REQUIREMENT PHASE

SOLUTION REQUIREMENT

Date : 4 Nov 2025

Team ID : NM2025TMID03861

Project Name : To Supply Leftover Food to Poor

Maximum Marks: 4 Marks

Okay, let's break down the functional and non-functional requirements for the Salesforce-based "Food Rescue Connect" platform. I'll keep the descriptions concise and focused for a Salesforce developer.

Functional Requirements (FRs)

Functional requirements describe *what the system must do*. They define the specific features and behaviors of the platform.

1. **FR1: Food Offer Management**
    - The system shall allow Food Donors to create, update, and delete food offers, including details like food type, quantity, expiration date, and pickup availability.
    - The system shall support submitting both ad-hoc and recurring food offers.

- The system shall allow Food Donors to upload photos of food items.

2. **FR2: Recipient Request Management**
    - The system shall allow Food Recipients to register, specifying their organization type, capacity (e.g., number of people served), dietary needs/preferences, and operational hours.
    - The system shall allow Food Recipients to submit requests for specific food types or general needs.
    - The system shall allow Food Recipients to view available food offers matching their criteria.
3. **FR3: Matching & Allocation Engine**
    - The system shall automatically match food offers with suitable recipients based on criteria such as proximity, recipient needs, capacity, and food availability.
    - The system shall provide a mechanism for System Admins to review and manually adjust automatic allocations.
    - The system shall send notifications to both donors and recipients upon successful allocation/matching.
4. **FR4: Volunteer & Logistics Management**
    - The system shall allow Volunteer Drivers to register their availability, vehicle capacity, and preferred service areas.
    - The system shall generate optimized pickup and delivery routes for volunteers, considering multiple stops, time windows, and vehicle capacity.
    - The system shall provide a mobile interface for volunteers to view assigned tasks, navigate routes, and confirm pickups/deliveries.
5. **FR5: Notification & Communication**
    - The system shall send automated email and/or SMS notifications for key events (e.g., new offers, allocation confirmations, pickup reminders, delivery updates).

- The system shall provide an in-app messaging feature for direct communication between donors, recipients, and volunteers for specific allocations.

6. **FR6: Reporting & Analytics**
    - The system shall generate reports on total food donated (by weight/servings), number of beneficiaries, saved food waste, and volunteer hours.
    - The system shall provide dashboards for System Admins to monitor real-time platform activity, key performance indicators (KPIs), and identify trends.
7. **FR7: User Management**
    - The system shall allow System Admins to create, edit, deactivate, and manage user accounts for Donors, Recipients, and Volunteers.
    - The system shall support different user roles with specific access permissions (e.g., Donor can only see their donations, Admin sees all).
8. **FR8: Feedback & Rating**
    - The system shall allow Donors, Recipients, and Volunteers to provide feedback and ratings on completed donations/deliveries.

Non-Functional Requirements (NFRs)

Non-functional requirements describe *how the system performs* a function. They define the quality attributes and constraints of the system.

1. **NFR1: Performance**
    - **Loading Speed:** The platform shall load core pages (e.g., food offer list, volunteer route map) within 3 seconds for 90% of users under normal load.

- **Response Time:** The system shall respond to allocation requests and route generation within 5 seconds.

2. **NFR2: Security**
    - **Data Protection:** All sensitive user data (contact information, dietary needs) shall be encrypted both in transit and at rest, adhering to Salesforce Shield or equivalent best practices.
    - **Access Control:** The system shall enforce role-based access control (RBAC) to ensure users can only access data relevant to their role.
    - **Authentication:** The system shall require strong password policies and support multi-factor authentication (MFA).
    - **Audit Trails:** The system shall maintain an audit trail of all significant data modifications (e.g., who changed a donation status and when).
3. **NFR3: Usability**
    - **Intuitive UI:** The user interface shall be intuitive and easy to navigate for all user types, requiring minimal training.
    - **Mobile Responsiveness:** The platform shall be fully responsive and optimized for mobile devices (smartphones and tablets) for volunteers and local donors/recipients.
    - **Accessibility:** The platform shall adhere to WCAG 2.1 AA accessibility standards where feasible.
4. **NFR4: Reliability & Availability**
    - **Uptime:** The system shall maintain an uptime of 99.9% (excluding scheduled maintenance).
    - **Error Handling:** The system shall provide clear and informative error messages to users and log detailed errors for administrators.
    - **Data Backup:** All data shall be regularly backed up in accordance with Salesforce's standard backup procedures.
5. **NFR5: Scalability**

- The system shall be capable of supporting an increasing number of Food Donors, Recipients, and Volunteers (e.g., scaling to 10,000 users and 1,000 daily donations) without significant performance degradation.
- The architecture shall be designed to leverage Salesforce's inherent scalability.

6. **NFR6: Maintainability**
    - The codebase shall be well-documented, modular, and adhere to Salesforce development best practices (e.g., Apex, LWC coding standards) to facilitate future enhancements and bug fixes.
7. **NFR7: Integration**
    - The system shall integrate with an external mapping service (e.g., Google Maps API) for geocoding and route optimization.
    - The system shall integrate with an SMS gateway for sending text notifications.
    - The system shall provide APIs for potential future integration with external inventory systems of large corporate donors (if applicable).
8. **NFR8: Compliance**
    - The system shall adhere to relevant data privacy regulations (e.g., GDPR, CCPA if applicable).
    - The system shall facilitate adherence to local food safety guidelines (e.g., by providing fields for temperature logging, expiry dates).