

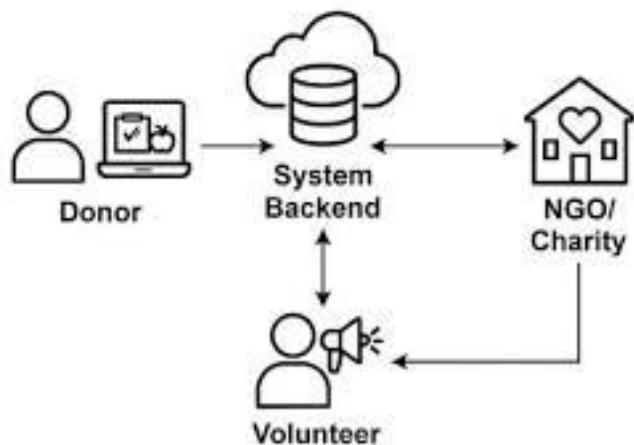
## Project Design Phase-II

### Technology Stack (Architecture & Stack)

<b>Date:</b>	1 November 2025
<b>Team ID:</b>	NM2025TMID08177
<b>Project Name:</b>	To Supply Leftover Food to Poor
<b>Maximum Marks:</b>	4 Marks

#### Technical Architecture:

The system helps collect leftover food from restaurants, events, and households, then redistributes it to needy people using a web platform and mobile interface. The architecture consists of user registration, food donation requests, real-time location tracking, and delivery management.



#### Guidelines Followed:

- Includes all processes (as application logic/technology block)
- Provides infrastructural demarcation (Local/Cloud)
- Indicates external interfaces (third-party APIs like Maps, Payment Gateway, etc.)
- Indicates data storage components/services
- Indicates optional interfaces for AI-based demand prediction (if applicable)

**Table-1: Components & Technologies**

S.No	Component	Description	Technology
1.	User Interface	Donors, volunteers, and admins interact via a web and mobile dashboard.	ReactJS (Web), Flutter (Mobile)

S.No	Component	Description	Technology
2.	<b>Application Logic-1</b>	Manages donor registration, food listings, and volunteer assignments.	Node.js / Express.js
3.	<b>Application Logic-2</b>	Validates location, food expiry time, and nearby volunteers.	REST API, Google Maps API
4.	<b>Application Logic-3</b>	Sends real-time notifications to volunteers and NGOs.	Firebase Cloud Messaging
5.	<b>Database</b>	Stores donor info, food details, volunteer data, and delivery records.	MongoDB / MySQL
6.	<b>Cloud Database</b>	Centralized cloud-hosted backend for all data operations.	AWS / Firebase Cloud
7.	<b>File Storage</b>	Stores uploaded food images, reports, and donor verification proofs.	AWS S3 / Firebase Storage
8.	<b>External API-1</b>	Google Maps API for location tracking and navigation.	Google Cloud Services
9.	<b>External API-2 (Optional)</b>	NGO verification via government portal API.	REST API Integration
10.	<b>Machine Learning Model (Optional)</b>	Predicts high-demand areas for food donation.	Python (TensorFlow / scikit-learn)
11.	<b>Infrastructure (Server / Cloud)</b>	Hosted on scalable cloud architecture for reliability and uptime.	AWS EC2 / Firebase Hosting

**Table-2: Application Characteristics**

S.No	Characteristics	Description	Technology
1.	<b>Open-Source Frameworks</b>	Built using open-source front-end and back-end technologies.	ReactJS, Node.js, MongoDB
2.	<b>Security Implementations</b>	Includes role-based access, data encryption, and secure login.	JWT Authentication, HTTPS
3.	<b>Scalable Architecture</b>	Supports increasing numbers of donors, NGOs, and volunteers.	Microservices Architecture
4.	<b>Availability</b>	Cloud hosting ensures continuous system availability.	AWS / Firebase Cloud
5.	<b>Performance</b>	Fast response via optimized queries and caching.	Redis Cache, Indexed DB Queries

