Project Design Phase

Solution Architecture

Date: 2 November 2025
Team ID: 295A0CF8D7EF8FEA2B34148BBB1928C0
Project Name: To Supply Leftover Food to Poor
Maximum Marks: 4 Marks

Goals of the Architecture:
- Create a reliable platform for connecting food donors, volunteers, and NGOs.
- Enable real-time communication and food collection tracking.
- Ensure hygiene, transparency, and efficient food distribution.
- Reduce food wastage by redistributing excess food to the needy.

Key Components:
- **Donor Module:** For restaurants, hotels, and households to list surplus food details.
- **Volunteer Module:** Allows registered volunteers to view available food listings and accept pickup requests.
- **NGO / Receiver Module:** Manages requests and ensures proper delivery of food to poor and homeless individuals.
- **Tracking and Notification System:** Provides real-time updates on food pickup and delivery.
- **Database:** Stores information on donors, food details, volunteers, and delivery history.
- **Admin Dashboard:** Monitors the entire operation for transparency and accountability.

Development Phases:
1. Design a relational database for food donors, volunteers, and requests.
2. Develop donor and volunteer registration and login systems.
3. Create modules for food listing, collection, and distribution tracking.
4. Implement live notifications for food status and delivery confirmation.
5. Test the system with real-time scenarios and feedback collection.

■ Solution Architecture Description:

The **"To Supply Leftover Food to Poor"** system architecture is designed to create a seamless digital network connecting food donors with volunteers and NGOs. The architecture ensures that surplus food is collected on time and distributed efficiently before spoilage occurs.

The platform integrates **web and mobile interfaces** connected to a **centralized database**, ensuring that all food entries, volunteer actions, and delivery updates are synchronized in real-time.

When a donor posts a food listing, the system automatically notifies the nearest available volunteers through the mobile app. Volunteers pick up the food and deliver it to registered NGOs or directly to the needy. The process is tracked from start to finish to ensure safety, accountability, and transparency.

This architecture supports **scalability**, **community participation**, and **data-driven impact tracking** to help reduce hunger and food wastage sustainably.

Example – Solution Architecture Diagram:
(Illustrates data flow between Donors, Volunteers, NGOs, and Admin through the central system.)

Reference:
Inspired by real-time logistics and food redistribution systems used in social welfare and sustainability platforms.