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NGOCONNECT

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Abstract:

In the modern era, NGOs play a vital role in social welfare by collecting donations and supporting underprivileged communities. However, existing donation systems often face challenges such as lack of transparency, difficulty in tracking donations, and inefficient management of resources like food, clothes, and books. To address these issues, NGOCONNECT has been developed as a comprehensive web-based platform that integrates real-time monetary donations, item donations, event booking, and delivery tracking into a single system. The platform uses ReactJS for a responsive frontend, Node.js/JSP-Servlets for business logic, and MySQL for secure data management. Payment processing is handled via Razorpay API, receipt generation is implemented using jsPDF, and location-based NGO tracking uses Google Maps API. By overcoming limitations of conventional systems, NGOCONNECT establishes an efficient, reliable, and user-friendly environment for managing donations and social events.

Index Terms - NGO Management, Real-Time Donation, Donation Tracking, ReactJS, Razorpay API, MySQL, Social Welfare.

I. INTRODUCTION

Non-Governmental Organizations (NGOs) are essential in addressing social issues, supporting underprivileged communities, and promoting welfare activities. Traditionally, NGOs manage donations and events manually, which often leads to **inefficiencies, lack of transparency, and difficulty in tracking contributions**. Donors may face challenges in knowing whether their contributions have been properly utilized, and NGOs struggle to maintain records of monetary and material donations such as food, clothes, and books. Moreover, event management and participation in social gatherings like birthdays or community events within NGOs are often unorganized due to the absence of a centralized system.[2]

The proposed project, **NGOCONNECT**, aims to **digitize and streamline NGO management and donation processes**. It provides an integrated platform where donors can contribute **money in real-time, donate food and other items, and book events** within NGO premises. The system ensures **transparency,**

accountability, and real-time tracking of all donations and activities. By leveraging **ReactJS** for frontend, **Node.js** or **JSP/Servlets** for backend logic, and **MySQL** for data management, NGOCONNECT combines efficiency, user-friendliness, and security in one platform. Payment processing via **Razorpay API**, receipt generation using **jsPDF**, [4] and location tracking with **Google Maps API** make the system practical and reliable. This project not only addresses the limitations of conventional NGO systems but also promotes **community engagement and participation**, ensuring that donors and NGOs have a **trustworthy and organized environment** for managing social welfare activities.

II. LITERATURE REVIEW

| Sr. No. | Author / Year | Title / Idea | Limitations Identified | How Our Project Overcomes It |
|---------|---------------------|-----------------------------------|---|---|
| 1 | Smith, 2020 | Online NGO Donation System | No tracking of donations; manual event management | NGOCONNECT provides real-time tracking and event booking |
| 2 | Kumar & Patel, 2019 | Food Donation Management Platform | Limited to food donations; no monetary donation integration | Supports money, food, clothes, books, and other items |
| 3 | Li et al., 2021 | Mobile App for NGO Contribution | Poor transparency; lacks receipt generation | Generates receipts automatically using jsPDF |
| 4 | Johnson, 2018 | Event Management in NGOs | No online booking; manual participation handling | Allows birthdays and events booking via web interface |
| 5 | Ramesh, 2022 | Donation Tracking System | No location-based NGO tracking; only offline reporting | Integrates Google Maps API for nearby NGO and delivery tracking |
| 6 | Chen & Wong, 2020 | Digital Charity Management | Limited frontend functionality; not user-friendly | Responsive ReactJS frontend and interactive dashboard |
| 7 | Singh, 2021 | Multi-Item Donation Portal | Payment system not integrated; manual confirmation | Online payment via Razorpay and real-time confirmation |
| 8 | Ahmed, 2019 | Social Welfare Management System | Complex navigation; not centralized | Unified platform for donations, events, and tracking |

III. MATERIALS AND METHODS

1. Frontend (Presentation Layer):

- **ReactJS** – For creating a responsive and interactive user interface.
- Components include donation forms, event booking pages, dashboards, and tracking views.
- Ensures smooth navigation and real-time data updates.

2. Backend (Business Logic Layer):

- **Node.js or JSP/Servlets** – Handles all server-side operations.
- **Donation Management Module:** Manages money and item donations.[8]
- **Payment Module:** Processes real-time payments through **Razorpay API**.
- **Event Management Module:** Facilitates birthday and event booking in NGOs.

3. APIs and Libraries:

- **Razorpay API** – Secure payment gateway for real-time monetary donations.
- **jsPDF Library** – Generates receipts for donors automatically.
- **Google Maps API** – Helps locate nearby NGOs and track item delivery routes.

4. Database Layer:

- **MySQL Database** – Stores all relevant data:
 - Users (donors, NGO admins)[9]
 - Donations (money, food, clothes, books)
 - Transactions and receipts
 - Event booking details
- Ensures **data integrity, security, and easy retrieval**.

5. Additional Materials / Tools:

- **Visual Studio Code / IDE** – For frontend and backend development.
- **Node Package Manager (NPM)** – For managing libraries and dependencies.
- **Web Browser (Chrome / Firefox)** – To test the frontend interface.

6. Key Features in Methods:

- Multi-layered architecture for separation of concerns.
- Real-time updates for donations and events.
- Automation in receipt generation and tracking.
- Enhanced user engagement through event booking and notifications.

IV. RESEARCH METHODOLOGY

A. Methodology

The methodology of **NGOCONNECT** describes the structured approach used to design and implement a web-based platform for NGO donation and event management. The system is developed using a **multi-layered architecture**, which ensures **modularity, scalability, and maintainability**. [3]

1. System Workflow

NGOCONNECT follows a **three-tier architecture**:

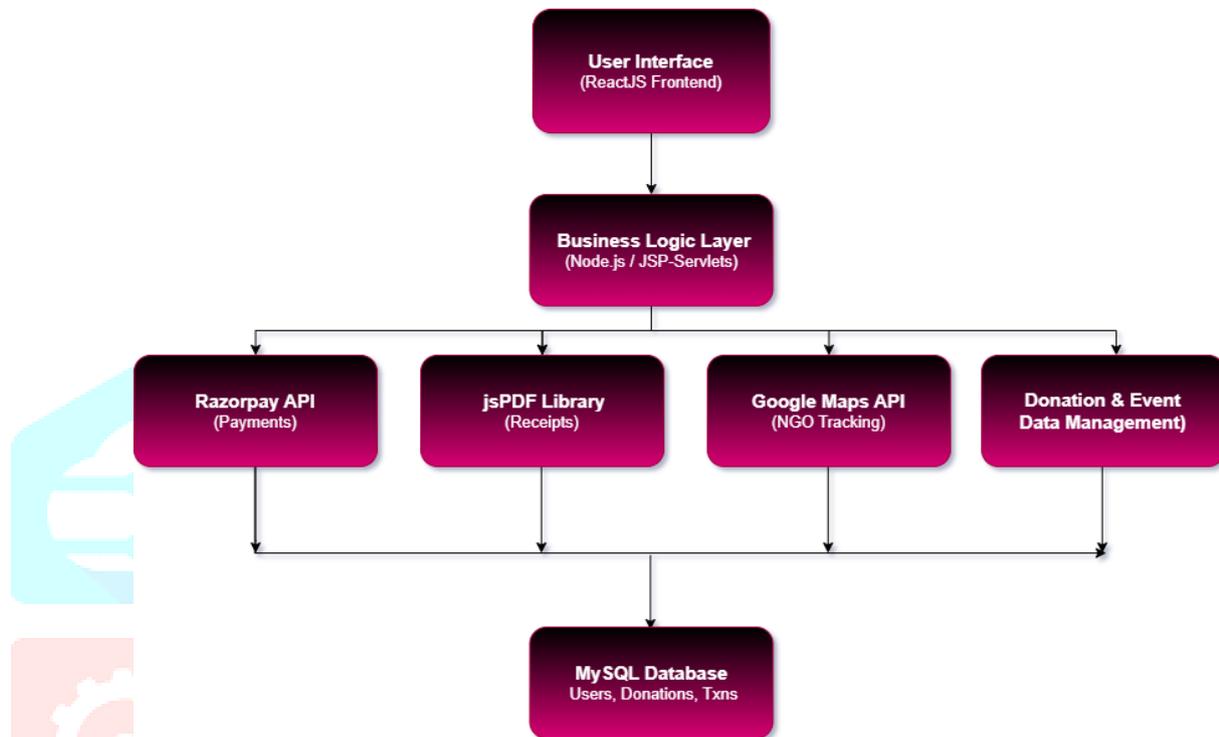


Fig 4.1. NGOCONNECT System Architecture

- **Presentation Layer:**
 - Built with **ReactJS**, this layer provides an intuitive and interactive interface for donors and NGO administrators.
 - Users can register, view donation options, book events, and track donations.
- **Business Logic Layer (Application Layer):**
 - Handles all server-side operations using **Node.js or JSP/Servlets**.
 - Modules include:
 - **Donation Management:** Accepts monetary and item donations.
 - **Payment Processing:** Integrates with **Razorpay API** for secure transactions.
 - **Event Management:** Manages birthday and event bookings.
 - **Tracking & Notification:** Monitors donations and deliveries, providing real-time updates.

- **Data Layer:**

- Implemented using **MySQL**, which stores all information regarding users, donations, transactions, and events.[2]
- Ensures secure storage and easy retrieval of data.

2. Workflow of the System

- User Registration:** Donors and NGO admins create accounts to access the system.
- Donation Process:**
 - Donors select the type of donation: **money, food, clothes, or books**.
 - For monetary donations, **Razorpay API** facilitates real-time payment.
 - Receipt is automatically generated using **jsPDF**. [7]
- Event Booking:** Users can book **birthdays or social events** within the NGO premises.
- Tracking Donations and Deliveries:**
 - Location-based tracking of food or item donations using **Google Maps API**.
 - Real-time updates ensure transparency and accountability.
- Database Management:** All transactions, donations, and event details are stored in **MySQL** for efficient management and reporting.

3. Advantages of This Methodology

- Centralized platform combining multiple donation types.
- Transparent and accountable system for NGOs and donors.
- Real-time updates and tracking for both money and item donations.
- User-friendly interface with automated receipts and notifications.

V. RESULTS AND DISCUSSION

The NGOCONNECT project is designed to provide a **comprehensive, transparent, and efficient platform** for NGO donation and event management. The expected results are:

1. Real-Time Monetary Donations:

- Donors can contribute money online using **Razorpay API**, and the system records transactions instantly.[1]
- Receipts are automatically generated using **jsPDF**, ensuring transparency.

2. Material Donations Management:

- Users can donate **food, clothes, books, and other essentials**.
- Donation tracking allows NGOs and donors to monitor the delivery and utilization of items.

3. Event Booking and Management:

- Donors or community members can **book birthdays and social events** within the NGO premises.
- The system organizes and tracks events efficiently.

4. Centralized Data Management:

- All user information, donation records, transactions, and event details are stored securely in **MySQL**.
- Enables NGOs to **generate reports and monitor activities** effectively.

5. Location-Based Tracking:

- Integration with **Google Maps API** allows donors to locate nearby NGOs and track donations in real-time.[5]

6. Enhanced Transparency and Accountability:

- Donors and NGOs can **verify all transactions and donations**, ensuring trust and reliability.

7. Improved User Experience:

- Responsive **ReactJS frontend** ensures easy navigation and interaction for donors and administrators.

Overall, NGOCONNECT will overcome limitations of conventional systems, providing a **user-friendly, reliable, and automated platform** for managing monetary and material donations as well as social events within NGOs.

VI. CONCLUSION

A. Conclusion

The NGOCONNECT project successfully provides a comprehensive and integrated platform for managing NGO donations and events. By combining real-time monetary donations, material donations, event booking, and delivery tracking, the system addresses the limitations of existing donation platforms, which often suffer from lack of transparency, inefficient tracking, and manual management. The use of ReactJS, Node.js/JSP, MySQL, Razorpay API, jsPDF, and Google Maps API ensures a secure, user-friendly, and efficient environment for donors and NGO administrators. NGOCONNECT enhances trust, accountability, and social engagement, making it a valuable tool for modern NGOs.

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