ReliefFlow – Crisis Coordination System

Project Description

ReliefFlow is a modular crisis response platform designed to optimize disaster relief efforts in areas affected by natural or humanitarian crises. It aims to solve the real-world issue of uncoordinated logistics, delayed aid delivery, and poor transparency during emergencies like floods, earthquakes, or large-scale evacuations. The system connects four key user groups: the general public, volunteers, coordinators (NGOs/ governments), and donors.

Each group interacts with the system via its own dedicated app or interface, with data flowing through a shared backend. This modular design not only supports scalability but also allows future integration with government and NGO databases, SMS gateways, and AI prediction systems.

Existing System

Currently, most disaster management systems are fragmented. Victims use social media or helplines to ask for help. Volunteers communicate via WhatsApp or Telegram groups. NGOs maintain spreadsheets or siloed tools to track donations and dispatch. This disorganization leads to:

- Duplicate or missed aid deliveries
- Delays due to lack of visibility into real needs
- Underutilized or misallocated resources
- No reliable tracking of donations or fulfillment

There is no centralized digital platform that brings together request intake, task coordination, inventory tracking, and donor transparency.

Proposed System

ReliefFlow offers a comprehensive system that bridges the gap between people in need and those who can help. The system consists of four modules:

- A mobile app for the general public to request aid and report emergencies
- A volunteer app to receive assigned tasks and report deliveries
- A web-based coordinator dashboard to manage operations, track requests, and

assign resources
- A donor portal to view real-time needs and contribute effectively

All modules are connected via a real-time backend, enabling fast, transparent, and accurate coordination. Maps, geolocation, and status tracking enhance reliability. This results in faster response times, reduced waste, and improved disaster resilience.

Module 1: ReliefFlow – Public App (Main App)

Platform: Flutter Mobile App
Target User: General Public

Features:

- Request Aid with GPS, category, notes, and image
- Live Map of shelters and relief centers
- Track status of submitted aid requests
- Receive emergency alerts
- Report emergencies with location
- Multi-language support

Module 2: Volunteer Companion App

Platform: Flutter Mobile App
Target User: Registered Volunteers

Features:

- Volunteer login and role-based task view
- Assigned delivery/field tasks with location
- Route map with navigation
- Upload proof of delivery (photo/signature)
- Task progress updates

Module 3: Coordinator/Admin Dashboard

Platform: Web App
Target User: NGOs, Local Authorities

Features:

- View and filter incoming aid requests
- Assign volunteers and manage teams

- Heatmap visualization of active cases
- Track inventory and dispatches
- Monitor task progress
- Analytics and emergency reports

Module 4: Donor Portal

Platform: Responsive Web App
Target User: Donors (Individuals & Organizations)

Features:

- Browse real-time needs by region/type
- Donate items or funds (mock interface)
- Track donations and their usage
- Get digital receipts
- Access downloadable impact reports

System Summary

- **Public App:** For requesting aid and viewing resources
- **Volunteer App:** For task management and delivery
- **Coordinator Dashboard:** For managing and assigning aid
- **Donor Portal:** For donations and impact tracking

All modules are connected via a centralized backend and real-time data sync.