**IDEATION PHASE**

**BRAINSTORM & IDEA PRIORITIZATION**

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| --- | --- |
| **Date** | 16th June 2025 |
| **Team ID** | LTVIP2025TMID28938 |
| **Project Name** | To supply leftover food to poor |
| **Maximum Marks** |  |

**Objective:**

Encouraging collaboration between donors and volunteers to minimize food wastage and maximize community impact by ensuring leftover food reaches those in need through timely and organized efforts..

**Step 1: Team Gathering, Collaboration and Problem Identification**

The team came together to understand the societal issue of food wastage and the challenges faced in distributing leftover food to the needy. Discussions with restaurant staff, event organizers, and NGOs were conducted to identify key pain points in the current process, such as:

* Lack of communication between donors and volunteers
* Food going to waste due to delays
* No proper system for tracking food pickup and delivery
* Difficulty in managing volunteer availability and coordination

**Selected Problem Statement:**

**"** There is no unified system to connect food donors with volunteers or NGOs to ensure timely collection and distribution of leftover food to the poor**."**

**Step 2: Brainstorming, Idea Listing and Grouping**

Raw Ideas Collected:

* Register food donors (restaurants, homes, event halls)
* Allow volunteers/NGOs to sign up and view requests
* Track food quantity, type, and expiry time
* Send notifications to nearest volunteers
* Auto-assign pickup and delivery tasks
* Create dashboards for tracking donations and deliveries
* Reports on food pickups, deliveries, and wastage
* Validation rules for food safety (e.g., expiry not passed)

Flow for notifying volunteers in real-time

**Grouped Ideas:**

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1. **Automation**
   * Auto-assign pickups to nearest available volunteer
   * Notify volunteers immediately when food is ready
2. **Food Inventory Management**
   * Track food type, quantity, pickup and expiry time
   * Ensure expired food is not listed or picked
3. **Role-Based Access**
   * Profiles for Donors, Volunteers, Coordinators
   * Permission sets based on roles
4. **Reporting & Visualization**
   * Reports: Food Donated, Delivered, Wasted
   * Dashboards showing live metrics and status
5. **User Communication**
   * Notification flow for volunteers
   * Confirmation messages for donors and receivers

**Step 3: Idea Prioritization**

|  |  |  |  |
| --- | --- | --- | --- |
| **Idea** | **Impact** | **Feasibility** | **Priority** |
| Auto-assign pickup to volunteers | High | Medium | High |
| Real-time notifications to volunteers | High | High | High |
| Role-based access (Donor, Volunteer) | Medium | High | Medium |
| Track food type and expiry | High | Medium | High |
| Dashboard for donations/deliveries | Medium | Medium | Medium |
| Validation rules for food expiry | High | High | High |

**Final Shortlisted Ideas (with More Detailed Explanation):**

Here are the final shortlisted ideas for the **Leftover Food Supply Management System**, along with detailed functionality, technical aspects, and the benefits they bring:

**1.Auto-Assignment and Notification to Volunteers:**

This feature is the cornerstone of operational efficiency in the food distribution system. It automates the process of matching available food donations with the nearest volunteers, ensuring fast, coordinated, and reliable delivery to the needy while minimizing human effort and delays.

1. **Smart Matching Algorithm:** When a donor submits a food request, the system uses location-based logic to find the nearest available volunteer, considering factors such as distance, availability, and current workload.
2. **Real-Time Assignment:** Once matched, the system automatically assigns the pickup task to the volunteer and updates the task status in the backend. In case of no response within a time limit, the system escalates and reassigns the task to the next eligible volunteer.
3. **Instant Notifications:** Volunteers receive real-time alerts via email or mobile (SMS/app) with full pickup details—location, food type, quantity, expiry time, and contact info.
4. **Live Tracking and Status Updates:** As volunteers accept and complete pickups, the system updates the delivery status, allowing donors and admins to monitor progress. This reduces follow-up calls and increases transparency.
5. **Auto-Confirmation to Donors:** Once delivery is confirmed, the system sends a thank-you notification and confirmation message to the donor, closing the loop and encouraging future participation.
6. **Benefit:** Significantly improves delivery speed, reduces manual coordination, prevents food wastage due to delays, and ensures a reliable end-to-end distribution cycle. It fosters trust among donors and volunteers while scaling outreach to more communities.

### ****Record-Triggered Flow to Send Email Notifications****

This powerful automation ensures timely, personalized, and proactive communication between donors, volunteers, and administrators, transforming coordination and improving response times in the food distribution process.

#### ****Workflow Automation Engine:****

Built on Salesforce Flow or a similar workflow engine, this system listens for specific **record changes**—such as new food donations, assignment updates, or delivery confirmations—and automatically triggers the appropriate email notifications.

#### ****Event-Based Triggers:****

* **New Donation Created:** Sends an immediate "Thank you" email to the donor, confirming the food details (type, quantity, and expiry) and estimated pickup time.
* **Pickup Assignment:** Notifies the assigned volunteer with donor location, food details, and contact info.
* **Pickup Confirmation:** Sends a status update to the donor once the food is picked up.
* **Delivery Confirmation:** Notifies both donor and admin once the food has been successfully delivered to the target location or NGO.
* **Volunteer Unavailable:** Alerts the admin if no volunteer accepts the task within a defined period.
* **Volunteer Appreciation:** Periodically sends automated appreciation emails to active volunteers with stats (e.g., “You helped deliver 120 meals this month!”).

#### ****Dynamic Content Insertion:****

Emails automatically pull relevant details from the database such as:

* Donor Name
* Food Type & Quantity
* Volunteer Name & Contact
* Pickup and Delivery Time
* Status of the Delivery

This ensures that every communication is relevant, clear, and personalized.

#### ****Error Handling & Logging:****

All email triggers are logged. If a message fails (e.g., invalid email address or network error), it will:

* Retry after a short interval
* Notify the admin of the failure
* Provide logs for manual reattempts if needed

#### ****Benefits:****

* Enhances transparency and trust between all parties
* Reduces manual follow-ups and miscommunication
* Encourages repeat donations through timely acknowledgements
* Keeps the entire food donation lifecycle smooth and efficient

### ****4. Create Record Types for Food Categories and Donation Types****

This feature is essential for organized and efficient food inventory management, enabling accurate classification, tracking, and reporting of various food types and donation scenarios. It supports tailored workflows and ensures proper handling of perishable goods.

#### ****Categorization Hierarchy:****

Beyond simply labeling items as "cooked" or "uncooked," the system defines **specific record types** or **sub-categories**, such as:

* **Cooked Food:** Fields for cuisine type (e.g., rice, curry, bread), number of servings, preparation time, expiry time, container type, and spice level (for dietary concerns).
* **Raw Ingredients:** Includes fruits, vegetables, grains, etc., with fields for weight, expiry date, and packaging status.
* **Packed Meals:** Pre-packaged meals with manufacturing date, shelf life, and nutritional value.
* **Perishable Items:** Milk, dairy, or bakery products with stricter expiry and handling fields.
* **Event-Based Surplus:** High-volume food entries tagged from weddings, conferences, etc., with organizer name, location, and estimated distribution count.
* **NGO Requests (Reverse Donation):** Where NGOs can post needs for specific food items, quantities, and time slots.

#### ****Tailored Fields & Layouts:****

Each record type features customized:

* **Fields** (e.g., “Best Before Time” for perishable food, or “Storage Instructions” for raw ingredients)
* **Page Layouts** (to display only relevant info based on food type)
* **Validation Rules** (e.g., expiry must be in the future, required quantity > 0)

For example, a **“Cooked Food”** record type may have fields for "Cuisine Type," "Preparation Time," and "Pickup Deadline"—which wouldn’t be necessary for "Raw Vegetables."

#### ****Quantity & Shelf Life Tracking:****

* Automated tracking of **remaining shelf life** based on the food type.
* Visual alerts for **near-expiry** food to prioritize dispatch.
* Quantity logs help volunteers plan logistics and batch deliveries efficiently.

#### ****Dynamic Distribution Planning:****

Based on food category, quantity, and expiry, the system can:

* Suggest suitable NGOs or areas needing that food type
* Assign volunteers based on required transportation (e.g., hot food containers vs. raw produce)

#### ****Benefit:****

Enables structured data entry, enhances food safety, supports targeted distribution, and ensures traceability of donated food. It empowers admins to make informed decisions, reduces waste, and improves reporting for impact assessment.

### ****7. Custom Reports and Dashboards****

This feature transforms raw data from donation and delivery records into actionable insights, enabling coordinators, NGOs, and volunteers to make data-driven decisions, track performance, and identify areas of improvement in food distribution operations.

#### ****Custom Report Builder:****

A flexible and user-friendly interface allowing users to generate tailored reports by selecting relevant fields, applying filters (e.g., donations this week, top contributing donors), grouping by category (food type, location), and sorting by metrics like quantity or response time.

##### **Examples of Reports:**

* **Donation Activity Reports:** Number of donations per day/week/month, by food type or donor category (restaurant, household, event).
* **Volunteer Efficiency Reports:** Average response time, completed pickups, cancellations or delays by volunteer.
* **Food Wastage Reports:** Expired or unclaimed food, reasons for missed pickups.
* **NGO Delivery Reports:** Number of deliveries made to each NGO, categorized by food type or volume.
* **Request Fulfillment Reports:** Requests fulfilled vs. pending, by area or urgency level.

#### ****Interactive Dashboards:****

Visual tools offering a real-time snapshot of the organization’s food distribution efforts and volunteer operations. Dashboards support high-level monitoring for quick decision-making.

##### **Dashboard Components:**

* **Total Donations (Day/Week/Month)**
* **Food Units Delivered**
* **Average Volunteer Response Time**
* **Active vs. Completed Pickup Requests**
* **Top Donors & Most Active Volunteers**
* **Food Wastage (Uncollected/Expired)**
* **Delivery Success Rate**

#### ****Drill-Down Capability:****

Users can click any visual component (like a pie chart of donation types) to dive into the underlying data—e.g., see exactly which donor gave what, when, and where it was delivered.

#### ****Scheduling & Sharing:****

* **Automated Reports:** Set to run daily, weekly, or monthly and delivered via email to admins, donors, or partner NGOs.
* **Team Sharing:** Dashboards can be restricted or shared based on role—admins get full access, donors see their own stats, volunteers view assigned zones.

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**EMPATHY MAP CANVAS**

The **Empathy Map Canvas** helps us deeply understand the experiences of our primary users—what they say, think, do, and feel—so we can design a system that truly addresses their needs, frustrations, and motivations.

### ****Who are we empathizing with?****

#### 1. ****Food Donors****

(Restaurants, event organizers, households)  
They are willing to contribute surplus food but often face barriers in logistics, timing, and trust. Their main concerns include:

* Ensuring the food is not wasted
* Finding a reliable pickup partner quickly
* Receiving acknowledgment that their donation reached the needy

#### 2. ****Volunteers / NGOs****

(Individuals or organizations managing food pickups and distribution)  
They are on the frontline of food delivery, often with limited time, resources, and structure. Their pain points include:

* Last-minute pickups and lack of real-time updates
* Managing multiple pickup and delivery requests
* Ensuring safety and hygiene of the food

### ****User Says (What the user verbalizes)****

* **"I want someone to pick up the food quickly."**  
  Implication: Donors seek a fast, dependable pickup system. “Quickly” implies minimal delay—automation is needed for matching and notifications.
* **"Let me know once it's delivered."**  
  Implication: Donors want confirmation their contribution made a difference. This calls for a delivery status tracking and automatic update flow.

### ****User Thinks (What the user is pondering, but not necessarily verbalizing)****

* **"I hope the food doesn't go to waste."**  
  Implication: There's an emotional investment and fear of failure. Donors worry about logistics. This points to the need for expiry-based prioritization and volunteer response tracking.
* **"It should be easier to coordinate."**  
  Implication: Volunteers might silently feel burdened by inconsistent coordination. They need better tools—location-based assignment, mobile alerts, and simplified task views.

### ****User Does (What actions the user takes)****

* **Donors call or message volunteers manually:**  
  Implication: This shows lack of systematization. Manual communication is inefficient and inconsistent. Automation is clearly needed.
* **Volunteers maintain task updates via WhatsApp or notes:**  
  Implication: They work outside the system to keep track. This highlights the need for centralized task assignment, real-time status updates, and mobile accessibility.

### ****User Feels (What emotions the user experiences)****

* **Donors feel disappointed if food expires before pickup:**  
  Implication: Wasted effort leads to discouragement. This reinforces the importance of urgency-based pickup matching and expiration alerts.
* **Volunteers feel satisfied when food reaches the needy successfully:**  
  Implication: Positive reinforcement boosts motivation. Acknowledgment systems (badges, impact stats, thank-you messages) can help sustain engagement.

## ****Insights Gained:****

Based on the detailed empathy mapping, we’ve uncovered key insights that will shape the design and implementation of the food donation coordination platform. These insights ensure that the system directly addresses the needs, frustrations, and expectations of our users—**donors, volunteers, and NGOs**.

### ****1. Critical Need for Centralized Coordination and Tracking System****

#### ****Detailed Insight:****

Donors currently rely on informal methods (e.g., phone calls, WhatsApp messages) and volunteers juggle multiple tasks with no central platform. This leads to missed pickups, delayed deliveries, and wasted food. Without a shared system, important information like pickup timing, food expiry, or delivery status is lost or miscommunicated.

#### ****Direct Impact on Solution:****

This insight demands the creation of a **centralized platform** with custom objects like:

* Donor\_\_c, Food\_Donation\_\_c, Volunteer\_\_c, and Delivery\_\_c
* Relationships to link donors to donations, and donations to delivery records
* Unified tracking for pickup requests, volunteer assignments, and delivery status

This central hub will serve as a **single source of truth**, ensuring reliability, transparency, and accountability across all stakeholders.

### ****2. Role-Based Access is Essential for Operational Clarity and Security****

#### ****Detailed Insight:****

Each user type—donor, volunteer, and NGO coordinator—has unique needs and responsibilities. Donors only need to submit and track donations; volunteers need task views and status updates; admins and NGOs need full access to monitor operations and performance. A one-size-fits-all approach would lead to clutter, confusion, and security issues.

#### ****Direct Impact on Solution:****

This requires implementing **Role-Based Access Control (RBAC)** through:

* **Profiles and Permission Sets** tailored for Donors, Volunteers, and Admins
* Controlled visibility of records based on user role
* Customized page layouts and user experiences for each role

This ensures **clarity**, **security**, and a **simplified user interface**, helping each user focus only on what matters to them.

### ****3. Communication Automation is Crucial for Speed and Trust****

#### ****Detailed Insight:****

Manual communication between donors, volunteers, and coordinators is inefficient and often unreliable. Donors feel anxious about whether their food gets delivered, and volunteers struggle with receiving timely instructions. Automation can bring transparency, speed, and trust to the process.

#### ****Direct Impact on Solution:****

This justifies the need for **Record-Triggered Flows** and **Email/SMS Alerts** at key moments:

* Donation received → Send confirmation to donor
* Volunteer assigned → Notify with task details
* Food picked up → Alert donor and admin
* Food delivered → Send success confirmation to donor

This communication flow enhances the **user experience**, builds **confidence in the system**, and reduces manual workload.

**CUSTOMER PROBLEM STATEMENTS**

## Problem Statement 1: Inefficient Food Collection and Distribution Process

**We believe that food donors and volunteers are struggling with timely and organized food pickup and delivery because of the absence of a centralized coordination system and over-reliance on manual communication methods (e.g., phone calls, WhatsApp groups).**  
**This causes delayed pickups resulting in food wastage, miscommunication between stakeholders, and a reduced willingness of donors to contribute regularly.**

### ****Elaboration:****

This problem highlights the **internal inefficiencies** in managing leftover food supply, especially under time-sensitive conditions.

* **Customer Type:**  
  Includes food donors (e.g., event hosts, restaurants, households) and volunteers responsible for pickup and delivery.
* **Core Problem:**  
  “Timely and organized pickup and delivery” emphasizes the urgent, perishable nature of the task, which demands seamless coordination.
* **Root Causes:**
  + Lack of a centralized coordination system: No unified platform to match food availability with volunteer availability and NGO demand.
  + Manual communication: Reliance on ad-hoc phone calls, group messages, or spreadsheets leads to confusion and inconsistency.
* **Negative Impacts:**
  + **Delayed pickups and food wastage:** Perishable food is often discarded if not picked up and distributed promptly.
  + **Miscommunication and inefficiency:** Volunteers may receive conflicting or incomplete information, and pickups may be missed or duplicated.
  + **Donor drop-off:** Donors may hesitate to contribute again if they face delays or uncertainty, reducing the overall food supply potential.

## Problem Statement 2: Lack of Transparency and Engagement for Donors

**We believe that food donors are struggling with a lack of visibility into what happens to their food donations because of the absence of automated status updates and acknowledgment mechanisms.**  
**This causes reduced donor confidence, the feeling that their contributions are underappreciated, and a decline in long-term donor engagement.**

### ****Elaboration:****

This statement focuses on the **external user experience**—how donors perceive the process and their emotional connection to the cause.

* **Customer Type:**  
  Individuals or organizations donating leftover food.
* **Core Problem:**  
  “Lack of visibility” implies that once donors hand over food, they receive no confirmation or feedback, which discourages continued participation.
* **Root Causes:**
  + No automated status updates: Donors are not informed when food is picked up or delivered.
  + No acknowledgment mechanism: Donors don’t receive thank-you messages, reports, or impact summaries.
* **Negative Impacts:**
  + **Reduced donor confidence:** Donors are unsure whether their efforts are meaningful or if the food was even used.
  + **Lack of appreciation:** Absence of gratitude messages or feedback leaves donors feeling ignored.
  + **Decline in engagement:** Over time, the lack of communication and recognition may lead to lower donation frequency.