PROJECT DESIGN PHASE

SOLUTION ARCHITECTURE

Project Details :

Date:	1 November 2025
Team ID:	NM2025TMID01438
Project Name:	To Supply Leftover Food to Poor
Maximum Marks :	4 Marks

Goals of the Architecture:

- Build a reliable and user-friendly platform to connect food donors, volunteers, and NGOs.
- Ensure safe and timely redistribution of leftover food to poor communities.
- Maintain transparency and data integrity through real-time tracking and monitoring.
- Minimize food wastage by optimizing collection and delivery routes.

Key Components:

- **Donor Module:** Allows restaurants, events, and households to list available leftover food with details such as quantity, freshness, and pickup location.
- **Volunteer/NGO Module:** Enables volunteers to accept food requests, track donor locations, and manage distribution schedules.
- **Food Tracking System:** Monitors food collection, storage, and delivery using GPS-based tracking for safety and accountability.
- **Notification System:** Sends real-time alerts to volunteers and NGOs about nearby food availability.
- **Database:** Stores donor, volunteer, food item, and delivery details securely.
- **Admin Dashboard:** Manages operations, verifies food quality, and generates reports on donations and deliveries.

Development Phases:

1. **User Registration:** Donors, volunteers, and NGOs register on the platform with verified contact details.
2. **Food Posting:** Donors upload details of leftover food along with images and pickup time.

3. **Matching & Allocation:** The system automatically matches available food with nearby volunteers/NGOs based on location and urgency.
4. **Collection & Delivery:** Volunteers collect the food and deliver it to identified poor or needy communities.
5. **Tracking & Feedback:** Delivery status and user feedback are recorded to improve service quality and reliability.

Solution Architecture Description:

The **solution architecture** for the *"To Supply Leftover Food to Poor"* project is designed to create a seamless and transparent system for managing surplus food distribution. The architecture integrates multiple user modules (Donors, Volunteers, NGOs) connected through a centralized database and real-time tracking system.

When donors list food availability, the system identifies the closest volunteers using GPS data and sends instant notifications for collection. The volunteer then confirms pickup, and the delivery process is tracked until completion. Admins monitor the flow through a control dashboard that ensures safety, freshness, and fair distribution.

This architecture ensures operational efficiency, accountability, and scalability. It helps communities fight hunger while reducing environmental waste caused by excess food disposal. The model can easily be scaled across cities and integrated with government food safety and welfare programs.

Example – Solution Architecture Diagram:

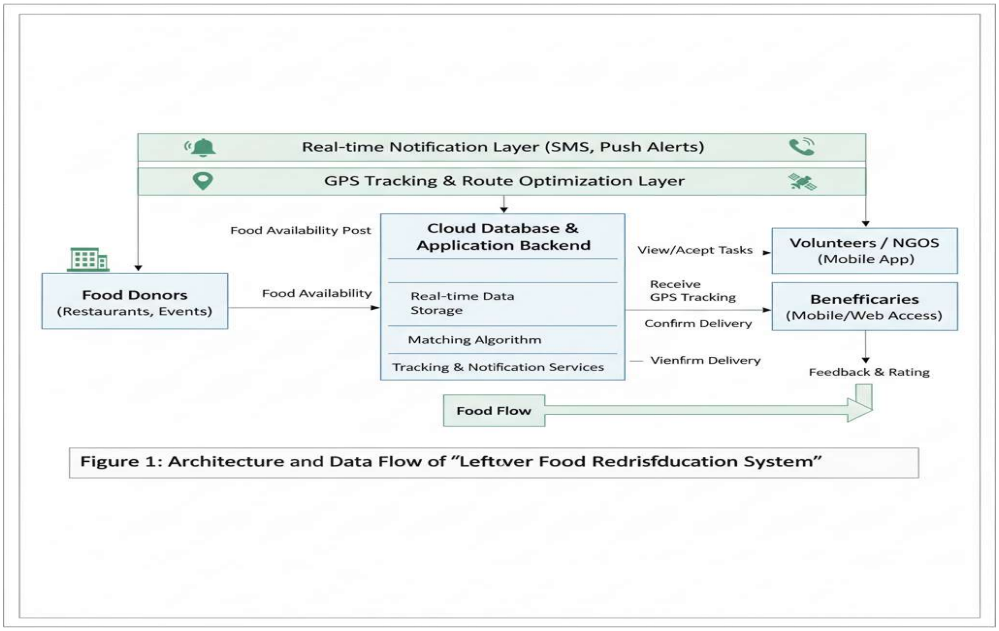

Figure 1: Architecture and Data Flow of the "Leftover Food Redistribution System"

Reference:

Infographic and architecture diagram created using **MidJourney** and **Canva** for visual representation.