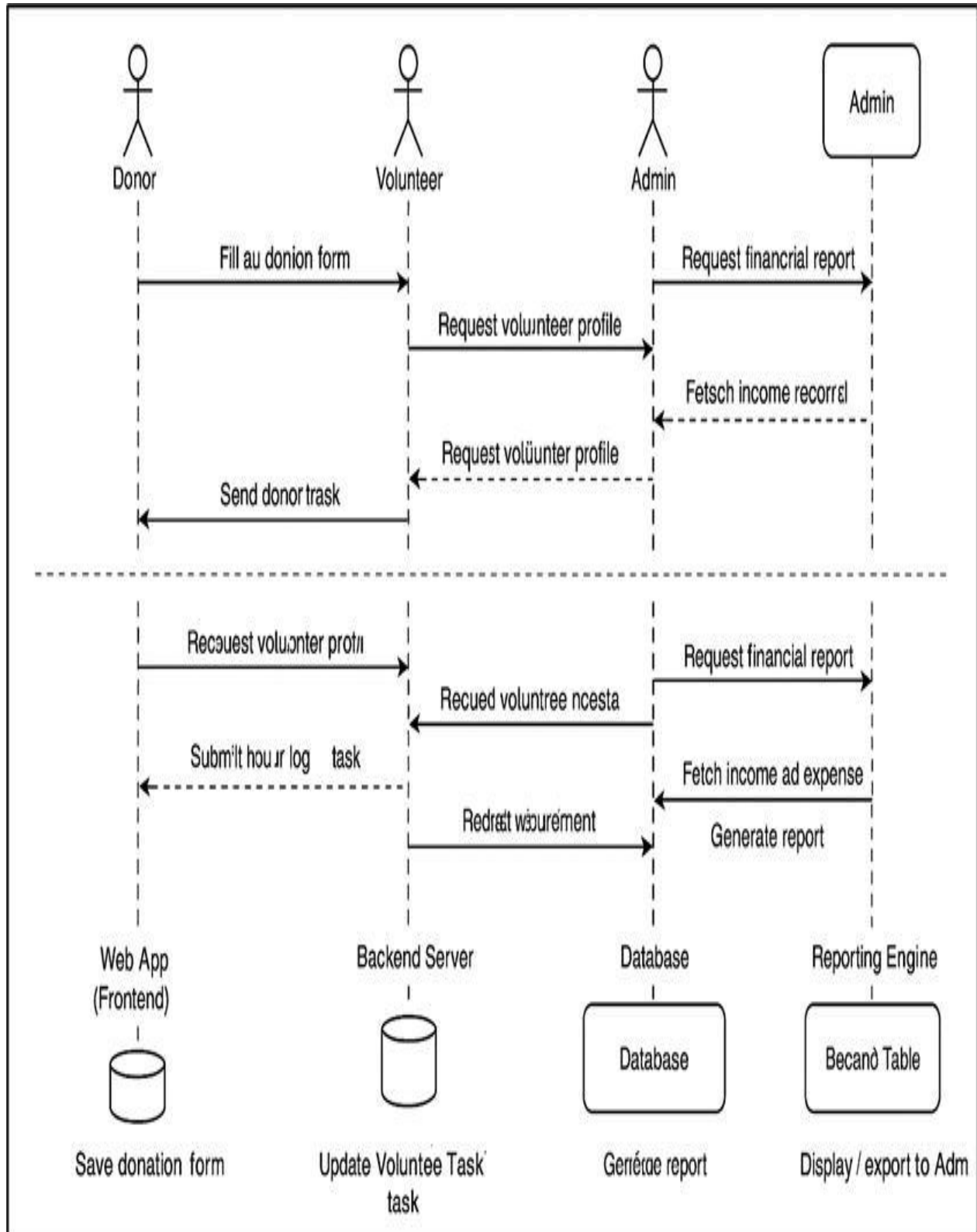
Git and GitHub were used throughout the development lifecycle for source control, branching, merging, and issue tracking. This ensured safe collaboration and version history management.

The implementation phase demonstrated practical proficiency in full-stack development and strengthened the understanding of real-world web applications designed for nonprofit use cases.

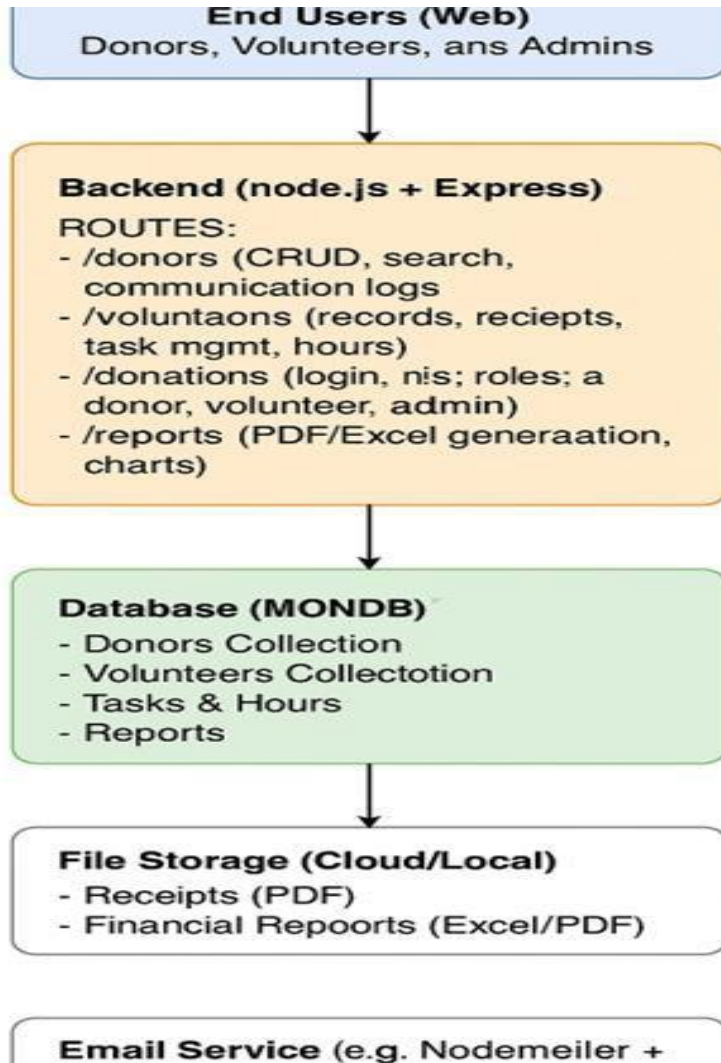
Data Flow Diagram (DFD):



Sequence diagram:



Architecture Diagram:



Test Cases :

S.No	Test Case ID	Description	Expected Outcome
1	TC01	Register New Donor	Donor profile is stored and appears in the donor list
2	TC02	Donate Using Valid Details	Donation is saved; visible in Admin overview and donor profile
3	TC03	View Donor History	All previous donations of selected donor are listed
4	TC04	Volunteer Registers and Logs In	Volunteer profile created and redirected to dashboard
5	TC05	Admin Assigns Volunteer Task	Task is assigned and visible on volunteer dashboard
6	TC06	Volunteer Logs Working Hours	Hours are updated and displayed correctly in profile
7	TC07	Generate Monthly Financial Report	PDF downloads with summary of all monthly donations
8	TC08	No Donations This Month	System shows 'No data found' when generating monthly report
9	TC09	Unauthorized Access to Reports	Non-admin users see 'Access Denied' message
10	TC10	Email Failure on Donation Receipt	System retries sending or marks donation for manual receipt issue
11	TC11	View Completed Events	All completed events are listed with export option
12	TC12	View Notifications from Contact Form	Messages from Contact Us form are displayed and downloadable
13	TC13	Export Donor Table	Donor data table exports successfully as Excel file
14	TC14	Audit Log Balance Update	Balance updates correctly after income deduction
15	TC15	Admin Logs Income Deduction	New entry added to audit table with amount, reason, date

SnapShots:

1. Home Page

CharityOrg
Home Volunteer Donor Admin Ongoing Tasks Contact Logout (Admin)

One hand to give. One soul to serve. One system to unite. 🤝

Join a movement where compassion becomes action — connecting donors, empowering volunteers, and building hope through every moment of kindness.

Donate Now 📄
Join as Volunteer 🧑

Our Impact So Far

200+
Active Volunteers

₹75K+
Funds Raised

50+
Projects Completed

Monthly Campaigns & Challenges

Abandoned And Orphaned Kids Need Your Support

Supporting orphaned children with food, shelter, and education to help them lead better lives.

Date: 2025-05-03
Goal: ₹32450

Education Kits for Slum Children

Purpose: Distribute school bags, notebooks, uniforms, and shoes to underprivileged children in Tumkur.

Date:
Goal: ₹5000

Success Stories

“I saw the direct impact of my contribution. That’s rare.”

Neha, Donor

Volunteer Experiences

“Every weekend, I look forward to giving back. It keeps me grounded.”

Kiran

“Helping out at the shelters has been incredibly humbling and rewarding.”

Sana

“The smiles I see are worth every second I spend volunteering.”

Arjun

Moments That Matter



Empathy in Action



Joy of Giving



Community Care



Hope Restored



Together We Can



Making Change

What Makes Us Unique



Smart Matchmaking

Intelligent algorithms connect donors and volunteers to the most impactful opportunities.



Transparent Impact

Track your impact with real-time reports and campaign progress dashboards.



Scalable Platform

Built for communities of any size, from local NGOs to global networks.

Ready to Make an Impact?

Join hands with our mission and help build brighter futures — one act of kindness at a time.

[Get Involved](#) 

Contact Us

Contact Info

Email: nageshk88611@gmail.com
Phone: +91-8861167234

Facebook Twitter

Quick Links

[Home](#)
[Volunteer](#)
[Donor](#)
[Admin](#)
[Ongoing Tasks](#)

Legal

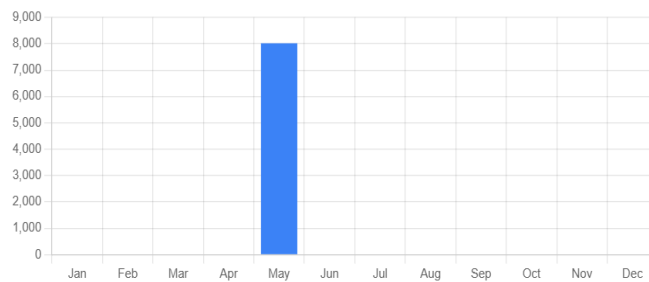
[Terms & Conditions](#)
[Privacy Policy](#)

2. Admin Page

Admin Dashboard

- [Overview](#)
[Manage Events](#)
[Donor Management](#)
[Volunteer Management](#)
[View Suggestions](#)
[Notifications](#)
[Audit Logs](#)

Overview



Ongoing Events

- School kits – 18/4/2025
- Education Kits for Slum Children – 1/1/1970
- Conduct Art Workshop at Children's Shelter – 14/4/2025
- Abandoned And Orphaned Kids Need Your Support – 3/5/2025

Completed Tasks

[Export Excel](#)

- Conduct Art Workshop at Children's Shelter – 6/5/2025

Admin Dashboard

- [Overview](#)
[Manage Events](#)
[Donor Management](#)
[Volunteer Management](#)
[View Suggestions](#)
[Notifications](#)
[Audit Logs](#)

Manage Events

Create or Manage Events

[Create Event](#)

All Events

Abandoned And Orphaned Kids Need Your Support

Type: Campaign | 2025-05-03
Goal: ₹32450

[Edit](#) [Delete](#)

[Overview](#)[Manage Events](#)[Donor Management](#)[Volunteer Management](#)[View Suggestions](#)[Notifications](#)[Audit Logs](#)

Donor Management

Donor Table

[Export to Excel](#)

Name	Email	Contact	Amount (₹)	Date
nagesh K	4mt21cs090@mite.ac.in	9988776655	₹10001	2/5/2025
nagesh K	4mt21cs091@mite.ac.in	9988776655	₹10001	2/5/2025
nagesh K	4mt21cs091@mite.ac.in	9988776655	₹8001	2/5/2025

Admin Dashboard

[Overview](#)[Manage Events](#)[Donor Management](#)[Volunteer Management](#)[View Suggestions](#)[Notifications](#)[Audit Logs](#)

Volunteer Management

Assigned Volunteer Tasks

#	Volunteer	Task Title	Progress	Deadline
1	Nagesh	Conduct Art Workshop at Children's Shelter	Not started	
2	Nagesh	Conduct Art Workshop at Children's Shelter	Completed	
3	Nagesh	Conduct Art Workshop at Children's Shelter	Not started	

Admin Dashboard

[Overview](#)[Manage Events](#)[Donor Management](#)[Volunteer Management](#)[View Suggestions](#)[Notifications](#)[Audit Logs](#)

Volunteer Suggestions

[Export Excel](#)[Export PDF](#)

1. Nagesh — General
good UI

2. Nagesh — General
all fine well good.

3. Nagesh — Bug
need to update

Admin Dashboard

Overview Manage Events Donor Management Volunteer Management View Suggestions **Notifications** Audit Logs

Notifications

Contact Submissions

Export Excel

Name	Email	Message	Date
Nagesh	lifetraveller122@gmail.com	all done	3/5/2025
Nagesh	lifetraveller122@gmail.com	fine.	2/5/2025
Nagesh	lifetraveller122@gmail.com	good	2/5/2025

Admin Dashboard

Overview Manage Events Donor Management Volunteer Management View Suggestions Notifications **Audit Logs**

Audit Logs

Total Balance: ₹20,000

Add Expense

Amount

Reason

Submit

Audit Logs

Export Excel

Type	Amount	Reason	Date	Balance
Expense	₹2	simply	2/5/2025	₹20000
Income	₹10001	-	2/5/2025	₹20002
Income	₹10001	-	2/5/2025	₹20002
Expense	₹8001	buying books	2/5/2025	₹20002

3. Volunteer Page

CharityOrg

Home Volunteer Donor Admin Ongoing Tasks Contact Logout (Volunteer)

Volunteer Dashboard

Logout

Assigned Tasks

Upcoming Events

Suggestion Box

Assigned Tasks

Conduct Art Workshop at Children's Shelter

Deadline:

Not started

Submit

Volunteer Dashboard

[Logout](#)[Assigned Tasks](#)[Upcoming Events](#)[Suggestion Box](#)

Upcoming Events

Education Kits for Slum Children

[Register](#)

School kits

2025-04-18T00:00:00.000Z

[Register](#)

Abandoned And Orphaned Kids Need Your Support

2025-05-03T00:00:00.000Z

[Register](#)

Volunteer Dashboard

[Logout](#)[Assigned Tasks](#)[Upcoming Events](#)[Suggestion Box](#)

Suggestion Box

Select Type

Your feedback...

[Submit](#)

4. Donor Page

CharityOrg

[Home](#) [Volunteer](#) [Donor](#) [Admin](#) [Ongoing Tasks](#) [Contact](#) [Logout \(Donor\)](#)

Welcome, Nagesh K!

Your generosity lights the way to a better future. Thank you for being the change! ☀

nagesh k

4mt21cs090@mite.ac.in

9988776655

tumkur

10001

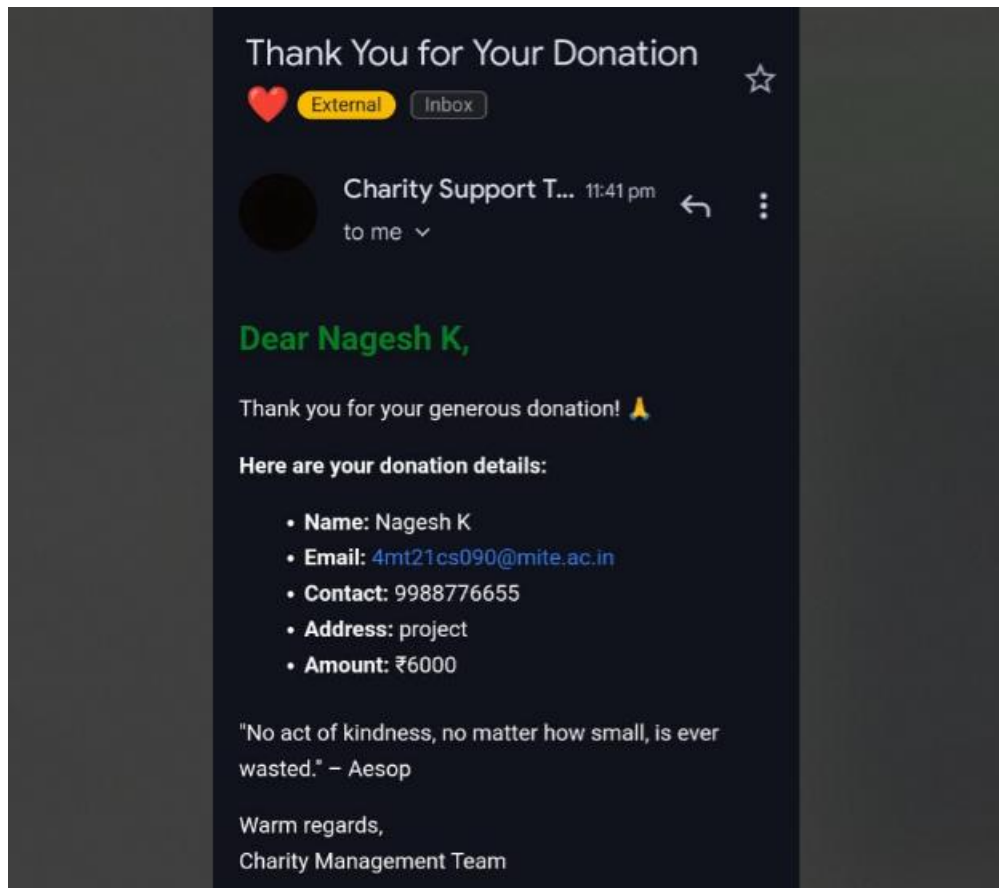
[Save & Proceed](#)

Draft Payment Page

Name: nagesh K
Email: 4mt21cs090@mite.ac.in
Contact: 9988776655
Address: tumkur
Amount: ₹10001

Make Payment

5. Confirmation/ Receipt Mail



5. CONCLUSION :

The development and deployment of the Charity Management System (CMS) successfully addressed the key operational challenges faced by nonprofit organizations, especially in managing donations, volunteers, events, and financial transparency. By leveraging the capabilities of the MERN stack, the system delivered a robust, secure, and scalable solution tailored to the specific needs of charitable institutions.

Throughout the project, several technical and functional milestones were achieved:

- **Centralized Operations:** The CMS brought together donor tracking, volunteer coordination, event management, and audit logging into a unified platform, reducing reliance on disparate manual processes.
- **Real-Time Insights:** With features such as donation bar charts, scrollable dashboards, and audit log visualizations, administrators gained real-time insights into the organization's financial and operational activities.
- **Data Accessibility and Export:** Excel-exportable data and form-based submissions ensured transparency, accountability, and ease of reporting—important attributes for building stakeholder trust.
- **Security and Role Segregation:** Secure JWT-based authentication and user role distinctions guaranteed data privacy and protected sensitive administrative functionalities.
- **User-Centric Design:** A responsive and intuitive UI, built using React and Tailwind CSS, made the platform accessible to users with varied technical backgrounds, both on the public and admin sides.

The CMS not only meets the present requirements of a charity-based workflow but also lays the groundwork for future enhancements. Possible extensions could include:

- Integration with online payment gateways for direct donations.
- Automated email confirmations for donor acknowledgment.
- AI-based donation trend analytics to aid strategic decision-making.
- Volunteer hour tracking and performance dashboards for better engagement.

6. REFERENCES

1. MongoDB, Inc. (2023). *MongoDB Documentation*. Retrieved from <https://www.mongodb.com/docs/>
 - Used for understanding NoSQL database structuring and dynamic schema handling in the project.
2. React.js Documentation. Meta (2023). Retrieved from <https://react.dev/>
 - Official React documentation used for implementing responsive UI and dynamic routing.
3. Express.js Guide. (2023). *Express.js Web Framework Documentation*. Retrieved from <https://expressjs.com/>
 - Provided guidance on creating RESTful APIs for backend operations.
4. Node.js Foundation. (2023). *Node.js v18 Documentation*. Retrieved from <https://nodejs.org/>
 - Used for server-side scripting and runtime logic implementation.
5. Chart.js Contributors. (2023). *Chart.js Documentation*. Retrieved from <https://www.chartjs.org/docs/>
 - Used for implementing dynamic data visualization on the admin dashboard.
6. JWT.io. Auth0 Inc. (2023). *JSON Web Tokens (JWT) Introduction*. Retrieved from <https://jwt.io/introduction>
 - Core reference for implementing secure user authentication across the CMS.
7. XLSX Package. SheetJS. (2023). *XLSX JavaScript Library Documentation*. Retrieved from <https://sheetjs.com/>
 - For implementing Excel file export functionalities for donor and audit data.
8. DLithe Consultancy Services. (2024). *Internship Use Case Document on Charity Management*.
 - Provided the foundational requirements and organizational context for the CMS project.