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NGO Help Hub : A Mobile Application for Donation and Volunteer Management

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Abstract: *In today's world, many people are willing to donate food, clothes, and other essential items, but they often face difficulty in finding nearby NGOs or proper channels to contribute. At the same time, NGOs struggle to manage donation requests and volunteer participation efficiently.*
This project introduces NGO Connect, a mobile application designed to bridge the gap between donors and NGOs. The application allows users to search for nearby NGOs using location-based services, donate items either by visiting or requesting pickup, and apply for volunteering opportunities.
The system uses Google Places API to fetch nearby NGOs dynamically and Firebase for authentication and real-time database management. Admin panels are provided for NGOs to manage incoming donation and volunteer requests. The system enhances transparency by allowing users to track the status of their requests in real time..

Keywords: NGO, Donation System, Mobile Application, Firebase, Google Places API, Volunteer Management

I. INTRODUCTION

Helping society through donations and volunteering is important, but many people face challenges in connecting with NGOs. Traditional methods like searching manually or contacting NGOs are inefficient and time-consuming.
With the increasing use of smartphones, mobile applications can provide a smart solution to this problem. NGO Connect is designed to simplify the donation process by allowing users to find NGOs nearby and interact with them directly.
The application provides the following key features:
• Searching nearby NGOs using location-based services
• Donating items such as food, clothes, and essentials
• Requesting pickup for donation items
• Applying for volunteering opportunities
• Tracking request status in real time
This system ensures ease of use, transparency, and better communication between users and NGOs.

II. LITERATURE SURVEY

Many applications and platforms exist for donations and volunteering, but they have significant limitations such as lack of real-time tracking, limited NGO data, no proper admin control, and poor user experience. Some systems rely on static databases, which do not provide dynamic NGO discovery. Others lack integration with maps or real-time updates.

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Problem Statement

People who want to donate or volunteer face difficulty in finding nearby NGOs, contacting NGOs easily, and tracking donation or pickup status. NGOs also face challenges in managing requests, communicating with users, and organizing volunteers effectively.

Existing System & Limitations

Current approaches rely on manual NGO search (Google, contacts), phone-based communication, and lack a centralized platform. This results in no real-time tracking, no structured system for requests, and a lack of transparency in donation and volunteer management.

System Modules

- User Authentication Module
- NGO Search Module (Google Places API)
- Donation Module
- Pickup Request Module
- Volunteer Module
- Admin Management Module
- Activity Tracking Module

III. PROPOSED SYSTEM

The proposed system provides a complete solution for donation and volunteer management through a mobile application.

User Capabilities

- Search NGOs nearby using real-time location
- Donate items (food, clothes, etc.)
- Request item pickup from home
- Apply for volunteering at NGOs
- Track request status in real time

NGO Admin Capabilities

- View all incoming donation and volunteer requests
- Accept or reject requests based on availability
- Update request status (Pending → Accepted → Completed)

Working of the System

The system operates through a straightforward workflow. The user logs into the app, searches for NGOs using their current location, selects an NGO, and chooses an action — visiting the NGO (which opens Google Maps), requesting a pickup, or volunteering. The request is stored in Firebase, reviewed by the admin, and the status is updated accordingly. Users can track all updates in real time through the Activity screen.

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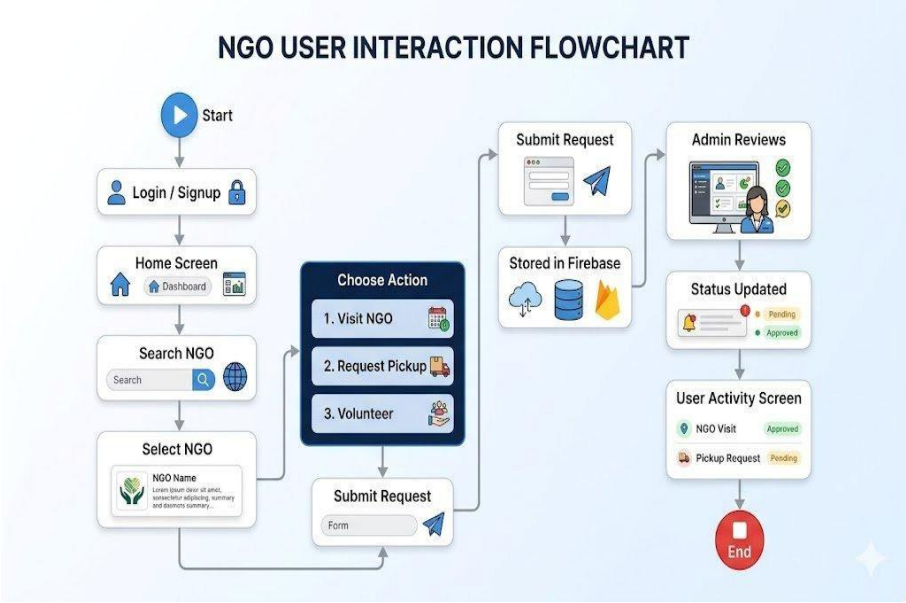

Figure 1: NGO User Interaction Flowchart

System Architecture

The system consists of three primary layers:

• Presentation Layer — Mobile UI built in Flutter for user interaction screens

• Business Logic Layer — Handles search, requests, and admin actions

• Data Layer — Firebase Firestore for database, Google Places API for NGO data

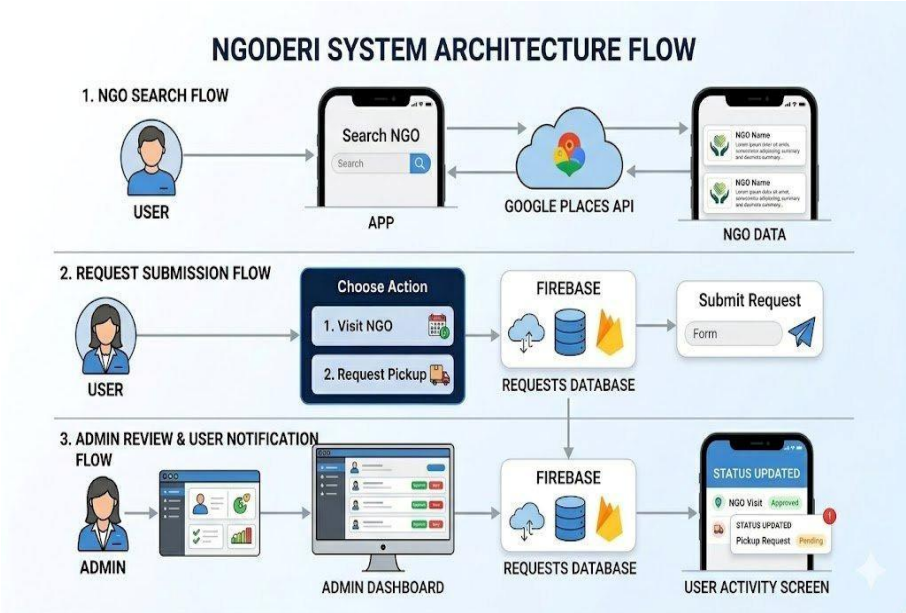

Figure 2: NGODeri System Architecture Flow

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Data Flow

The system's data flow is structured across three main pipelines: (1) User → App → Google Places API → NGO Data, (2) User → App → Firebase → Requests, and (3) Admin → Firebase → Update Status → User. This layered approach ensures efficient data handling and real-time synchronization across all stakeholders.

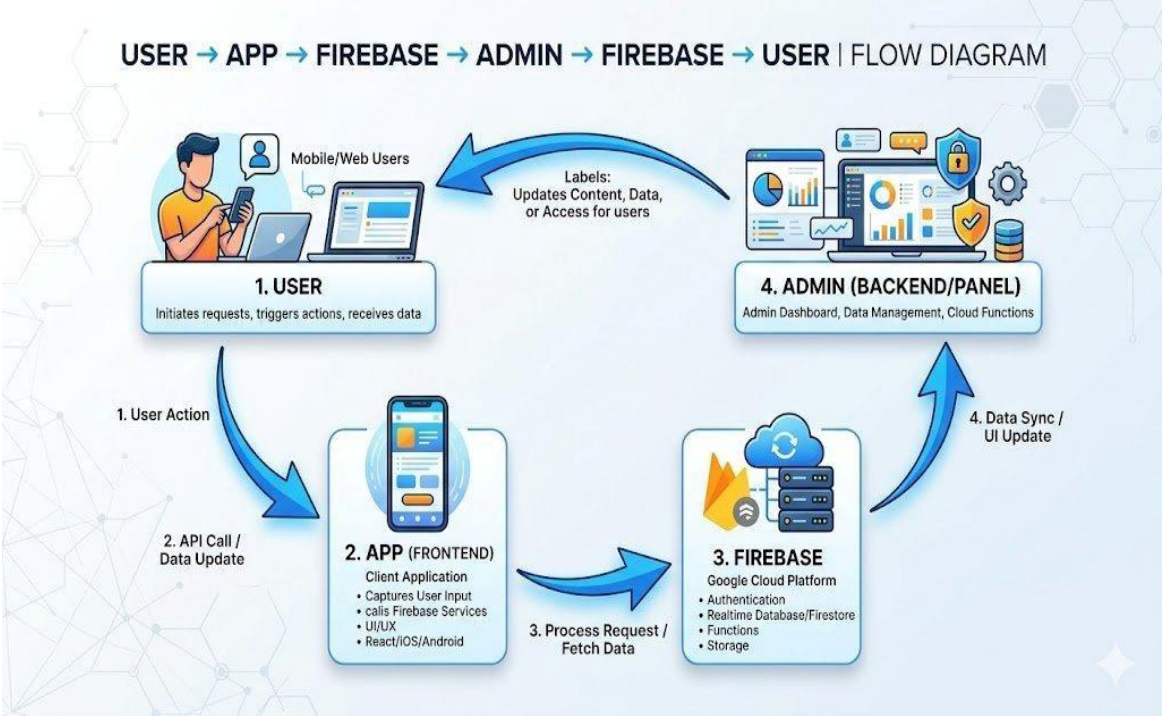

Figure 3: User → App → Firebase → Admin → Firebase → User Flow Diagram

Hardware Requirements

• RAM: 8 GB
• Processor: Intel i5 or higher
• Storage: 40 GB

Technology Stack

Component	Technology Used
Frontend (Mobile UI)	Flutter (Dart)
Backend / Database	Firebase Firestore & Authentication
NGO Discovery	Google Places API
Navigation	Google Maps API
IDE	Android Studio
Operating System	Windows 10 / 11

IV. FUTURE SCOPE

The NGO Connect system can be significantly enhanced through the following planned improvements:

• Adding real-time chat between users and NGOs for direct communication
• AI-based NGO recommendation system based on user location and history

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- Payment integration for monetary donations
- Verified NGO certification system to improve trust
- Delivery tracking system for pickup requests

V. CONCLUSION

NGO Connect provides a modern solution for donation and volunteering by connecting users with NGOs efficiently. The application simplifies the process of donating items and managing requests while ensuring transparency through real-time tracking.

By integrating Firebase and Google APIs, the system offers scalability, reliability, and ease of use. This application can significantly improve the impact of donations and volunteer activities in society, making it easier for individuals to contribute meaningfully and for NGOs to operate more effectively.

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