NAAN MUDHAVALVAN - SALESFORCE REPORT

TO SUPPLY LEFTOVER FOOD TO POOR

PROJECT CREATED BY

B.TECH – V SEMESTER

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TABLE OF CONTENTS

1. Project Overview

The initiative to supply leftover food to the poor focuses on the efficient redistribution of surplus food from various sources like restaurants, event organizers, food manufacturers, and households. The goal is to ensure that leftover food doesn't go to waste but is instead used to feed those in need, promoting food security and reducing hunger. Salesforce, a robust CRM and cloud platform, can facilitate and manage this process effectively by using Salesforce technology to create a seamless system where food donors (e.g., restaurants, individuals), volunteers, and charities can communicate, coordinate, and ensure the efficient delivery of leftover food tothe poor.

2. Objectives

- **Facilitate Real-Time Coordination**
  Real-time coordination is crucial for efficient redistribution of food. The system will include features such as live notifications for donors and volunteers about collection and delivery schedules. GPS integration will allow for tracking vehicles and ensuring timely food delivery. A mobile app will notify drivers and volunteers about changes in routes or pickup points to reduce delays.
- **Optimize Resource Allocation**
  Using Salesforce's data analysis tools, the platform will monitor donation patterns and demand trends to allocate resources effectively. For example, surplus food from urban areas can be directed to nearby regionswith high levels of food insecurity. Resource optimization will also include load balancing for transportation and staff assignments to maximize efficiency.
- **Foster Community Engagement**
  Community engagement features will include a portal for local businesses, schools, and households to sign up as donors or volunteers. The platform will host campaigns to raise awareness about food waste and encourage participation. It will also showcase success stories and testimonials to inspire others to join the initiative.

- **Integrate AI-Powered Features**
  With Salesforce Einstein, the platform will use predictive analytics to forecast food demand based on historical data, seasonal trends, and local events. AI will also optimize delivery routes to save time and fuel.
  Machine learning models can predict the shelf life of donated food, helping prioritize distribution.

- **Enable Customizable Reporting**
  Stakeholders such as NGOs, donors, and government agencies will have access to dynamic dashboards that provide real-time reports. These dashboards will track key metrics such as the quantity of food donated, number of beneficiaries served, and volunteer hours logged. Reports can be customized to meet specific needs, like assessing regional performance or planning future campaigns.

3. Salesforce Key Features and Concepts Utilized

- **Salesforce CRM for Donor Management**:
  Centralizes donor information, enabling easy tracking of donations, preferred delivery methods, and frequency of contributions, ensuring efficient communication with donors.

- **Salesforce Lightning Platform for Custom App Development**: Enables the creation of personalized mobile apps and web portals for recipients, making it easy for them to track food availability and request food donations.

- **Salesforce Communities for Collaborative Engagement**: Empowersfood donors, volunteers, and recipients to collaborate on a
  Single platform, allowing donors to post food items and volunteers to claimtasks for deliveries.

- **Salesforce Einstein Analytics for Data Insights**:
  Uses AI to predict trends in food donations, volunteer availability, and recipient needs, optimizing resource allocation and improving decisionmaking.

- **Salesforce Flow for Process Automation**:
  Streamlines processes such as food donation collection, task assignment for volunteers, and notifications for recipients about food availability, enhancing operational efficiency.

- **Integration with External Systems (MuleSoft)**:
  Facilitates seamless data exchange between Salesforce and third-party systems like food bank databases and logistics tools, improving the food redistribution process.

- **Secure Data Handling and Privacy Compliance**: Salesforce ensures that all sensitive data, including donor and recipient information, is stored securely and in compliance with relevant privacy regulations, such as GDPR.

- **Volunteer Training and Resources**: The platform can host training materials and guidelines for volunteers to ensure they are well-prepared for tasks such as food collection and delivery.

- **Real-Time Analytics for Operational Efficiency**: Salesforce's realtime reporting and analytics help monitor logistics, ensuring efficient food collection, sorting, and distribution to recipients.

4. Detailed Steps in Solution Design

Step 1: Requirement Gathering

- Identify stakeholders: food donors, volunteers, profit organizations, and food recipients.
- Gather requirements for food donation processes, food safety standards, and logistics.

Step 2: Designing the Salesforce Application

- **Salesforce Objects**: Create custom objects for food donations, volunteers, recipients, and food types (e.g., categories such as perishable, non-perishable).
- **Custom Fields and Records**: Define fields such as food quantity, pick-up time, delivery time, and donor contact information.
- **Salesforce Communities**: Design a portal where donors can post available food, and volunteers can sign up to pick up and deliver food.

Step 3: Automating the Process with Flows and Workflows

- Use **Salesforce Flow** to automate the process. For example, a flow could automatically generate a task for a volunteer to pick up food once a donation is made.
- Notifications and reminders can be sent through **Salesforce Workflow Rules** to ensure tasks are completed on time.

Step 4: Integration with External Systems

- Use **MuleSoft** or other integration tools to connect Salesforce with third-party applications (e.g., delivery apps, food tracking systems).

Step 5: Testing and User Feedback

- Test the system with a small group of users, including food donors,recipients, and volunteers.
- Collect feedback and make necessary adjustments to the applications

Procedure of Project

Salesforce Developer Account Creation

1. **Visit the Website**
   Go to https://developer.salesforce.com/ and click **"Sign Up"**.

2. **Fill in Details**
   Provide your name, email, company (if applicable), and a unique username in email format.

3. **Verify Email**
   Check your inbox for a verification email and activate your account.

4. **Set Password**
   Create a password and security question following Salesforce guidelines.

5. **Login and Explore**
   Access your Developer Org at https://login.salesforce.com/ and familiarize yourself with the tools like **Setup** and **Developer Console**.

Creating Objects in Salesforce

Objects in Salesforce are used to store data and represent tables in the database. Custom objects can be created to fit the specific needs of the project. Below is the process for creating objects:

1. **Navigate to Setup**
   Log in to the Salesforce Developer Org.
   Click on the **Gear Icon** (Setup) in the top-right corner.

2. **Create a New Object**
   In the Quick Find box, search for **"Object Manager"** andclick on it.
   Click on **"Create Object"** and choose **Custom Object**.

3. **Define Object Details:** Enter the **Object Label**

   The **Object Name** is automatically generated (e.g., Food_Donation_____c). Check the box for **Allow Reports** to enable reporting features for the object. ○ Save the object.

4. **Add Custom Fields**

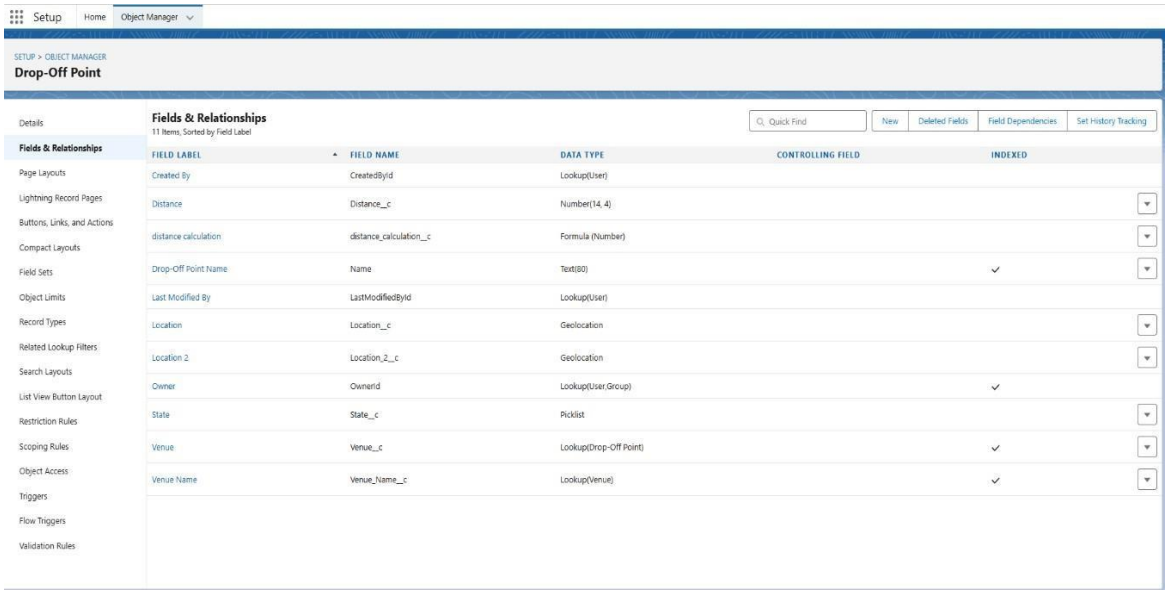
   After creating the object, add fields to store specific data,such as:

   - Text Field for Donor Name.
   - Number Field for Quantity.
   - Date-Time Field for Pickup Time .

5. **Page Layout and Visibility**

Customize the page layout to display fields in a user- friendly manner. Set object permissions for different userprofiles as required.

Figure 1 :



Creating Tabs for Custom Objects

Tabs in Salesforce provide a user-friendly way to access and manage custom objects from the application interface. Below are the steps to create tabs for the custom objects:

1. Navigate to Tabs Setup

- Go to **Setup > User Interface > Tabs**.
- Under the **Custom Object Tabs** section, click **"New"**.

2. Create Tabs for Each Object

a. Venue Tab

- Select the custom object **"Venue"** from the dropdown.
- Choose a suitable tab style (e.g., Building icon).
- Click **Next** and set visibility for profiles (select as needed).
- Save the tab.

b. Drop-off Point Tab

- Select the **"Drop_Off_Point"** object.
- Pick an appropriate tab style (e.g., Map Pin icon).
- Configure visibility and save.

c. Task Tab

- Choose the **"Task"** object.
- Use a relevant tab style (e.g., Clipboard icon).
- Set Visibility Preference and Save .

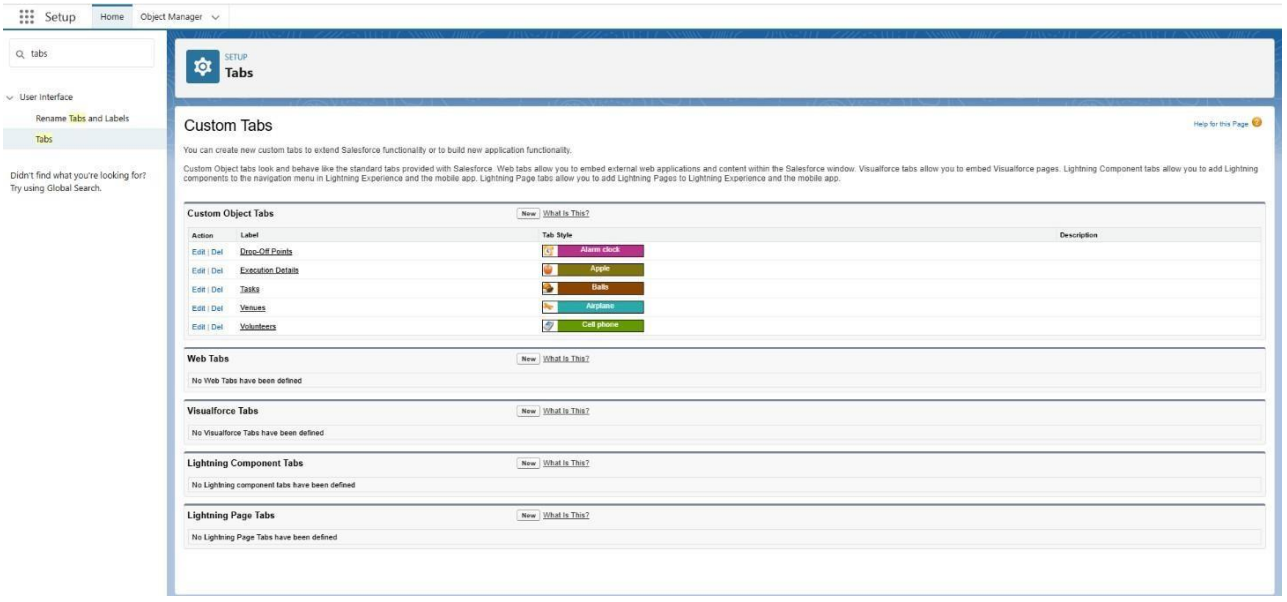
d. Volunteer Tab

- Select the **"Volunteer"** object.
- Choose a tab style (e.g., People icon).
- Configure visibility settings and save.

e. Execution Details Tab

- Pick the **"Execution_Details"** object.
- Select a tab style (e.g., Checklist icon).
- Set visibility and save.

Figure 2 :



Adding Fields

Fields are created in each custom object to capture and manage specific data.

1. Venue Object

- **Venue Name** (Text).
- **Location** (Geolocation).
- **Capacity** (Number).

2. Drop-off Point Object

- **Point Name** (Text).
- **Address** (Text Area).
- **Contact Number** (Phone).

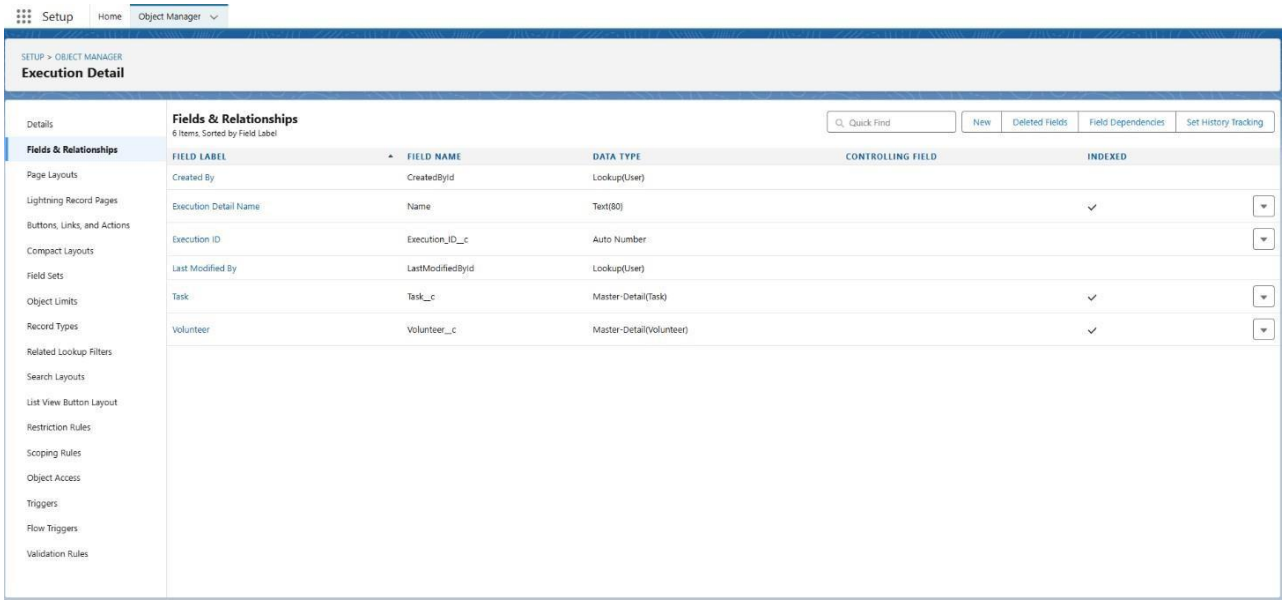
3. Task Object

- **Task Description** (Text Area).
- **Due Date** (Date).
- **Assigned Volunteer** (Lookup to Volunteer).

4. Volunteer Object

- **Volunteer Name** (Text).
- **Contact Number** (Phone).
- **Availability** (Picklist: Available, Not Available).

Figure 3 :



5. Execution Details Object

- **Task Reference** (Lookup to Task).
- **Status** (Picklist: Pending, In Progress, Completed).

- **Completion Date** (Date).

Creating Users

1. **Navigate to User Setup** ○ Go to **Setup > Users > Users** and click **"New User"**.
2. **Enter User Details**

   Fill in **First Name**, **Last Name**, **Username**, **Email**, **Profile**,and **Role**.

   Choose **License** and set the user as **Active**.
3. **Save User**

   Click **Save** to create the user.

Creating Public Groups

Public Groups help organize users for sharing records and collaboratingin Salesforce.

1. **Navigate to Public Groups Setup**

   Go to **Setup > Administration > Manage Users > Public Groups.**

   Click **"New Group"**.
2. **Define Group Name**

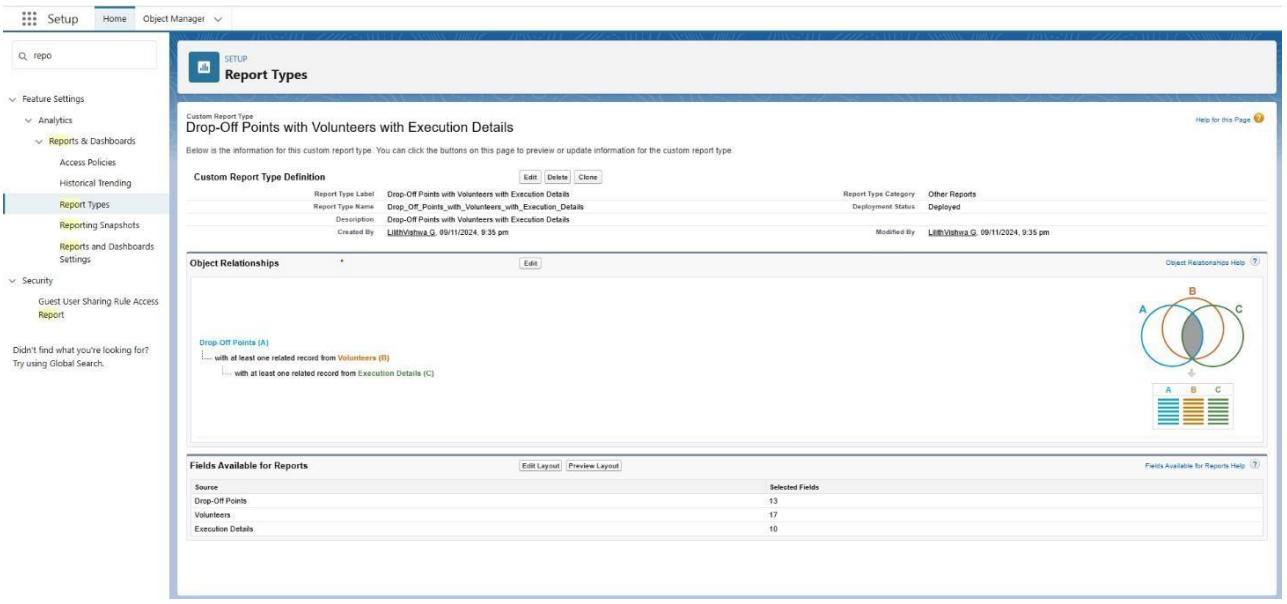
   Enter a **Group Name** (e.g., "Food Donors","Volunteers").
3. **Add Group Members**

   Click **Add Members** and select users, roles, or other groups to include.
4. **Save Group** Click **Save** to create the group.

Creating Custom Report Types

To create custom report types in Salesforce, navigate to Setup > Create > Report Types and click "New Custom Report Type". Select the primary object (e.g., Food Donation, Task) and enter a Report Type Label with a description. Define the relationship between objects, such as linking tasks to food donations,and set the report type to "Deployed" for availability. Finally, click Save to create the report type. Custom report types allow for detailed, tailored reporting, offering insights into various aspects of the project. Custom report types allow for detailed, tailored reporting, offering insights into various aspectsof the project.

Figure 4 :



HOME PAGE

The **Home Page** serves as the central hub for the application, offering a structured view of critical information and actions for managing the project effectively. It is divided into three primary panels, each designed to address specific functionalities.

Left Panel:

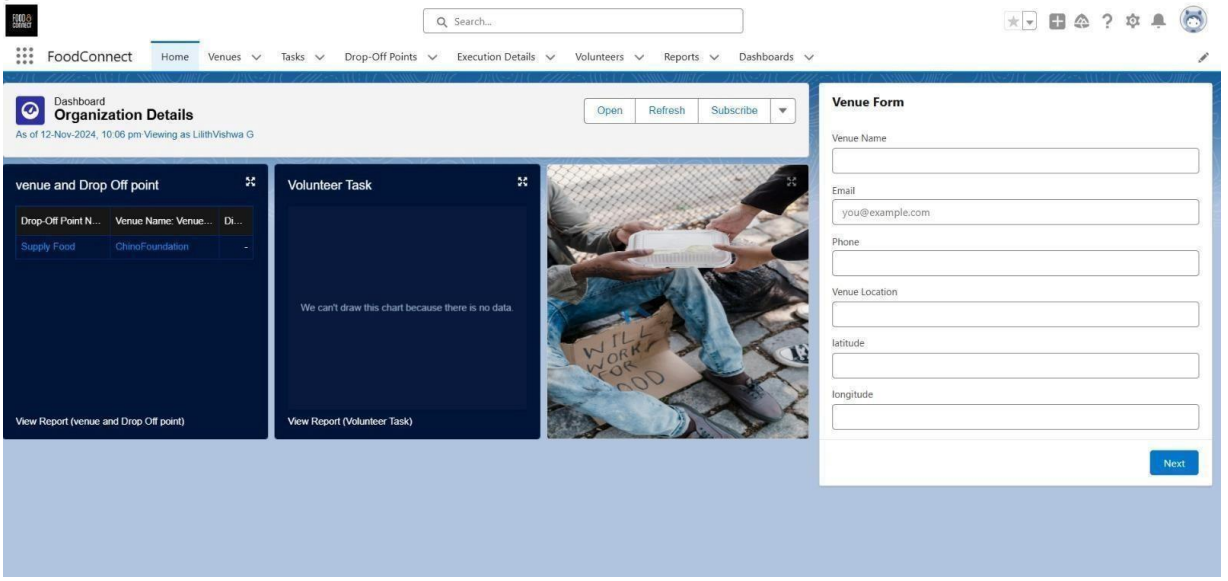
- **Purpose:**
  Displays a comprehensive list of available drop-off points and their corresponding venues.
- **Details:**
  The panel includes entries like "Supply Food" and "Chino Foundation," providing quick identification of food supply locations and associated organizations.

  Provides an overview of tasks assigned to volunteers.
- **Current Status:**
  At this stage, the section does not display any data,indicating that no volunteer tasks have been created or assigned yet.
- **Potential Updates:**
  This panel could dynamically update to show tasks with details such as task name, assigned volunteer, and completion status as the project progresses.

Right Panel:

- **Purpose:** Serves as a venue entry form, enabling users to input new venue details.
- **Features:** Input fields for essential details, including:
  - Name
  - Phone Number
  - Location
  - Latitude and Longitude
- A **"Next" button** signifies a multi-step process, indicating that additional details or steps may follow for completing the venue registration.

Figure 5 :



Flows

1. **Start Node**
   - **Purpose:** Marks the entry point of the flow, where the process is initiated.
   - **Trigger:** The flow begins when a user interacts with the form or performs an action to create a venue record.
   - **Significance:** Ensures that the flow is systematically activated, establishing a clear beginning for the data entry and management process.
2. **Venue Details Screen**
   - **Purpose:**

     Serves as an interactive user interface (UI) for collectingvenue-related information.
   - **Features:**

     Users can input critical details such as:
     - Venue Name
     - Email Address
     - Contact Phone Number
     - Physical Location

3. Create Venue Record

- **Purpose:**

  Automates the creation of a new record in the system using the information provided by the user.

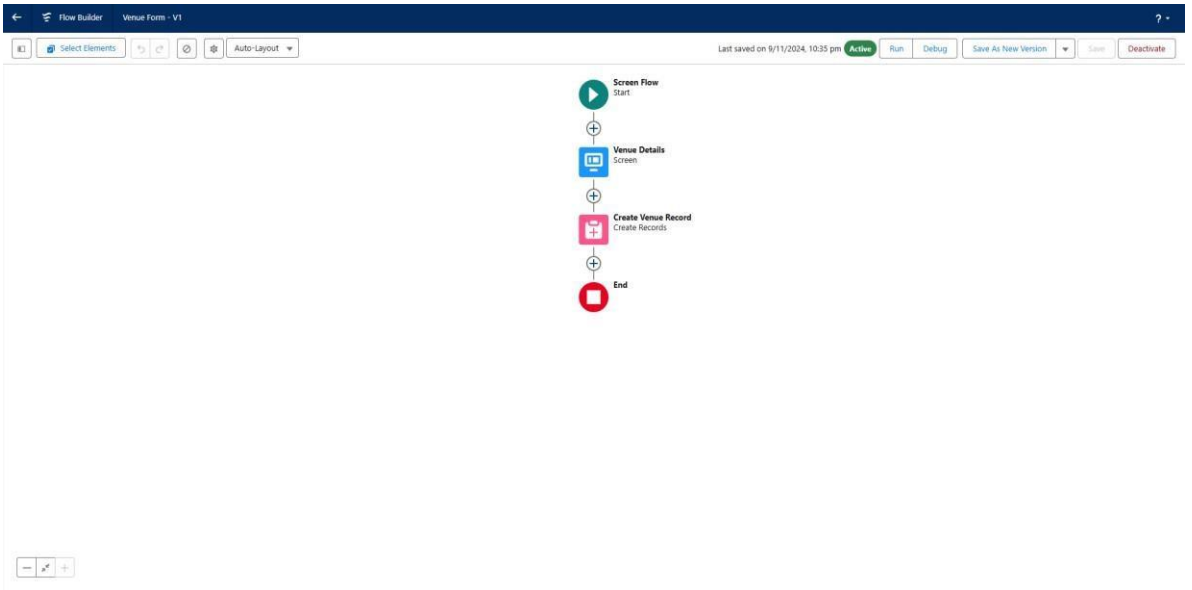
- **Process Details:**

  Once the user completes the Venue Details Screen, the flow takes the collected data and processes it. ○ A new venue record isthen created in the system database with fields populated based on the user's inputs.

- **Outcome:**

  Ensures data integrity and reduces manual effort in record creation. Provides instant feedback to users, confirming thatthe venue has been successfully added.

Figure 6 :



Purpose of the Flow:

The **"Venue Form - V1"** flow simplifies the process of venue management by providing a streamlined and automated approach to data collection and record creation. This ensures accuracy, efficiency,and user satisfaction while reducing manual workload for administrators.

DEVELOPER CONSOLE :

The **Developer Console** in Salesforce is utilized to manage and test custom code. In this case, it is used to create and execute an **Apex Trigger** named **DropOffTrigger**. This trigger automates a key process by populating the Distance_c field of the Drop_Off_point_cobject during record creation. Below is a detailed explanation of the trigger's functionality and implementation.

Apex Trigger: DropOffTrigger

The **DropOffTrigger** is a custom Apex trigger that enhances automation within the Salesforce system by performing calculations before inserting new records into the Drop_Off_point_c object.

Key Details:

1. **Trigger Event:**

   The trigger is executed **before insert**. ○ This ensures that the required fields, such as Distance_c, are populated before the new record is saved to the database.

2. **Purpose:**

   Automatically calculates and populates the Distance_c field with the value of distance_calculationc. ○ Simplifies the process, reducing manual data entry and ensuring consistent calculations.

3. **Structure:**

   - The trigger uses a **simple for loop** to iterate over the list of newrecords (Trigger.new).
   - During each iteration, the Distance_c field of the current record is set to the value derived from the distance_calculationc formula or field.

Code Example:

Below is a conceptual representation of the trigger:

apex Copy code

```
trigger DropOffTrigger on Drop_Off_point_c (before insert) {
for (Drop_Off_point_c dropOff : Trigger.new) {
dropOff.Distance_c = dropOff.distance_calculationc;
    }
}
```

Figure 7 :

Benefits of the Trigger:

- **Automation:** Reduces manual effort by automatically populating the field during record creation.
- **Data Integrity:** Ensures the Distance_c field is consistently calculated and populated for all new records.
- **Efficiency:** Simplifies workflows by eliminating the need for additional user actions or processes.

Purpose of the Developer Console in This Context:

- **Debugging:** The Developer Console provides an environment to test and debug the trigger to ensure it performs as expected.
- **Testing:** Developers can simulate the creation of records to validate the accuracy of the Distance_c calculations.
- **Optimization:** Enables quick iterations and improvements to the trigger logic if necessary.

REPORT

The **"Reports"** section within the **FoodConnect platform** is designed to provide users with a comprehensive view of data related to venues, drop-off points, volunteer tasks, and system workflows. This functionality aids in monitoring, analyzing, and improving the efficiency of various processes. Below is a detailed breakdown of the section and its components.

Key Features of the Reports Section:

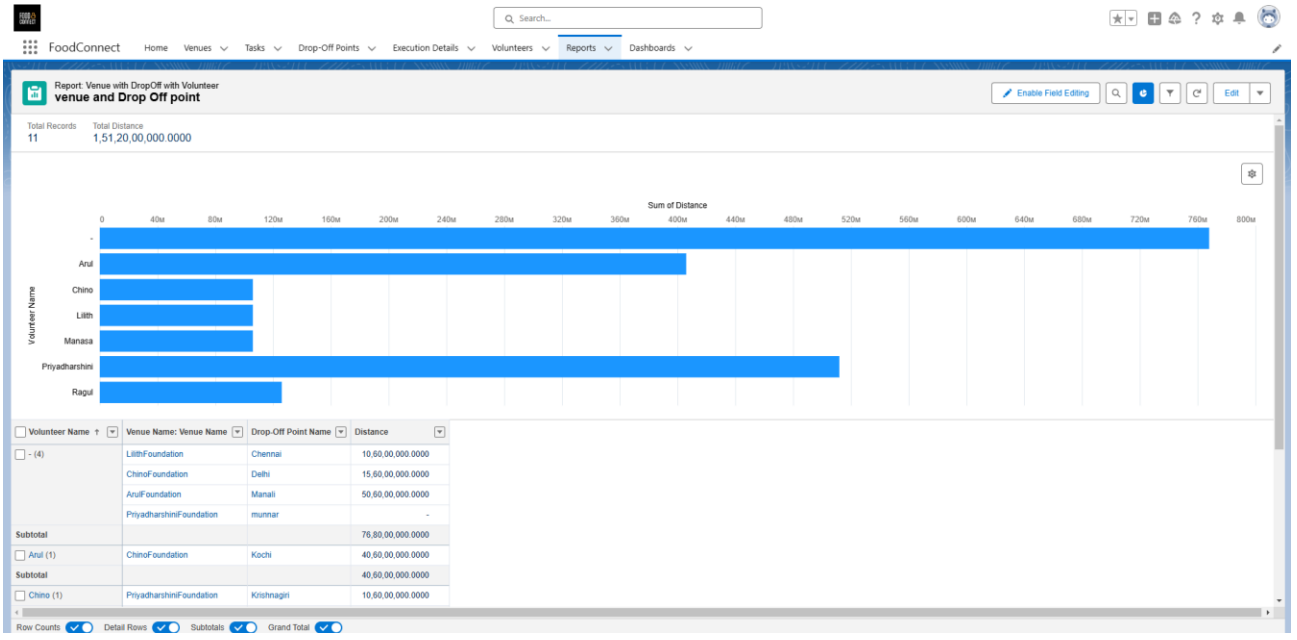
1. **Available Reports:**

- Provides insights into the relationship between venuesand drop-off points.
- Helps in understanding the distribution of resources and optimizing logistics.
- Offers details on the usage and performance of screenflows within the platform.
- Useful for tracking user interactions and ensuring theeffectiveness of flow designs.

2. **Report Organization:**

- **Name:** Clear titles for each report, enabling users to quickly identify relevant data.
- **Description:** Provides a brief overview of the report's purpose and contents, ensuring clarity.
- **Folder Location:** Indicates where the report is stored, facilitating easy navigation within the platform.
- **Creator:** Displays the name of the user who created the report, ensuring accountability and reference.
- **Creation Date:** Records the date the report was generated, allowing users to track updates and relevance.
- **Subscription Status:** Shows whether users have subscribed to receive periodic updates or notifications about the report.

Figure 8 :



DASHBORD

The **Dashboard** in the **FoodConnect platform** is a powerful feature that consolidates essential information into a visually intuitive interface. It serves as a

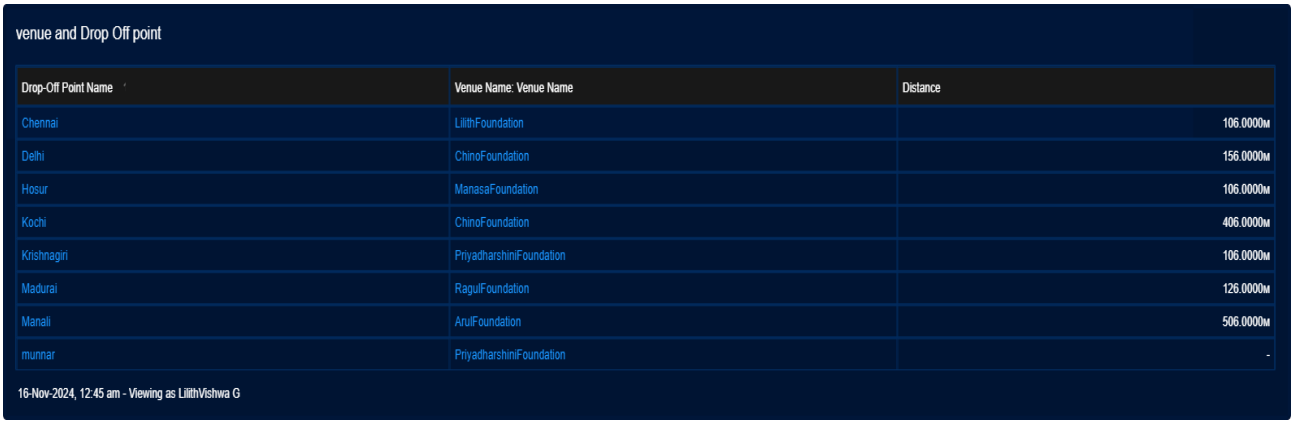
central hub for monitoring, analyzing, and managing key provider-related data. Designed for user convenience, the dashboard combines statistics, charts, and summaries to enable quick insights and decision-making.

Key Features of the Dashboard:

1. **Comprehensive Overview of Provider Information:**
    - Displays detailed data about providers, including names, contactdetails, locations, and service areas.
    - Highlights key metrics such as the number of active providers, completed tasks, and ongoing projects. ○ Ensures transparency bypresenting all provider-related information in a centralized location.

2. **Data Statistics:**
    - Summarizes critical data points into easily digestible formats, such as total resources distributed, average volunteer participation, and event success rates. ○ Offers numerical summaries to highlight keyperformance indicators (KPIs).

Figure 9 :



venue and Drop Off point

Drop-Off Point Name	Venue Name: Venue Name	Distance
Chennai	LilithFoundation	106.0000M
Delhi	ChinoFoundation	156.0000M
Hosur	ManasaFoundation	106.0000M
Kochi	ChinoFoundation	406.0000M
Krishnagiri	PriyadharshiniFoundation	106.0000M
Madurai	RagulFoundation	126.0000M
Manali	AruiFoundation	506.0000M
munnar	PriyadharshiniFoundation	-

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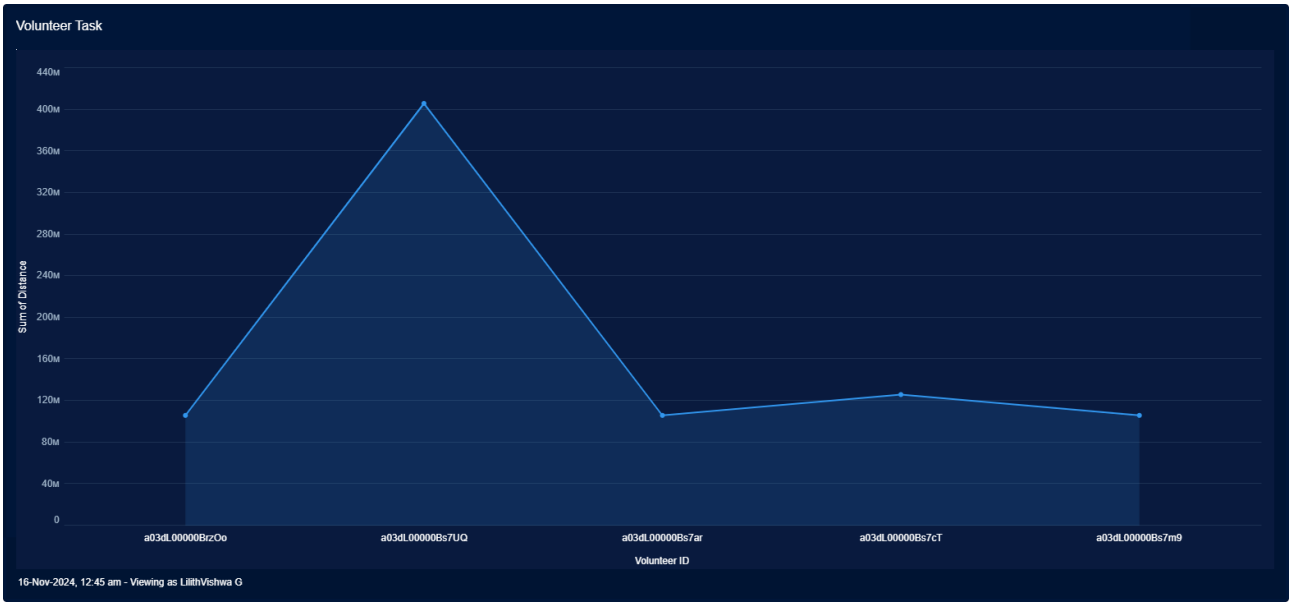
3. **Charts for Easy User Understanding:**

    Includes various chart types, such as:
    - **Bar Charts:** To compare provider contributions or venue performance over time.
    - **Pie Charts:** For visualizing resource distribution across different locations or providers.

- **Line Graphs:** To track trends like increasing volunteer participation or declining resource availability.
- Charts are interactive, allowing users to drill down into specificdata points for deeper insights.

Figure 10 :



4. Testing and Validation

- **Unit Testing**: This phase involves testing each individual component of the platform to verify its functionality in isolation. For instance, food donation forms are tested to ensure that they correctly capture and process donor information.
- **Volunteer assignment** : logic is tested to ensure that volunteers are appropriately matched to tasks based on availability and location.
- **Integration Testing**: Once individual components are tested, the next step is to ensure that these components work together as a unified system.
- **User Acceptance Testing (UAT)**: UAT is conducted with real food donors, volunteers, and recipients to ensure that the system meets the expectations and requirements of its end users.

5. Key Scenarios Addressed

1. Food Donation Process

Salesforce automates the process where donors post surplus food, and volunteers are notified and assigned tasks to pick up and deliver the food. This system ensures efficient coordination between donors, volunteers, and recipients, streamlining the entire food donation cycle.

2. Volunteer Management

The platform tracks volunteer availability and assigns them to tasks based on their schedules and proximity to food donation points. This ensures that food is picked up and delivered in a timely manner, improving operational efficiency.

3. Recipient Management

Salesforce ensures that food recipients are verified and deliveries are scheduled according to their needs. This verification process ensures food is distributed to eligible individuals and organizations, enhancing trust and reliability in the system.

4. Real-time Notifications

Donors, volunteers, and recipients receive real-time notifications about food availability, pick-up, and delivery times. This keeps everyone informed and helps maintain smooth communication, reducing delays and misunderstandings.

5. Reporting and Analytics

The platform uses Salesforce's Einstein Analytics to track key metrics such as the amount of food donated, the number of people served, volunteer participation, and delivery efficiency. This data is used to analyze trends and optimize the food distribution process for better impact and resource management.

6. Conclusion

This Salesforce-driven solution for supplying leftover food to the poor combines technology, social responsibility, and data analytics to address food insecurity. By using Salesforce's cloud-based CRM, automation tools, and dataanalytics capabilities, the project can scale to meet the needs of diverse communities. The integration of volunteers, food donors, and recipients on a unified platform ensures that food surplus is redistributed efficiently, reducing waste and alleviating hunger. With thorough testing, real-time tracking, and a focus on community engagement, this initiative has the potential to make a significant impact on food security while promoting sustainable practices in the food industry. By leveraging Salesforce's capabilities, this project can not only optimize the redistribution process but also set a blueprint for similar initiatives around the world, ensuring that food surplus is no longer wasted butinstead used to nourish those who need it most.