PHASE III: REQUIREMENT ANALYSIS

Date	06 November 2025
Team ID	NM2025TMID07246
Project Name	To supply Leftover Food to Poor
Maximum Marks	4 Marks

Title: Requirement Analysis for *"FoodConnect – To Supply Leftover Food To Poor"*

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1. Objective

The **Requirement Analysis Phase** focuses on identifying, defining, and validating the specific requirements needed to implement *FoodConnect* on the Salesforce platform.
This phase ensures that every functional and technical aspect aligns with project goals, minimizes ambiguity, and provides a clear roadmap for development and testing.

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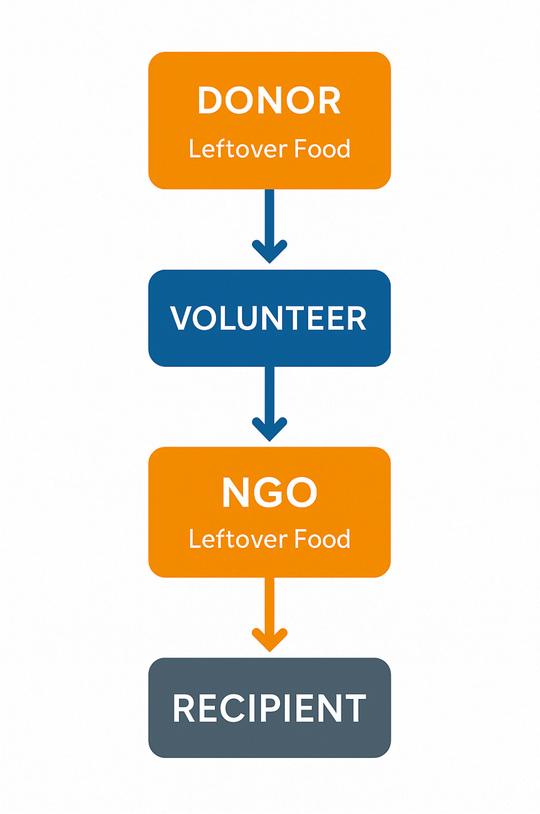
2. Scope of the System

The *FoodConnect* system aims to automate the **collection, tracking, and distribution** of surplus food between donors (venues) and NGOs (recipients) through volunteers.
The scope includes:

- End-to-end data management using Salesforce objects.
- Automated task creation and allocation to volunteers.
- Secure and role-based access control.
- Dashboard-based analytics for transparency.



3. Functional Requirements

The functional requirements define what the system **must perform**. These are directly mapped to Salesforce features and modules.

3.1 Core Functional Modules

Module	Functionality	Salesforce Feature Used
Venue Management	Register donors, update contact info, and food details	Custom Object + Flow
Drop-Off Point Management	Manage NGO and shelter details	Custom Object

Module	Functionality	Salesforce Feature Used
Task Allocation	Assign food pickup and delivery to volunteers	Flow + Trigger
Execution Tracking	Monitor delivery completion and performance	Master-Detail Relationship
Volunteer Management	Track volunteer availability and feedback	Custom Object
Dashboard Reporting	Visualize total deliveries, distances, and volunteer ratings	Reports + Dashboard Builder

3.2 System Workflow

1. Donor (Venue) creates a food donation record.
2. System automatically generates a **Task Record** for available volunteers.
3. Volunteer receives the assignment and updates status post-delivery.
4. **Execution Details Record** is automatically created upon completion.
5. Dashboard reflects real-time performance metrics.

4. Technical Requirements

The technical requirements focus on the **tools, components, and platform configurations** necessary for implementation.

Category	Requirement	Description
Platform	Salesforce Developer Edition	Cloud-based CRM for automation and data management
Programming	Apex (Trigger)	Automates distance formula execution

Category	Requirement	Description
Automation Tool	Salesforce Flow	Automates venue creation and volunteer assignment
Database	Salesforce Objects	Stores structured records for Venues, Tasks, etc.
Visualization	Salesforce Dashboard	Displays key performance metrics
Security	Profiles, Public Groups, and Sharing Rules	Ensures safe data access by role

4.1 Software Tools

- Salesforce Lightning Experience
- Flow Builder
- Schema Builder
- Developer Console
- Dashboard & Report Builder

4.2 Hardware Requirements

Component	Minimum Specification
Processor	Intel i3 or higher
RAM	4 GB minimum
Storage	512 MB for Salesforce Cache
Internet	Stable 2 Mbps connection
Browser	Chrome / Edge (latest)

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5. Non-Functional Requirements

These requirements define **system performance, usability, reliability, and security** characteristics.

Category	Requirement	Description
Performance	System must handle 100 concurrent users	Ensured by Salesforce multi-tenant architecture
Scalability	Should support multiple NGOs in future	Achieved via dynamic object linking
Security	Role-based data access	Controlled using Profiles & Public Groups
Usability	Easy navigation for all users	Ensured by Lightning App structure
Reliability	99.9% uptime	Managed through Salesforce Cloud
Maintainability	Low-code platform for easy updates	Supported by declarative tools

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6. Data Model Design

The **Data Model** defines how different objects interact and store essential data.

Object	Key Fields	Relationship Type
Venue	Venue Name, Email, Phone, Location	Lookup to Drop-Off Point
Drop-Off Point	Drop-Off Location, Distance	Formula from Venue
Task	Task ID, Food Category, Volunteer Assigned	Master-Detail with Execution Details
Volunteer	Volunteer ID, Contact Info, Availability	Lookup to Task
Execution Details	Task Reference, Date, Rating	Master-Detail with Task

Distance Formula Used:

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DISTANCE(Drop_Off_Point_Location__c, Venue__r.Geolocation__c, 'km')
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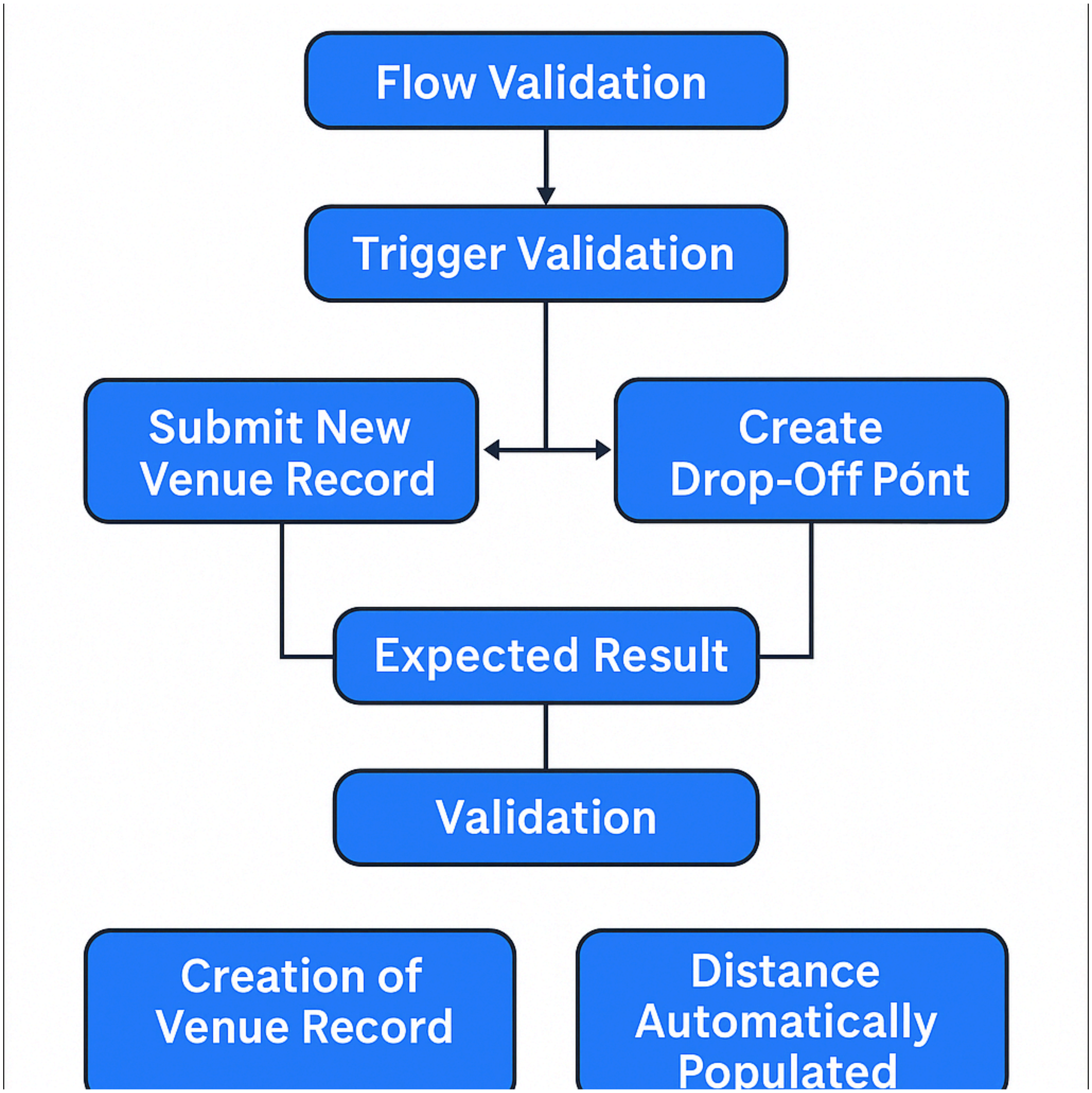


7. User Interface (UI) Requirements

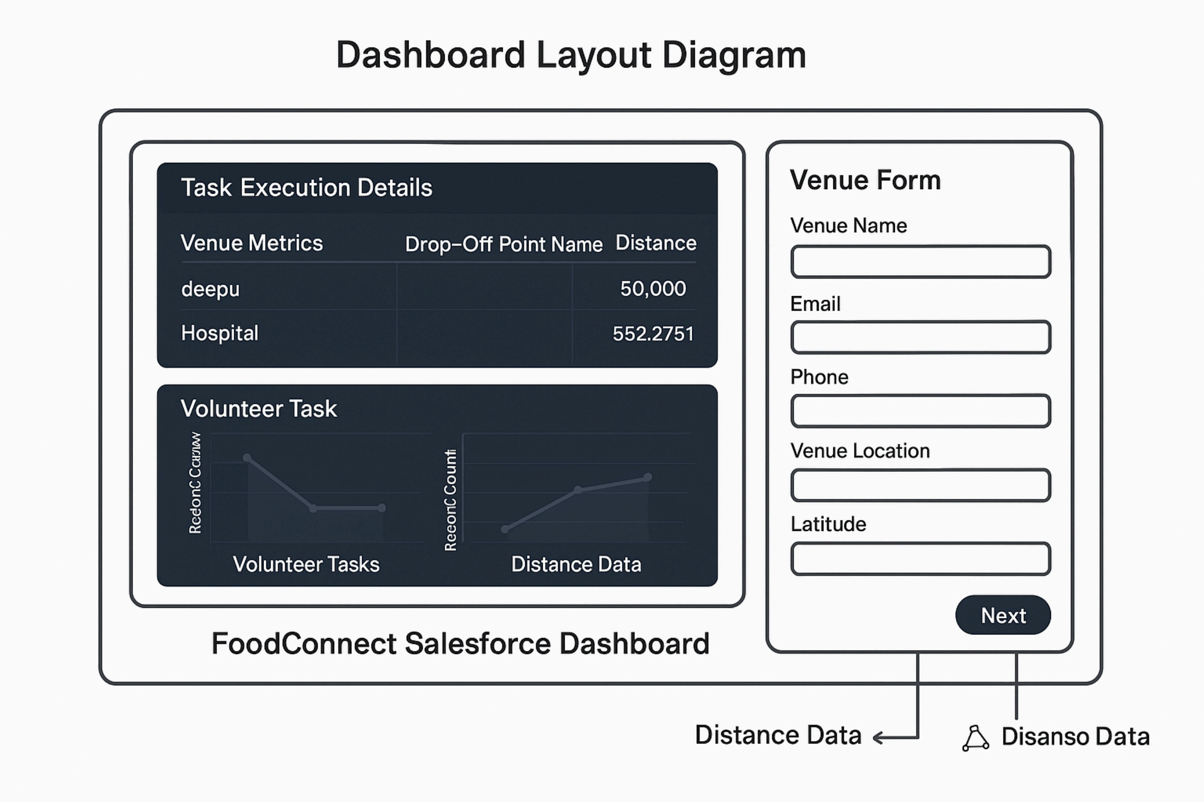
The UI design is created in Salesforce Lightning App with 5 navigation tabs:

- **Venues**
- **Drop-Off Points**
- **Volunteers**

- **Tasks**
- **Execution Details**

7.1 UI Expectations

- Modern and clean interface
- Simple record creation via **Flow Screen**
- Responsive layout for different devices
- Embedded **Dashboards** on the Home Page



Venue Metrics	Drop-Off Point Name	Distance
deepu		50,000
Hospital		552.2751

8. System Validation Requirements

Test Area	Description	Expected Output
Flow Execution	Venue Form creates record correctly	Record created successfully

Test Area	Description	Expected Output
Trigger Validation	Distance auto-calculated	Distance displayed in km
Dashboard Display	Reports updated automatically	Real-time visual update
Profile Access	Volunteers limited to their records	Restricted access confirmed

9. Risk Identification and Mitigation

Risk	Description	Mitigation Strategy
Data Loss Risk	Accidental deletion by user	Enable Recycle Bin & Backup
Access Conflicts	Incorrect profile permission	Regular audits of sharing settings
Network Downtime	Cloud dependency	Offline data export for reports
Automation Failure	Trigger or Flow error	Include debug logs and test classes

10. Summary

The **Requirement Analysis Phase** solidifies the blueprint for the *FoodConnect* system. By carefully identifying all **functional, technical, and non-functional requirements**, the project is fully prepared for the **Design and Implementation Phase**.

Key achievements of this phase:

- Complete mapping of system entities and relationships
- Defined UI and automation requirements
- Established validation and risk control procedures
- Ensured platform scalability and sustainability

This phase guarantees that the project remains **structured, feasible, and purpose-driven** throughout its development lifecycle.