PHASE 4: REQUIREMENT ANALYSIS PHASE

4.1 Functional Requirements

- The Requirement Analysis Phase is a crucial stage that determines the overall functionality and performance of the FoodConnect system. It focuses on identifying, documenting, and validating the necessary features and behaviors that the system must possess to meet user needs effectively.
- The first functional requirement of the system is the ability to **create and manage venues**. This involves capturing essential donor details, including the name of the venue, contact information, address, and location coordinates. This functionality ensures that every donor contributing surplus food is accurately registered in the system.
- The second requirement is to **register volunteers**, who serve as the primary workforce for food collection and distribution. The system stores each volunteer's contact information, gender, and availability details to ensure efficient task allocation and scheduling. This feature allows NGOs to easily manage volunteer participation and maintain an organized network of helpers.
- The third requirement focuses on the ability to **manage drop-off points**, which are the designated locations where food donations are delivered. These may include community kitchens, shelters, and NGO warehouses. The system enables users to define, categorize, and update these delivery points as needed, ensuring smooth coordination between donors and recipients.
- The fourth functional requirement is to **record tasks** related to food delivery operations. Each task captures detailed information such as the delivery date, type of food collected, quantity, distance traveled, and the number of people served. This feature allows for transparent tracking of activities and helps measure the impact of each donation.
- The fifth key requirement is the generation of **reports and dashboards**. The system should provide visual insights and analytical summaries of ongoing activities, such as the total amount of food collected, tasks completed, and volunteer performance. This helps NGOs and administrators assess efficiency and make data-driven decisions.
- Lastly, the system must **apply sharing rules** to control data access among different NGOs and user groups. This ensures that sensitive data is shared appropriately while maintaining confidentiality and organizational independence. Each NGO will have controlled access to records relevant to their operations, enabling collaboration without compromising data privacy.

4.2 Non-Functional Requirements

- In addition to functional needs, the system must also meet several non-functional requirements to ensure quality, reliability, and performance.
- One of the primary non-functional requirements is **scalability**. The system should be designed in such a way that it can easily accommodate multiple NGOs and additional users in the future without affecting its performance. As more organizations join the initiative, the system must continue to operate efficiently under an increased workload.
- The next requirement is **usability**. The Salesforce Lightning interface must be simple and user-friendly so that NGOs, administrators, and volunteers can operate the system with minimal training. The design should provide clear navigation and accessible features to make data entry and retrieval straightforward.
- **Reliability** is another essential criterion. Since the system deals with critical social data, it must ensure the secure and consistent storage of all records in the Salesforce Cloud. The data should remain available at all times, with minimal downtime or service interruption.
- Finally, **performance optimization** is an important factor. The system is designed with minimal custom code and optimized triggers to ensure quick execution and high responsiveness. This makes the platform efficient even as data volumes grow, maintaining smooth operation for all users.

4.3 Data Requirements

- For the FoodConnect application to function effectively, it must handle and store specific categories of data accurately.
- The system requires detailed information about food donors, including their name, email, phone number, and location. These details help establish reliable communication channels and track the origin of food donations.
- In addition, **task-related data** must be captured to record details of each delivery operation. This includes metrics like the distance covered, type of food delivered, number of people served, feedback received, and overall task rating. These metrics are important for monitoring performance and assessing impact.
- Finally, the system maintains **volunteer profiles**, storing their personal information, contact details, and availability. This ensures that task assignments are made efficiently based on volunteer capacity and location.

4.4 Security and Access

- Security and controlled access form a core part of the Salesforce-based system. Since the application deals with sensitive operational data from multiple organizations, it is essential to maintain strict data protection and privacy measures.

- A dedicated **NGO Profile** has been created in the system by cloning the Standard Platform User profile. This custom profile ensures that NGO members have only the necessary permissions to view, edit, and manage records relevant to their role.
- **Sharing rules** have been implemented to control access based on geographical distance. Food donations and delivery tasks are distributed according to predefined distance ranges. For instance, when the delivery distance is less than 15 kilometers, the responsibility is assigned to the *Iksha* group. Distances between 15 and 30 kilometers are managed by *NSS*, while deliveries between 30 and 50 kilometers fall under the *Street Cause* group. This structured rule-based sharing ensures equitable distribution of tasks and efficient management of food collection efforts.