CRM SOLUTION TO SUPPLY LEFTOVER FOOD TO POOR

Project Overview

The **CRM Solution to Supply Leftover Food to Poor** is a Salesforce-based solution designed to streamline the collection, management, and distribution of surplus food from restaurants, hotels, and events to underprivileged communities. The CRM system will streamline the interaction between food donors (businesses and individuals), NGOs, volunteers, and beneficiaries to minimize food waste and ensure timely delivery to the needy.

Purpose

Customer Relationship Management (CRM) system that enables seamless coordination among food donors, volunteers, and NGOs to supply leftover food to the underprivileged. This application solves problems by:

- **Donor Management:** Restaurants, hotels, supermarkets, and individuals can register as donors.
- **Beneficiary Coordination:** NGOs or local community organizations can request food on behalf of the poor.
- **Logistics Management:** Volunteers or delivery partners will be connected through the system to facilitate timely food collection and delivery.
- **Inventory and Tracking:** Monitor food quantity, location, shelf life, and distribution status.
- **Communication and Notifications**: Real-time updates between donors, volunteers, and NGOs.
- **Data Analytics & Reporting:** Generate insights on food donations, distribution areas, and impact.

Key Features

1. **Donor Portal**
   - Easy registration and food donation forms.
   - Schedule pickups for leftover food.
   - Real-time tracking of donation status.

2. **Volunteer Coordination**
   - Assign volunteers to nearby pickups and deliveries.
   - Notifications about new tasks and food collection schedules.

3. **Beneficiary/NGO Management**
   - Register and request food assistance.
   - Track delivery schedules and manage feedback.

4. **Logistics Module**
   - Route optimization to minimize travel time.
   - Real-time tracking of food deliveries to reduce spoilage.

5. **Analytics Dashboard**
   - Track metrics like donated food, delivery success rates, and geographic impact.
   - Reports for stakeholders and NGOs to assess the project's success.

Objectives

The CRM Solution to Supply Leftover Food to Poor aims to:

- **Optimize Food Collection and Distribution:** Match available food donations with nearby NGOs or beneficiaries in real-time. Ensure timely pickup and delivery to prevent spoilage.
- **Improve Stakeholder Collaboration:** Facilitate seamless communication between donors, NGOs, and volunteers. Provide automated notifications and updates to reduce manual coordination efforts.
- **Minimize Food Waste:** Redirect excess food that would otherwise be discarded to serve the underprivileged. Track and report the impact of food redistribution efforts.
- **Create a Scalable Solution:** Design a **modular system** that can be extended to multiple cities and regions. Ensure cloud-based hosting for seamless operation and future scalability.

Users and Roles

The primary users of this CRM application will include:

- **Donors:** Restaurants, hotels, event organizers, supermarkets, and individuals.
- **NGOs/Charities:** Organizations providing food to the poor.
- **Volunteers:** Individuals willing to collect and distribute food.
- **Beneficiaries:** Low-income groups, homeless individuals, or anyone facing food insecurity.

Benefits of the Application

1. **Waste Reduction:** Minimizes food waste by repurposing surplus food.
2. **Hunger Relief:** Ensures that food reaches underprivileged communities effectively.
3. **Streamlined Communication:** Reduces logistical complexity through real-time coordination.
4. **Impact Tracking:** Provides insights into how much food was saved and how many people benefited.

Example Workflow

1. User Registration and Login

- Food Suppliers (e.g., restaurants, grocery stores) and Distributors (e.g., NGOs, volunteers) create accounts on the platform.
- They provide details such as contact information, location, type of user (supplier or distributor), and operating hours.

2. Food Supply Posting (By Food Suppliers)

- Step 1: Food suppliers log in and list the available leftover food, including:
- Step 2: Suppliers specify pickup time windows and any additional details (e.g., food handling instructions).

3. Matching Process (Automated or Manual)

- The platform automatically matches food supply posts with nearby distributors based on:
    - Location proximity
    - Availability of distributors in the area
- Alternatively, distributors can browse available posts and select food they can pick up.

4. Notifications and Alerts

- Once a match is made, both supplier and distributor receive notifications:
    - Supplier is alerted about the distributor picking up the food.
    - Distributor is notified of the food supply details and pickup location.
- Push notifications or SMS alerts can help ensure timely pickups.

5. Pickup and Transportation (By Distributor)

- Distributors proceed to the supplier's location within the specified time window.
- A tracking feature can show live updates, estimated arrival times, and delivery schedules.

6. Confirmation and Feedback

- After pickup, the distributor confirms it in the app.
- Upon delivery, the distributor can mark the food as "Delivered" to track successful distributions.
- Both parties can provide feedback to ensure high standards for future collaborations.

Summary

In summary, this CRM-based solution aims to bridge the gap between surplus food and those in need by leveraging technology for a sustainable and socially impactful outcome. The system will not only enhance food distribution efficiency but also promote awareness about food waste and hunger. With proper stakeholder collaboration, this project can significantly contribute to alleviating hunger and reducing waste.

Objectives

The **CRM Solution to Supply Leftover Food to Poor** that connects surplus food donors (restaurants, hotels, supermarkets, events) with NGOs, volunteers, and communities in need. The system aims to ensure efficient coordination, tracking, and timely distribution of leftover food, thereby reducing food waste and alleviating hunger.

Business Goals

1. **Social Impact and Hunger Alleviation**

   Reduce Food Insecurity: Ensure leftover food reaches poor and underprivileged communities efficiently.

   Minimize Food Waste: Repurpose surplus food from businesses and events, contributing to global food sustainability.

2. **Operational Efficiency**

   Automate Processes: Streamline communication and coordination between donors, volunteers, and NGOs through automated notifications and task management.

3. **Strengthen Stakeholder Relationships**

   Build Donor Trust: Provide businesses with transparency by tracking the journey of their donations from pickup to delivery.

   Improve Volunteer Engagement: Create incentives and ensure smooth collaboration through task assignments and recognition programs.

4. **Data-Driven Decision Making**

   Measure Social Impact: Use analytics to monitor food donated, distributed, and saved from waste.

   Identify High-Demand Areas: Analyze beneficiary patterns to focus efforts where food scarcity is the greatest.

5. **Scalability and Sustainability**

   Expand Operations Seamlessly: Design a modular system that can scale to new regions or integrate with other platforms (e.g., Uber-like delivery systems).

   Sustain Operations Through Funding: Use donation data to showcase impact and attract additional funding or grants from donors and government bodies.

Specific Outcomes

1. **Reduction in Food Waste:**

    - Significant decline in the amount of surplus food discarded by restaurants, hotels, supermarkets, and events.
    - Real-time tracking of food quantities helps donors optimize food donations efficiently.

2. **Increased Access to Food for the Needy:**

    - Improved and consistent availability of meals to marginalized groups, including homeless individuals and low-income communities.
    - Targeted food distribution through NGOs ensures that food reaches areas with the highest need.

3. **Streamlined Coordination Among Stakeholders:**

    - Automated matching of food donors with volunteers and NGOs reduces manual intervention.
    - Efficient communication channels with notifications (SMS/email/app alerts) keep all participants informed of food pickup and delivery status.

4. **Enhanced Donor Engagement:**

    - Donors receive automated reports and impact summaries.
    - Recognition programs or badges for regular donors encourage ongoing participation.

5. **Faster and More Efficient Logistics:**

    - Route optimization reduces delivery times, minimizing food spoilage and operational costs.
    - Volunteer tracking ensures timely food pickups and distributions.

Salesforce Key Features and Concepts Utilized

This project leverages key Salesforce features and concepts to create an efficient, scalable CRM solution to supply leftover food to poor.

Key Salesforce Features

1. **Custom Objects:**

   Venue__C, *Volunteer__c*, *Drop_Off_Point__c*, and *Task__c* objects store relevant data for this project.

2. **Object Relationships (Lookup Relationships):**

   Relationships between objects (e.g., *Drop_Off_Point__c* and *Task__c*) allow smooth data flow and quick access to linked records.

3. **Formula Fields:**

   Automates calculations such as total food volume and shelf life remaining.

4. **Validation Rules:**

   Ensures data accuracy, such as preventing food with expired shelf life from being assigned for delivery.

5. **Process Builder and Workflows:**

   Automates volunteer assignment and sends alerts when tasks are scheduled or completed.

6. **Reports and Dashboards:**

   Provides visual insights on food donations, delivery success rates, and beneficiary reach.

7. **Page Layouts and Tabs:**

   Creates organized interfaces for donors, volunteers, and NGOs to access their data efficiently.

8. **Security and Sharing Settings:**

   Ensures that only authorized users can access specific information, maintaining data privacy.

Salesforce Concepts

1. **Data Integrity and Validation**: Ensuring that accurate and reliable data is entered and maintained across the application is essential. This is achieved through validation rules, picklist values, and relationship constraints.

2. **Automation and Efficiency**: Leveraging Process Builder, workflows, and formula fields enhances productivity by automating repetitive tasks like order total calculations and stock updates, reducing human error and manual intervention.

3. **Scalability and Customization**: The use of custom objects and fields makes the application flexible and scalable, allowing it to grow with the business by easily adding new produce items, customers, and features as needed.

4. **User Accessibility and Experience**: Custom tabs, layouts, and a well-structured data model create an intuitive, user-friendly experience, helping users to quickly access the data they need and make efficient use of the application.

Detailed Steps to Solution Design

1. Data Model Design

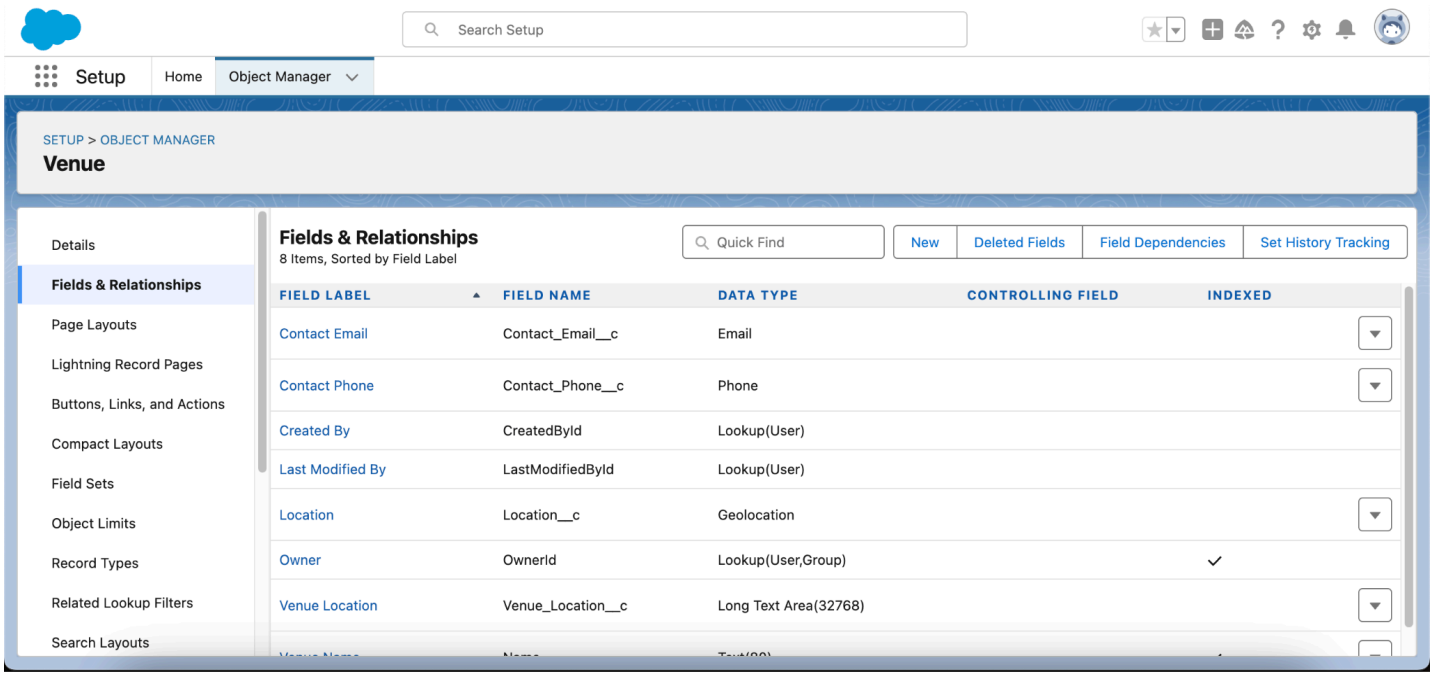
The data model consists of three primary custom objects: **Donor**, **Food Item**, and **Delivery**.

1.1. Donor Object

- **Purpose**: To store and manage donor information.
- **Key Fields**:
  - **Name**
  - **Contact Info**
  - **Donation History**

1.2. Food Item Object

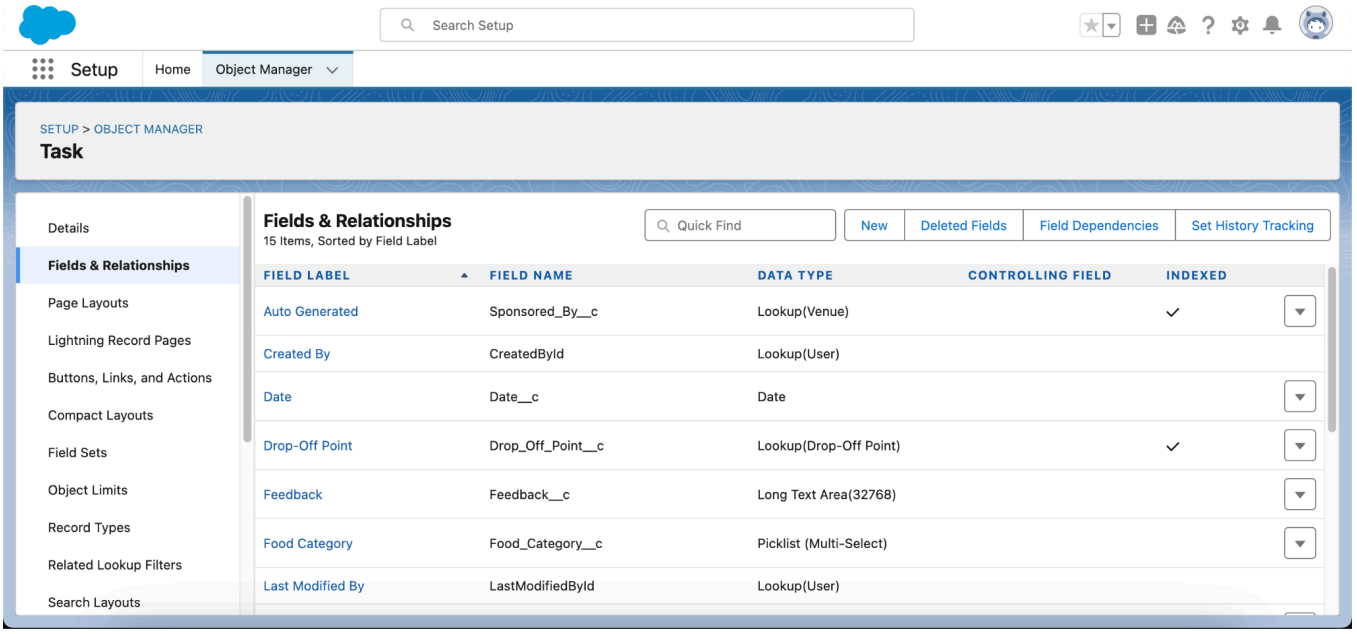
- **Purpose**: To track donated foods, including perishability and stock levels.
- **Key Fields**:
  - **Name**
  - **Quantity**
  - **Expiration Date**
  - **Donor** (Lookup to Donor)



1.3. Delivery Object

- **Purpose**: To record and manage food deliveries to beneficiaries.
- **Key Fields**:

- **Delivery Number** (Auto Number)
- **Food Item** (Lookup to Food Item)
- **NGO/Beneficiary** (Lookup to Contact)

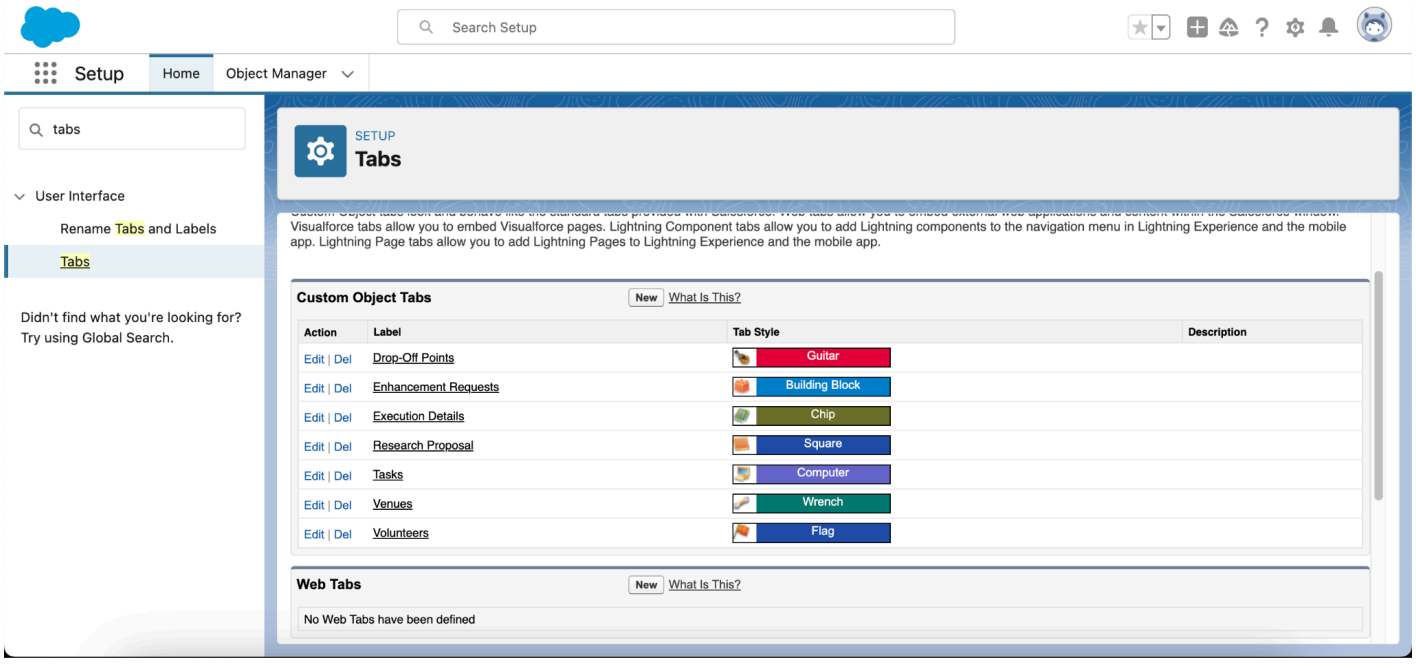


2. User Interface Design

The UI includes custom tabs and layouts for each object, allowing users to access and interact with records in a structured format.

2.1. Custom Tabs

- **Tabs Created**:
  - **Donor Tab**: For accessing donor records.
  - **Food Item Tab**: For managing donated food.
  - **Delivery Tab**: For viewing and managing food deliveries



2.2. Page Layouts

Custom page layouts were configured for each object to display relevant fields in a logical order and to enhance the user experience.

- **Contact Page Layout**:
  - Displays fields for Name, Email, Phone, and Address.
- **Produce Page Layout**:
  - Displays fields for Produce Name, Available Stock, and Unit Price.
- **Order Page Layout**:
  - Displays fields for Order Number, Customer, Produce, Quantity Ordered, and Total Amount.

3. Business Logic Design

The business logic includes formula fields, validation rules, and automated workflows to handle stock updates, order totals, and low stock alerts.

3.1. Formula Field: Total Amount on Order Object

- **Purpose**: Automatically calculates the starting location, venue and the destination.
- **Formula**: DISTANCE(Location_2__c , Venue__r.Location__c , 'km')

3.2. Validation Rule: Ensure Sufficient Stock

- **Purpose**: Prevents orders with quantities greater than the available stock.

3.3. Workflow/Process Builder: Stock Update on Order Placement

- **Purpose**: Reduces the `Available Stock` of a produce item by the ordered quantity whenever an order is placed.

3.4. Automated Low Stock Alert Workflow

- **Purpose**: Sends a notification to the inventory manager when stock for any produce item falls below a set threshold.

Testing Approach

1. **Unit Testing:**

   Verify individual components such as donor registration, food donations, and delivery tracking.

2. **Integration Testing:**

   Ensure that all modules, including donor, volunteer, and NGO components, work together seamlessly.

3. **User Acceptance Testing (UAT):**

   Test the system with real users (volunteers, donors, and NGOs) to validate ease of use and functionality.

4. **Regression Testing:**

   Confirm that new updates do not break existing features.

Testing Scenarios and Procedures

1. **Volunteer Assignment Testing:**

   Ensure volunteers are assigned correctly based on location and availability.

2. **Validation Rules Testing:**

   Attempt to assign food past its expiration date and confirm the system blocks the assignment.

3. **Real-Time Tracking Testing:**

   Confirm that delivery status updates appear in real-time on the dashboard.

4. **Error Handling:**

   Test with incomplete data to ensure the system displays appropriate error messages.