FoodBridge: A Web Platform to Connect Excess Food to the Hungry through NGOs and Volunteers

Abstract

In today's world, food waste remains a critical issue, especially after events like marriages, parties, and hotel services. At the same time, millions of people including homeless and underprivileged communities suffer from hunger. This project introduces FoodBridge, a web application designed to bridge the gap between food donors and those in need. By connecting social service groups, NGOs, and individual volunteers with excess food providers, the platform ensures timely collection and distribution of surplus food, promoting sustainability and reducing hunger.

Problem Statement

Every day, large quantities of food go to waste after family functions, hotel buffets, and social gatherings. Meanwhile, people living on streets, in shelters, or below the poverty line face food insecurity. There is a need for a tech-based solution that connects both ends: the donors with the distributors and the recipients.

Objectives

- To reduce food waste from functions and hotels.
- To feed the needy and hungry in nearby areas.
- To connect NGOs, social workers, and donors on a single platform.
- To create a sustainable food distribution ecosystem through technology.

Proposed Solution

FoodBridge is a web application that allows:
- Donors (Hotels, Households, Event Planners) to list surplus food.
- NGOs & Volunteers to view available donations and pick them up.
- Geo-location-based filtering to find donations near the volunteer's area.
- A scheduling and alert system to notify volunteers about fresh food availability.
- A rating and feedback system to ensure accountability and trust.

Modules & Features

Donor Module – Register, post food availability (type, quantity, time)
Volunteer/NGO Module – Accept food pickup tasks, view nearby donations
Admin Panel – Approve NGOs, monitor activity, data insights
Location-based Filtering – Find nearest donors and recipients

Notification System – Alerts for new donations and pickup reminders
Sustainability Tracker – Track how much food was saved and how many were fed

Technology Stack

Frontend: React.js, Tailwind CSS
Backend: Node.js, Express.js
Database: MongoDB
Hosting: Vercel / Heroku / Netlify
Location Services: Google Maps API
Authentication: Firebase Auth / JWT
Notification System: EmailJS, Push Notifications API
Optional: Progressive Web App (PWA)

Target Users

- Event organizers, households, restaurants with leftover food
- NGOs and social workers
- Homeless shelters and relief centers
- College students and community service groups

Benefits

- Helps reduce food waste
- Promotes social responsibility and sustainability
- Fosters community engagement
- Provides real-time updates for efficient food distribution
- Supports government and NGO-led hunger relief initiatives

Future Enhancements

- AI-based food quantity prediction
- Integration with donor-recipient visibility maps
- Mobile application version
- AI chatbot for support

Conclusion

FoodBridge aims to bridge the digital gap between excess food and hunger. With the support of volunteers, NGOs, and local donors, this platform promotes a sustainable, efficient, and compassionate system that not only reduces food waste but also feeds the needy with dignity and speed.

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