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Project – To Supply Leftover Food to Poor

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To Supply Leftover Food to Poor

(A Salesforce-Based Food Distribution Management System)

Introduction:

Food wastage is a major issue in urban areas where large quantities of edible food are discarded daily from events, restaurants, and institutions. Simultaneously, many underprivileged people struggle for one meal a day.

This project, **"To Supply Leftover Food to Poor,"** aims to create a **Salesforce-based system** that streamlines **collection, tracking, and distribution** of surplus food to needy individuals, ensuring **transparency, efficiency, and accountability**.

The project uses Salesforce's cloud platform to manage venues, volunteers, drop-off points, and task execution details efficiently.

Requirements Phase:

1.Functional Requirements

- Manage venues where leftover food is available.
- Track drop-off points for food delivery.
- Assign volunteers for pickup and delivery tasks.
- Record execution details for each delivery.
- Generate reports and dashboards for monitoring.

2. Non-Functional Requirements

- Accessible via Salesforce platform (web-based).
- Easy to use with minimal training.
- Scalable for multiple NGOs and organizations.
- Secure data access using sharing rules.

3. Software Requirements

- Salesforce Developer Edition Account
- Web Browser (Chrome/Edge)
- Stable Internet Connection

Design Phase:

1. System Architecture

The architecture is based on Salesforce CRM's multi-object model integrating custom objects and relationships:

- Venue
- Drop-Off Point
- Task
- Volunteer
- Execution Details

Each object interacts through lookup and master-detail relationships to form a complete operational workflow.

2. ER Diagram (Conceptual Design)


Entities:

- Venue (Venue_ID, Venue_Name, Contact_Email, Contact_Phone, Location)
- Drop-Off Point (Drop_ID, Location_2, State, Venue_ID, Distance)
- Volunteer (Volunteer_ID, Name, Gender, Contact_Number, Email, Address)
- Task (Task_ID, Date, Food_Category, Rating, Feedback, Drop_Off_ID, Venue_ID)
- Execution Details (Execution_ID, Volunteer_ID, Task_ID)

Relationships:

- Venue → Drop-Off Point (Lookup)
- Drop-Off Point → Volunteer (Master-Detail)
- Volunteer → Execution Details (Master-Detail)
- Task → Execution Details (Master-Detail)





Setup
 Home
 Object Manager

SETUP > OBJECT MANAGER

Drop-Off Point

Details

- Fields & Relationships
- Page Layouts
- Lightning Record Pages
- Buttons, Links, and Actions
- Compact Layouts
- Field Sets
- Object Links
- Record Types
- Related Lookup Fields
- Search Layouts
- List View Buttons Layout
- Restriction Rules

Edit Existing Object

Drop-Off Point

Help & Info Page

Custom Object Definition Edit

Save Save & New Cancel

Custom Object Information
24 Required Information

The singular and plural labels are used in table, page layouts, and reports. Be careful when changing the name or label as it may affect existing integrations and merge templates.

Label Example: Account

Plural Label Example: Accounts

Name with word search


The object name is used when referencing the object via the API.

Object Name Example: Account

Description

Custom Developer Help Setting ☒ Open the standard Salesforce user help & training website ☐ Open a website using a third-party page

Custom Name



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SETUP > OBJECT MANAGER

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Volunteer

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Field Sets

Filter Controls

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Related Lookup Filters

Search Layouts

List View Custom Layouts

Record Rules

View Custom Page

Volunteer

Help on this Page

Custom Object Definition Edit

Save / Save & New / Cancel

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Key Required Information

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Plural Label Example: Accounts

Items with record search ☐

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API Name Example: Account

Description

Custom Developer Only Setting ☒ Open the custom developer's user help & training section
☐ Open a window using a situation page

Custom Name

Setup

Object Manager

Task

Details

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Relationships

Object	Relationship Type	Related object
Volunteer	Master-Detail	Drop-Off Point
Execution Details	Master-Detail	Volunteer
Execution Details	Master-Detail	Task
Drop-Off Point	Lookup	Venue
Task	Lookup	Venue
Task	Lookup	Drop-Off Point

Lightning App Creation

App Name: *Food Connect*

Navigation Items: Home, Venue, Drop-Off Point, Task, Volunteer, Execution Details, Reports.

Profiles: System Administrator and NGO users.

Automation

Flow Creation

Flow Name: Venue Form

Type: Screen Flow

Purpose: To create Venue records from UI form input automatically.

Fields include Venue Name, Contact Email, Contact Phone, Latitude, and Longitude.



Apex Trigger

Trigger Name: DropOffTrigger

Object: Drop-Off Point

Apex code:

```
trigger DropOffTrigger on Drop_Off_point__c (before insert) {  
    for(Drop_Off_point__c Drop : Trigger.new){  
        Drop.Distance__c = Drop.distance_calculation__c;  
    }  
}
```

Purpose: To calculate and assign the "Distance" field automatically for sharing rule processing.

Sharing Rules

Rules created based on Distance criteria:

- Rule 1: Distance < 15 → Shared with Iksha Group
- Rule 2: $15 \leq \text{Distance} \leq 30$ → Shared with NSS Group
- Rule 3: $30 \leq \text{Distance} \leq 50$ → Shared with Street Cause Group

Reports and Dashboards

Reports:

1. Venue with Drop-Off with Volunteer
 - Displays Venue, Drop-Off Points, and Volunteer Names.
2. Volunteer Task
 - Shows Volunteers, Task Details, Ratings, and Execution Data.

Dashboard:

Name: Organization Details

Components:

- Lightning Table for Venue & Drop-Off Report
- Line Chart for Volunteer Task Report
- Optional image logo

Recent | Reports

orgfarm-820b5911ae-dev-ed.develop.lightning.force.com/lightning/o/Report/home?queryScope=mr

FoodConnect

HomeVenuesTasksDrop-Off PointsExecution DetailsVolunteersReportsDashboards

ReportsRecent3 items

REPORTSRecent


Report Name	Description	Folder	Created By	Created On	Subscribed
Sample Flow Report: Screen Flows	Which flows run, what's the status of each interview, and how long do users take to complete the screens?	Public Reports	Automated Process	10/17/2025, 2:49 PM	
Volunteer Task		Custom Reports	Madhumitha M	10/26/2025, 11:06 AM	
venue and Drop Off point		Custom Reports	Madhumitha M	10/26/2025, 10:49 AM	

Task Execution Details

RefreshEditSubscribe

venue and Drop Off point

Volunteer Task



FoodConnect


HomeVenuesTasksDrop-Off PointsExecution DetailsReportsDashboards

Task Execution Details

RefreshEditSubscribe

venue and Drop Off point

Volunteer Task



Testing Phase:

Test Cases

Test Case	Description	Expected Output	Expected Output
TC01	Create new Venue	Record saved successfully	Pass
TC02	Volunteer assigned to Drop-Off	Linked correctly	Pass
TC03	Flow form submission	Venue record auto-created	Pass
TC04	Trigger calculation	Distance updated automatically	Pass
TC05	Dashboard view	Displays data correctly	Pass

Validation Rules

Validation rules ensure correct data entry

(e.g., mandatory fields, valid emails, and phone numbers).

Example:

ISBLANK(Contact_Email__c)

→ Displays error if email is missing.

Deployment Phase:

The project was deployed in a Salesforce Developer Org.

Steps for replication:

- Create Salesforce Developer Org.
- Recreate custom objects and fields as listed.
- Configure relationships and flows.
- Add users, public groups, and sharing rules.
- Build reports and dashboards.

Once verified, assign app to NGO user profiles and test record creation via Home Page flow.

Limitations:

- System relies on manual record input; no IoT-based automation yet.
- Distance calculation accuracy depends on geolocation precision.
- Limited offline accessibility.
- Requires internet connectivity for all operations.

Future Enhancements:

- Integrate mobile app with real-time location tracking.
- Enable automatic food pickup scheduling through Apex scheduler.
- Add WhatsApp/SMS notification integration.
- Build community portal for donors and NGOs.

Conclusion:

This project demonstrates how Salesforce CRM can be effectively utilized for social welfare and resource optimization.

The system provides a structured way to connect food donors, volunteers, and distribution points through cloud-based automation, ensuring accountability, efficiency, and transparency. It can serve as a scalable foundation for NGOs and civic bodies working towards reducing hunger and food waste.

References:

- <https://developer.salesforce.com/>
- <https://trailhead.salesforce.com/>
- Salesforce Documentation & Flow Builder Guide