Group 3

1. **Introduction:**
   This document outlines the product and software requirements for the Leftover Food Circulation Application. The goal is to reduce food waste by connecting donors (restaurants, vendors) with recipients (NGOs, shelters
2. Stakeholder Requirements:
   Stakeholder:
   - Restaurant Owners
   - NGOs / Volunteers
   - End Recipient

   Pain Points:

   - Logistics of food pickup and delivery
   - Real-time coordination
   - Food safety and tracking

   Functional Requirements:

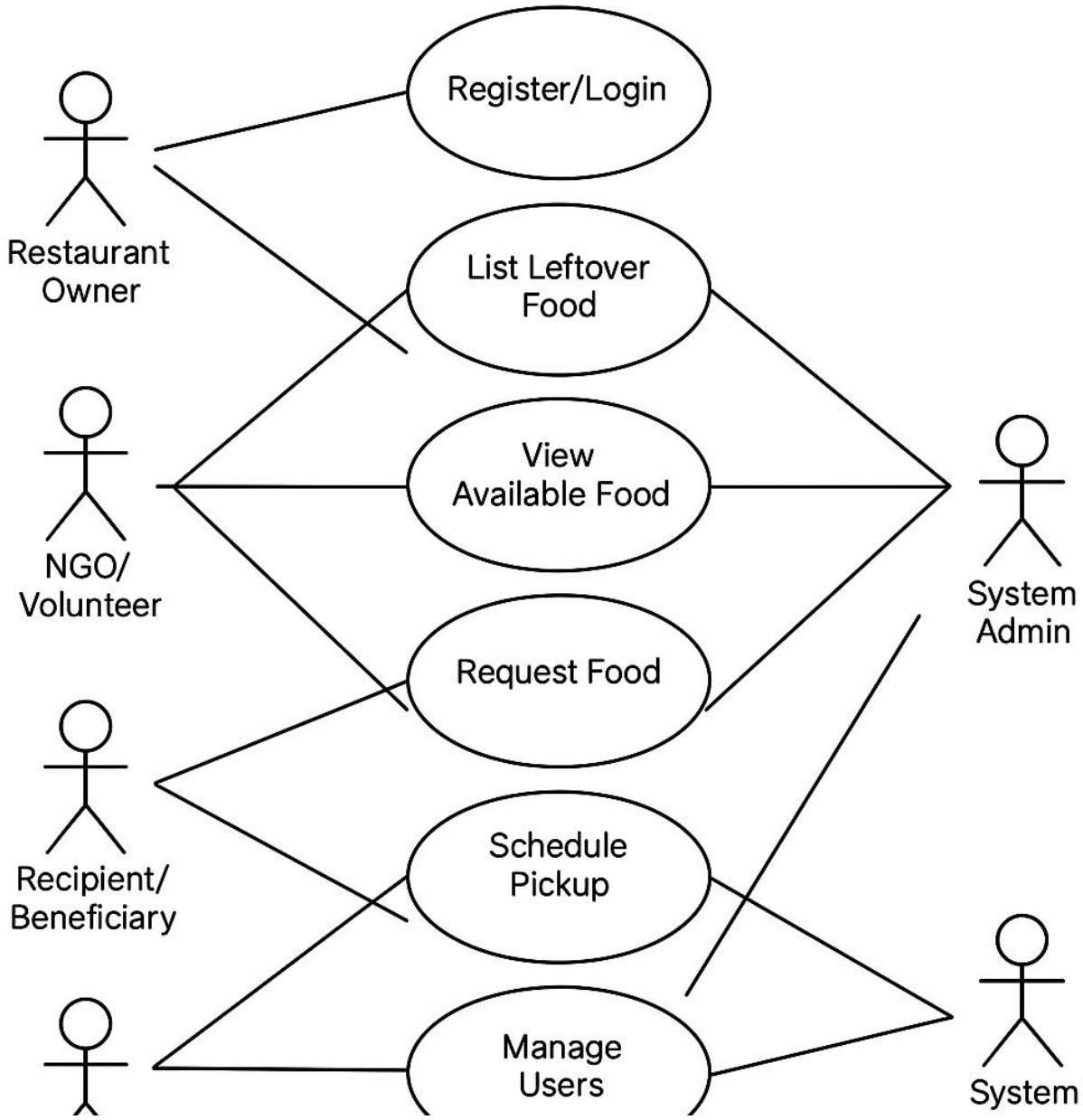
   - User registration and authentication
   - Food listing and availability
   - Pickup scheduling
   - Notifications and alerts
   - Map integration for location tracking

   Non-functional Requirements:

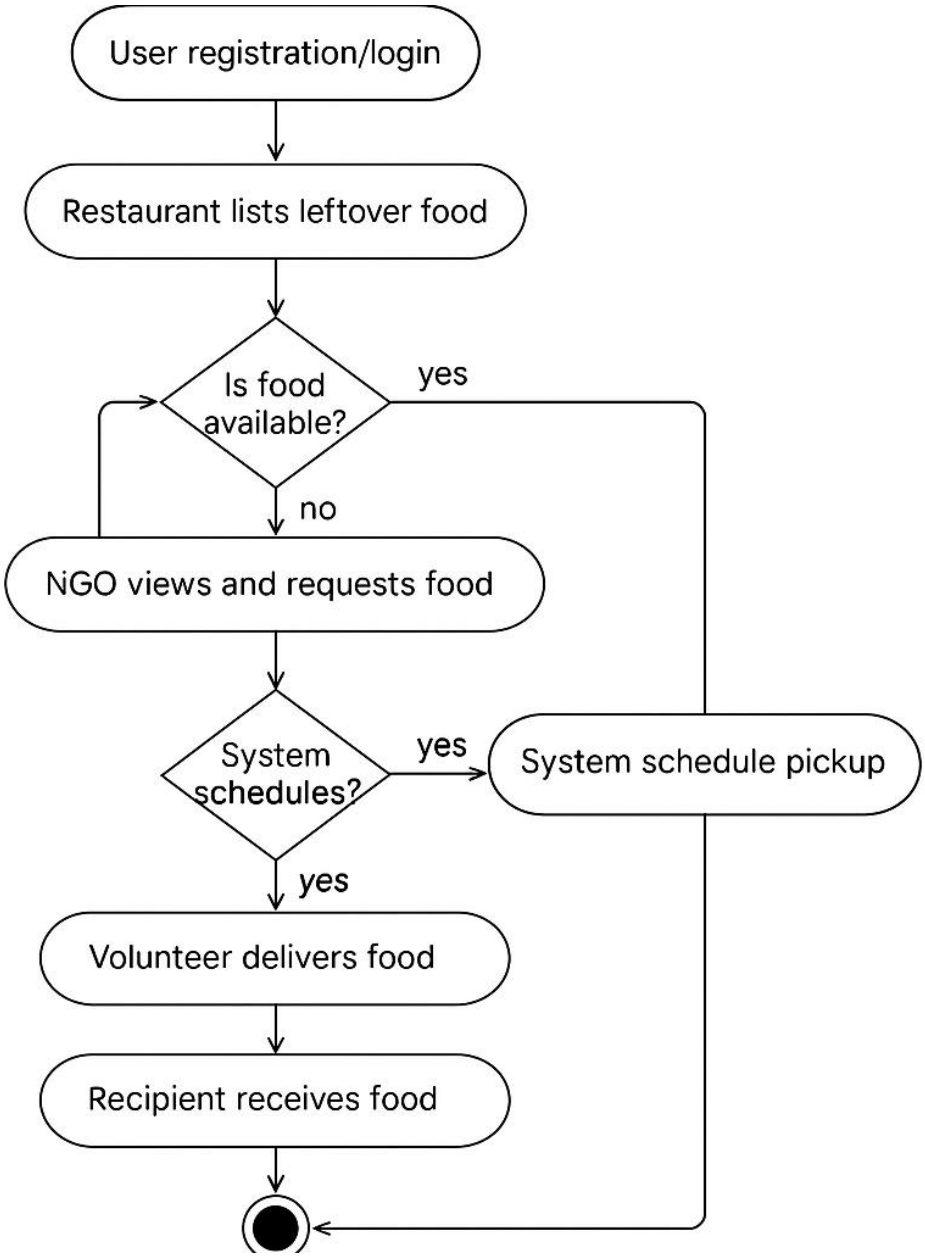
   - Scalability
   - Security
   - Performance
   - Usability

   System Diagrams:

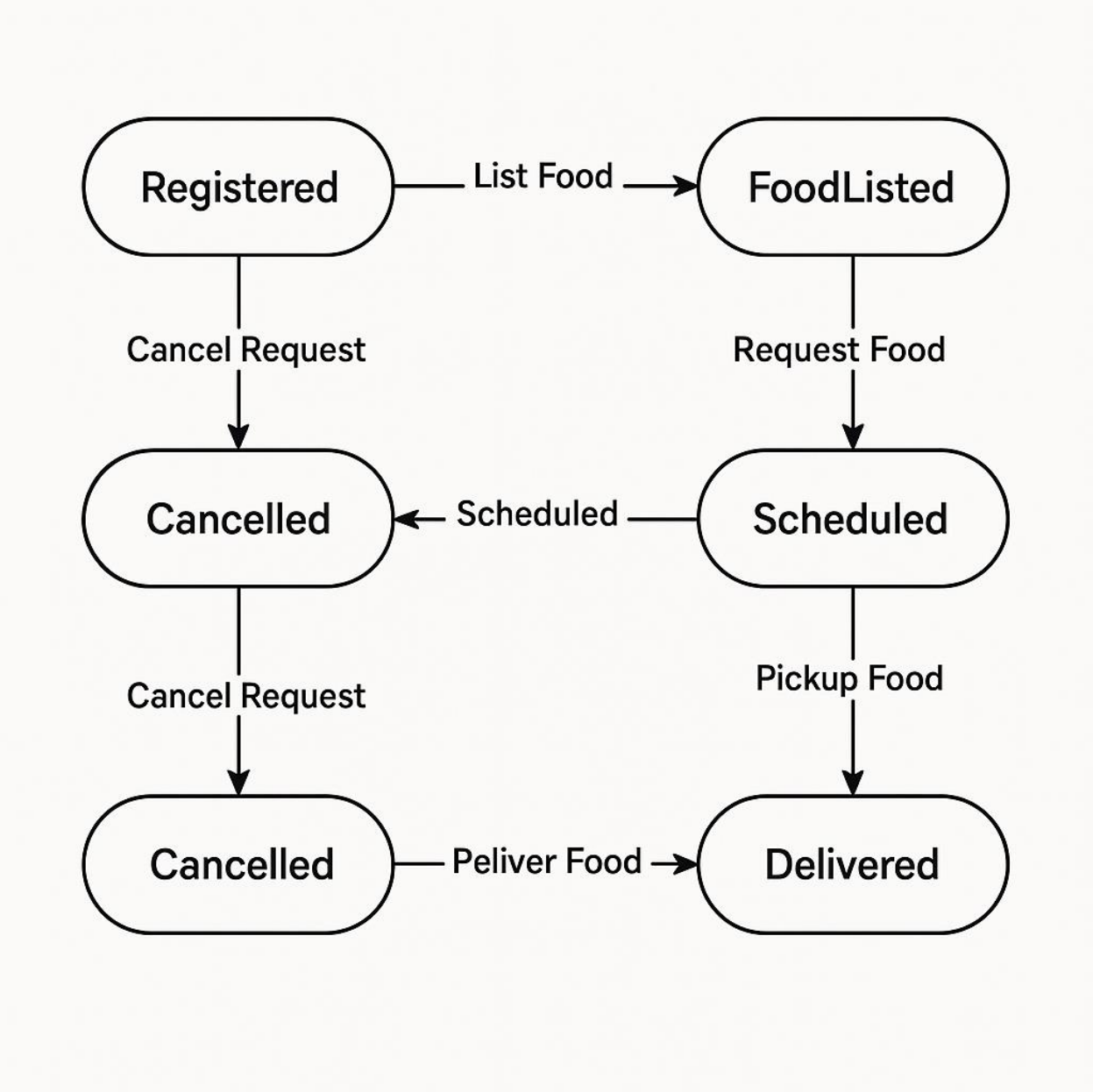
   - Use Case Diagram



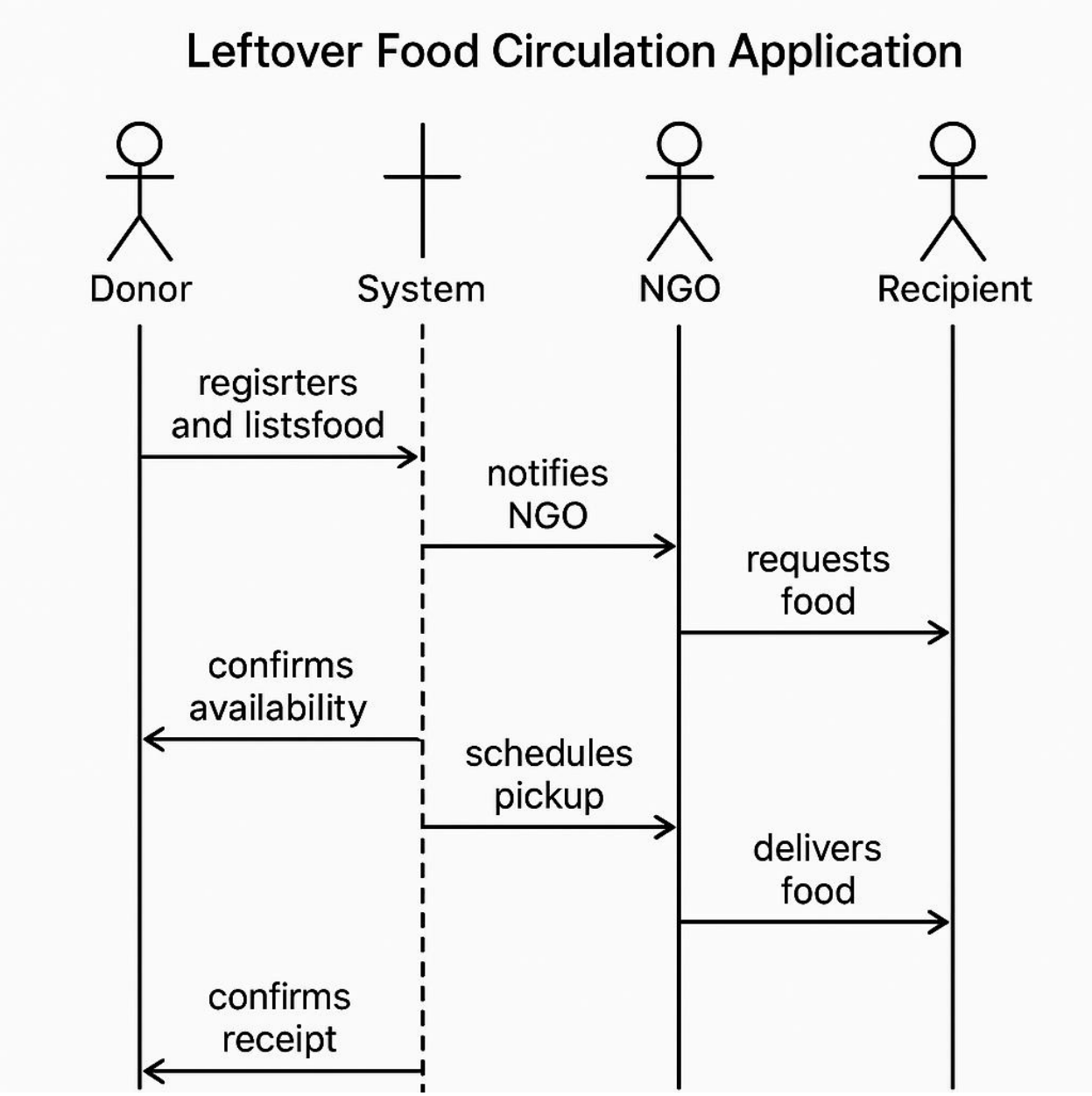
- Activity Diagram



- State Machine Diagram



- Sequence Diagram



- Data Modelling

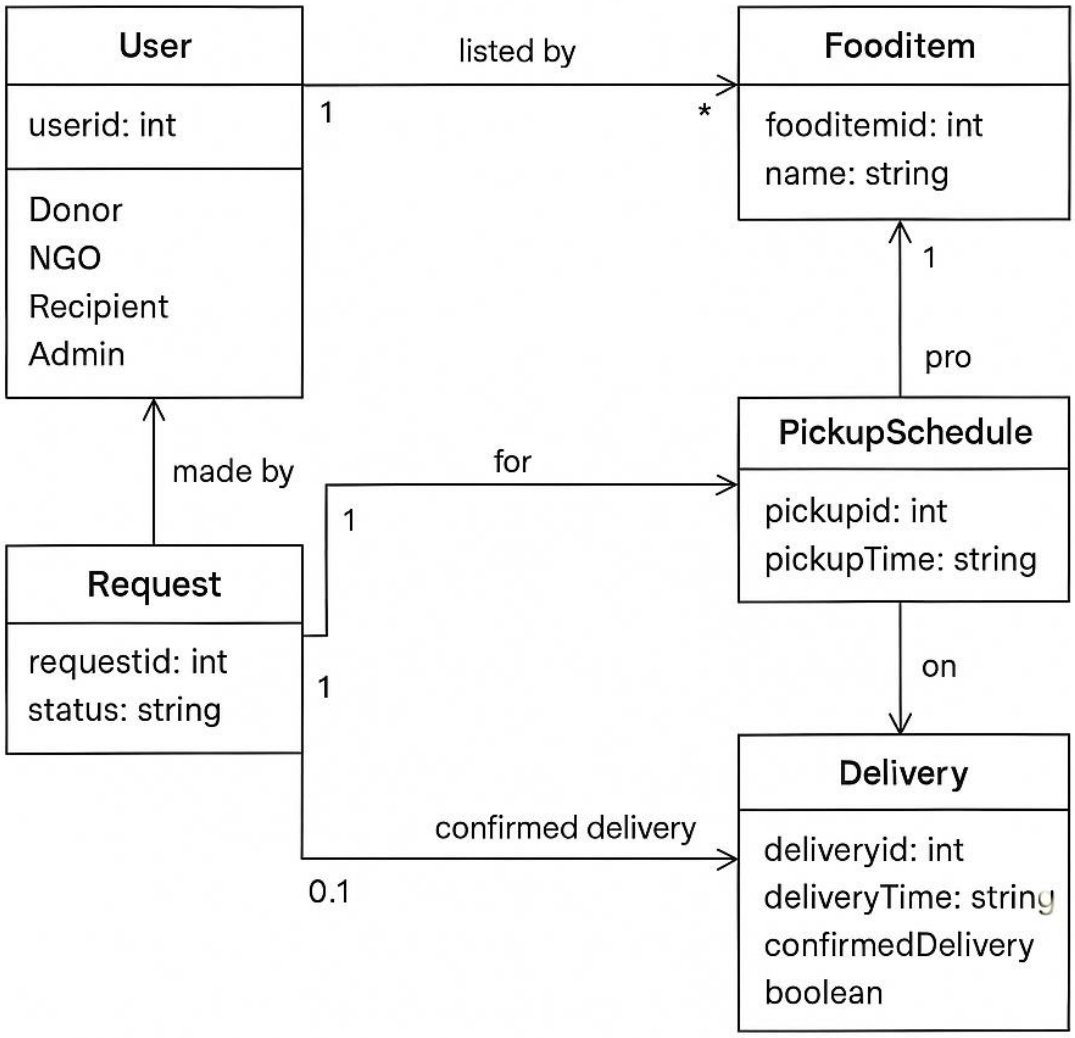
Entities:

1. **User**
   - user_id (PK)
   - name
   - email
   - password
   - role (Donor, NGO, Recipient, Admin)
2. **FoodItem**
   - food_id (PK)
   - user_id (FK)

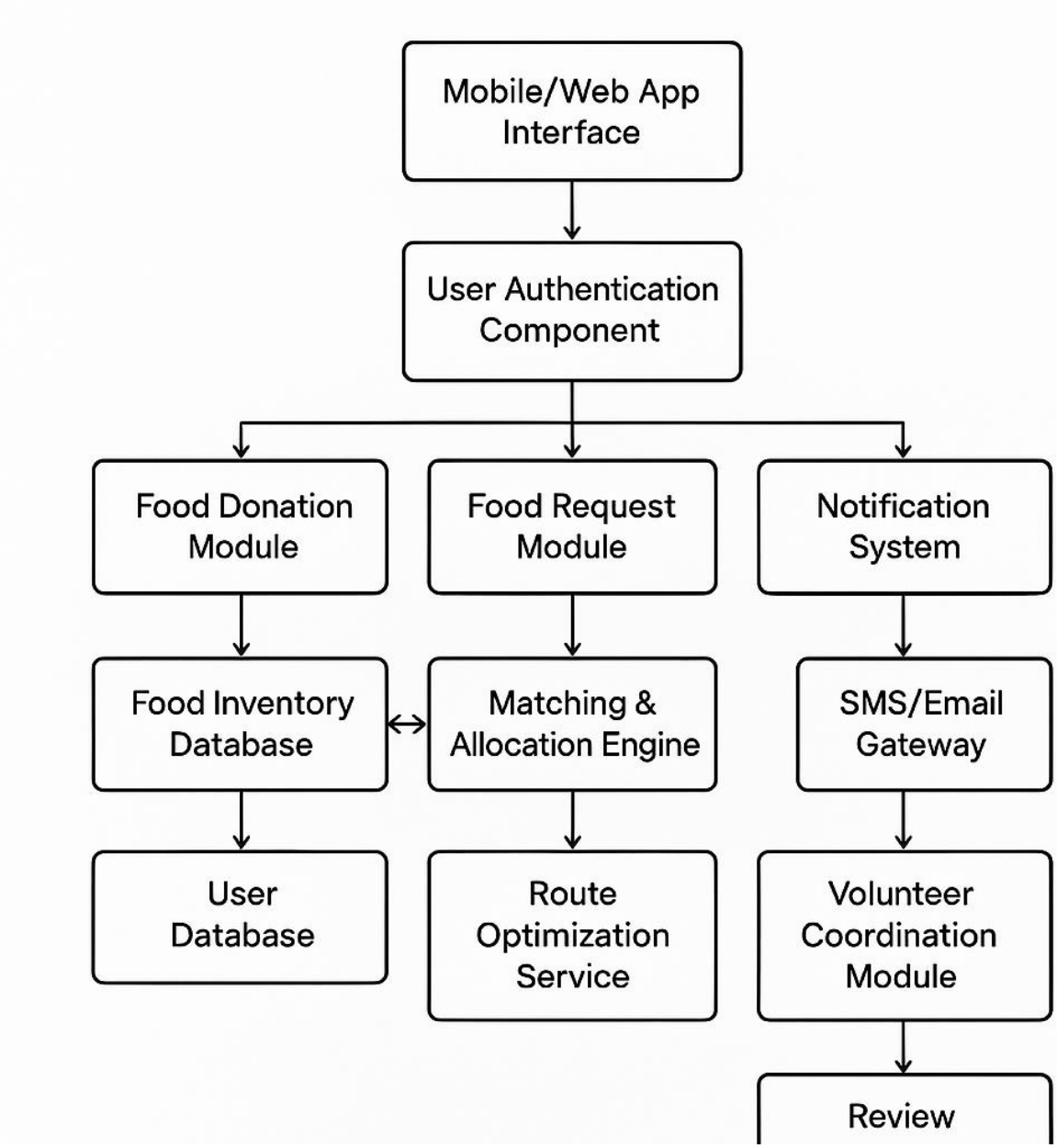
        - description
        - quantity
        - expiry_time
        - status (Available, Requested, PickedUp, Delivered)
    3. **Request**
        - request_id (PK)
        - food_id (FK)
        - requested_by (FK to User)
        - status (Pending, Approved, Cancelled)
        - timestamp
    4. **PickupSchedule**
        - schedule_id (PK)
        - request_id (FK)
        - pickup_time
        - pickup_location
        - status (Scheduled, Completed, Cancelled)
    5. **Delivery**
        - delivery_id (PK)
        - schedule_id (FK)
        - delivered_to (FK to User)
        - delivery_time
        - confirmation_status
    - A **User** can list many **FoodItems**.
    - A **FoodItem** can have one or more **Requests**.
    - A **Request** can have one **PickupSchedule**.
    - A **PickupSchedule** can result in one **Delivery**.

- Class Diagrams

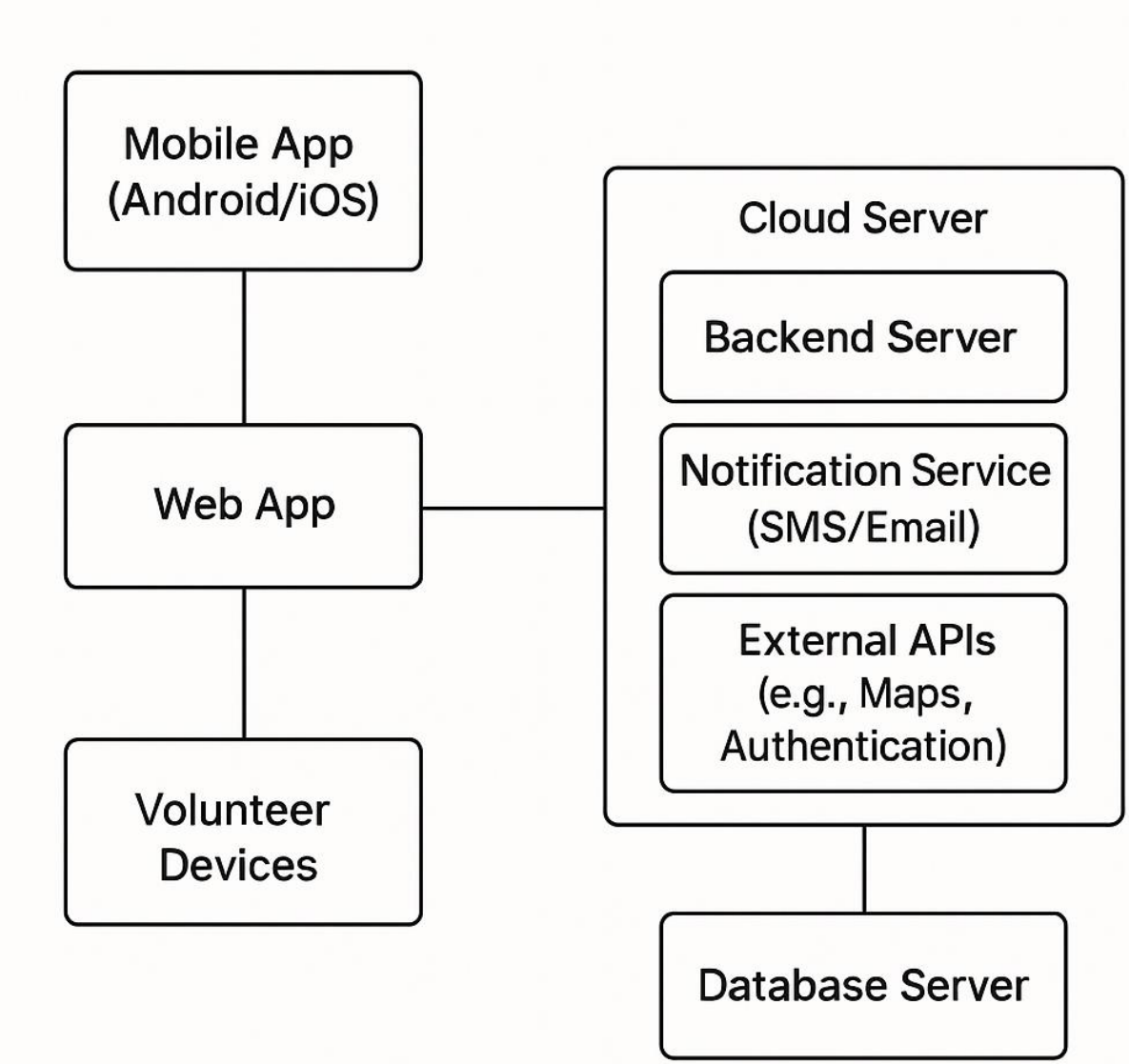
Leftover Food Circulation Application



- Component Diagram

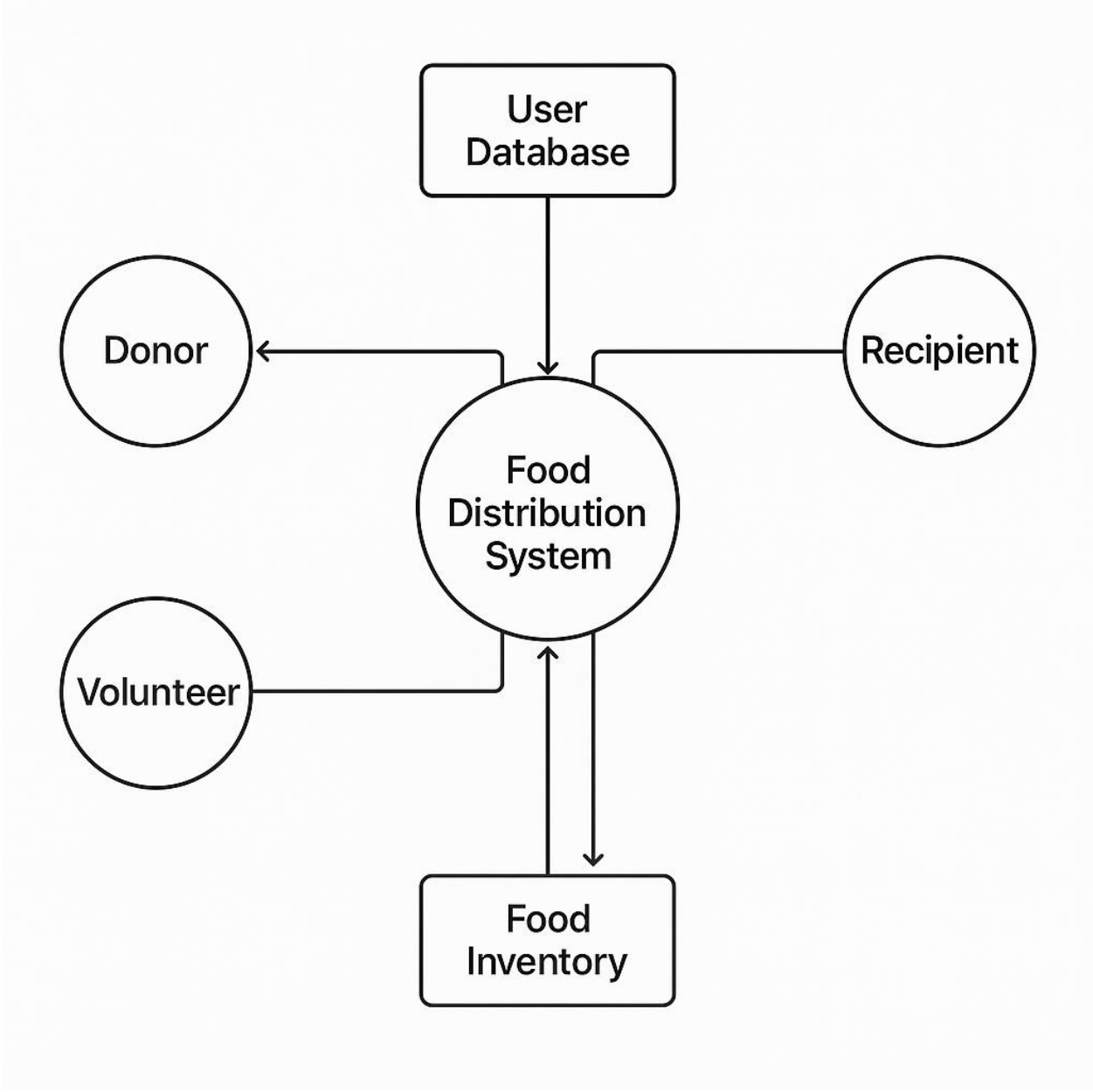


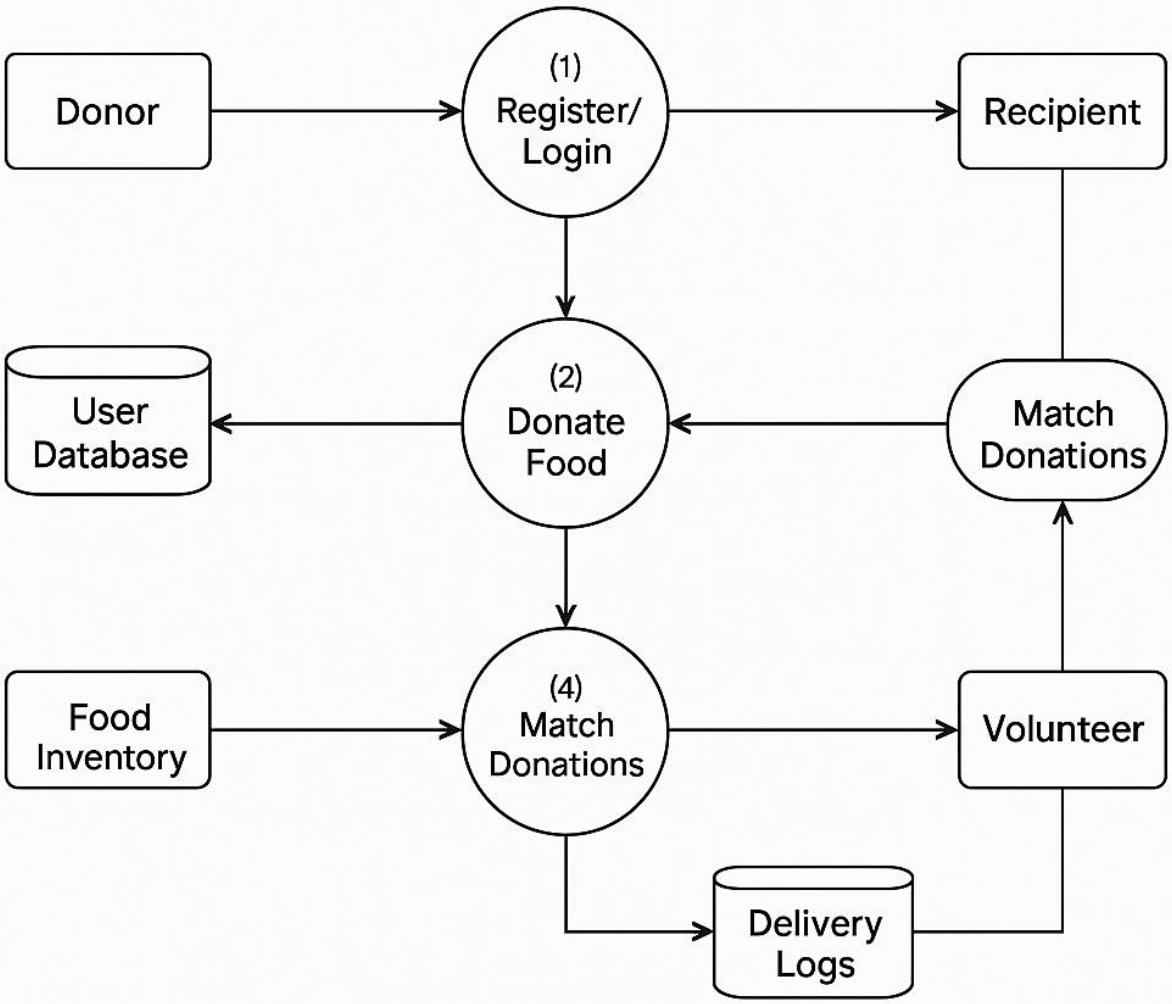
- Deployment Diagram



Deployment Diagam

- Data Flow Diagram - Level 0



- Data Flow Diagram - Level 1

LEVEL 1 DFD FOR LEFTOVER FOOD DISTRIBUTION APPLICATION