

Project Title:

To Supply Leftover Food to Poor

Team ID:

LTVIP2025TMID30745

Team Size:

4 Members

Team Leader:

Siddani Mohith

Team Members:

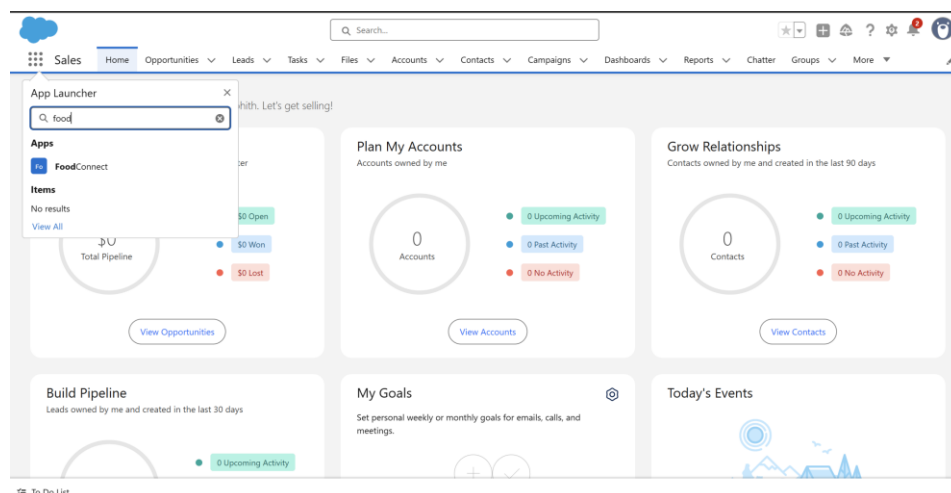
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Abstract

The increasing challenge of food wastage in urban areas has become a significant concern, especially when vast quantities of edible food go unutilized after large events, restaurant operations, or social gatherings. At the same time, a significant portion of the population continues to suffer from hunger and malnutrition. This project, titled *"To Supply Leftover Food to Poor,"* aims to bridge the gap between food surplus and food scarcity using technology.

Leveraging the capabilities of the Salesforce platform, this project establishes a transparent, scalable, and automated system to manage the collection and distribution of leftover food. By integrating a structured model that includes donors, venues, drop-off points, volunteers, and event tracking, the platform ensures efficient coordination and delivery. Automated workflows, role-based permissions, and data analytics contribute to streamlining operations while maintaining accountability.

This system not only addresses food insecurity but also minimizes environmental impacts caused by food waste. Furthermore, it promotes active community involvement and empowers individuals to participate in a meaningful social cause. The result is a holistic platform that contributes to social good while utilizing cutting-edge cloud-based CRM technology.

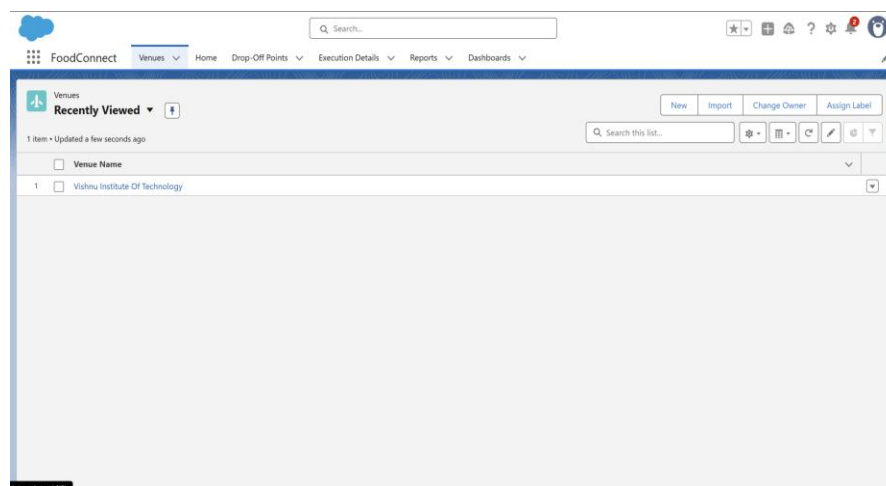


Project Overview

The project is built entirely on the Salesforce Lightning Platform and provides a centralized, end-to-end solution for food redistribution. It allows food donors—such as restaurants, caterers, and event organizers—to register leftover food along with essential details such as quantity, type, and pickup location. Once food is registered, the system automatically creates and assigns pickup and delivery tasks to available volunteers.

Using custom Salesforce objects like **Venue**, **Drop-Off Point**, **Task**, **Volunteer**, and **Execution Details**, the application efficiently captures and manages the entire workflow. Volunteers are notified through automated alerts, and food is tracked from pickup to delivery, with real-time updates available for administrators. The project includes dashboards and reports that allow tracking of key metrics such as the number of meals served, frequency of donations, and volunteer participation.

By using data-driven decision-making, the project optimizes food routing and ensures that perishable food reaches recipients in time. It supports transparency, accountability, and collaboration, making it a reliable and impactful solution to fight hunger and reduce waste. With future enhancements like mobile apps, AI-based prediction, and social integration, the project holds strong potential for real-world adoption and scalability.



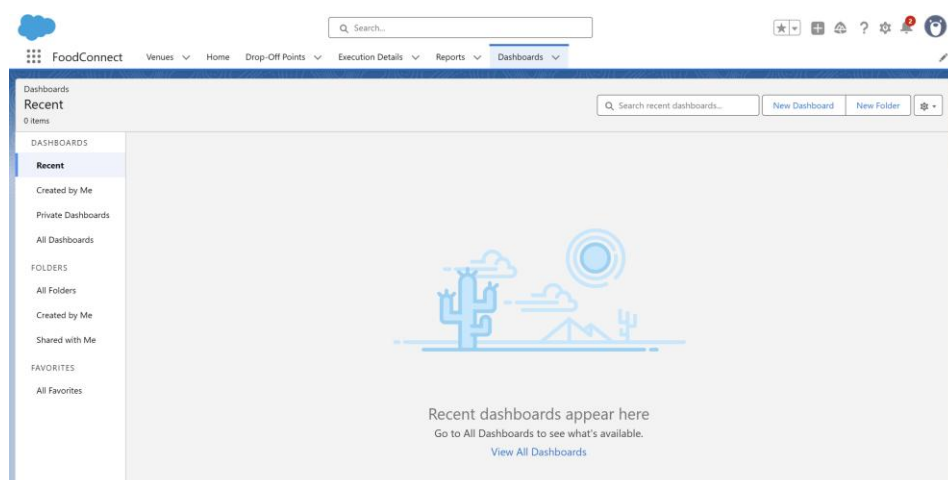
Purpose

The primary purpose of the project *“To Supply Leftover Food to Poor”* is to reduce food wastage and combat hunger by establishing a streamlined digital system that efficiently manages the collection and distribution of surplus food. With a growing population suffering from food insecurity, and tons of edible food being discarded daily by commercial and social establishments, this project provides a much-needed bridge between those who have excess food and those who are in need.

This system utilizes Salesforce to create a robust, cloud-based infrastructure capable of:

- Tracking food donors and their offerings.
- Automating the task of assigning volunteers for pickups and deliveries.
- Logging each distribution activity for analysis and future optimization.
- Encouraging community participation and transparency through role-based access and workflows.

The project serves both environmental and humanitarian goals. By ensuring timely delivery of edible surplus food, it helps mitigate the effects of food wastage while delivering support to underprivileged sections of society. The overall goal is to create a scalable and transparent solution that can be adopted by NGOs, municipalities, and community organizations to streamline their food donation operations.



Requirement Analysis

To develop a complete and functional surplus food distribution platform on Salesforce, several functional and non-functional requirements were identified. These are categorized below:

Functional Requirements

1. Food Donation Management

- Allow restaurants, event organizers, and individuals to register food donations.
- Collect metadata such as food type, quantity, pickup time, and special notes (e.g., allergens).

2. Volunteer Coordination

- Manage volunteer registrations and availability.
- Automatically assign tasks based on proximity, availability, and capacity.

3. Task Scheduling and Assignment

- Generate and assign tasks for pickup and delivery.
- Notify volunteers via email or in-app alerts.

4. Location Management

- Maintain records of venues (pickup points) and drop-off points (distribution centers).
- Link each donation with its respective location data.

5. Execution Tracking

- Record execution details of each delivery: who received it, how much was delivered, and any feedback collected.

6. Reports and Dashboards

- Display number of meals served, volunteers active, top donors, and delivery success rates.

Non-Functional Requirements

- **Scalability:** The system should support expansion across cities and larger organizations.
- **Security:** Role-based access control should be enforced to protect sensitive data.
- **Reliability:** System should ensure data integrity and prevent double allocation of resources.
- **Performance:** Real-time alerts and updates should occur without delay.
- **Usability:** The user interface should be simple for donors, volunteers, and administrators to navigate.

The screenshot shows the 'FoodConnect' application interface. A 'New Venue' modal form is open, displaying fields for venue information and location. The form is titled 'New Venue' and includes a note '* = Required Information'. The fields are organized into sections: 'Information' (Venue Name, Contact Email, Contact Phone) and 'Location' (Latitude, Longitude, Venue Location). The 'Owner' field is pre-filled with 'Mohith Siddani'. The form has 'Cancel', 'Save & New', and 'Save' buttons at the bottom. The background shows a sidebar with 'Venues' and 'Recently Viewed' sections, and a top navigation bar with a search bar and various icons.

FoodConnect Venues

Search...

New Venue

* = Required Information

Information

* Venue Name

Owner: Mohith Siddani

* Contact Email

* Contact Phone

Location

* Latitude

* Longitude

Venue Location

Cancel Save & New Save

Technology Stack

The project is developed using the Salesforce Lightning Platform, which serves as the core infrastructure for all modules including data handling, logic, automation, and user interface. Apex, Salesforce's proprietary programming language, is used to write backend logic, including validation rules, triggers, and other server-side operations. For frontend development, Lightning Web Components and Aura Components are employed to create responsive and dynamic user interfaces within the Salesforce ecosystem. The system uses SOQL and SOSL for efficient querying and searching of Salesforce records, while standard web technologies such as HTML, CSS, and JavaScript are integrated for customizing the interface and email templates.

To automate repetitive processes and streamline operations, Salesforce Flow Builder is used to design multi-step workflows for task assignments, notifications, and record updates. Workflow Rules complement this automation by allowing specific triggers for alerts, such as notifying volunteers when a task is assigned or completed. For analytics, the system incorporates Salesforce's native Reports and Dashboards to monitor the effectiveness of food collection and distribution, including insights such as the number of meals served, volunteer engagement, and delivery timelines. Security and access control are handled through the use of Profiles, Permission Sets, and Roles to ensure that users can only access features relevant to their responsibilities. Altogether, the technology stack provides a powerful, scalable, and secure environment tailored to managing the redistribution of surplus food efficiently.

Project Design

The design of the project is centered around Salesforce's object-oriented framework, where each major component of the food redistribution process is represented by a custom object. These objects include Venue, Drop-Off Point, Task, Volunteer, and Execution Detail, all of which are interlinked to ensure end-to-end

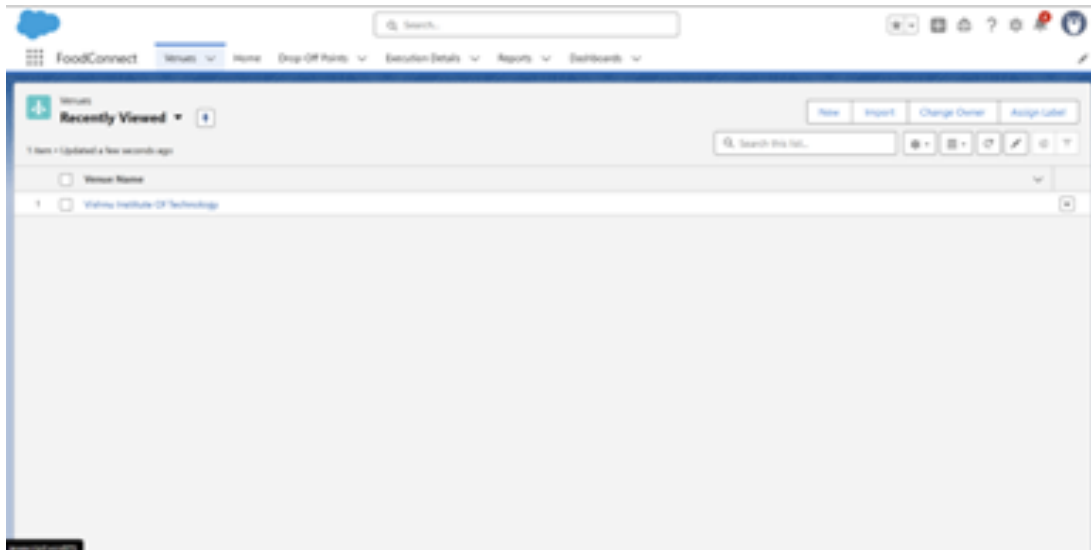
traceability and accountability. A Venue represents the location from which surplus food is collected, such as a restaurant or event hall. The Drop-Off Point indicates the final destination where food is distributed to beneficiaries, such as community shelters or public kitchens. Tasks are created to facilitate the pickup and delivery process, and each task is assigned to a registered volunteer. Volunteers are managed within the system, where their availability and task history are maintained. Execution Details store the outcome of each distribution, including the number of meals delivered and feedback from recipients.

The relationships between these objects are designed to ensure seamless coordination. For example, a Task is connected to both a Venue and a Drop-Off Point, and it also logs the Volunteer responsible for the action. When a task is completed, an Execution Detail record is automatically created to capture the results. All operations are supported by automation through Flow Builder and Workflow Rules, ensuring that the right people are notified at the right time and that tasks progress through predefined stages without manual intervention. The overall structure is scalable and modular, allowing for future enhancements such as mobile integrations, location-based matching, and third-party donor onboarding. The system's design emphasizes efficiency, transparency, and real-time responsiveness, making it well-suited for large-scale implementation in urban food redistribution efforts.

The screenshot displays the FoodConnect web application interface. A modal window titled "New Drop-Off Point" is open, allowing users to create a new drop-off point. The form includes the following fields:

- Drop-Off Point Name:** A required text input field.
- Owner:** A dropdown menu currently showing "Mohith Siddani".
- Venue_c:** A search input field with the placeholder "Search Venues..." and a magnifying glass icon.
- Location 2:** Two input fields for "Latitude" and "Longitude".
- State:** A dropdown menu currently showing "--None--".

At the bottom of the modal, there are three buttons: "Cancel", "Save & New", and "Save". The background shows the application's navigation menu with options like "Venues", "Home", "Drop-Off Points", "Execution Details", "Reports", and "Dashboards". A sidebar on the left lists "Drop-Off Points" and "Recently Viewed" items, including "Vishnu Institute Of Technology".



Implementation Workflow

The implementation of the project followed a systematic approach using Salesforce's declarative tools combined with programmatic customization where necessary. The first step involved creating custom objects to represent the core entities in the system. These included Venue, Drop-Off Point, Task, Volunteer, and Execution Detail. Each object was configured with appropriate fields, record names, and settings such as tracking field history, enabling activities, and allowing search functionality. After object creation, corresponding custom tabs were defined to ensure users could access these records through the Salesforce interface.

Once the data structure was established, relationships were set between objects to reflect the real-world connections between donors, volunteers, and recipients. Workflows were then implemented using Salesforce Flow Builder to automate task creation, volunteer assignment, and notification processes. When a food donation is logged under a Venue, a pickup task is automatically generated and matched with a Volunteer based on their availability. Upon completion of the delivery, an Execution Detail record is created to track the outcome and capture any beneficiary feedback. The entire system is designed to operate in real time, providing alerts to users, updating record statuses, and reflecting data in dashboards for

administrative oversight. The implementation ensures that each step in the food supply chain is monitored, recorded, and optimized for efficiency.

Advantages & Disadvantages

The system provides numerous advantages that directly contribute to addressing food insecurity and minimizing wastage. By digitizing the process of food donation and distribution, it ensures that surplus food is redirected to those who need it most in a timely manner. The use of automation reduces the need for manual coordination, allowing volunteers and organizers to focus on execution rather than administration. Real-time tracking enables stakeholders to monitor every step of the donation cycle, while integrated dashboards offer valuable insights into performance metrics such as number of meals served and volunteer engagement. The system also fosters transparency and accountability by maintaining complete records of all transactions and deliveries.

Despite its benefits, the system has a few limitations that must be considered. Its dependency on internet connectivity may restrict its functionality in rural or low-network areas. Additionally, initial setup and configuration require a working knowledge of Salesforce administration, which may pose a barrier for organizations without technical expertise. As the system relies on volunteers and external contributors, consistent engagement is necessary to maintain its effectiveness. Lastly, while Salesforce offers a robust platform, advanced features may incur licensing costs, which could be a consideration for non-profit groups operating under limited budgets.

Conclusion

The project titled *“To Supply Leftover Food to Poor”* stands as a comprehensive and technology-driven solution to the global problems of food waste and hunger. Built entirely on the Salesforce platform, the system bridges the gap between surplus

food sources and communities in need through automation, efficient task management, and real-time monitoring. By utilizing a structured object model and automated workflows, the application ensures transparency, scalability, and reliability in food distribution.

The integration of custom objects, roles, and reports empowers donors, volunteers, and administrators to collaborate seamlessly within a single platform. With its data-centric approach and intelligent use of automation tools, the system enhances accountability while minimizing the manual workload involved in coordinating food pickups and deliveries. In conclusion, this project demonstrates how digital transformation, when applied thoughtfully, can result in a sustainable, socially impactful solution that benefits both communities and the environment.

Future Scope

The potential for scaling and enhancing the system is significant. In the future, the project can be extended by developing a mobile application to provide users with on-the-go access to task updates, real-time notifications, and location tracking for pickups and deliveries. Integrating communication channels such as WhatsApp and SMS will improve responsiveness and volunteer coordination, especially in areas where app usage may be limited. Additional features like donor and volunteer rating systems could be implemented to enhance trust and ensure quality service across the platform.

Artificial intelligence and data analytics can be integrated to predict food demand patterns based on historical donation and delivery data, allowing for more proactive planning. The system could also be expanded to support financial donations and payment gateways, enabling supporters to contribute toward logistics, transportation, or packaging costs. Finally, multilingual support and localized customizations would allow broader adoption across regions and communities, making the platform inclusive and adaptable to diverse operational environments.