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Hope Haven: Verified Orphanage Donation and Volunteer Coordination System

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ABSTRACT

Child Care Institutions (CCIs), including orphanages, often struggle to obtain essential resources, coordinate volunteers and earn public trust, while donors find it difficult to identify genuine institutions and their actual needs. This paper presents Hope Haven, a centralized web platform that connects verified institutions with donors and volunteers. The system is built on a client-server architecture using React and Vite for the frontend and Node.js, Express.js and MongoDB for the backend. Role-based access control separates Supporters, Orphanage Representatives and Super Admins. Institutions register, upload legal documents for Super Admin verification, publish requirements and post volunteer roles. Supporters discover needs, donate, apply to volunteer and track their impact. An urgency-based algorithm ranks requirements by priority level and funding progress, and unique receipt identifiers support transparent donation records. Security is provided by JSON Web Token authentication, Bcrypt.js password hashing, protected routes, Aadhaar format validation using the Verhoeff checksum and a simulated OTP process. Testing of the registration, verification, donation and volunteer workflows showed that the platform improves transparency, accountability and coordination in supporting children in need.

Keywords: Child Care Institutions, Donation Management, Volunteer Coordination, Institutional Verification, Role-Based Access Control, MERN Stack

1. Introduction

Hope Haven is a centralized digital platform that connects Child Care Institutions (CCIs) with donors, supporters and volunteers. It addresses challenges such as resource shortages, lack of transparency and difficulties in volunteer coordination. The platform enables institutions to publish their needs, receive donations and manage volunteer activities efficiently.

1.1 Background and Motivation

Child Care Institutions often face difficulties in obtaining essential resources, receiving timely donations and coordinating volunteers. Donors may also struggle to identify trustworthy institutions and understand their actual needs. These challenges highlight the need for a centralized platform that improves transparency, simplifies donation management and connects institutions with genuine supporters. Hope Haven was developed to address these issues through institutional verification, urgency-based need prioritization and efficient volunteer coordination. The main motivation is to promote accountability and make support for children in need more accessible and reliable.

1.2 Problem Statement

Child Care Institutions face difficulties in obtaining essential resources, receiving timely donations and coordinating volunteers. The lack of a centralized platform makes it difficult to identify genuine institutions and to track donations transparently. Hope Haven addresses these challenges by connecting verified institutions with donors and volunteers through a secure and reliable digital platform.

1.3 Objectives of the Project

- To develop a centralized digital platform connecting Child Care Institutions, donors and volunteers.
- To implement institutional verification to improve credibility and prevent fraudulent registrations.
- To let institutions publish and manage their essential requirements.
- To facilitate transparent donation management and maintain donation history.
- To implement an urgency-based prioritization algorithm that highlights critical institutional needs.
- To enable supporters to discover and apply for volunteer opportunities.
- To provide a Super Admin dashboard for institutional verification and platform monitoring.
- To generate unique donation receipts and maintain financial records.
- To ensure secure access through JWT authentication, password hashing and role-based access control.

1.4 Existing and Proposed System

Traditional methods of managing Child Care Institutions involve manual record keeping, separate donation management processes and limited volunteer coordination. Donors may find it hard to identify trustworthy institutions, and the absence of a centralized system makes it difficult to track donations and prioritize urgent needs.

Hope Haven is a centralized web application that connects Child Care Institutions, donors and volunteers through a unified platform. It enables institutions to register, submit legal documents for verification, publish requirements and manage volunteer opportunities. Supporters can explore institutional needs, contribute donations and apply for volunteering activities. The Super Admin reviews institutional registrations and manages verification to improve reliability and accountability.

2. Literature Review

Digital platforms for charitable donations and volunteer management provide basic services for connecting donors with organizations. However, institutional verification, donation transparency, urgent-need prioritization and volunteer coordination remain important concerns. Hope Haven integrates these capabilities into a single platform. The main themes drawn from the literature are summarized below.

2.1 Institutional Verification and Security

Verification of registration documents and legal credentials, together with secure authentication and role-based access control, improves institutional credibility. Super Admin approval helps prevent fraudulent registrations and ensures that public requirements are published only by approved institutions.

2.2 Transparent Donation Management

Transparency is essential for building trust between charitable institutions and their supporters. Maintaining donation records, generating unique receipt identifiers and tracking funding progress give donors clear information about how contributions are recorded and used.

2.3 Urgency-Based Requirement Prioritization

When many institutions need assistance at the same time, supporters may find it difficult to identify which requirements need immediate attention. A systematic approach assigns priority levels (Critical, High, Medium and Low) and, within the same level, considers funding completion so that requirements further from their target are highlighted.

2.4 Volunteer Coordination and Resource Management

Volunteer participation is an important part of supporting Child Care Institutions, but coordinating opportunities and applications is hard when information is spread across channels. A web-based system lets institutions publish roles, specify required skills and availability, and review applications, while applicants track their status and receive notifications.

2.5 Digital Transformation and Future Development

A centralized platform replaces manual records and separate communication channels with organized institutional profiles, requirements and support activities. Digital philanthropic platforms can be further improved through mobile accessibility, automated reporting, real-time notifications and integration with secure payment services.

3. Methodology and System Design

The development of Hope Haven follows a systematic methodology comprising requirement analysis, system design, implementation, testing and deployment. Requirement analysis identified the needs of supporters, orphanage representatives and Super Admins. The system design stage produced the architecture, database schemas, REST APIs and user interface, and the implementation stage then built each module using the technologies listed in Table 1.

3.1 System Architecture

Hope Haven follows a client-server architecture that separates the frontend, backend and database layers. The React and Vite frontend provides an interactive interface for each user role. Node.js and Express.js handle server-side operations, authentication middleware and REST API requests. MongoDB stores user details, institutional records, requirements, donations, volunteer applications and notifications, with Mongoose schemas providing validation and consistent records.

Table 1 - Technology stack of the Hope Haven platform.

Layer	Technology	Purpose
Frontend	React.js, Vite, Tailwind CSS	Responsive and interactive dashboards for supporters, orphanage representatives and administrators; fast development and optimized builds.
Backend	Node.js with Express.js	RESTful APIs, authentication middleware, request handling and communication between the frontend and database.
Database	MongoDB with Mongoose	Document-oriented storage of users, institutions, requirements, donations, volunteer applications and notifications, with schema validation.
Security	JWT, Bcrypt.js	Token-based authenticated sessions, password hashing and protected routes.
File handling	Multer	Upload of institutional registration documents and building photographs for verification.

3.2 User Roles and Access Control

The platform implements three roles. Role-based access control restricts each feature to the responsible role, as summarized in Table 2.

Table 2 - User roles and their permissions.

Role	Main permissions
Supporter (Donor / Volunteer)	Discover verified institutions and urgent needs, donate, apply for volunteer roles, view donation history, notifications and impact dashboard.
Orphanage Representative	Register the institution, upload legal documents, publish and update requirements, post volunteer roles, review applications, view the donations ledger.
Super Admin	Review registration documents, approve or reject institutions, monitor platform statistics and verification status.

3.3 Urgency-Based Requirement Prioritization

Each requirement carries an urgency level (Critical, High, Medium or Low). Requirements are sorted first by urgency level and, within the same level, by funding completion so that those furthest from their target appear first. The funding progress P of a requirement with amount raised R and goal G is

calculated as given in equation (1).

$$P = (R / G) \times 100, \quad (1)$$

For example, a requirement with Rs. 9,000 raised against a goal of Rs. 25,000 is shown at 36% funded, as seen on the supporter feed in Fig. 5. Supporters can also filter the feed by category such as Healthcare, Food and Nutrition, Education, Clothing and Facility and Infrastructure.

3.4 Donation, Receipt and Volunteer Management

When a supporter donates to a requirement, the system records the donor, amount, date and payment method and generates a unique receipt identifier. Institutions view these records in a donations ledger. For volunteering, institutions publish roles with required skills and schedules, supporters apply, and institutions approve or reset each application. Notifications keep users informed about donations and application status, and users can mark them as read.

3.5 Security Mechanisms

User passwords are hashed with Bcrypt.js and authenticated sessions are managed with JSON Web Tokens. Protected routes and middleware enforce role-based authorization. Aadhaar number format validation uses the Verhoeff checksum algorithm, and a simulated one-time password (OTP) verification process is included. These mechanisms support input validation and account security, although they do not replace official identity verification. Institutional verification by the Super Admin ensures that only approved institutions can publish public requirements.

3.6 Testing and Deployment

Authentication, institutional verification, requirement management, donation and volunteer application workflows were tested through unit and integration testing. Invalid inputs, authentication failures and unavailable resources return suitable HTTP status codes and error messages. The frontend, backend and database can be deployed in a local or cloud environment.

4. Results and Discussion

This section presents the outcomes of implementing Hope Haven. The results show how institutional verification, requirement management, donation management and volunteer coordination work together, and how the platform supports security and usability.

4.1 Landing Page and Registration

The landing page introduces the platform and provides access to volunteering, login and the administrator portal (Fig. 1). New users choose between a Donor and Volunteer account and an Orphanage account (Fig. 2). Orphanage registration collects organization details such as registration number, organization type, address, contact details, PAN number, CCI registration number and the authorized person, which are used to verify the institution before it goes live.

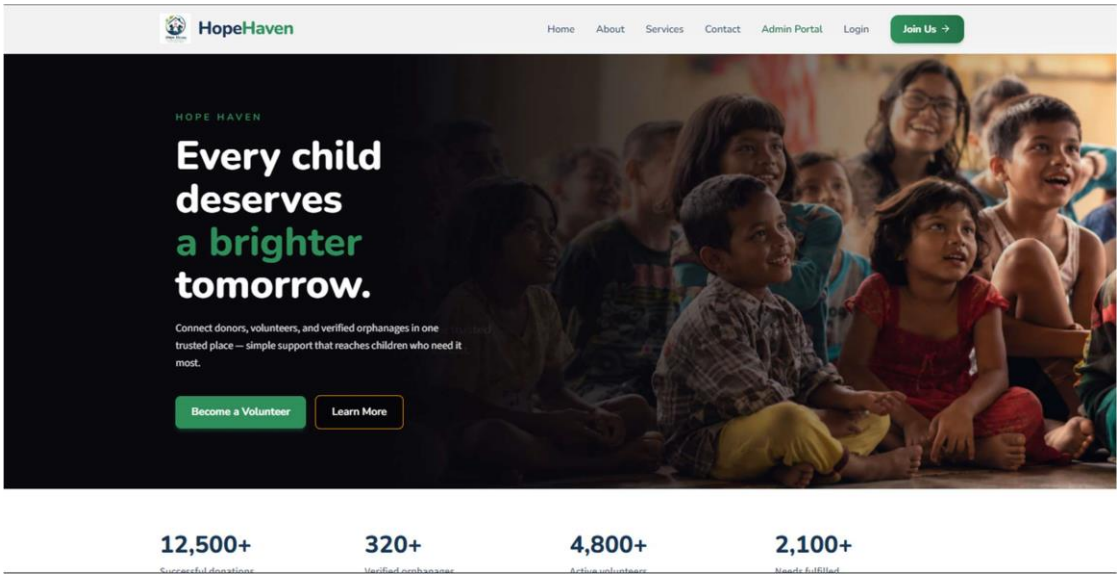


Fig. 1 - Hope Haven landing page

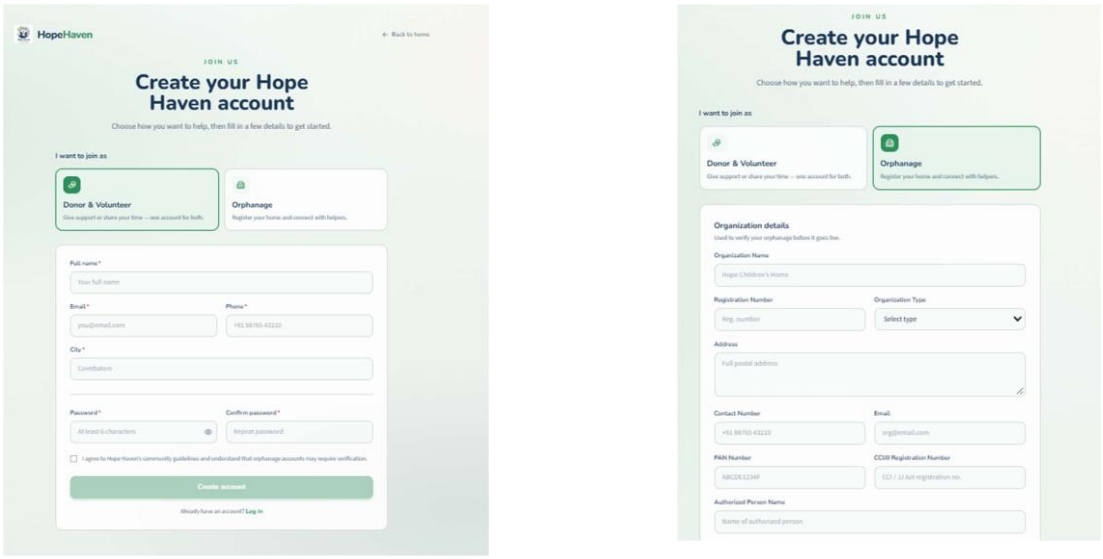


Fig. 2 - Account registration: (a) donor and volunteer, (b) orphanage

4.2 Authentication and Supporter Experience

The login page lets users select the Donor/Volunteer or Orphanage role to reach the correct dashboard (Fig. 3). Supporters see a personal impact profile with the amount donated, volunteer hours, number of lives touched and trophies (Fig. 4). Golden, Silver and Bronze trophies are awarded for fulfilling critical needs, supporting high and medium priority needs, and ongoing contributions respectively.

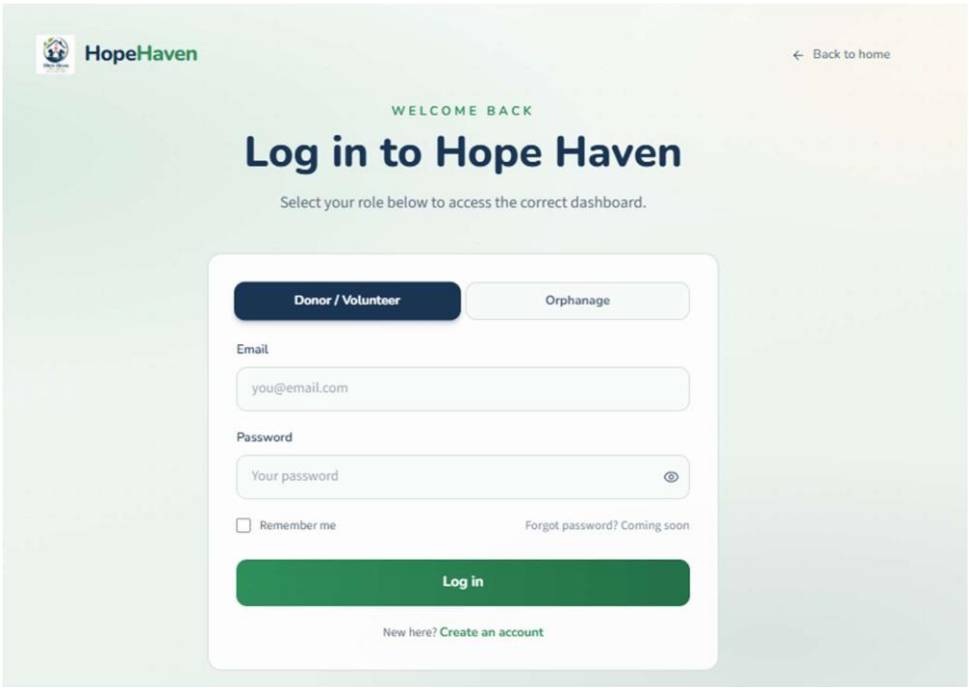


Fig. 3 - Role-based login page

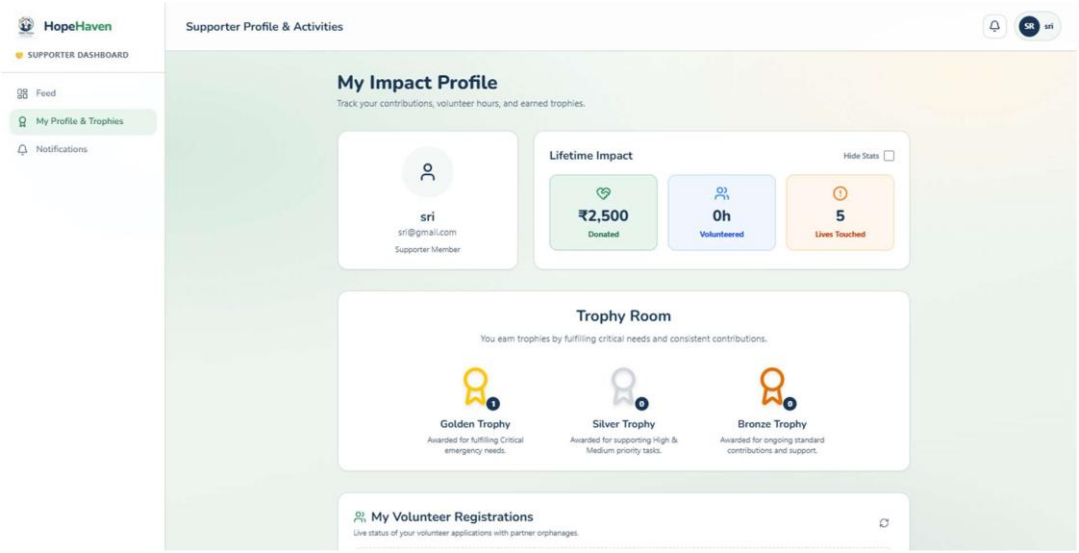


Fig. 4 - Supporter impact profile and trophy room

4.3 Urgent Needs Feed

The community support feed lists verified institutions' requirements with priority tags, category, funding progress, goal amount and a Donate Now option (Fig. 5). Critical requirements, such as emergency medical funds and drinking water plant repairs, appear first, allowing supporters to identify the needs that require immediate attention.

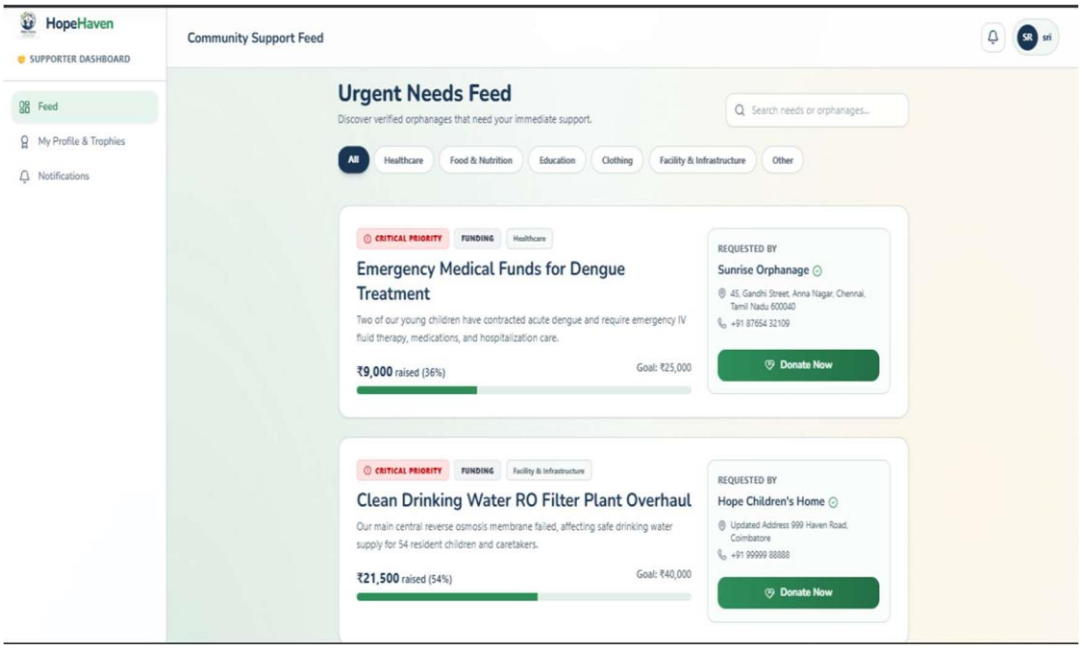


Fig. 5 - Urgent needs feed with funding progress

4.4 Orphanage Dashboard, Volunteers and Donations

The orphanage dashboard summarizes total donations, active requirements, volunteer requests, fulfilled needs and the verification status (Fig. 6). On the volunteers page, institutions post volunteer needs, review applications with skills and schedule, update application status and manage volunteer roles (Fig. 7). The donations ledger lists each donor, receipt identifier, amount, date, payment method and status, and provides a printable receipt (Fig. 8).

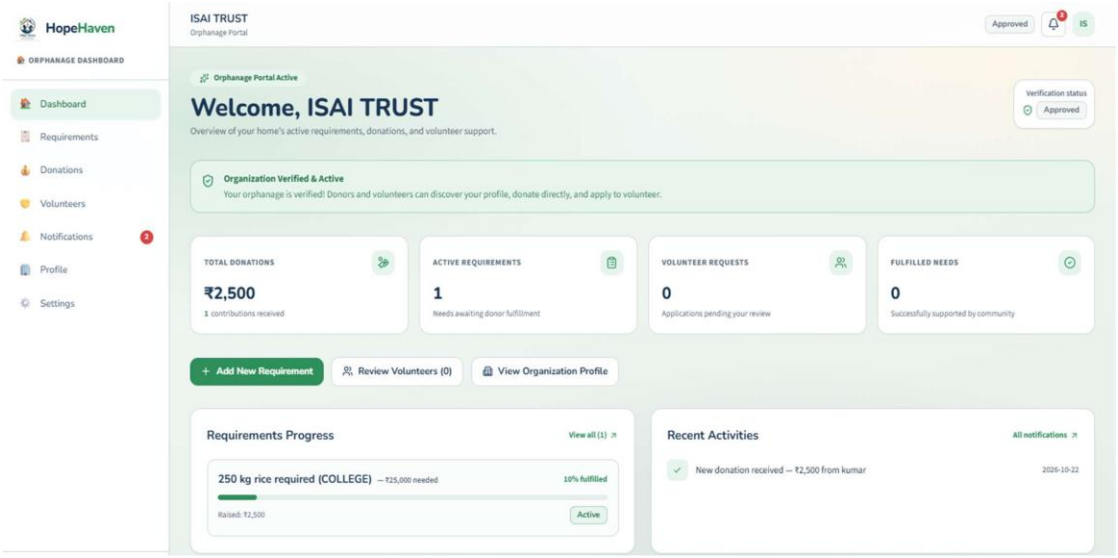


Fig. 6 - Orphanage dashboard

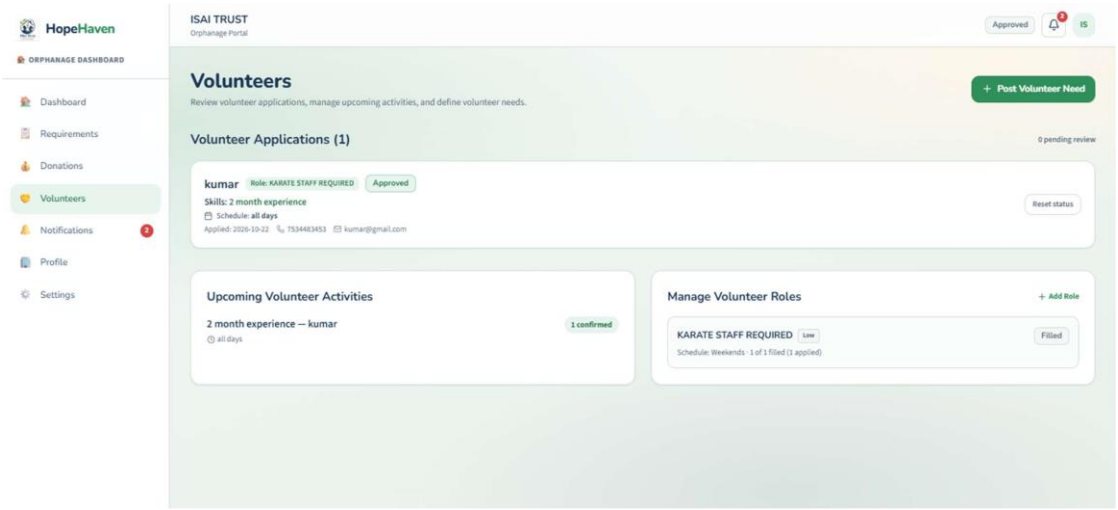


Fig. 7 - Volunteer applications and role management

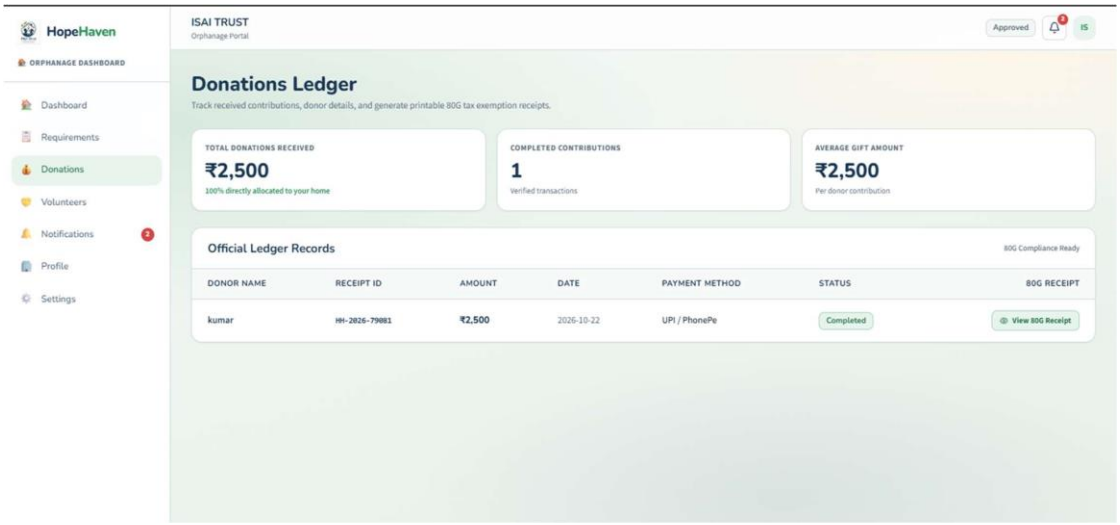


Fig. 8 - Donations ledger with receipt identifiers

4.5 Super Admin Verification

Access to the admin portal is limited to pre-approved credentials (Fig. 9). The verification dashboard shows total, pending, approved and rejected registrations with search and filters, and lets the administrator view full details and approve or reject each institution (Fig. 10). Approved institutions can log in and publish requirements, while rejected institutions are blocked and shown as cancelled.

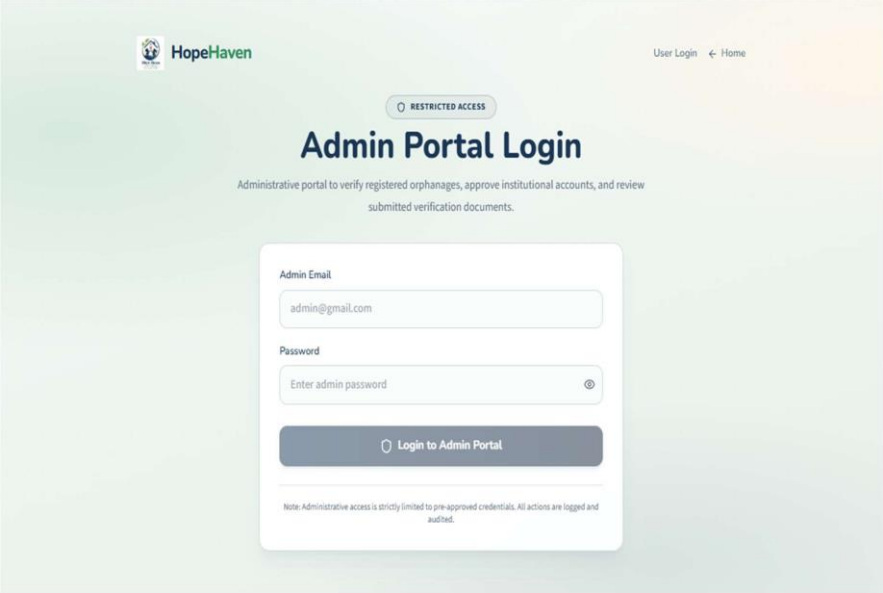


Fig. 9 - Admin portal login

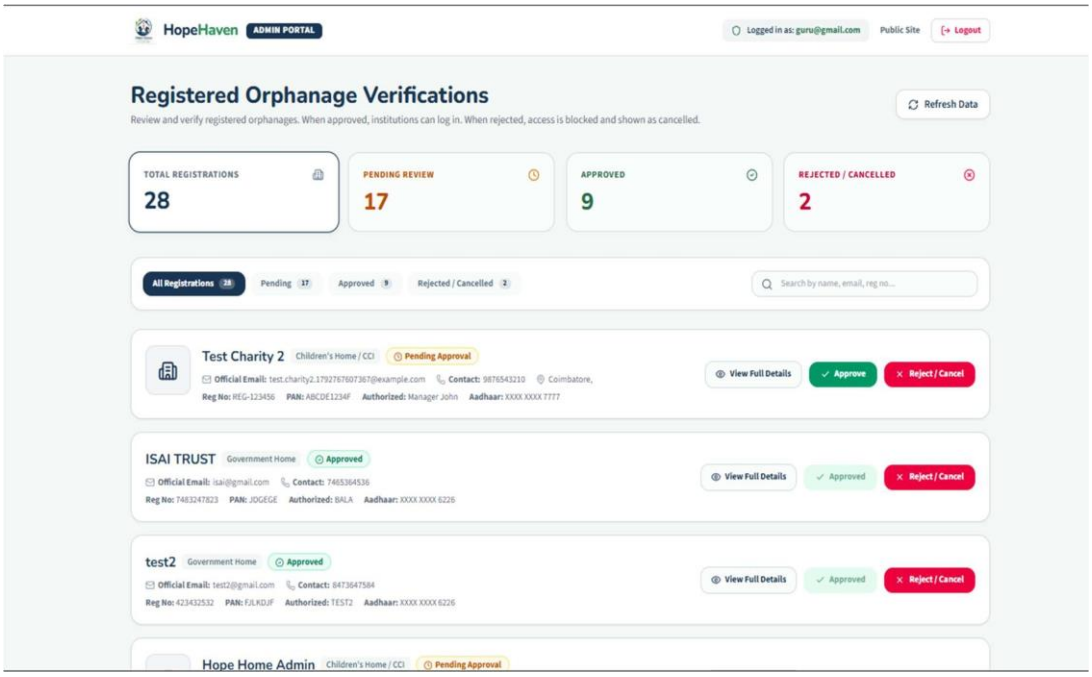


Fig. 10 - Registered orphanage verification dashboard

4.6 Discussion

The results show that the platform meets its objectives. Institutional verification increases trust because only approved institutions publish requirements. Urgency-based sorting and funding progress help supporters find critical needs quickly. Receipt identifiers and the donations ledger make contributions traceable, and the volunteer module reduces coordination effort by keeping roles, applications and statuses in one place. The separation of frontend components, backend APIs and database operations supports maintainability and future enhancements. Payments are currently simulated, so real financial transactions require a payment gateway.

5. Conclusion and Future Scope

5.1 Conclusion

Hope Haven is a centralized digital platform that connects Child Care Institutions, donors and volunteers. The integration of React, Vite, Node.js, Express.js and MongoDB provides a modern full-stack architecture. Institutional verification, urgency-based requirement prioritization, donation receipt generation and volunteer application management improve the efficiency and transparency of charitable activities, while JWT authentication, password hashing and role-based access control protect user accounts and restrict unauthorized access. The platform demonstrates how modern web technologies can address social challenges and encourage participation in supporting children in need.

5.2 Future Scope

Hope Haven can be extended in the following directions:

- Integration of verified payment gateways with automated payment confirmation and transaction tracking.
- Advanced analytics and administrative reports on donations, requirements and volunteer participation.
- Real-time and automated email notifications about urgent requirements, donations and volunteer applications.
- Mobile application support and cloud-based deployment for wider access.
- Geographical institution discovery, mapping services, multilingual interfaces and improved accessibility.
- Stronger verification workflows, document expiry alerts, audit logging, and automated backup and recovery.
- Recommendation of relevant requirements to supporters based on urgency, location and donation history.

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References

[1] Meta Open Source. (n.d.). *React documentation*. https://react.dev/

[2] Vite. (n.d.). *Vite documentation*. https://vite.dev/

[3] OpenJS Foundation. (n.d.). *Node.js documentation*. https://nodejs.org/

[4] OpenJS Foundation. (n.d.). *Express.js documentation*. https://expressjs.com/

[5] MongoDB, Inc. (n.d.). *MongoDB documentation*. https://www.mongodb.com/docs/

[6] Mongoose. (n.d.). *Mongoose documentation*. https://mongoosejs.com/docs/

[7] Auth0. (n.d.). *Introduction to JSON Web Tokens*. https://jwt.io/introduction

[8] OWASP Foundation. (n.d.). *OWASP Top Ten web application security risks*. https://owasp.org/www-project-top-ten/

[9] Ministry of Women and Child Development, Government of India. (n.d.). *Child protection and child care institutions*. https://wcd.gov.in/

[10] Income Tax Department, Government of India. (n.d.). *Section 80G deductions for charitable donations*. https://www.incometax.gov.in/