

A

Project Report

ON

NGO SAATHI

**Submitted in partial fulfillment of the requirements for the award of
the degree of
Bachelor of Computer Applications (BCA)
Jai Narain Vyas University, Jodhpur
SESSION 2022 – 2025**

**SUBMITTED TO
JAI NARAIN VYAS UNIVERSITY, JODHPUR**



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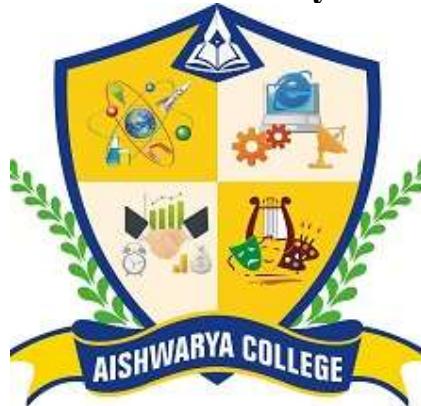


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CERTIFICATE

Certified this is a Bonafide record of the project entitled
NGO Saathi

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Of BCA III Year, Department of Computer Science of **Aishwarya College of Education, JODHPUR** in the year 2025 in partial fulfillment of the requirements of the award of Degree of **Bachelor of Computer Applications (BCA)** of the JNVU during the academic session 2022-2025. This project report is a record of work carried out under our guidance and supervision.

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We would like to express my gratitude to almighty God who made us capable of representing this project report.

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1 Introduction

1.1 Overview of NGO Saathi

1.1.1 Introduction to NGO Saathi

NGO Saathi is a centralized web platform designed to bridge the gap between Non-Governmental Organizations (NGOs), donors, volunteers, and beneficiaries. The platform provides a comprehensive directory of NGOs, enabling users to explore, connect, and contribute seamlessly. By integrating modern technology, NGO Saathi ensures that NGOs receive the visibility and support they need to operate effectively.

1.1.2 Purpose of this Project

The idea behind NGO Saathi emerged from the **challenges faced by NGOs** in reaching the right audience and securing resources. Many small and medium-sized NGOs struggle with **visibility, funding, and volunteer engagement**. This project aims to:

- **Provide a structured platform** where NGOs can register and share their missions.
- **Enable donors and volunteers** to find NGOs based on their interests and location.
- Try **Simplify the process of making donations** and tracking contributions. **Promote transparency** by allowing NGOs to showcase their projects and impact reports.

1.1.3 Problem Statement (What Issues Does It Solve?)

Despite the growing number of NGOs, many of them **face difficulties in gaining recognition and securing resources**. Some of the key problems NGO Saathi addresses include:

- **Lack of Visibility** – Many NGOs struggle to reach potential donors and volunteers.
- **Inefficient Donation Process**– Owner trust and transparency in NGO operations.

- **Limited Engagement** – NGOs find it challenging to engage **long-term volunteers**. **Scattered Information** – No single **aggregated database** exists where people can explore and compare NGOs.

NGO Saathi provides a **structured, verified, and easy-to-use** platform that resolves these challenges by connecting the right people to the right organizations.

1.1.4 Target Audience (Who Will Use NGO Saathi?)

NGO Saathi is designed for **multiple stakeholders**, including:

- **NGOs** – To register, list their activities, attract donations, and recruit volunteers.
- **Donors** – To discover credible NGOs and contribute towards meaningful causes.
- **Volunteers** – To find NGOs that match their skills and interests.
- **Government & CSR Departments** – To identify NGOs for social responsibility programs.
- **General Public** – To stay informed about NGO initiatives and social impact.

1.2 Objectives and Goals

The primary objective of **NGO Saathi** is to create a **centralized, transparent, and accessible** platform that connects NGOs with donors, volunteers, and beneficiaries. This project aims to **bridge the gap between organizations and individuals** who wish to contribute to social causes efficiently.

1.2.1 Enhance NGO Visibility

- Provide a structured platform where NGOs can register and showcase their work.
- Enable users to search and filter NGOs based on location, category, and causes.

1.2.2 Simplify Donations & Resource Management

- Create a **secure and transparent donation system** for monetary and

material contributions.

- Ensure NGOs can track **fund utilization and donor impact reports..**

1.2.3 Improve Volunteer Engagement

- Develop a system for **volunteer registrations, skill-based matching, and scheduling.**
- Allow NGOs to post **volunteering opportunities** and connect with interested individuals.

1.2.4 Foster Trust & Credibility

- Implement **NGO verification processes** to ensure authenticity.
- Enable user reviews and ratings to **enhance credibility and trustworthiness.**

1.2.5 Data-Driven Insights & Analytics

- Provide **real-time analytics** for NGOs on donations, volunteer sign-ups, and user engagement.
- Help stakeholders make **informed decisions** through interactive dashboards.

1.2.6 Scalability & Future Growth

- Design the platform to **accommodate expansion** across different cities and regions.
- Allow future integration of **AI-based recommendations and mobile applications.**

1.3 Scope of the Project

The scope of the NGO Saathi project boundaries, functionalities, and future scalability of the platform. It outlines what the system includes, excludes, and aims to achieve, ensuring that all stakeholders understand the capabilities and limitations of the project.

1.3.1 What Does NGO Saathi Cover?

Geographic Coverage

- Initially focuses on local and national NGOs in India.
- international NGOs and global users.

Stakeholders & Users

The platform caters to multiple stakeholders, each with distinct roles and functionalities:

- **NGOs** → Register, manage profiles, list projects, seek donations & volunteers.
- **Donors** → Search NGOs, donate funds or resources, track contributions.
- **Volunteers** → Discover NGOs, apply for roles, participate in activities.

Key Functional Areas Covered

- **NGO Registration & Verification**
 - NGOs can register & create profiles with their legal details.
 - A verification process ensures the legitimacy of listed NGOs.
- **Comprehensive NGO Directory**
 - Users can search NGOs based on category, location, and impact areas.
 - NGOs can update their profiles with projects, achievements, and testimonials.
- **Donation & Fund Management**
 - Secure online donation system supporting various payment gateways.
 - Donation tracking & transparency reports for contributors.

- **Volunteer Recruitment & Management**
 - NGOs can list volunteer opportunities with detailed roles & requirements.
 - Volunteers can apply, schedule, and receive confirmation from NGOs.
- **Review & Feedback System**
 - Users can **rate & review NGOs** to ensure credibility and trust.
 - NGOs can **showcase testimonials & impact reports** to gain more support.

1.3.2 What Is NOT Covered in NGO Saathi? (Limitations & Exclusions)

- **Direct Fund Distribution:** NGO Saathi does not **hold or distribute funds**; all donations go directly to the NGOs.
- **Legal Assistance:** While the platform provides verified NGO information, it does not **offer legal or financial advice** for NGOs.
- **Offline NGO Operations:** The platform only facilitates **online interactions** and does not manage offline NGO activities directly.
- **Government Partnerships (Initially):** While NGO Saathi aims to integrate with **government welfare initiatives**, it currently operates **independently**.

1.3.3 Future Scope & Expansion

As the platform matures, we plan to **expand its functionalities** with the following:

- **AI-Based NGO Recommendations**
 - Uses machine learning to suggest NGOs based on donor/volunteer interests.
 - Personalized NGO suggestions for better engagement & impact.
- **Mobile App Development**
 - A dedicated Android & iOS app for better accessibility.
 - Features real-time donation alerts, volunteer matching, and SOS requests.
- **Global Expansion**
 - Integration with international NGOs and support for multiple languages.
 - Partnerships with global charity organizations.

1.4 Problem Statement

1.4.1 Identifying the Challenges in NGO Discoverability and Accessibility

In today's world, **Non-Governmental Organizations (NGOs)** play a crucial role in addressing societal issues, ranging from education, healthcare, and environmental conservation to poverty alleviation and disaster relief. However, despite their impactful work, many NGOs struggle with **visibility, accessibility, and resource mobilization** due to the following key challenges:

- **Lack of a Centralized Platform**
 - There is no unified platform that aggregates all NGOs in one place, making it difficult for donors, volunteers, and beneficiaries to find relevant NGOs efficiently.
 - NGOs often rely on individual websites or social media for outreach, which lacks standardization and visibility.
- **Difficulty in Connecting with the Right Audience**
 - Many people want to contribute (either through donations, volunteering, or partnerships) but are unaware of the NGOs operating in their area or working in their preferred cause.
 - Similarly, NGOs struggle to reach potential supporters due to limited marketing budgets and digital literacy.
- **Transparency and Credibility Concerns**
 - Donors and volunteers often hesitate to engage with NGOs due to concerns about fund mismanagement, lack of impact tracking, and difficulty in verifying the legitimacy of NGOs.
 - Many NGOs do not have a proper reporting system to showcase their impact, leading to trust issues.
- **Limited Technological Integration**
 - Many small and medium-sized NGOs lack access to digital tools to enhance their efficiency.
 - Websites, mobile apps, and automated management systems are either expensive or require technical expertise, which many NGOs do not have.

1.4.2 How NGO Saathi Solves These Problems?

To address these challenges, NGO Saathi provides a **comprehensive, technology-driven platform** that:

1. Centralizes NGO information for easy access.
2. Connects NGOs with the right audience (donors, volunteers, beneficiaries).
3. Ensures credibility and transparency with detailed NGO profiles and reviews.
4. Simplifies NGO management with digital tools for record-keeping and outreach.
5. Promotes collaboration and partnerships to enhance social impact.

With **NGO Saathi**, we aim to revolutionize the way NGOs operate and engage with society, ensuring a **more connected, transparent, and effective** ecosystem for social good

1.5 Significance of the Project

The **NGO Saathi** project plays a crucial role in transforming the way NGOs operate, engage with the public, and manage their resources. By providing a centralized platform, it enhances the visibility of NGOs, allowing them to reach a broader audience and gain the support they need. The project simplifies the process of connecting NGOs with donors, volunteers, and beneficiaries, making social contributions more accessible and impactful.

One of the most significant aspects of this project is its ability to promote transparency and trust. Many individuals hesitate to donate or volunteer due to concerns about the credibility of NGOs. NGO Saathi addresses this by offering verified profiles, detailed reports, and real-time updates on NGO activities, ensuring a trustworthy and accountable ecosystem.

Additionally, the project enhances operational efficiency for NGOs by integrating digital tools that reduce manual workload and streamline management tasks. Many NGOs struggle with resource allocation and outreach due to a lack of technical expertise and digital presence.

2 System Analysis & Design

System Analysis & Design (SAD) is a crucial phase in software development that ensures the system is well-structured, scalable, and meets both user and business requirements. This phase involves understanding the system's needs, defining its architecture, and planning its implementation.

2.1 *Software Development Life Cycle (SDLC)*

The Software Development Life Cycle (SDLC) is a structured process that outlines the phases involved in developing software, ensuring efficiency, maintainability, and scalability. For NGO Saathi, we followed an **Agile SDLC Model** to ensure flexibility, iterative improvements, and continuous feedback integration.

2.1.1 *Introduction to SDLC*

SDLC defines the entire **development process** from the **idea stage to deployment and maintenance**. The goal is to **deliver high-quality software** that meets user requirements.

2.1.2 *Phases of SDLC in NGO Saathi*

Planning Phase

This phase involved identifying objectives, defining project scope, and conducting feasibility studies.

Project Goals:

- Create a platform that connects NGOs with volunteers, donors, and beneficiaries.
- Provide a centralized database of NGOs across different categories.
- Enable easy donations,

Planning Phase Sequence



event participation, and resource tracking.

Key Tasks:

- Conducted market research on existing NGO platforms.
- Defined core functionalities (registration, verification, search, donations).
- Created an initial project roadmap for development.

Requirement Analysis Phase

In this phase, we gathered user requirements and identified both functional and non-functional requirements.

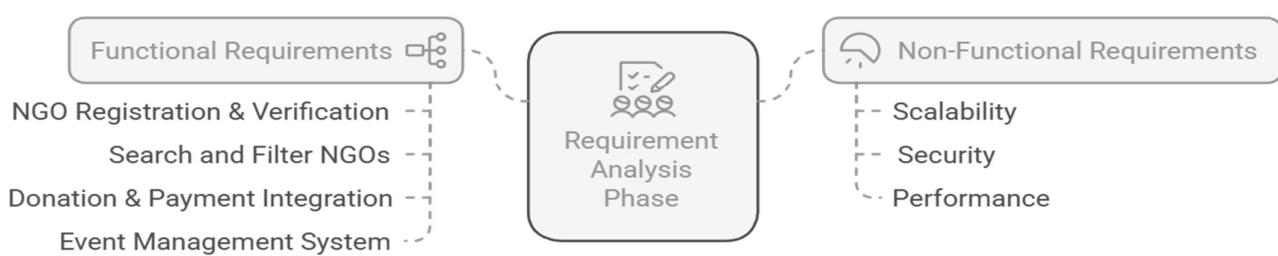
Functional Requirements (What the system must do):

- NGO Registration & Verification
- Search and Filter NGOs
- Donation & Payment Integration (Razorpay)
- Event Management System

Non-Functional Requirements (How the system should work):

- **Scalability** → Handle large data efficiently.
- **Security** → Clerk authentication & role-based access.
- **Performance** → Fast-loading UI with Tailwind CSS & optimized API responses.

Requirement Analysis Phase: Functional and Non-Functional Requirements



System Design Phase

This phase involved designing the system architecture, database schema, and UI wireframes.

Key Design Decisions:

- **Frontend:** Built with React.js + Tailwind CSS for modularity.

- **Backend:** Developed with Node.js & Express.js for efficient API handling.
- **Database:** Used MongoDB for storing NGO and user data.
- **Authentication:** Integrated Clerk for secure login and role management.

Implementation Phase

This phase focused on coding, integrating APIs, and setting up third-party services.

Frontend Implementation:



Frontend Implementation

- Developed with React.js.
- Styled using Tailwind CSS for responsiveness.
- Implemented dynamic NGO listing & search functionality.



Backend Implementation

Backend Implementation:

- Built RESTful APIs using Node.js & Express.js.
- Integrated MongoDB with Mongoose for efficient data handling.



Payment Integration

Payment Integration:

- Used Razorpay for secure online donations.
- Implemented transaction tracking & reports.

Testing Phase

This phase focused on ensuring software reliability, security, and usability.

Types of Testing Conducted:

- **Unit Testing** → Tested individual components (React UI & APIs).
- **Integration Testing** → Verified database and API interactions.
- **Security Testing** → Ensured data protection via Clerk authentication.
- **Performance Testing** → Optimized API response times & UI load speeds.

Deployment & Maintenance Phase

The final phase involved deploying the system, monitoring its performance, and planning future updates.

Deployment Strategy:

- Frontend hosted on **Netlify**.
- Backend hosted on **Vercel**.
- Database hosted on **MongoDB Atlas**.
- Regular updates planned for scalability.

2.2 Functional & Non-Functional Requirements

Our system is designed with a set of functional and non-functional requirements that define how it should operate. These requirements serve as the blueprint for development, ensuring that the system performs efficiently, meets user expectations, and remains scalable in the long run.

2.2.1 Functional Requirements

Functional requirements define the **core operations** that NGO Saathi must perform. These describe how different users will interact with the system and what features must be implemented to fulfill their needs.

User Management & Authentication:

The platform must provide secure **user registration, login, and profile management** for different types of users:

- **NGO Representatives** – They can register their organization, manage profiles, and update their activities.
- **Donors & Volunteers** – They should be able to sign up, view NGOs, donate, and participate in volunteering programs.
- **Admin Panel** – A system administrator should have access to approve/reject NGOs and oversee operations.

NGO Listings & Search System

To ensure easy discovery, NGO Saathi have:

- A search and filter system where users can find NGOs based on categories like education, health, environment, and more.
- Detailed NGO profiles showcasing mission, services, projects, and donation needs.

- A verification mechanism where only genuine NGOs are listed after admin approval.

Donation & Fundraising System

A robust **donation system** is necessary to support NGO operations. The system should:

- Allow NGOs to create fundraising campaigns for specific causes.
- Enable donors to contribute via UPI, credit/debit cards, and net banking.
- Provide real-time tracking of donation progress.
- Send donation receipts and tax exemption certificates to donors.

Volunteering & Event Management

The system should allow NGOs to create events where volunteers can register and participate.

- Volunteers should get event details, dates, and locations.
- A notification system should remind users of upcoming events.
- NGOs should be able to mark attendance and maintain records.

2.2.2 Non-Functional Requirements

Apart from core functionality, NGO Saathi must adhere to various non-functional requirements that determine its **performance, security, usability, and scalability**.

Performance & Scalability

Our system can:

- Handle hundreds of concurrent users without delays.
- Use's optimized database queries to ensure fast data retrieval.
- Be **scalable**, meaning as the number of NGOs and donors increases, the system should expand without failures.

Security Measures

Security is a **top priority**, as the platform deals with sensitive user data and financial transactions. We have:

- Implement JWT authentication for secure user logins.
- Use SSL encryption to protect user data from cyber threats.

Usability & Accessibility

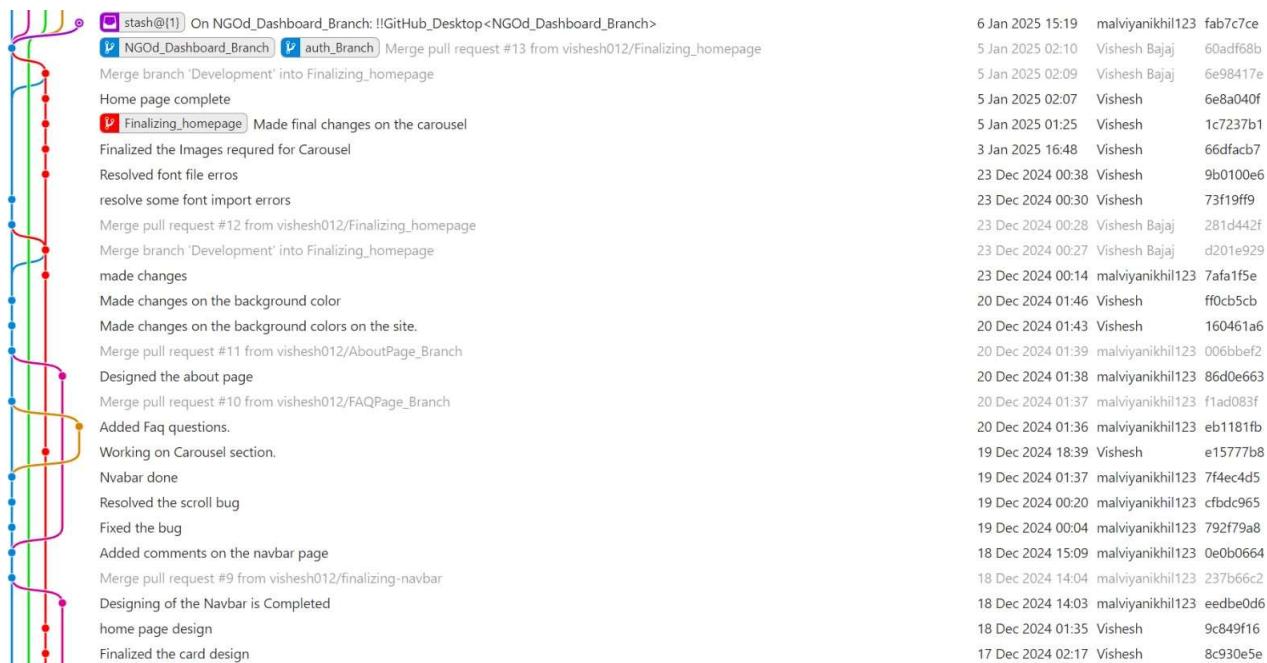
NGO Saathi should be easy to use for all types of users, including those who are not tech-savvy. It must:

- Follow UI/UX best practices to ensure smooth navigation.
- Support multiple languages to cater to a wider audience.
- Be mobile-friendly, ensuring accessibility across devices.
- Include screen reader support for visually impaired users.

Maintainability & Documentation

To ensure long-term maintainability:

- The codebase should follow **clean coding practices**.
- Proper **API documentation** should be provided for future developers.
- Version control using **GitHub** should track all updates and modifications.



2.3 Technology Stack

A **technology stack** is a set of programming languages, frameworks, and tools used to develop and deploy a software application. NGO Saathi is built using modern web technologies to ensure:

- **Scalability** (handling a growing number of NGOs and users efficiently).
- **Security** (protecting user data and financial transactions).
- **Performance** (fast-loading pages and smooth interactions).

The **stack** is divided into frontend, backend, database, hosting, and third-party integrations to create a robust and efficient platform.

2.3.1 Frontend (Client-Side Development)

The frontend is responsible for displaying information to the user and allowing them to interact with the platform.

React.js (JavaScript Library for UI Development)

React.js is a **widely used JavaScript library** for building fast, interactive, and dynamic user interfaces.

Key Features:

- **Component-Based Architecture** → Breaks the UI into reusable, independent components.
- **Virtual DOM** → Optimizes rendering, making the application fast.
- **State Management** → Efficiently manages UI updates and interactions.
- **React Hooks** → Enables functional components to have lifecycle features.

Tailwind CSS (Styling Framework for Responsive UI)

Tailwind CSS is a **utility-first CSS framework** that allows for rapid styling without writing custom CSS.

Key Features:

- **Mobile-First Design** → Ensures a fully responsive UI.
- **Highly Customizable** → Uses a configuration file for unique styling.
- **Performance Optimization** → Generates only the necessary CSS, reducing file size.

2.3.2 Backend (*Server-Side Development*)

The backend is responsible for **handling business logic, authentication, and database operations**.

Node.js (JavaScript Runtime for Server-Side Development)

Node.js is a **lightweight and scalable runtime environment** that executes JavaScript outside the browser.

Key Features:

- **Asynchronous & Event-Driven** → Handles multiple requests efficiently.
- **Single Programming Language** → JavaScript for both frontend & backend.
- **Cross-Platform Support** → Works on Windows, macOS, and Linux.

Authentication & User Management with Clerk

Instead of handling authentication manually with JWT tokens, Clerk is used to provide a secure and streamlined authentication process.

Why Clerk?

- Built-in authentication UI components (signup, login, profile management).
- Supports social logins (Google, GitHub, etc.).
- Manages session security with minimal configuration.
- Provides Role-Based Access Control (RBAC).

How Clerk Works in NGO Saathi?

1. User Signup/Login – Users register through Clerk's authentication system.
2. Session Management – Clerk handles secure session storage and token refresh.
3. Role-Based Access Control (RBAC) – Different access levels for donors, NGOs, and admins.
4. API Security – Requests are authenticated via Clerk-provided session tokens.

2.3.3 Database Management

NGO Saathi requires a **scalable and flexible database** to store and manage large amounts of data.

MongoDB (NoSQL Database for Flexible Data Storage)

MongoDB is a **document-oriented database** that stores data in **JSON-like format (BSON)**.

Key Features:

- **Schema-less Structure** → Easily adapts to new data fields.
- **High Performance** → Indexing and aggregation for fast queries.
- **Horizontal Scaling** → Handles large amounts of NGO and user data.

2.3.4 Hosting & Deployment

To make NGO Saathi **accessible worldwide**, we deploy the **frontend, backend, and database** using cloud services.

Netlify (Frontend Hosting)

Netlify is a **powerful frontend hosting platform** for fast and reliable deployment.

Key Features:

- **Global CDN (Content Delivery Network)** → Ensures **fast loading speed** worldwide.
- **Continuous Deployment (CI/CD)** → Automatically deploys after new code updates.
- **Environment Variables Support** → Secures sensitive credentials (API keys, database URLs).

2.3.5 Payment & API Integrations

Razor pays (Payment Gateway for Donations)

Razor pays allows users to **make secure donations** using various payment methods.

Key Features:

- **UPI, Credit/Debit Card, Net Banking Support**
- **Payment Analytics Dashboard** → Tracks donation trends.
- **Instant Payment Settlement** → Ensures NGOs receive funds quickly.

2.4 Database Schema Design

A well-structured **database schema** is crucial for ensuring efficient data storage, retrieval, and management in NGO Saathi. The platform relies on **MongoDB**, a **NoSQL database**, which provides flexibility and scalability for handling dynamic data. The database is designed using a **document-oriented approach**, where data is stored in **collections** instead of relational tables.

2.4.1 Database Structure Overview

The key collections in the MongoDB database are:

1. **Users** → Stores information about registered users (donors, NGO admins, volunteers).
2. **NGOs** → Maintains details of different NGOs, their services, and contact information.
3. **Donations** → Tracks all donations made, including amount, donor, and NGO details.
4. **Events** → Logs NGO-organized events and volunteer activities.
5. **Transactions** → Stores Razor pay payment transaction records.
6. **Messages** → Manages real-time communication between users and NGOs.

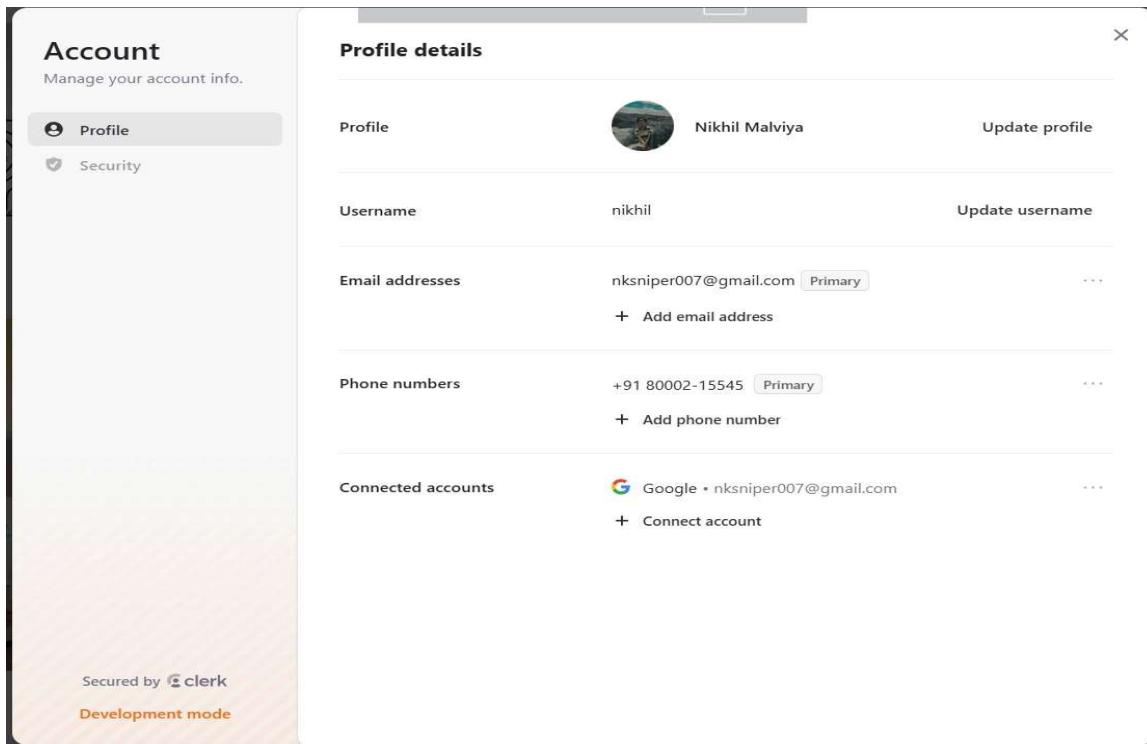
2.4.2 Collection Schema Details

Users Collection

Stores **user accounts**, which can be **donors, NGO admins, or volunteers**.

(Put images from Mongo DB and Clerk)

```
_id: ObjectId('67c35d6d3fe3a71760377c64')
clerkId : "user_2tjDeRei0U7Ul3xbTkFaWRWaLTL"
email : "nksniper007@gmail.com"
name : "Nikhil Malviya"
__v : 0
```



NGOs Collection

Stores NGO details, including their cause, contact information, and verification status.

```

_id: ObjectId('67c44b96ffff44a02d8360c10')
ngo_card_img: "https://example.com/ngo_card.jpg"
name: "Pragati Seva Sansthan"
registrationNumber: "NGOIND2024001"
establishedYear: 2008
contactDetails: Object
  email: "info@pragati.org.in"
  phone: "+91 9876543210"
  website: "https://pragati.org.in"
address: Object
  street: "25, Gandhi Marg"
  city: "Lucknow"
  state: "Uttar Pradesh"
  country: "India"
  postalCode: "226001"
categories: Array (2)
  0: "Education"
  1: "Women Empowerment"
shortdescription: "Empowering underprivileged communities through education and skill dev..."
description: "Pragati Seva Sansthan is a non-profit organization dedicated to provid..."
goals: Array (4)
  0: "Provide education to 1,00,000 underprivileged children by 2030."
  1: "Offer vocational training to 20,000 women for financial independence."
  2: "Expand self-help groups to 500 villages in rural India."
  3: "Launch healthcare and sanitation awareness programs in 100 communities..."
socialMedia: Object
  facebook: "https://facebook.com/pragatisevasansthan"
  twitter: "https://twitter.com/pragati_sansthan"
  instagram: "https://instagram.com/pragatiseva"
  linkedin: "https://linkedin.com/company/pragati-seva"

```

Donations Collection

Tracks all **donation transactions**, linking the donor and the receiving NGO.

```
_id: ObjectId('67c4dd43fff44a02d8360cc6')
▼ donor : Object
  userId : "65e09a1b1c2d3e4f5a6b7c8d"
  name : "Aishwarya Sharma"
  phoneNumber : "+919876543210"
  email : "aishwarya.sharma@example.com"
  amount : 500
  method : "UPI"
  date : "2024-03-01T10:00:00Z"
  cause : "65e09b2c3d4e5f6a7b8c9d0e"
  transactionId : "UPI-1234567890"
  status : "Completed"
  notes : "Donation for education fund."
```

Donation Section Cards Collection

Stores details of **Current Donation Cards**.

```
_id: ObjectId('67c4e005fff44a02d8360ce0')
▼ donation_card : Object
  NGO_Name : "Helping Hands"
  Description : "Providing food and shelter to the homeless."
  Image_URL : "https://media.istockphoto.com/id/941788480/photo/portrait-of-girl-kid-..."
  Donation_Link : "https://helpinghands.org/donate"
  Category : "Relief"
  ▼ Contact : Object
    Email : "contact@helpinghands.org"
    Phone : "+919876543210"
  Target_Amount : 500000
  Raised_Amount : 250000
```

2.5 System Architecture

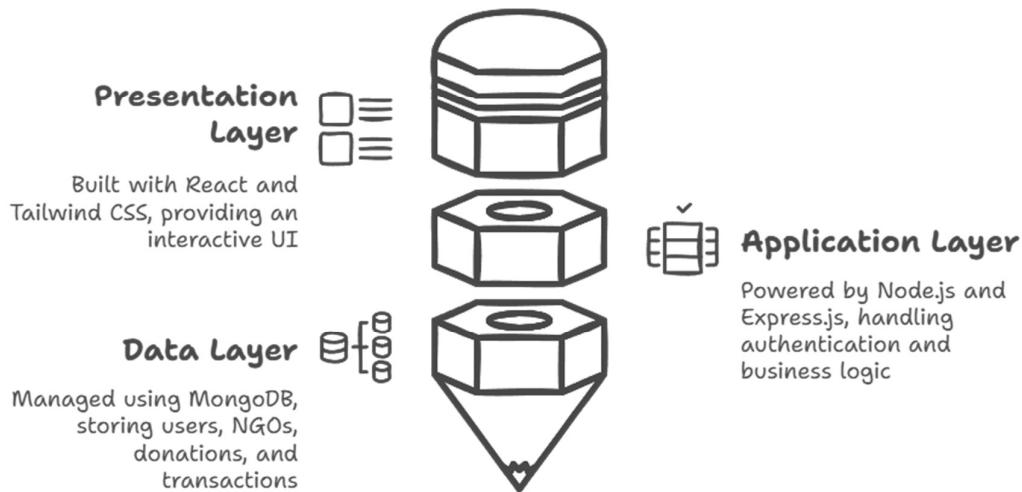
The **system architecture** of NGO Saathi defines how different components interact, ensuring **scalability, security, and performance**. It follows a **modern web application architecture** with a **MERN stack** (MongoDB, Express.js, React, Node.js) and integrates **Razor pay for payments** and **Netlify for frontend deployment**.

2.5.1 Architectural Overview

NGO Saathi is built on a three-tier architecture, consisting of:

1. **Presentation Layer (Frontend)** → Built with React + Tailwind CSS, providing an interactive UI.
2. **Application Layer (Backend API)** → Powered by Node.js & Express.js, handling authentication, business logic, and data processing.
3. **Data Layer (Database)** → Managed using MongoDB, storing users, NGOs, donations, and transactions.

NGO Saathi System Architecture Overview



2.5.2 System Architecture Diagram

A high-level architecture diagram should be placed here illustrating:
 User Interaction (Frontend) API Calls to Backend (Express.js) Database Storage
 (MongoDB) Payment Gateway (Razorpay)

(To be Done)

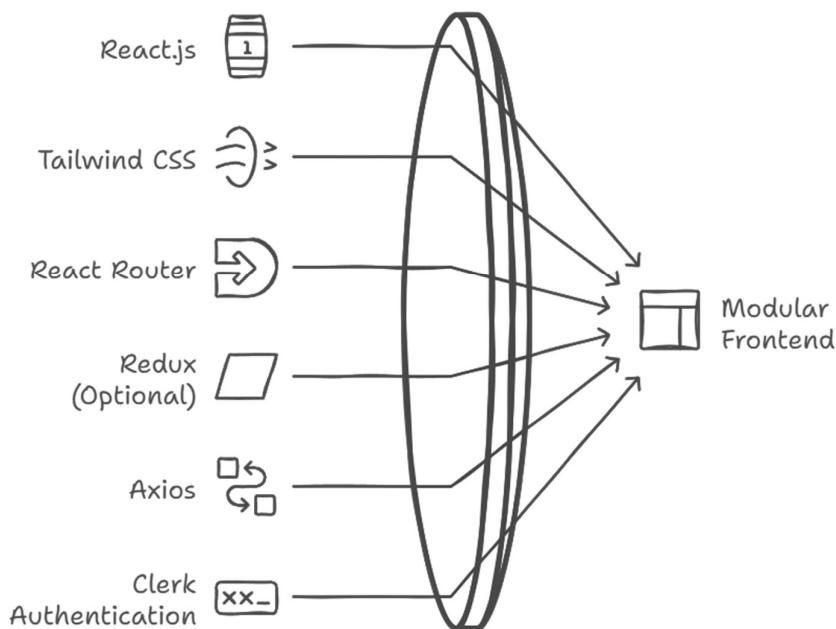
2.5.3 Frontend Architecture

The frontend is developed using **React.js** with **Tailwind CSS** for styling. It follows a **component-based approach**, where each UI element is modular and reusable.

Key Features:

- **React Router** → For page navigation.
- **Redux (Optional)** → For state management.
- **Axios** → For API requests.
- **Clerk Authentication** → Secure user authentication.
- **Netlify Deployment** → Hosting the frontend.

Building a Modular Frontend



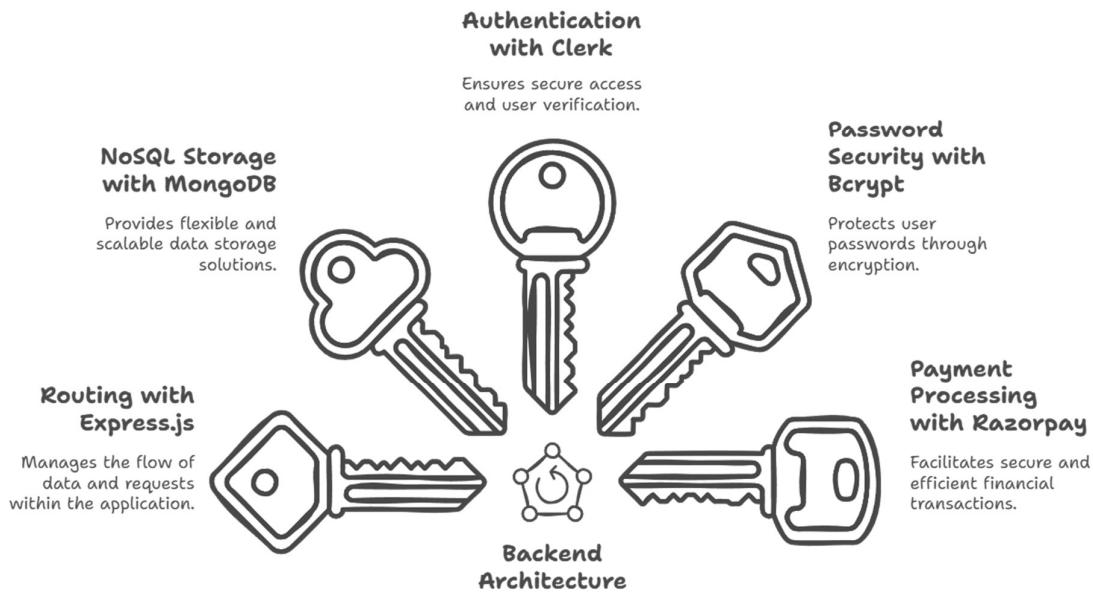
2.5.4 Backend Architecture

The backend is built using **Node.js** with **Express.js** and follows a **REST API** architecture.

Key Features:

- Express.js for routing
- MongoDB for NoSQL storage
- Clerk for authentication
- Bcrypt for password hashing
- Razor pay API for payments

Building a Secure and Scalable Backend with Node.js



2.5.5 Database Architecture

- **MongoDB (NoSQL)** for dynamic schema flexibility.
- **ObjectId references** to establish relationships.
- **Indexes** for fast data retrieval.

2.5.6 Security & Performance Considerations

- **Clerk Authentication** → Secure user management.
- **Rate Limiting** → Prevent DDoS attacks.
- **Data Encryption** → Protect sensitive information.
- **CDN & Lazy Loading** → Improve performance.

3 Project Planning & Development

Project planning and development form the backbone of any successful software project, ensuring a structured approach to building and deploying the application. For **NGO Saathi**, a well-defined planning and development strategy was crucial to manage resources effectively, meet deadlines, and deliver a high-quality, functional platform.

Key elements of the project planning approach:

- **Requirement Analysis** – Understanding the needs of NGOs and users
- **Resource Allocation** – Assigning tasks to team members based on expertise
- **Technology Selection** – Choosing the appropriate tech stack (React, Node.js, MongoDB, Tailwind CSS, Clerk for authentication, Razorpay for payments, and Netlify for hosting)
- **Risk Assessment** – Identifying potential challenges and creating mitigation strategies
- **Timeline & Milestones** – Breaking down the project into achievable phases with deadlines

3.1 Development Methodology

The development methodology defines the structured approach used to build the **NGO Saathi** platform. Given the dynamic nature of web development and the need for flexibility, we adopted the **Agile Methodology** with **Scrum Framework** to ensure an iterative, user-focused, and efficient development process.

3.1.1 Why Agile?

Agile was chosen for its adaptability, continuous feedback integration, and incremental development approach. It allowed us to accommodate changes based on stakeholder feedback, prioritize tasks dynamically, and ensure timely delivery of features.

3.1.2 Scrum Framework Implementation

The **Scrum Framework** helped us break the project into smaller, manageable units known as **Sprints**, each lasting around **2 weeks**.

1. **Sprint Planning** – Defined tasks and goals for each sprint

2. **Daily Stand-ups** – Short meetings to track progress and resolve blockers
3. **Development & Testing** – Implemented features in iterative cycles
4. **Sprint Review** – Evaluated completed features and gathered feedback
5. **Sprint Retrospective** – Identified improvements for the next cycle

3.1.3 Development Workflow

The project followed a structured workflow to ensure a smooth development cycle:

- **Requirement Gathering** → Understanding NGO needs and platform objectives
- **Design & Prototyping** → Creating UI/UX using **Figma**
- **Backend & Database Development** → Implementing **Node.js**, **Express.js**, **MongoDB**
- **Frontend Development** → Building UI using **React & Tailwind CSS**
- **Integration & Testing** → Ensuring smooth functionality and security
- **Deployment & Maintenance** → Hosting on **Netlify** with **Clerk** for authentication and **Razor pay** for payments

3.2 Phases of Development

The development of **NGO Saathi** followed a structured process divided into multiple phases, ensuring a smooth and efficient progression from concept to deployment. Each phase played a crucial role in shaping the final product.

3.2.1 Requirement Analysis & Research

Objective: Understanding the problem statement and defining project goals.

Key Activities:

- Conducted market research on NGO platforms.
- Identified target users and their needs.
- Defined core functionalities.
 - **Outcome:** Documented project requirements, feature list, and business approach.

3.2.2 System Design & Prototyping

Objective: Creating a visual and technical blueprint of the system.

Key Activities:

- Designed wireframes and UI using Figma.
- Created a sitemap to define navigation structure.
- Developed database schema in MongoDB.
 - **Outcome:** A finalized UI/UX design and database structure.

3.2.3 Development Phase

Objective: Writing actual code and building the platform.

Key Activities:

- Developed frontend using **React & Tailwind CSS**.
- Built **backend** with **Node.js & Express.js**.
- Integrated Clerk for **authentication** and Razorpay for payments.
- Connected MongoDB database for storing NGO data.
 - **Outcome:** A functional website with key features implemented.

3.2.4 Testing & Debugging

Objective: Ensuring platform stability, performance, and security.

Key Activities:

- Performed **unit testing, integration testing, and UI testing**.
- Used **Postman** for API testing.
- Fixed major bugs and optimized performance.
 - **Outcome:** A fully tested, bug-free, and stable application..

3.2.5 Deployment & Maintenance

Objective: Deploying the platform and ensuring long-term scalability.

Key Activities:

- Hosted the website on **Netlify**.

- Configured Clerk authentication & Razor pay payment gateway.
- Monitored user feedback for future improvements.
 - **Outcome:** A live, accessible, and continuously improving web platform.

3.3 Challenges & Risk

Every software development project faces obstacles and uncertainties. In **NGO Saathi**, we encountered several technical, operational, and strategic challenges. This section outlines the **major challenges**, the **risks involved**, and the **measures we took to overcome them**.

3.3.1 Data Collection & Verification

Challenge: Aggregating and verifying NGO data was difficult as there was no centralized database with updated information.

Risk: Inaccurate or outdated information could mislead users and reduce platform credibility.

Solution:

- Partnered with local NGOs for data validation.
- Implemented a **manual review system** before approving NGO listings.
- Allowed NGOs to update their details via a **verified admin dashboard**.

3.3.2 Authentication & Security Risks

Challenge: Implementing a secure yet seamless authentication process.

Risk: Unauthorized access, user impersonation, and data breaches.

Solution:

- Used **Clerk for authentication**, ensuring robust user verification.
- Implemented **role-based access control** (NGOs, donors, and admins).
- Stored sensitive user data securely in **MongoDB with encryption**.

3.3.3 Payment Integration Issues

Challenge: Ensuring safe, fast, and seamless donations through the platform.

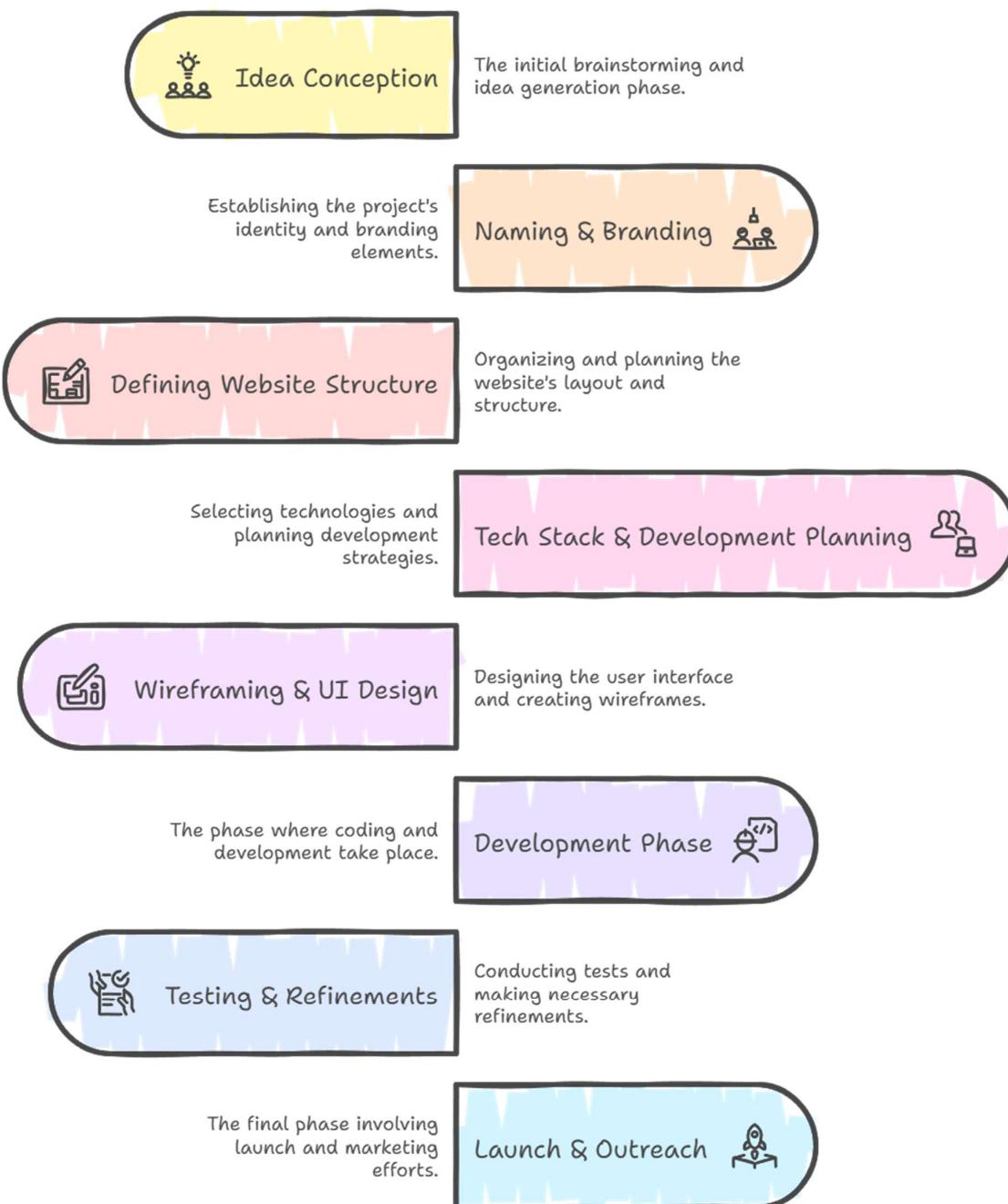
Risk: Failed transactions, fraud risks, and payment processing errors.

Solution:

- Integrated **Razorpay**, a trusted payment gateway.

- Implemented real-time transaction tracking and fraud detection mechanisms.
- Provided donors with **secure payment receipts** and transaction logs.

Project Development Timeline



4 User Interactive & UX Designs

A well-designed user interface (UI) and seamless user experience (UX) are critical for ensuring **NGO Saathi** is intuitive, visually appealing, and accessible to its target audience. This section delves into the design choices, structural planning, and interactive elements that define the platform's usability.

The **UX design process** involved research, wireframing, prototyping, and iterative testing to ensure a smooth and engaging experience for both NGOs and users. The goal was to create a **clean, minimalistic, and functional interface** that allows users to **easily find, connect with, and support NGOs** based on their interests.

To achieve this, we focused on:

- **User-Centered Design:** Ensuring the platform meets the needs of NGOs and donors.
- **Consistency & Branding:** Using a well-defined **color scheme, typography, and UI components**.
- **Accessibility & Responsiveness:** Making the platform **usable across devices** (mobile, tablet, desktop).
- **Smooth Navigation:** A simple and intuitive **sitemap, wireframes, and interactive prototypes** helped in designing seamless user flows.

4.1 Figma Design Overview

Figma was used as the primary design tool for creating, iterating, and refining the **NGO Saathi** user interface. It enabled the team to **collaborate in real-time**, ensuring that the design was aligned with user expectations and project requirements.

4.1.1 Design Approach & Workflow

The Figma workflow followed these key stages:

1. **Ideation & Research** – Understanding user needs and defining UI/UX goals.
2. **Low-Fidelity Wireframes** – Creating basic layouts to map out content placement and navigation.
3. **High-Fidelity Designs** – Adding colors, typography, icons, and branding elements.

4. **Prototyping** – Developing interactive elements to simulate user flows.
5. **Testing & Iteration** – Gathering feedback and refining the UI for a seamless experience.

4.1.2 Key UI Elements in Figma

- **Color Scheme & Branding:** A professional and engaging palette to maintain consistency.
- **Typography & Spacing:** Readable and aesthetically pleasing font selections.
- **Button & Component Designs:** Well-structured CTAs (Call-to-Action) for easy navigation.
- **Forms & Input Fields:** User-friendly and accessible forms for NGOs and donors.
- **Dashboard UI:** A structured interface for NGO management and user interaction.

4.2 Sitemap

A **sitemap** serves as a blueprint of the **NGO Saathi** website, outlining its structure and navigation flow. It ensures an intuitive and seamless user experience by logically organizing pages and features.

4.2.1 Structure of NGO Saathi's Sitemap

The website is structured into key sections for different user roles (**NGOs, donors, and admins**) to ensure smooth navigation and accessibility.

Below is the breakdown of the sitemap:

1. Homepage

- Introduction to NGO Saathi
- Call-to-action buttons (Explore NGOs, Donate, Register)
- Search functionality

2. NGO Directory

- Filter & search NGOs by category, location, and needs
- Individual NGO profile pages
- Contact and donation options

3. User Authentication (Powered by Clerk)

- Login & Sign-up for NGOs and donors
- Profile management

4. NGO Dashboard (For Registered NGOs)

- NGO Profile Management
- Add/Edit Projects & Campaigns
- Track Donations & Donor Details
- Request for Assistance

5. Donor Dashboard (For Registered Donors)

- View donation history
- Save favorite NGOs
- Manage payment methods (via Razorpay)

6. Payment & Donation System (Integrated with Razorpay)

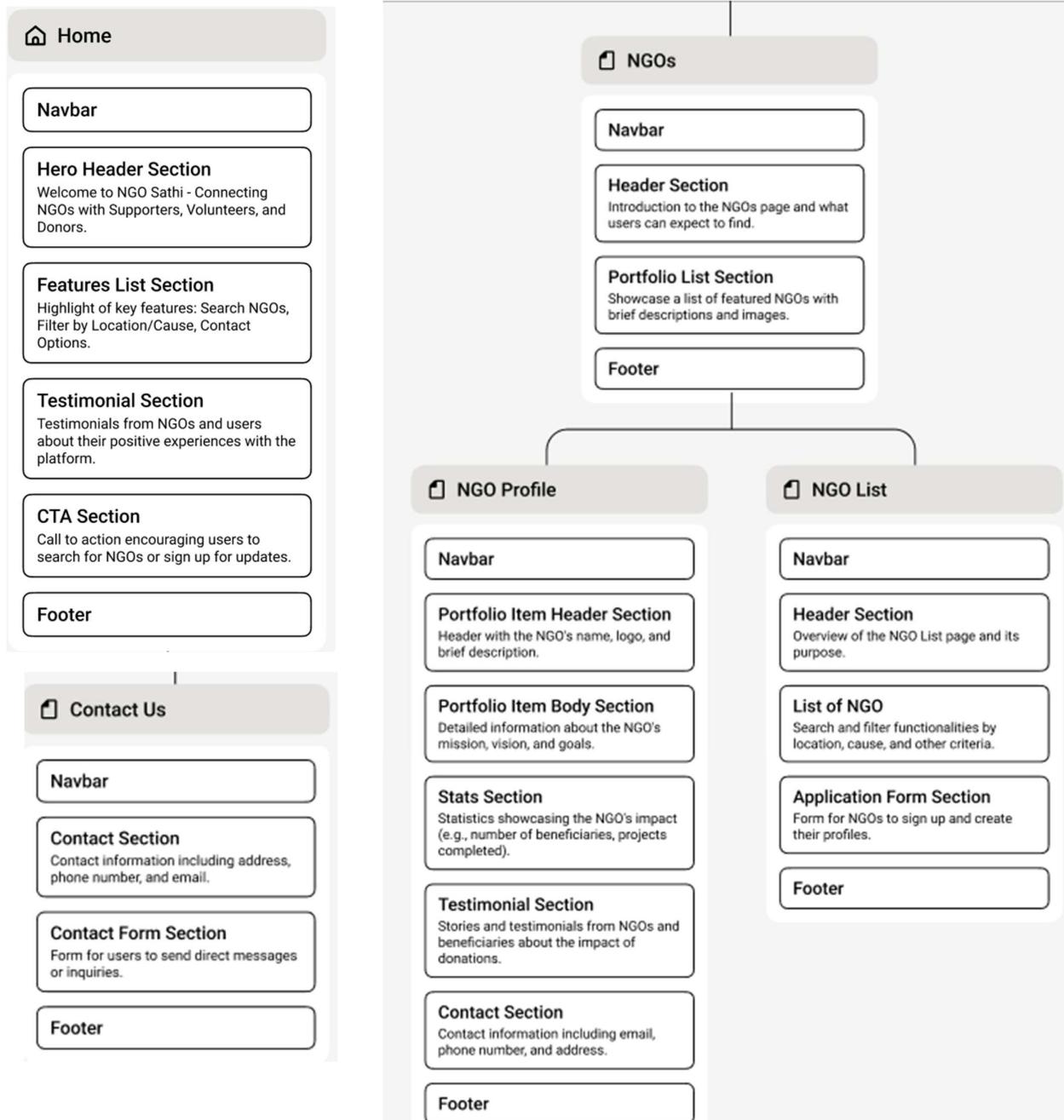
- Secure payment processing
- Donation confirmation & receipt generation

7. About Us & Contact Page

- Information about the project and its team
- Contact details & feedback form

8. Admin Panel (Restricted Access)

- NGO Verification & Approval
- User Management
- Reports & Analytics



Overview of Sitemap

4.3 Wireframes & Prototypes

4.3.1 Introduction to Wireframes & Prototypes

Wireframes and prototypes play a crucial role in the UI/UX design process of **NGO Saathi**. They serve as visual guides that define the layout, structure, and user flow before actual development begins.

- **Wireframes** → Low-fidelity sketches that outline the basic structure of each page.
- **Prototypes** → Interactive mockups that simulate user interactions and functionality.

4.3.2 Wireframes of NGO Saathi

Low-Fidelity Wireframes (Initial Sketches)

Low-fidelity wireframes are rough sketches that help in defining the core layout of different pages. These wireframes were created using **Figma**,
They provide a clear idea of:

- Content placement
- Navigation structure
- Call-to-action elements

Key Pages with Wireframes:

1. **Homepage Wireframe** – Showcasing NGO search, featured NGOs, and donation options.
2. **NGO Profile Page Wireframe** – Displaying NGO details, projects, and donation buttons.
3. **User Dashboard Wireframe** – Managing donor and NGO activities.
4. **Payment & Donation Page Wireframe** – Seamless integration with Razorpay.

High-Fidelity Interactive Prototypes

After wireframing, we developed high-fidelity prototypes in **Figma** to visualize the final design before coding. These prototypes:

- Include **realistic UI elements**, colors, and typography.
- Provide a **clickable experience** to test user interactions.
- Simulate **user journey scenarios** (e.g., making a donation, signing up).

Key Prototypes:

- User Registration & Login Flow
- NGO Search & Filtering Experience
- Donation & Payment Process
- NGO Profile Management Flow

4.4 Snapshots

4.4.1 Home Page



Find NGOs Near You and Support Their Causes

DISCOVER VOLUNTEER OPPORTUNITIES THAT MAKE A DIFFERENCE

NGO Saathi provides a comprehensive platform to connect NGOs with potential supporters, volunteers, and donors.

DONATE TO CAUSES THAT ALIGN WITH YOUR VALUES

Make a positive impact by supporting NGOs and their initiatives. Your donation can make a real difference in the lives of those in need.

CONNECT WITH NGOs AND MAKE A DIFFERENCE IN YOUR COMMUNITY

Join forces with NGOs to create positive change in your community. Together, we can make a lasting impact.

Latest

Stories from Volunteers

READ INSPIRING STORIES FROM VOLUNTEERS MAKING A DIFFERENCE.

**Rahul Sharma****Marketing Director, Global Brands**

Their campaign boosted our brand visibility in India significantly.

**Priya Nair****Principal, Sunshine School**

Their resources improved student performance in rural Maharashtra.

**Dr. Sanjay Patel****Healthcare Coordinator, Apollo**

Mobile clinics enhanced healthcare access in Tamil Nadu.

**Anita Desai****CSR Manager, Reliance**

Rural electrification in Gujarat was a huge success.

Stay Informed with Our Newsletter

SIGN UP FOR OUR NEWSLETTER TO RECEIVE THE LATEST UPDATES AND NEWS.

ENTER YOUR EMAIL



SUBSCRIBE



NGO SAATHI

Address:
4th Pola, C.H.B, Jodhpur, 342001, Rajasthan, India

© 2025 NGO Saathi. All rights reserved.

Contact:

800354728
800021545
NGOSathi.Quries@gmail.com

Volunteer Now

Donate Today

Contact Us

Privacy Policy Terms of Service Cookies Settings

4.4.2 Donation Page

ABOUT US **DONATE** **NGO LIST** **MORE >**

SIGN OUT

Make a Difference

YOUR DONATION CAN CHANGE LIVES AND SUPPORT CAUSES THAT MATTER. EVERY CONTRIBUTION, BIG OR SMALL, BRINGS US CLOSER TO BUILDING A BETTER WORLD. WHETHER YOU'RE EMPOWERING EDUCATION, PROVIDING FOOD AND SHELTER, OR SUPPORTING HEALTHCARE INITIATIVES, YOUR GENEROSITY FUELS HOPE AND CREATES LASTING IMPACT.

TOGETHER, WE CAN:

- BRING SMILES TO UNDERPRIVILEGED CHILDREN.
- PROVIDE MEDICAL CARE TO THOSE IN NEED.
- SUPPORT SUSTAINABLE COMMUNITY PROJECTS.
- OFFER RELIEF DURING EMERGENCIES.

JOIN US IN MAKING A DIFFERENCE. YOUR KINDNESS CAN SPARK A CHAIN OF GOOD DEEDS AND TRANSFORM LIVES FOR THE BETTER.

Support Us

Make a Difference by Donating Today

WHEN YOU DONATE TO NGOs THROUGH NGO SATHI, YOU NOT ONLY SUPPORT THEIR MISSION BUT ALSO ENJOY TAX DEDUCTIONS.

TAX BENEFITS

DONATE AND GET TAX DEDUCTIONS WHILE MAKING A POSITIVE IMPACT.

EMPOWER NGOs

YOUR DONATION HELPS NGOs CONTINUE THEIR VITAL WORK AND ACHIEVE THEIR GOALS.

ABOUT US

Helping Hands
Providing food and shelter to the homeless.

Category: Relief
Target: ₹ 500000
Raised: ₹ 250000

Donate Now **Learn More**

Contact: contact@helpinghands.org | +919876543210
Last Updated: 2025-03-01T13:01:23.000Z

Vidya Vikas
Educating underprivileged children in rural areas.

Category: Education
Target: ₹ 600000
Raised: ₹ 320000

Donate Now **Learn More**

Contact: info@vidyavikas.org | +919123456789
Last Updated: 2025-03-01T13:01:23.000Z

Arogya Foundation
Offering free healthcare to slum dwellers.

Category: Healthcare
Target: ₹ 450000
Raised: ₹ 200000

Donate Now **Learn More**

Contact: support@arogyafoundation.org | +918765432109
Last Updated: 2025-03-01T13:01:23.000Z

PREVIOUS **PAGE 1 OF 10** **NEXT**

4.4.3 NGO's

The image shows two screenshots of the NGO Saathi website. The top screenshot displays the homepage with a large graphic of two hands reaching towards each other, a search bar, and a 'Discover NGOs' section. The bottom screenshot shows a filtered list of NGOs, specifically 'Nari Shakti Sansthan', with categories like Education, Rural Development, Health, Women Empowerment, Environment, Healthcare, and Child Welfare.

ABOUT US DONATE NGO LIST MORE > SIGN OUT

Discover NGOs

EXPLORE IMPACTFUL NGOs WORKING IN EDUCATION, HEALTHCARE, AND SOCIAL WELFARE.

Search

ABOUT US DONATE NGOS MORE > SIGN OUT

Search

Nari Shakti Sansthan
Established: 2015
Categories: Women Empowerment

Filter

Filter by Category

- EDUCATION
- RURAL DEVELOPMENT
- HEALTH
- WOMEN EMPOWERMENT
- ENVIRONMENT
- HEALTHCARE
- CHILD WELFARE
- ACTIVE NGOs
- VOLUNTEER OPPORTUNITIES AVAILABLE

4.4.4 Contact us

ABOUT US **DONATE** **NGO LIST** **MORE >**

CONNECT 

Sign Out

Your Connection Matters

LET'S WORK TOGETHER — REACH OUT FOR MORE INSIGHTS.

Our News Letter      



Contact Information

FOR ANY INQUIRIES OR SUPPORT, PLEASE REACH OUT TO US.

WE AT NGO SAATHI ARE COMMITTED TO MAKING A POSITIVE IMPACT IN OUR COMMUNITIES. WHETHER YOU HAVE QUESTIONS, SUGGESTIONS, OR WISH TO JOIN HANDS WITH US, WE'RE HERE TO HELP. YOUR VOICE AND ACTIONS MATTER, AND TOGETHER, WE CAN CREATE MEANINGFUL CHANGE.

BE PART OF A MOVEMENT THAT'S TRANSFORMING LIVES AND FOSTERING HOPE ACROSS COMMUNITIES. WHETHER IT'S THROUGH VOLUNTEERING, DONATIONS, OR SIMPLY SPREADING THE WORD, EVERY CONTRIBUTION BRINGS US CLOSER TO ACHIEVING OUR SHARED GOALS.

AT NGO SAATHI, WE BELIEVE IN THE POWER OF COMMUNITY AND THE STRENGTH OF COLLECTIVE ACTION. WHETHER YOU'RE LOOKING TO GIVE BACK OR NEED SUPPORT FOR A CAUSE CLOSE TO YOUR HEART, WE'RE HERE TO LISTEN, GUIDE, AND COLLABORATE. EVERY CONNECTION AND EFFORT COUNTS, BUILDING A BRIGHTER AND BETTER FUTURE FOR ALL.

EMAIL
SEND US AN EMAIL TODAY!
NGOSAATHI.QUERIES@GMAIL.COM

PHONE
CALL US FOR ASSISTANCE.
[+91 8003514728](tel:+918003514728)

OFFICE
4TH PULIYA,
C.H.B, JODHPUR,
#42001,
RAJASTHAN, INDIA
[Get Directions](#)

Get in Touch

GOT A QUESTION OR NEED HELP? WRITE TO US BELOW AND HIT SUBMIT!

NAME

EMAIL

MESSAGE

I AGREE TO THE TERMS

SUBMIT



4.4.5 About us

Empowering NGOs Worldwide



NON-GOVERNMENTAL ORGANIZATIONS (NGOs) PLAY A VITAL ROLE IN ADDRESSING GLOBAL CHALLENGES, FROM POVERTY ALLEVIATION AND EDUCATION TO ENVIRONMENTAL CONSERVATION AND HUMAN RIGHTS ADVOCACY. EMPOWERING THESE ORGANIZATIONS IS ESSENTIAL TO AMPLIFY THEIR IMPACT AND ENSURE SUSTAINABLE DEVELOPMENT WORLDWIDE.

[READ MORE](#)

YOUR TRUSTED PARTNER IN SOCIAL IMPACT



EMPOWERING NGOs, AMPLIFYING IMPACT

AT NGO SATHI, WE CONNECT RESOURCES, IDEAS, AND PEOPLE TO CREATE LASTING CHANGE. FOUNDED BY PASSIONATE CHANGEMAKERS, WE EMPOWER NGOs TO TACKLE SOCIAL, ECONOMIC, AND ENVIRONMENTAL CHALLENGES THROUGH STRATEGIC GUIDANCE, COLLABORATION, AND TECHNOLOGY.

WHETHER YOU'RE AN NGO AIMING TO SCALE, A VOLUNTEER LOOKING TO CONTRIBUTE, OR A DONOR SUPPORTING MEANINGFUL CAUSES, NGO SATHI IS YOUR PARTNER FOR IMPACTFUL SOLUTIONS.

JOIN HANDS WITH US TO CREATE A SUSTAINABLE, EQUITABLE FUTURE—BECAUSE EVERY ACTION MATTERS.




NGO SATHI TIMELINE 

EXPLORE THE HISTORY AND MILESTONES OF NGO SATHI THROUGH OUR INTERACTIVE TIMELINE.

<p>15/09/2024</p> <p>INCEPTION OF NGO SATHI</p> <p>THE VISION FOR NGO SATHI WAS CONCEIVED, AIMING TO CONNECT NGOs WITH RESOURCES, VOLUNTEERS, AND DONORS TO MAXIMIZE THEIR IMPACT.</p>	<p>24/09/2024</p> <p>TEAM FORMATION</p> <p>THE NGO SATHI TEAM— VISHESH BAJA, NIKHIL MALVIYA, SOURBH PANWAR, AND HRITIK HARSH—JOINED FORCES TO BRING THE VISION TO LIFE.</p>
<p>01/10/2024</p> <p>PLANNING AND DESIGNING</p> <p>DETAILED PLANNING AND USER-CENTRIC DESIGN STRATEGIES WERE IMPLEMENTED TO ENSURE AN INTUITIVE AND VISUALLY APPEALING PLATFORM.</p>	

5 Implementation & Deployment

This section explains how NGO Saathi is deployed, including hosting, backend, and frontend setup. It ensures that the platform runs efficiently and remains accessible to users worldwide.

Key Aspects Covered in this Section:

1. **Hosting & Domain Setup** – Where and how the site is hosted.
2. **Backend & API Deployment** – Deploying the backend server and APIs.
3. **Frontend Deployment** – Making the user interface live.

5.1 Hosting & Domain Setup

For seamless deployment and accessibility, NGO Saathi is fully hosted on **Netlify**, handling both frontend and backend services. Netlify provides an efficient, scalable, and secure hosting environment with **continuous deployment**, **serverless backend functions**, and automated builds.

5.1.1 Domain Registration & Setup

- A **custom domain** is registered through **Name.com**
- The domain is linked to **Netlify**, enabling automatic SSL certification and DNS management.

5.1.2 Frontend & Backend Hosting on Netlify

- Since Netlify supports both **static site hosting** and **serverless functions**, we utilize:
- **Continuous Deployment** – Direct integration with GitHub for automatic updates.
- **Netlify Functions (Serverless)** – Handles backend API operations without a separate backend server.
- **Custom Domain & SSL** – Ensures a secure HTTPS connection.
- **Environment Variables** – Securely store API keys and credentials.

5.1.3 Deployment Steps on Netlify

- **Connect GitHub Repository** to Netlify for both frontend and backend.

- **Configure Build Settings** (React app & backend functions).
- **Deploy & Monitor** performance using the Netlify Dashboard.
- **Set Up Custom Domain & SSL** for secure access.

5.2 Backend & API Deployment

For **NGO Saathi**, the backend is deployed using **Netlify Functions**, which act as a serverless backend, handling API requests and database interactions. This ensures scalability, security, and cost-effectiveness without maintaining a dedicated server.

5.2.1 Backend Deployment on Netlify

Since we are using **Netlify for backend hosting**, the API endpoints are deployed as **serverless functions**.

Steps for Deployment:

1. **Push Backend Code to GitHub**
 - a. The backend code is structured within the same repository as the frontend or in a separate repository.
 - b. All API routes and database operations are defined using **Express.js**.
2. **Configure Netlify Functions**
 - a. Server-side logic is implemented using **Netlify Functions** (`netlify/functions` directory).
 - b. Each function handles API calls, database interactions, authentication (via **Clerk**), and processing requests.
3. **Set Up MongoDB Atlas Connection**
 - a. The backend connects to **MongoDB Atlas** using **Mongoose**.
 - b. **Environment variables** are used to store the MongoDB connection URI securely.
 - c. Ensure IP whitelisting for secure access to the database.
4. **Deploy to Netlify**
 - a. Netlify automatically detects backend changes and deploys the API functions.
 - b. The backend endpoints are accessible as **serverless API endpoints**.

5.2.2 Integration with Frontend

- The frontend (React) communicates with the backend via **REST API calls**.
- **CORS policies** are configured to allow secure API access.
- Authentication and authorization are handled using **Clerk**.

5.2.3 Testing & Monitoring

- Postman is used to test API endpoints before deployment.
- Netlify provides logs and analytics to monitor API performance.
- Error handling is implemented to ensure smooth API functioning.

5.3 Frontend Deployment

The frontend of **NGO Saathi** is built using **React.js** and is deployed using **Netlify**, ensuring seamless performance, fast loading times, and automatic updates whenever changes are pushed to GitHub.

5.3.1 Steps for Frontend Deployment on Netlify

Push Frontend Code to GitHub

- The React project is pushed to a **GitHub repository**.
- The repository contains all frontend assets, components, and necessary configurations.

Connect GitHub Repository to Netlify

- Log in to **Netlify** and connect the GitHub repository.
- Select the branch (e.g., main or master) for deployment.

Deploy & Verify

- Netlify automatically **builds and deploys** the site.
- A **custom domain** “*ngosaathi.social*” is linked via Netlify’s domain settings

5.3.2 Post-Deployment Enhancements

Performance Optimization

- Lazy loading is implemented using React Suspense.
- Code splitting is used to improve load times.

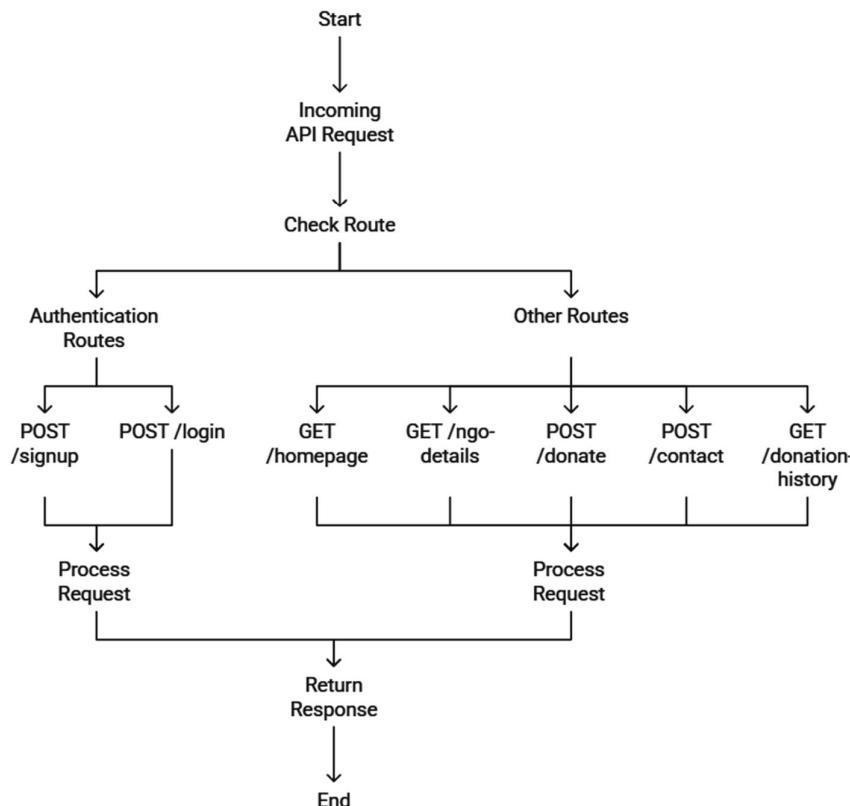
SEO & Metadata Configuration

- React Helmet is used to manage page titles and meta descriptions.
- Sitemap.xml & robots.txt are configured for search engine indexing.

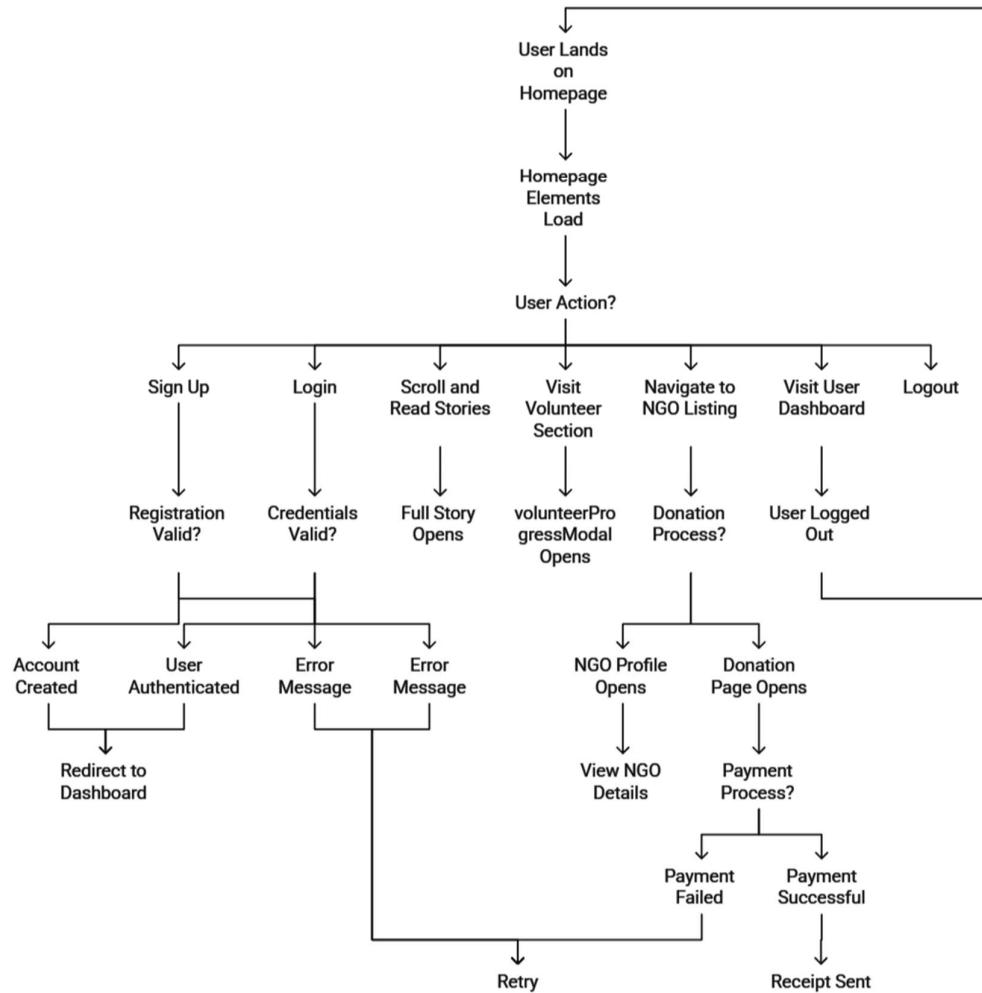
Security Measures

- HTTPS enforced via Netlify.
- CORS policies correctly configured for secure API communication.

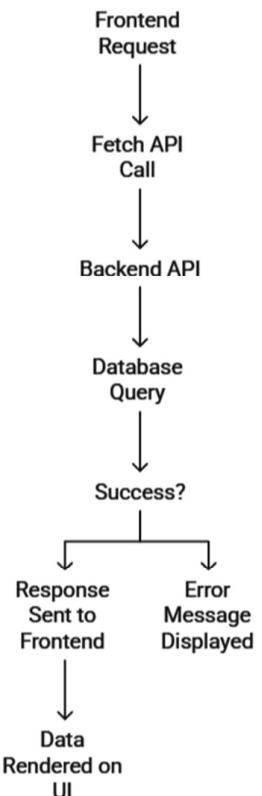
API Request Handling Flowchart



Application Workflow Flowchart



API Call Flowchart



6 Security & Data Protection

Security is a critical aspect of NGO Saathi, ensuring that user data, transactions, and platform interactions remain protected from unauthorized access and cyber threats. This section outlines the security mechanisms implemented in **Authentication & Authorization** and **Data Encryption & Privacy** to safeguard user information and maintain data integrity.

6.1 Authentication & Authorization

6.1.1 User Authentication with Clerk

To ensure secure and seamless authentication, NGO Saathi uses Clerk, a robust authentication provider that offers modern identity management features.

Why Clerk?

- Provides **password less login**, OAuth (Google, GitHub), and **multi-factor authentication (MFA)**.
- Manages user sessions securely without exposing sensitive credentials.
- Automatically handles **session expiration** and **token refresh** for better security.

6.1.2 Role-Based Authorization

NGO Saathi follows a **Role-Based Access Control (RBAC)** model, ensuring that users can only access permitted functionalities based on their roles.

<i>User Role</i>	<i>Permissions</i>
<i>Admin</i>	Manage NGOs, review NGO applications, handle donations, and oversee platform operations.
<i>NGO Representative</i>	Register NGOs, manage profiles, update information, and view donation reports.
<i>User/Donor</i>	Search NGOs, make donations, and track contributions.

6.2 Data Encryption & Privacy

6.2.1 Secure Data Transmission (HTTPS & SSL)

- NGO Saathi enforces **HTTPS** using SSL certificates to protect data in transit between the client and server.
- All API requests are encrypted to prevent **MITM (Man-in-the-Middle) attacks.**

6.2.2 Data Encryption

- User passwords & sensitive information are hashed & encrypted before being stored in the database.
- Sensitive payment details are handled securely using Razorpay, ensuring PCI DSS compliance.

6.2.3 Privacy & Compliance

- GDPR compliance is maintained by allowing users to control their personal data.
- Users can delete their accounts or request data deletion upon request.

7 A Business Approach & Future Scope

NGO Saathi is not just a platform for connecting NGOs with donors but also a scalable solution with potential monetization strategies, financial planning, and expansion possibilities. This section explores how the platform can generate revenue, the budget required for smooth operations, and future growth plans.

7.1 How NGO Saathi Can Be Monetized

To ensure the platform's sustainability, we have identified multiple monetization strategies:

7.1.1 ◊ Subscription-Based Model for NGOs

- NGOs can **subscribe to premium plans** for **additional features**, such as **priority listing, advanced analytics, and enhanced visibility**.
- A **tier-based pricing model** can be implemented (Free, Basic, and Premium).

7.1.2 ◊ Transaction Fees on Donations

- A **small commission (e.g., 1-2%)** can be charged on donations processed through **Razorpay** to cover operational costs.
- Transparent policies will ensure NGOs and donors are aware of the processing fees.

7.1.3 ◊ Sponsored Listings & Advertisements

- NGOs or **corporate sponsors** can pay to feature their campaigns on the homepage or in search results.
- **CSR partnerships** with companies can help in funding NGO projects.

7.1.4 ◊ Data Analytics & Reports for NGOs

- NGOs can subscribe to **detailed impact reports**, donor insights, and **funding analytics** to track their performance.
- These reports can be offered as a **paid service**.

7.2 Budget & Resource Allocation

Effective budgeting is crucial for managing development, hosting, security, and marketing expenses. The following table outlines estimated costs:

Category	Estimated Cost (Annual) in INR
Domain & Hosting (Netlify)	₹25,000 - ₹40,000
Development & Maintenance	₹4,00,000 - ₹8,00,000
Marketing & Outreach	₹1,50,000 - ₹2,00,000
Security & Compliance	₹80,000 - ₹2,50,000
Operational Expenses	₹2,50,000 - ₹6,00,000
Total Estimated Budget	₹9,05,000 - ₹21,90,000

7.3 Future Expansion Plans

7.3.1 Expanding Beyond Local NGOs

- Initially focused on local NGOs, the platform can scale **nationwide and globally**.
- Integration with **international charity organizations** to expand reach.

7.3.2 AI-Powered Recommendations

- Implement **AI-driven donor-ngo matching**, helping users find causes based on interests.
- Chatbots for user support** to answer queries and guide donors.

7.3.3 Mobile App Development

- Launching an **Android & iOS mobile application** for easier NGO discovery and donations.
- Push notifications for updates on favorite NGOs.

7.3.4 Blockchain for Transparent Transactions

- Implementing **blockchain-based donation tracking** to enhance transparency.
- Smart contracts to ensure funds are allocated correctly.

8 Conclusion & References

8.1.1 Conclusion

- NGO Saathi has been developed as a comprehensive platform aimed at bridging the gap between NGOs and potential donors, volunteers, and beneficiaries. By integrating modern web technologies, a user-friendly interface, and secure authentication mechanisms, it ensures seamless access to relevant NGO data while promoting transparency and efficiency.
- The platform not only enhances the visibility of NGOs but also simplifies the process of finding and supporting causes that align with an individual's or organization's interests. With a structured registration process, advanced search and filter mechanisms, and an integrated donation system, NGO Saathi serves as a vital tool in fostering social impact.
- Future updates will focus on scalability, AI-driven recommendations, multilingual support, and an expanded outreach program to ensure that NGOs across different regions can leverage the platform effectively. The project, while still evolving, holds immense potential in transforming the way NGOs operate and engage with stakeholders.

8.1.2 References & Bibliography

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