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)

Development Phase:

Salesforce Developer Account Creation

- Go to https://developer.salesforce.com/signup.
- Fill in your details: name, email, role (Developer), company name, country (India), and postal code.
- Username format: username@organization.com
- Verify account through email and set a password.

Object Creation

- Venue – to manage food source details
- Drop-Off Point – to track distribution points
- Task – to record deliveries and feedback
- Volunteer – to manage individuals assisting in operations
- Execution Details – to log volunteer-task execution records

Each object includes key fields such as Email, Phone, Geolocation, Text Area, Picklist, and Lookup relationships.

SETUP > OBJECT MANAGER
Drop-Off Point

Edit Custom Object
Drop-Off Point

Help for this Page

Custom Object Definition Edit   Save Save & New Cancel

Custom Object Information   I = Required Information

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

Label   Drop-Off Point   **Example:** Account
Plural Label   Drop-Off Points   **Example:** Accounts
Starts with vowel sound   ☐

The Object Name is used when referencing the object via the API.
Object Name   Drop_Off_Point   **Example:** Account

Description

Context Sensitive Help Setting   ● Open the standard Salesforce.com Help & Training window
○ Open a window using a Visualforce page
Content Name

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

SETUP > OBJECT MANAGER
Venue

Edit Custom Object
Venues

Help for this Page

Custom Object Definition Edit   Save Save & New Cancel

Custom Object Information   I = Required Information

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

Label   Venue   **Example:** Account
Plural Label   Venues   **Example:** Accounts
Starts with vowel sound   ☐

The Object Name is used when referencing the object via the API.
Object Name   Venue   **Example:** Account

Description

Context Sensitive Help Setting   ● Open the standard Salesforce.com Help & Training window
○ Open a window using a Visualforce page
Content Name

Details
Fields & Relationships
Page Layouts
Lightning Record Pages
Buttons, Links, and Actions
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SETUP > OBJECT MANAGER
Volunteer

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Search Layouts

List View Button Layout

Restriction Rules

Edit Custom Object
Volunteer

Custom Object Definition Edit	Save Save & New Cancel

Custom Object Information

The language and pluralizations are used in tabs, page layouts, and reports.
Be careful when changing the name or label as it may affect existing integrations and merge templates.

Label | Volunteer | Example: Account
Plural Label | Volunteers | Example: Accounts
Starts with vowel sound | ☐

The Object name is used when referencing the object via the API.
Object Name | Volunteer | Example: Account

Description |

Context Sensitive Help Setting | ⦿ Open the standard Salesforce.com Help & Training window
☐ Open a window using a Visualforce page

Content Name

SETUP > OBJECT MANAGER
Task

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Search Layouts

List View Button Layout

Restriction Rules

Edit Custom Object
Task

Custom Object Definition Edit	Save Save & New Cancel

Custom Object Information

The language and pluralizations are used in tabs, page layouts, and reports.
Be careful when changing the name or label as it may affect existing integrations and merge templates.

Label | Task | Example: Account
Plural Label | Tasks | Example: Accounts
Starts with vowel sound | ☐

The Object name is used when referencing the object via the API.
Object Name | Task | Example: Account

Description |

Context Sensitive Help Setting | ⦿ Open the standard Salesforce.com Help & Training window
☐ Open a window using a Visualforce page

Content Name

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: $15 \leq$ Distance ≤ 30 → Shared with NSS Group
- Rule 3: $30 \leq$ Distance ≤ 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

Reports
Recent
3 items

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		⌄

REPORTS
- Recent
- Created by Me
- Private Reports
- Public Reports
- All Reports

FOLDERS
- All Folders
- Created by Me
- Shared with Me

FAVORITES
- All Favorites

Task Execution Details

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