Project Design Phase Report

Project Title: FoodBridge – Supplying Leftover Food to the Poor

Team ID:	NM2025TMID06815
Team Size:	5
Team Leader:	Sakthivel K
Team Members:	Deepak S, Vigneswaran V, Bharanidaran R, Kavin N.

1. Objective:

To design a user-friendly and efficient system that connects food donors (restaurants, events, households) with NGOs and volunteers to redistribute leftover food to the poor, ensuring minimal food wastage and safe handling.

2. System Architecture:

Architecture Components:
- Frontend: Web/Mobile App (for donors, NGOs, volunteers).
- Backend: Cloud-based database and API server.
- Database: Firebase/SQL for storing donor and food data.
- Modules:
  1. Donor Module
  2. NGO/Volunteer Module
  3. Admin Module
  4. Food Tracking & Notification Module

Workflow:
1. Donor posts details of leftover food.
2. System notifies nearby NGOs or volunteers.
3. Volunteer confirms and collects food.
4. Food delivery confirmation is updated in the system.

3. Data Flow Diagram (DFD):

Level 0: User (Donor/NGO) → FoodBridge System → Database → Notification → Delivery Update

Level 1: Donor inputs food details → System stores info → Nearby NGOs notified → Volunteer picks up food → Delivery status updated.

4. UML Diagrams:

1. Use Case Diagram: Shows interactions among Donor, NGO, Volunteer, and Admin.
2. Sequence Diagram: Depicts the sequence of actions during a donation cycle.
3. Activity Diagram: Represents the flow of actions in the food donation process.
4. Class Diagram: Defines the relationship between classes such as Donor, FoodItem, Volunteer, NGO, Admin, and Notification.

5. Technologies Used:

- Frontend: HTML, CSS, JavaScript, React Native
- Backend: Node.js / Firebase
- Database: MySQL / Firebase Realtime Database
- APIs: Google Maps API for location tracking
- Tools: StarUML, Figma, GitHub

6. Expected Outcome:

- A reliable, real-time food redistribution system.
- Reduced food wastage and hunger.
- Increased awareness and community participation.

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