

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.

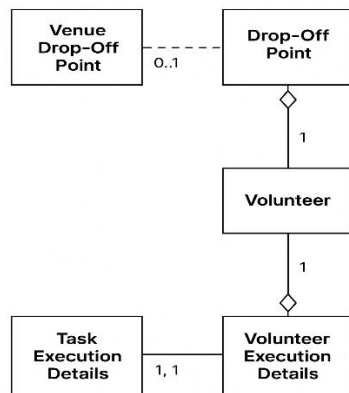
2. ER Diagram (Conceptual Design)

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.

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Search Setup

Setup Home Object Manager

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

Scoping Rules

Object Access

Triggers

Flow Triggers

Validation Rules

Conditional Field Formatting

Edit Custom Object

Volunteer

Custom Object Definition Edit

Save Save & New Cancel

Custom Object 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 **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 **None**

Enter Record Name Label and Format

The Record Name appears in page layouts, key lists, related lists, lookups, and search results. For example, the Record Name for Account is "Account Name" and for Case it is "Case Number". Note that the Record Name field is always called "Name" when referenced via the API.

Record Name **Volunteer Name** Example: Account Name

Data Type **Text** Warning: If you plan to insert a high volume of records in this object, via the API for example, use the Text data type.

Optional Features

☒ Allow Reports

☒ Allow Activities

☒ Track Field History

☐ Allow in Chatter Groups

☐ Enable Licensing

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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 **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

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Content Name **None**

Enter Record Name Label and Format

The Record Name appears in page layouts, key lists, related lists, lookups, and search results. For example, the Record Name for Account is "Account Name" and for Case it is "Case Number". Note that the Record Name field is always called "Name" when referenced via the API.

Record Name **Task Name** Example: Account Name

Data Type **Text** Warning: If you plan to insert a high volume of records in this object, via the API for example, use the Text data type.

Optional Features

☒ Allow Reports

☒ Allow Activities

☒ Track Field History

☐ Allow in Chatter Groups

☐ Enable Licensing

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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

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

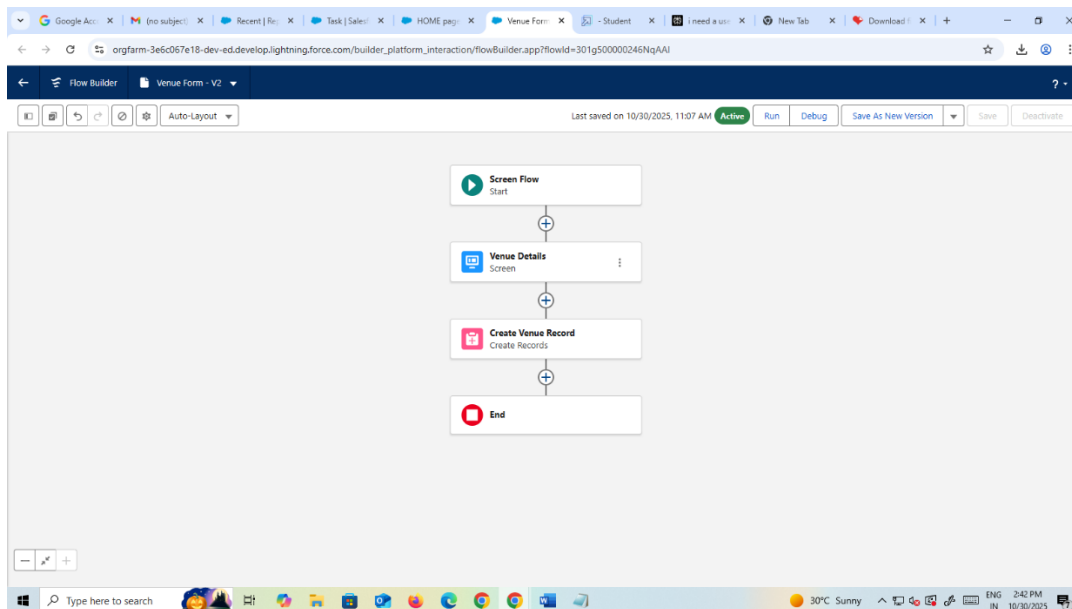
Flow Creation

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: DropOff Trigger

Object: Drop-Off Point

Apex code:

```
trigger DropOff Trigger on Drop Off pointc (before insert) [  
for(Drop Off point Drop: Trigger.new){  
Drop. Distance  
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 Distance \leq 30 Shared with NSS Group

Rule 3: 30 Distance \leq 50 Shared with Street Cause Group

Reports and Dashboards

Reports:

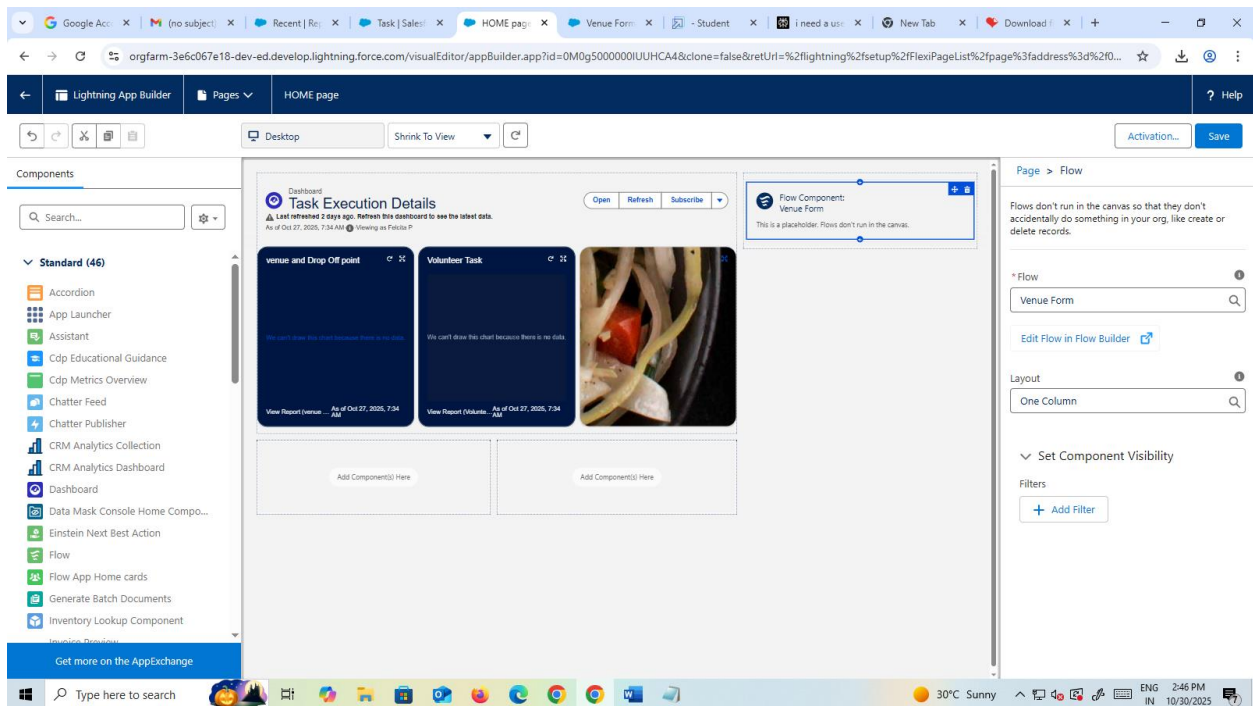
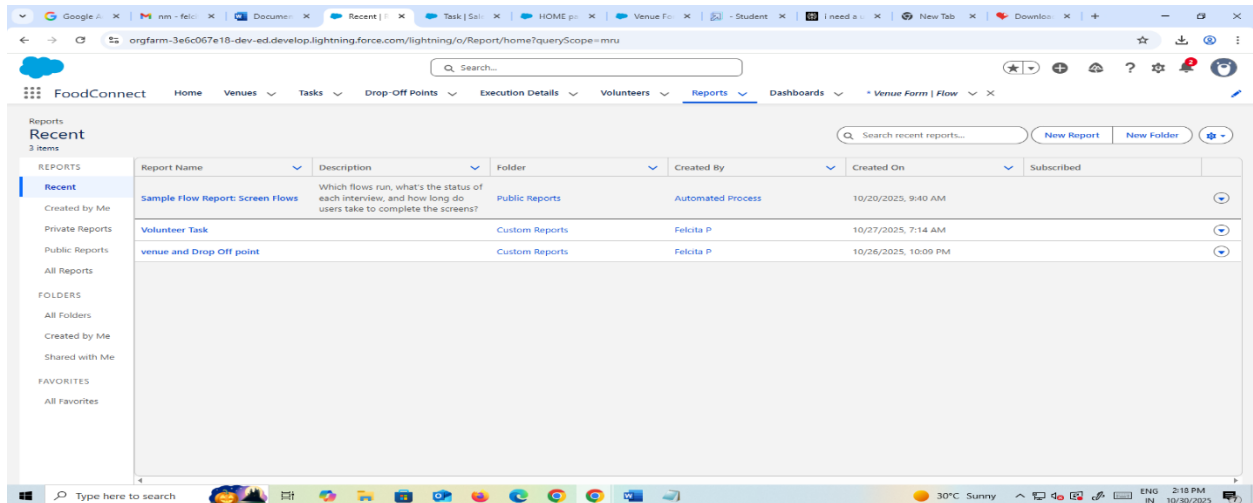
1. Venue with Drop-Off with Volunteer
 - Displays Venue, Drop-Off Points, and Volunteer Names.
2. Volunteer Task
 - Shows Volunteers, Task Details, Ratings, and Execution Data

Dashboard:

Name: Organization Details

Components:

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



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

