DEPARTMENT OF INFORMATION TECHNOLOGY

GOVERNMENT COLLEGE OF TECHNOLOGY

(An Autonomous Institution affiliated to Anna University)

COIMBATORE - 641 013

18IVA727 – SALESFORCE DEVELOPER

DECEMBER 2024

This is to certify that this project work entitled

TO SUPPLY LEFTOVER FOOD TO POOR

is the bonafide record of project work done by

MAITHIREYAN S
71772118126
SEDHU RAM P
71772118138
SOUNTHARARAJA S
71772118142
SRIDHAR E
71772118145

of B.E. / B.Tech. (Information Technology) during the year 2024 - 2025

Submitted for the Project Viva-Voce examination held on _____

_____ _____

Internal Examiner External Examiner

To Supply Leftover Food to Poor

College: 7177 – Government College of Technology, Coimbatore

TEAM - 4

Team Members:

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1. Project Overview

Food Connect is a project created as an initiative designed to streamline the process of gathering and distributing surplus food to individuals in need. The objective is to deliver an all-encompassing solution using Salesforce to manage food collection points, coordinate volunteers, and handle distribution tasks. We aim to enhance operational efficiency, promote transparency, and ensure data accuracy in food distribution efforts, contributing to the broader goals of sustainable food access and reducing food waste.

2. Objectives

Business Goals:

The project seeks to improve the efficiency and transparency of surplus food collection and distribution processes by utilizing Salesforce. By reducing food waste and supporting sustainable food access for those in need, the project fosters community collaboration through organized food logistics.

Specific Outcomes:

- Optimized collection and distribution workflows that reduce operational costs.
- An intuitive dashboard to monitor drop-off points, volunteer involvement, and food distribution status.
- Accurate data reporting on food collection, distribution, and volunteer engagement.
- Greater accessibility to food resources for underserved populations.

3. Salesforce Key Features and Concepts Utilized

This project harnesses essential Salesforce functionalities to build a seamless and effective food distribution network:

1. Custom Objects and Relationships
    - Created custom objects such as Venue, Drop-Off Point, Task, Volunteer, and Execution Details to track and manage key data.
    - Established lookup relationships between objects to maintain data consistency and simplify access.
2. Tabs and Lightning App (Food Connect)
    - Configured tabs for each object to ensure easy navigation within the Food Connect Lightning app.
    - Customized the Lightning app for a streamlined experience, including branding and organization.

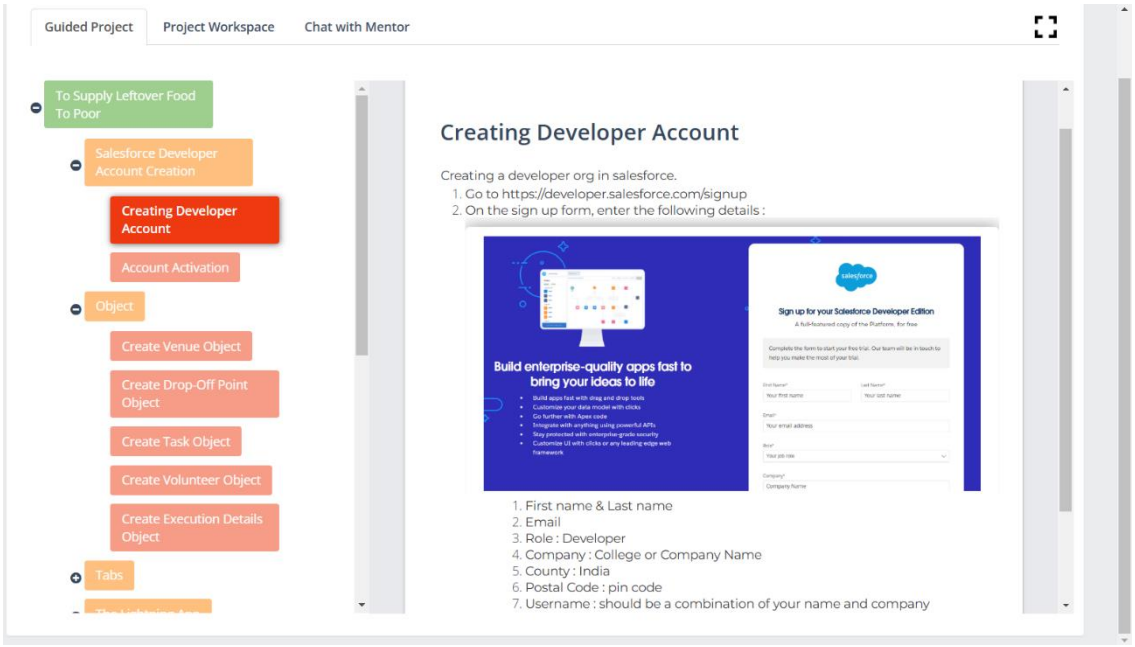
3. Screen Flows
    - Built a Venue Form using Screen Flow to capture important venue details, including location coordinates, for precise drop-off management.
4. Apex Triggers
    - Developed Apex triggers to automate tasks, such as calculating the distance between venues and drop-off points, enabling optimized logistics and efficient route planning.
5. Users and Public Groups
    - Created specific users and public groups (e.g., Iksha Foundation, NSS, StreetCos) for effective team collaboration and data access control.
6. Reports and Dashboards
    - Designed custom report types and reports to provide insights into volunteer activity, food distribution status, and drop-off points.
    - Created a dashboard integrated with the homepage to offer real-time visibility into project metrics and progress.
7. Homepage Integration
    - Integrated the dashboard on the homepage for centralized data monitoring, allowing stakeholders to track the project's impact at a glance.

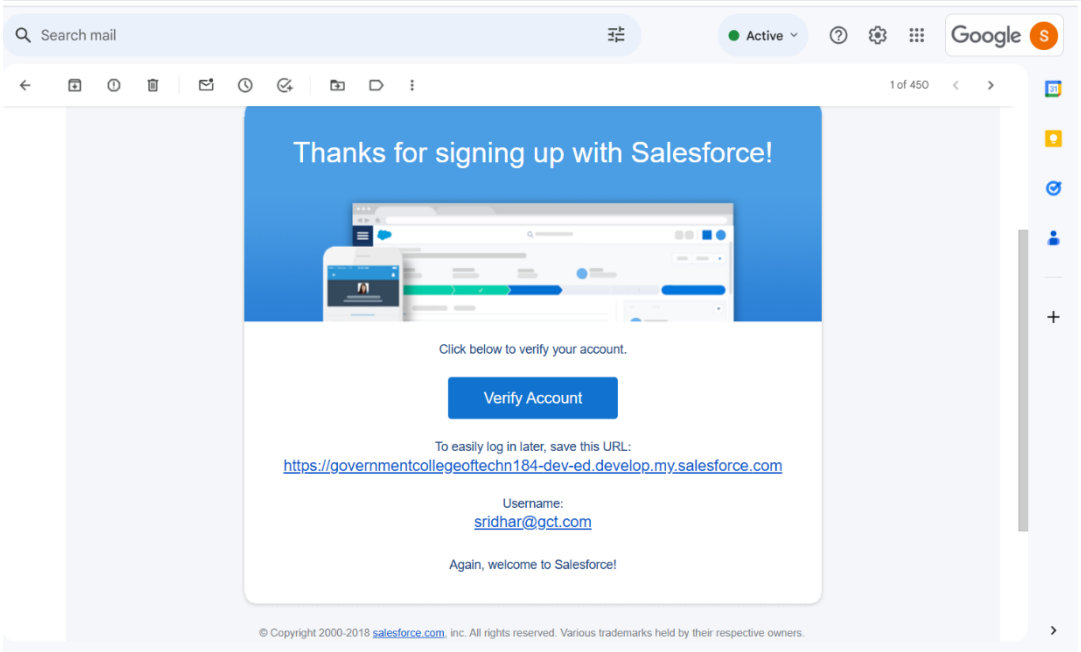
These Salesforce features collectively ensure that the project operates with high efficiency, transparency, and data-driven decision-making to maximize food distribution effectiveness.

4. Detailed Steps to Solution Design

1. Created Salesforce Developer Account

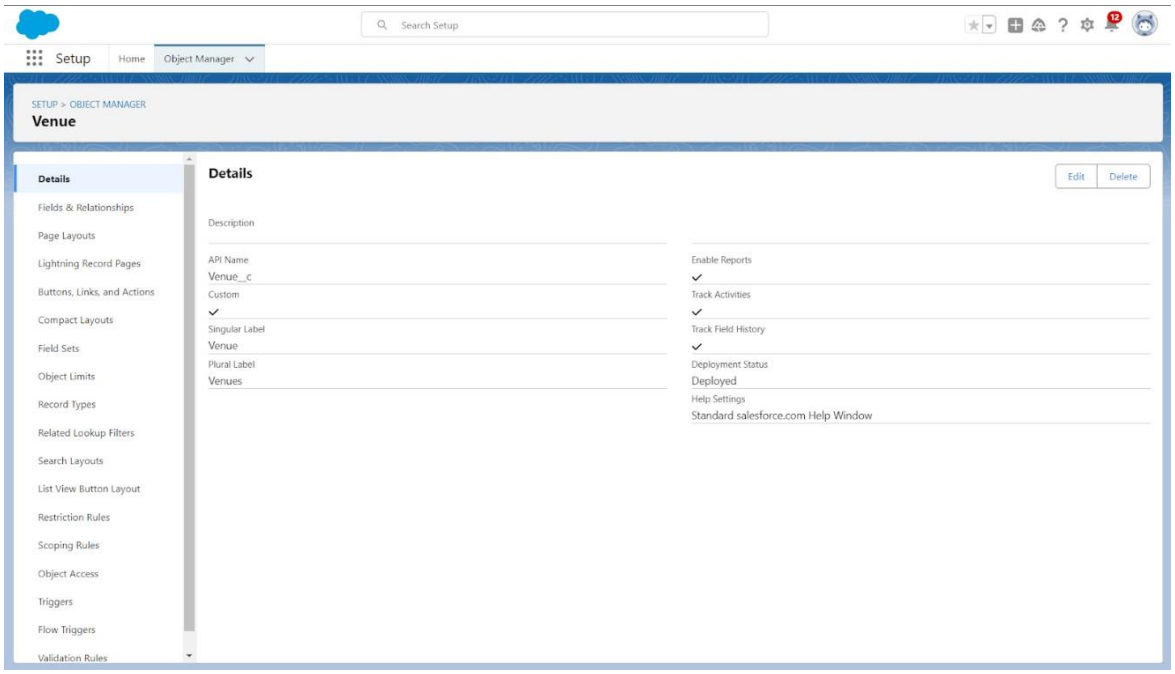
- In order to access a development environment where we could construct and modify the application, we first created a Salesforce Developer Account. The tools required to design, test, and launch the application were made available by this configuration.





2. Defined Objects

- Five primary objects—Venue, Drop off Point, Task, Volunteer, and Execution Details—were created in Object Manager.
- Each object was designed to store relevant data, such as location details in Venue, task information in Task, and volunteer records in Volunteer.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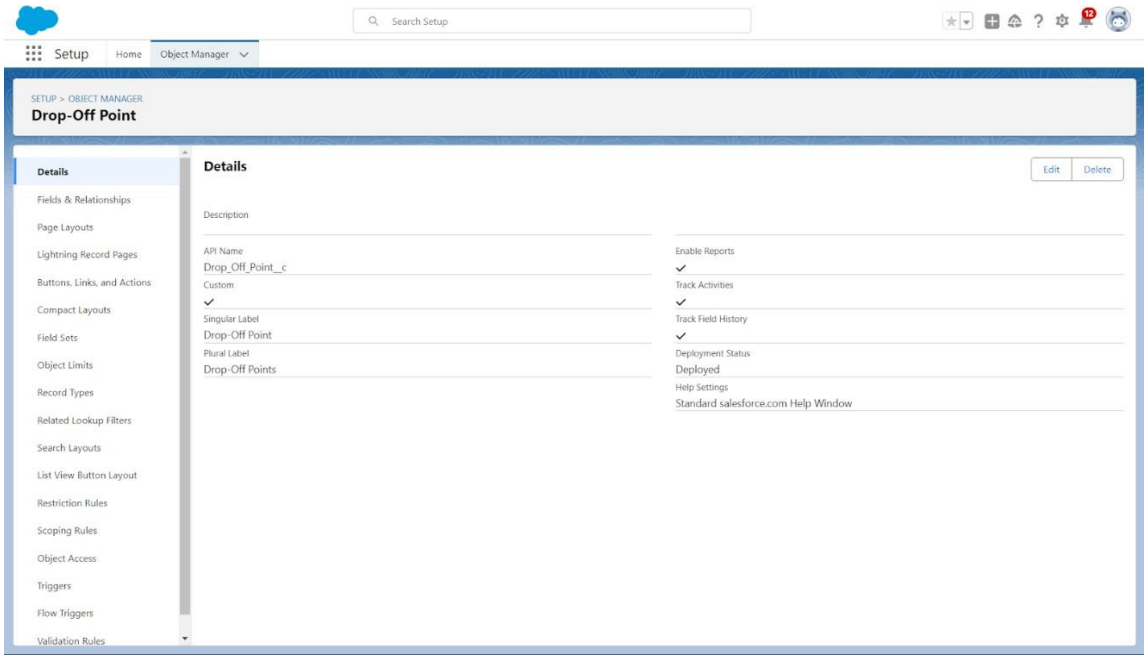
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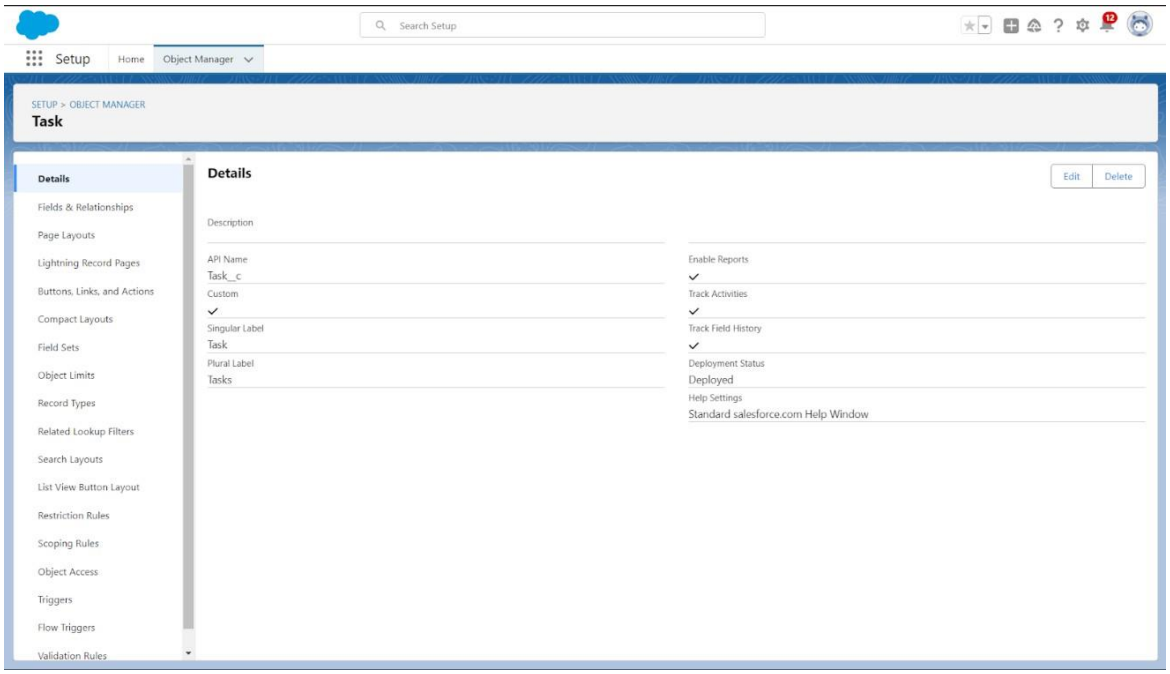
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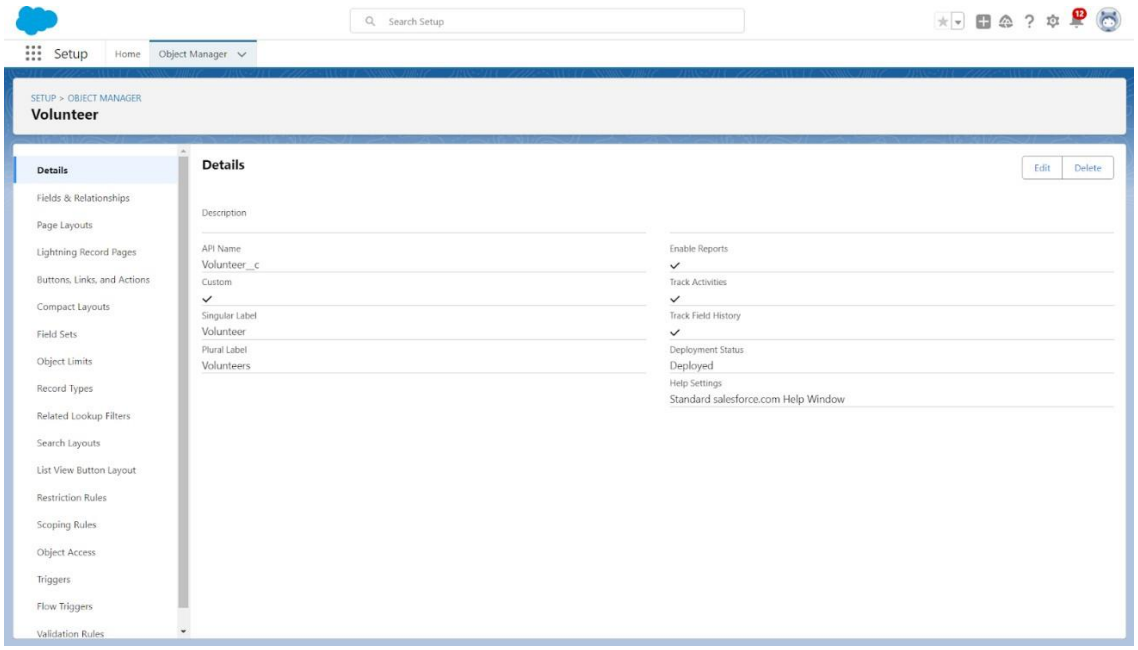
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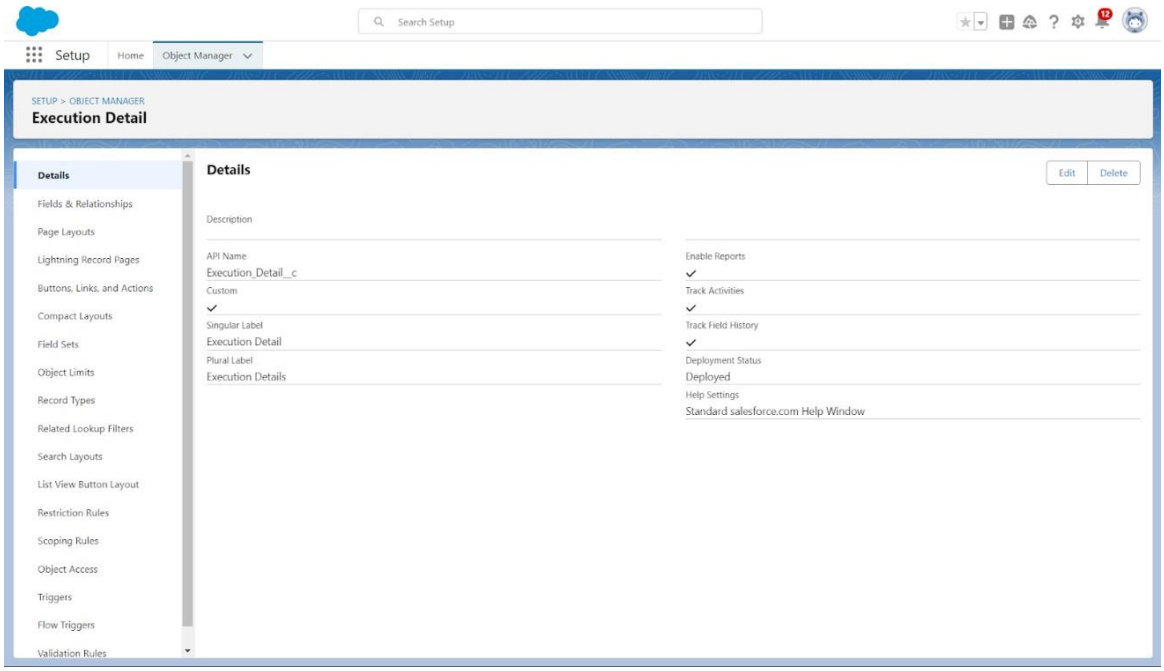
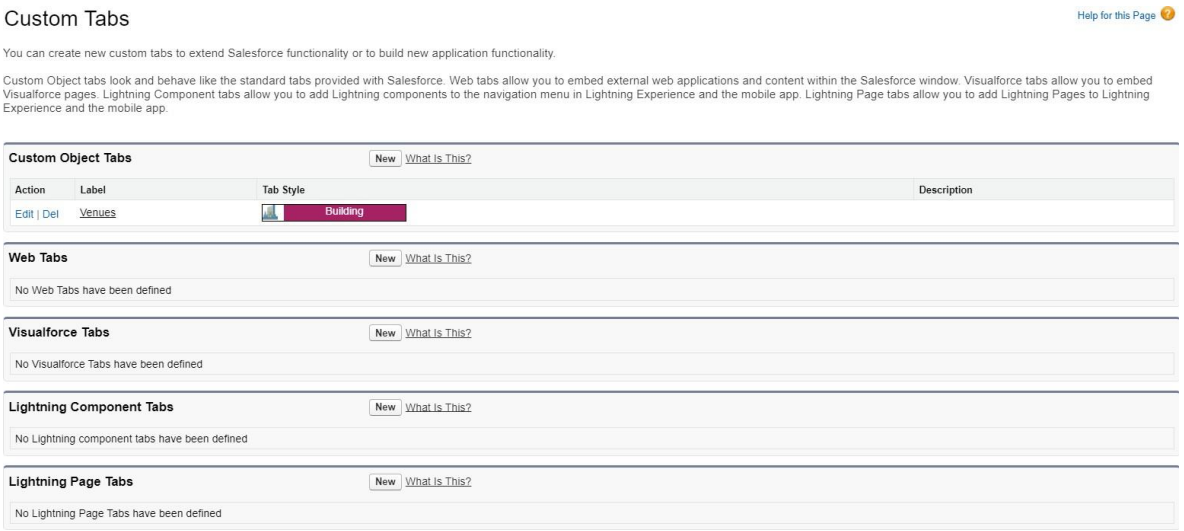
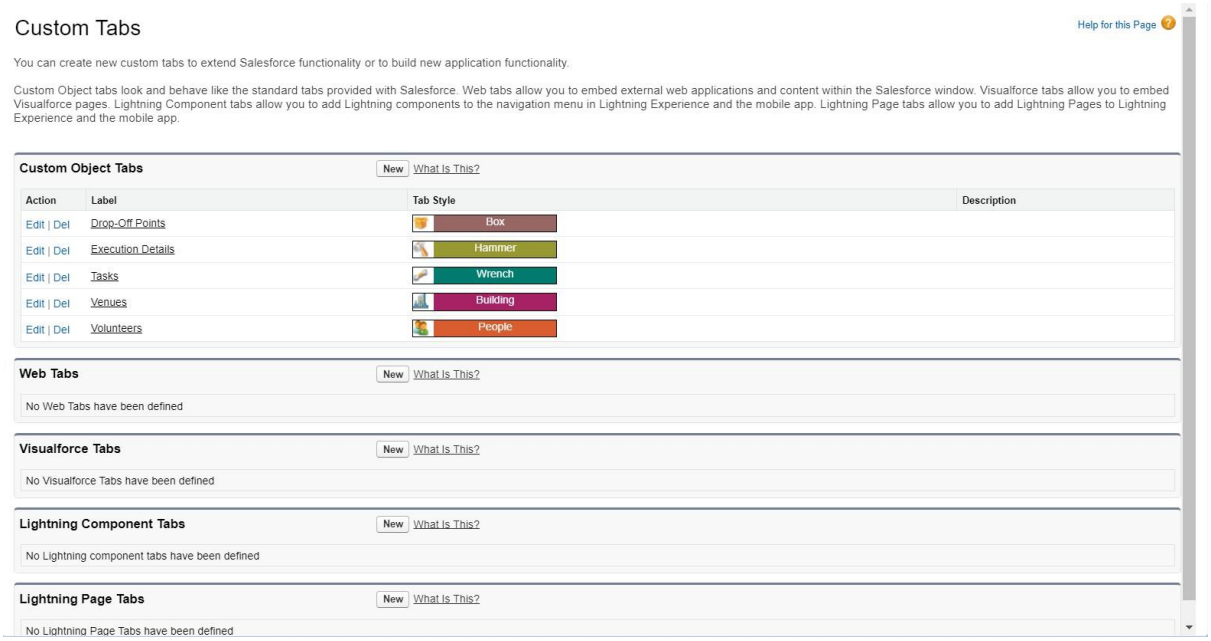


3. Configured Tabs

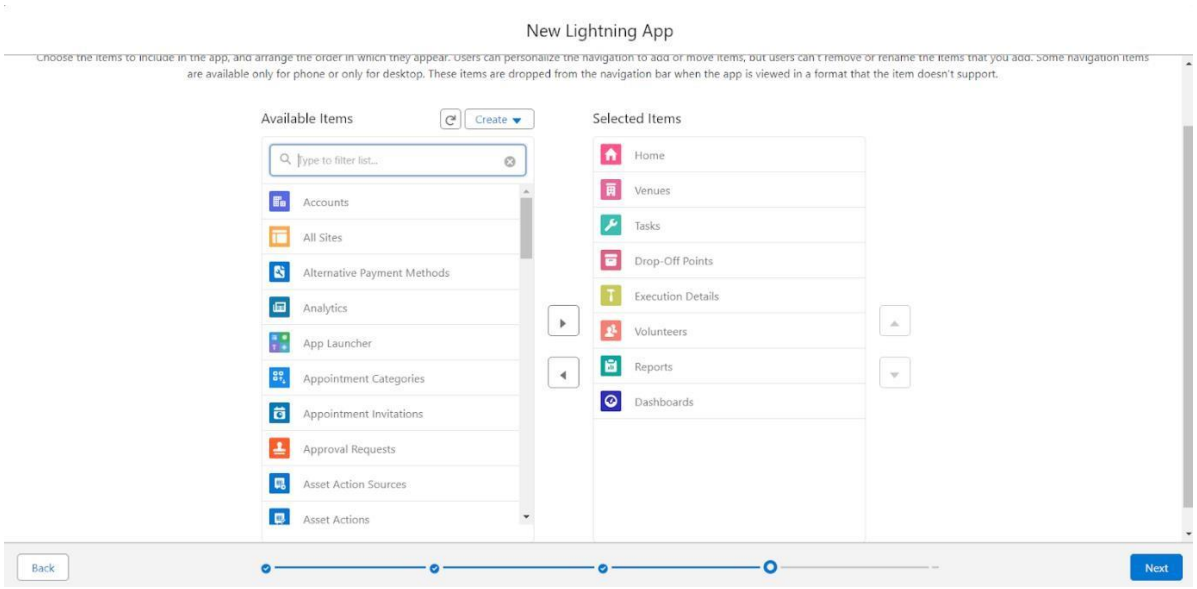
- Corresponding tabs were created for each of the main objects to facilitate easy access within Salesforce.
- Tabs for Venue, Drop off Point, Task, Volunteer, and Execution Details were set up, allowing users to navigate directly to these data points and manage records effectively.

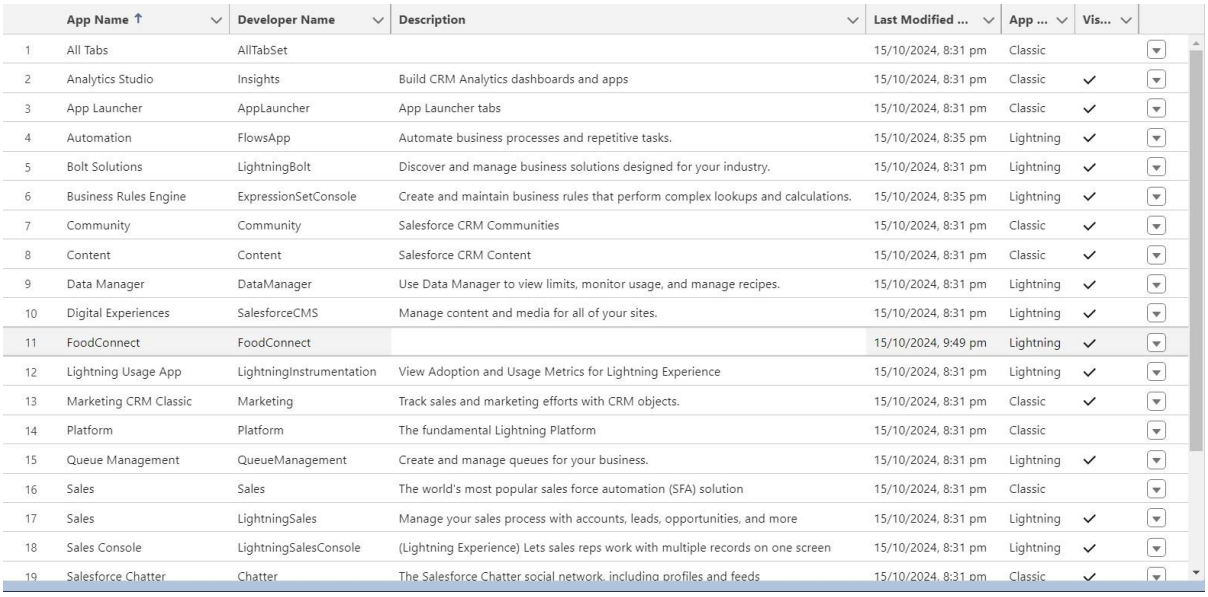




4. Developed the Lightning App

- We created a custom Lightning App named "Food Connect" to consolidate all project functionalities.
- The app was configured with specific branding, navigation items, and user access settings, which made it intuitive and easy to use for project participants.

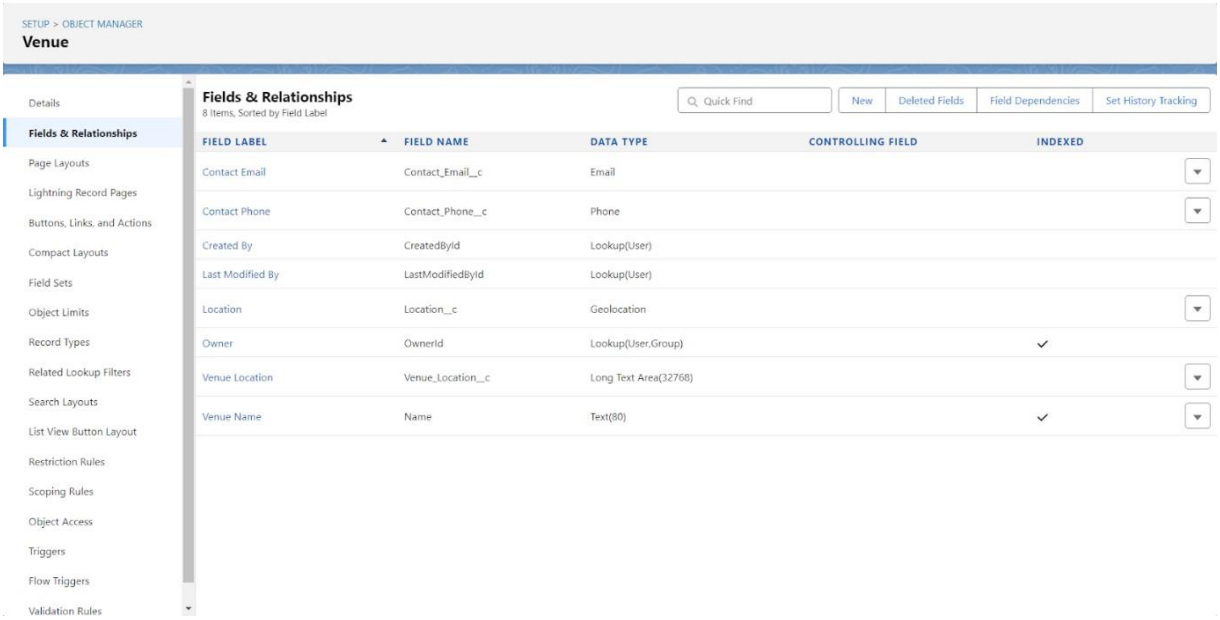




	App Name ↑	Developer Name	Description	Last Modified ...	App ...	Vis...
1	All Tabs	AllTabSet		15/10/2024, 8:31 pm	Classic	
2	Analytics Studio	Insights	Build CRM Analytics dashboards and apps	15/10/2024, 8:31 pm	Classic	✓
3	App Launcher	AppLauncher	App Launcher tabs	15/10/2024, 8:31 pm	Classic	✓
4	Automation	FlowsApp	Automate business processes and repetitive tasks.	15/10/2024, 8:35 pm	Lightning	✓
5	Bolt Solutions	LightningBolt	Discover and manage business solutions designed for your industry.	15/10/2024, 8:31 pm	Lightning	✓
6	Business Rules Engine	ExpressionSetConsole	Create and maintain business rules that perform complex lookups and calculations.	15/10/2024, 8:35 pm	Lightning	✓
7	Community	Community	Salesforce CRM Communities	15/10/2024, 8:31 pm	Classic	✓
8	Content	Content	Salesforce CRM Content	15/10/2024, 8:31 pm	Classic	✓
9	Data Manager	DataManager	Use Data Manager to view limits, monitor usage, and manage recipes.	15/10/2024, 8:31 pm	Lightning	✓
10	Digital Experiences	SalesforceCMS	Manage content and media for all of your sites.	15/10/2024, 8:31 pm	Lightning	✓
11	FoodConnect	FoodConnect		15/10/2024, 9:49 pm	Lightning	✓
12	Lightning Usage App	LightningInstrumentation	View Adoption and Usage Metrics for Lightning Experience	15/10/2024, 8:31 pm	Lightning	✓
13	Marketing CRM Classic	Marketing	Track sales and marketing efforts with CRM objects.	15/10/2024, 8:31 pm	Classic	✓
14	Platform	Platform	The fundamental Lightning Platform	15/10/2024, 8:31 pm	Classic	
15	Queue Management	QueueManagement	Create and manage queues for your business.	15/10/2024, 8:31 pm	Lightning	✓
16	Sales	Sales	The world's most popular sales force automation (SFA) solution	15/10/2024, 8:31 pm	Classic	
17	Sales	LightningSales	Manage your sales process with accounts, leads, opportunities, and more	15/10/2024, 8:31 pm	Lightning	✓
18	Sales Console	LightningSalesConsole	(Lightning Experience) Lets sales reps work with multiple records on one screen	15/10/2024, 8:31 pm	Lightning	✓
19	Salesforce Chatter	Chatter	The Salesforce Chatter social network, including profiles and feeds	15/10/2024, 8:31 pm	Classic	✓

5. Added Fields to Objects

- Custom fields were defined within each object to capture the necessary details:
    - Venue: Location, contact information, capacity.
    - Task: Type of food, quantity, delivery date, and assigned volunteers.
    - Volunteer: Availability, contact information, and skills.
    - Execution Details: Logs with dates, food types, and quantities distributed.
- Validation rules were also established to ensure data integrity, such as requiring fields like contact information and dates.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Contact Phone
Contact_Phone__c
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Location
Location__c
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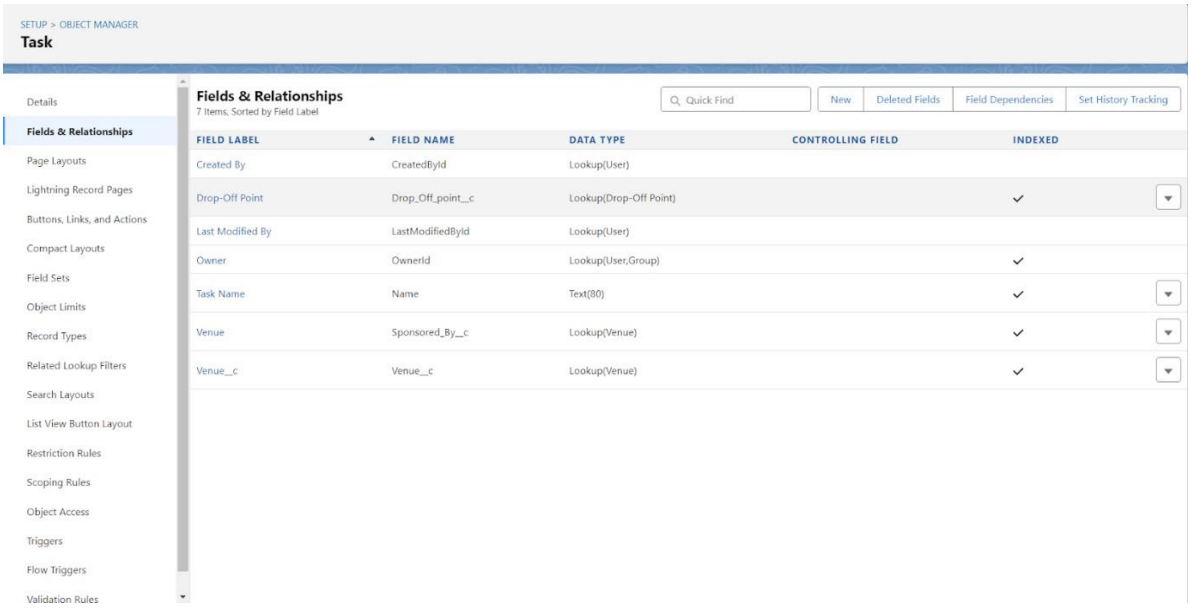
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Drop-Off Point
Drop_Off_point__c
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Last Modified By
LastModifiedById
Lookup(User)
Owner
OwnerId
Lookup(User,Group)
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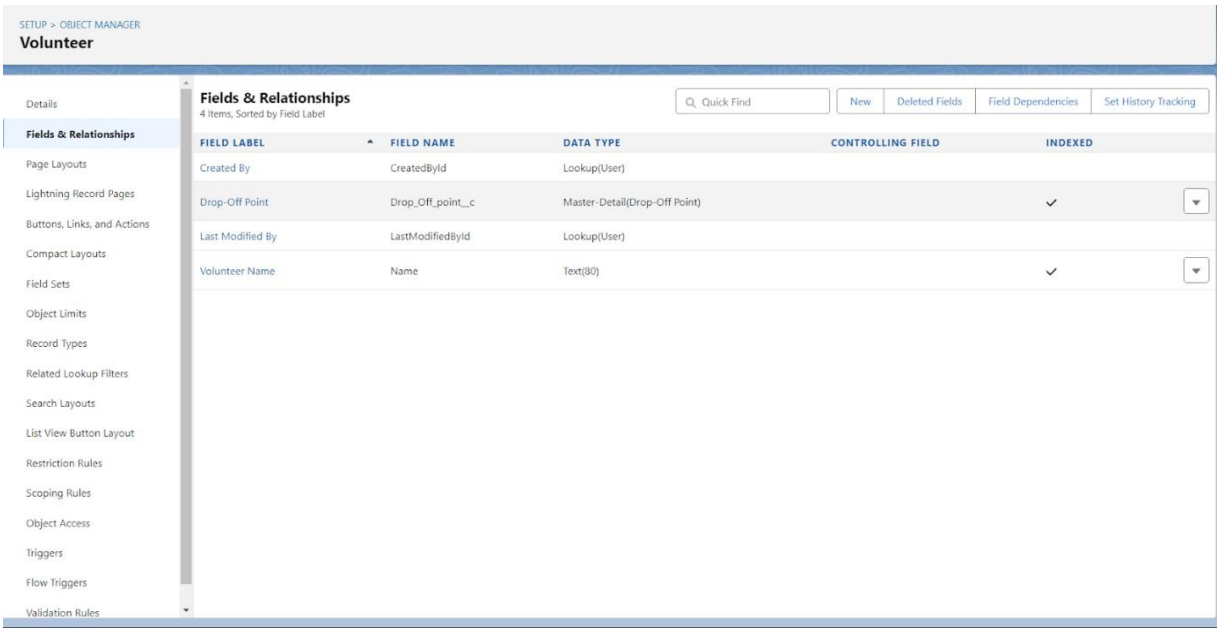
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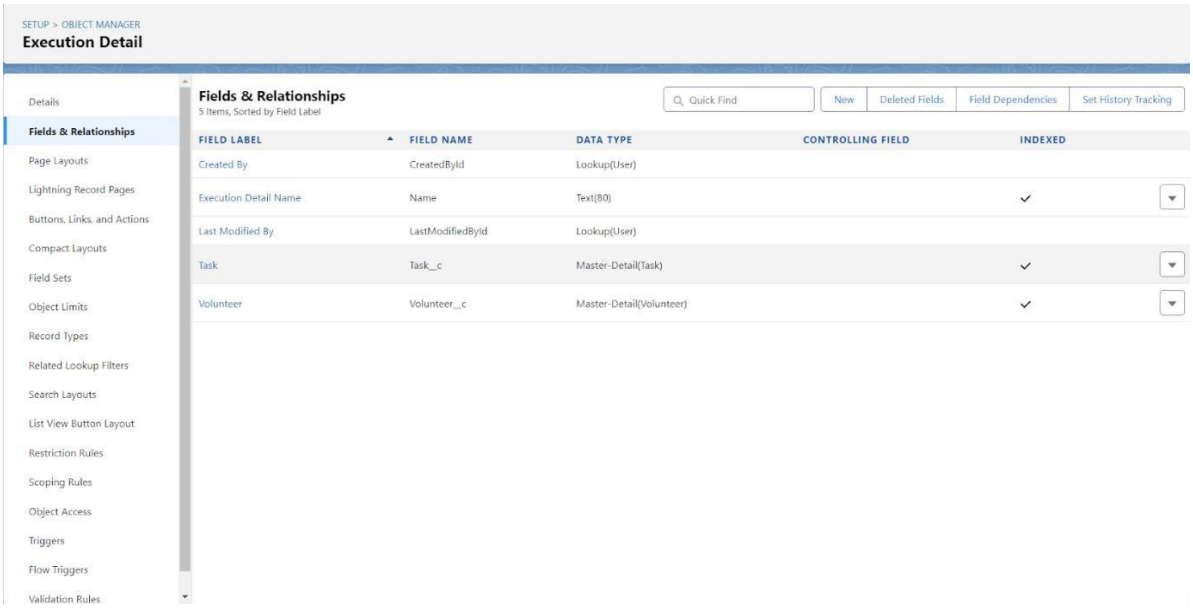
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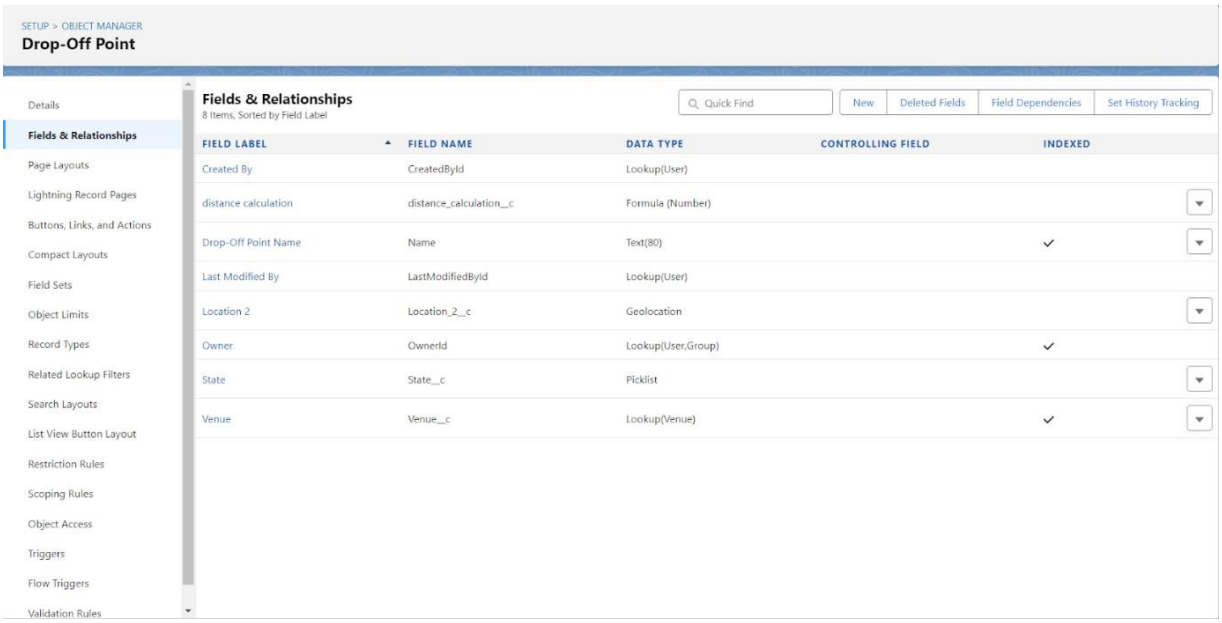
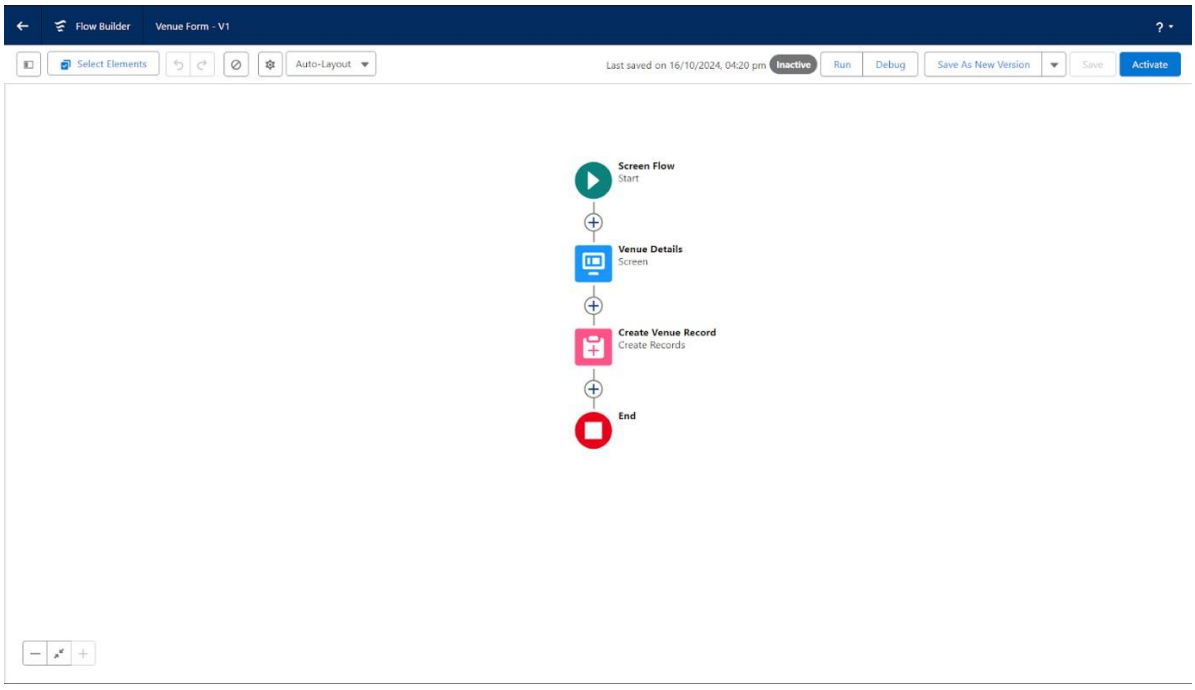


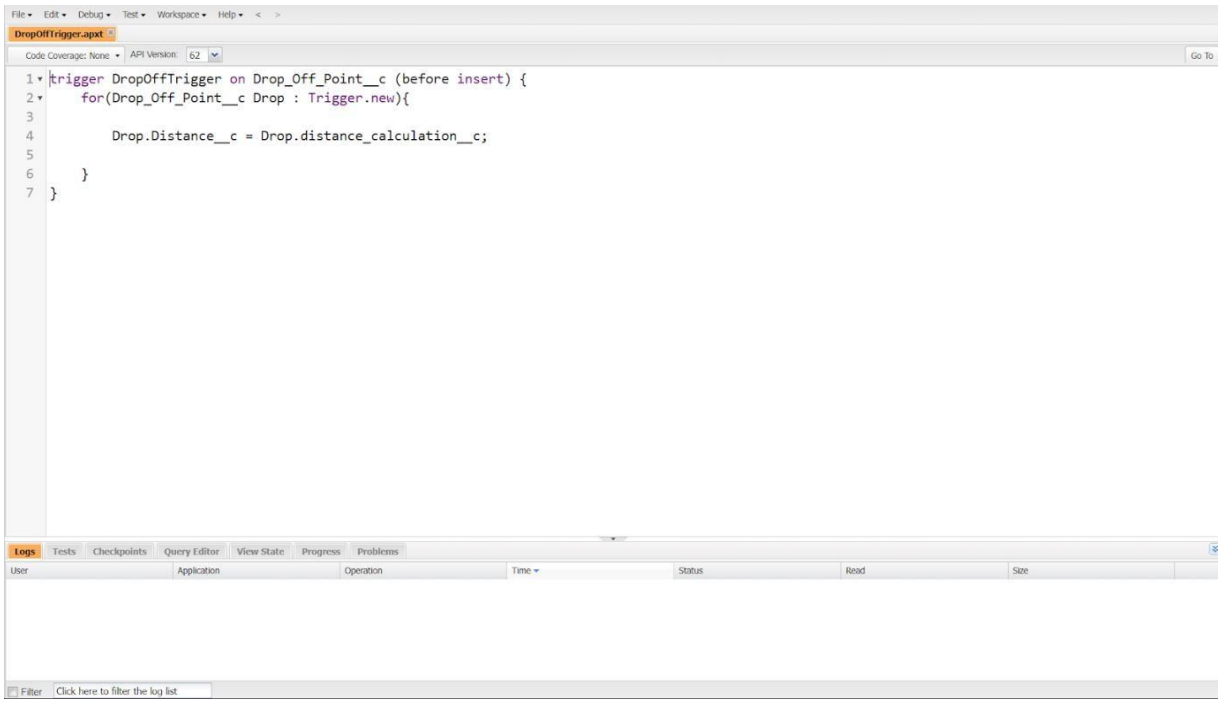
6. Created Flows for Data Entry

- We developed a Screen Flow called "Venue Form" to capture venue details in a step-by-step format.
- The flow included fields for venue name, email, phone, location, latitude, and longitude, making data entry faster and more accurate.



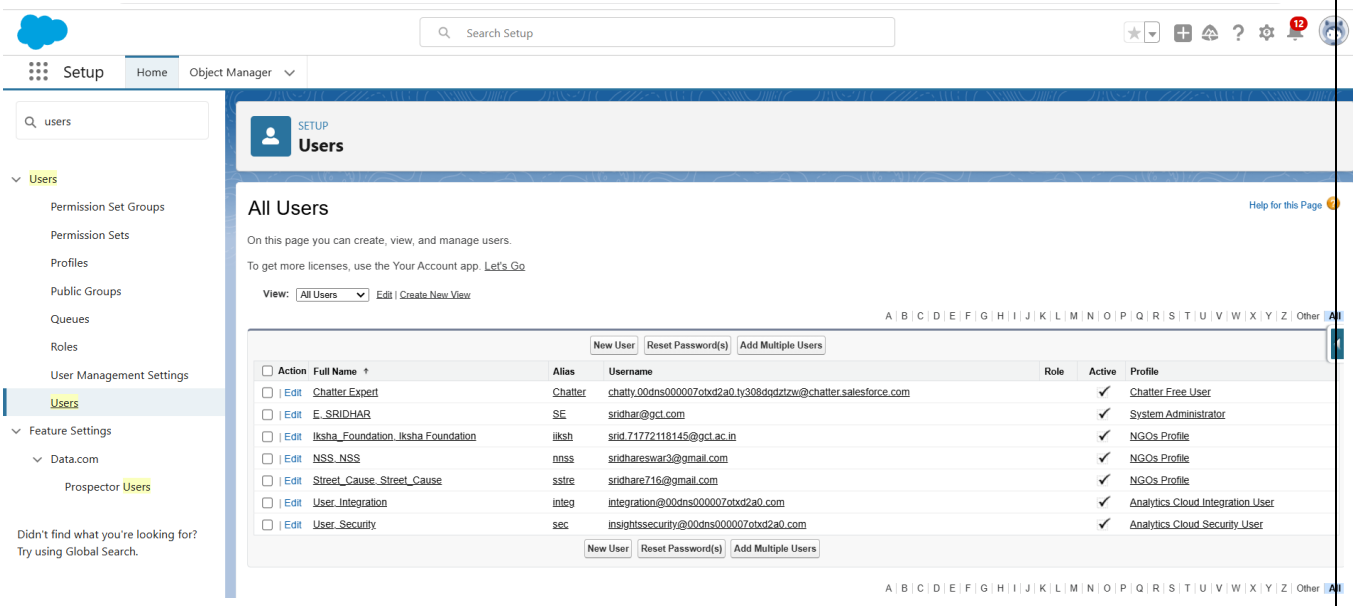
7. Implemented Apex Triggers

- An Apex Trigger was created to automate specific functions, including calculating the distance between drop-off points and venues.
- This automation facilitated optimized routing for volunteers and increased the system's efficiency by reducing manual calculations.



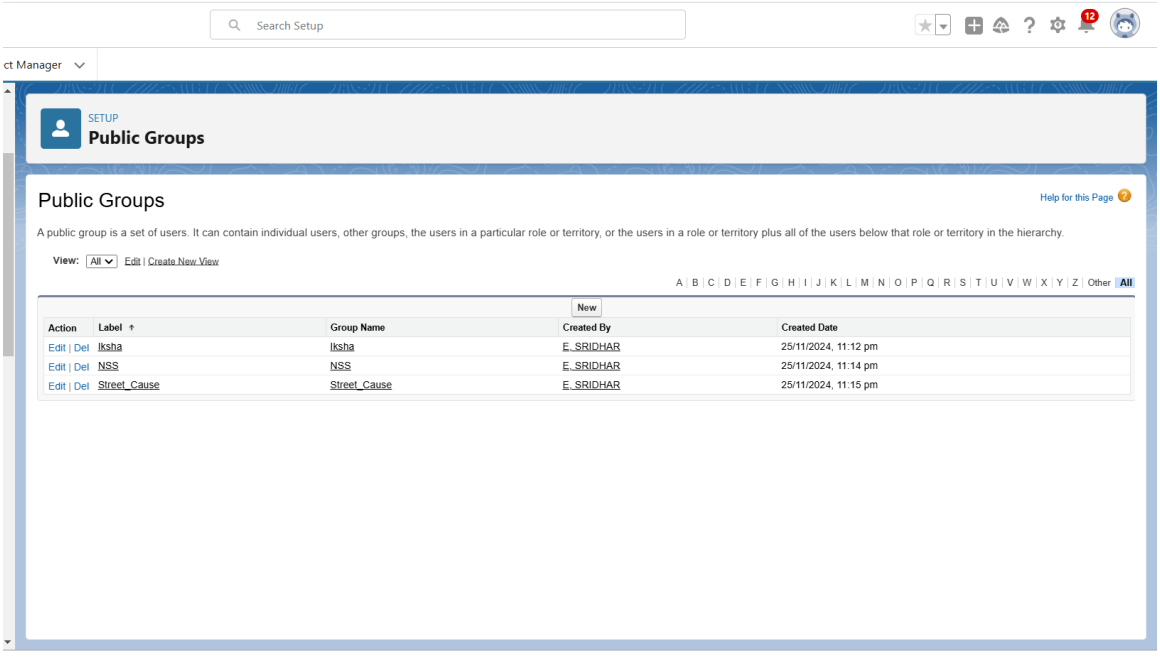
8. Created Users for Different Roles

- We added users representing various partner organizations, such as Iksha Foundation, NSS, and Street_Cause.
- Each user was assigned a profile that granted appropriate access based on their role, ensuring secure and organized collaboration within the project.



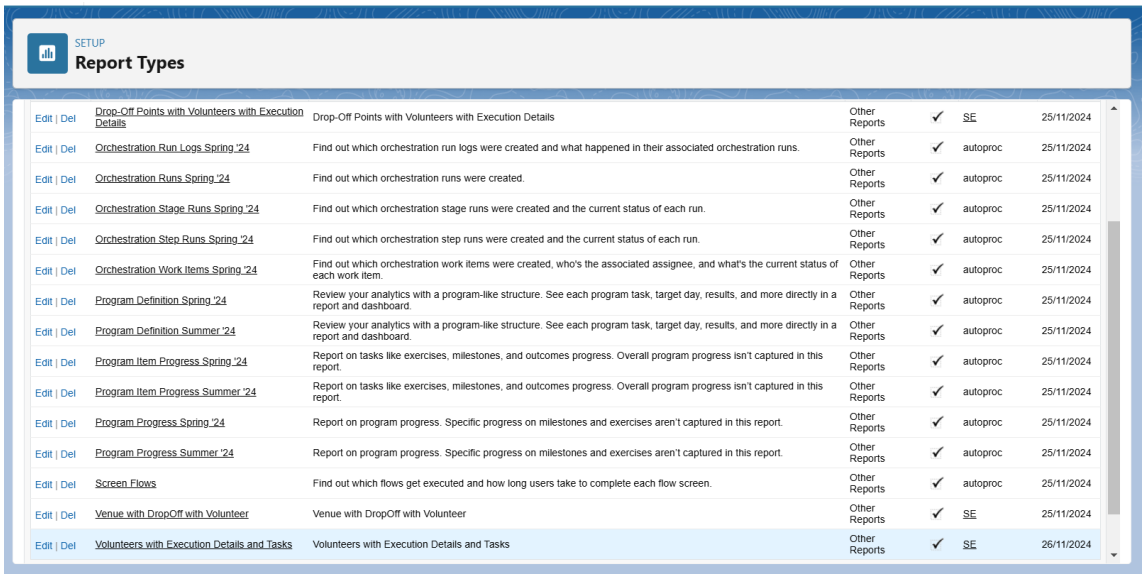
9. Established Public Groups

- Public groups, including Iksha, NSS, and Street_Cause, were created to streamline data sharing and collaboration among the project's participants.
- These groups facilitated quick sharing of reports, records, and tasks, enhancing collaboration between different organizations involved.

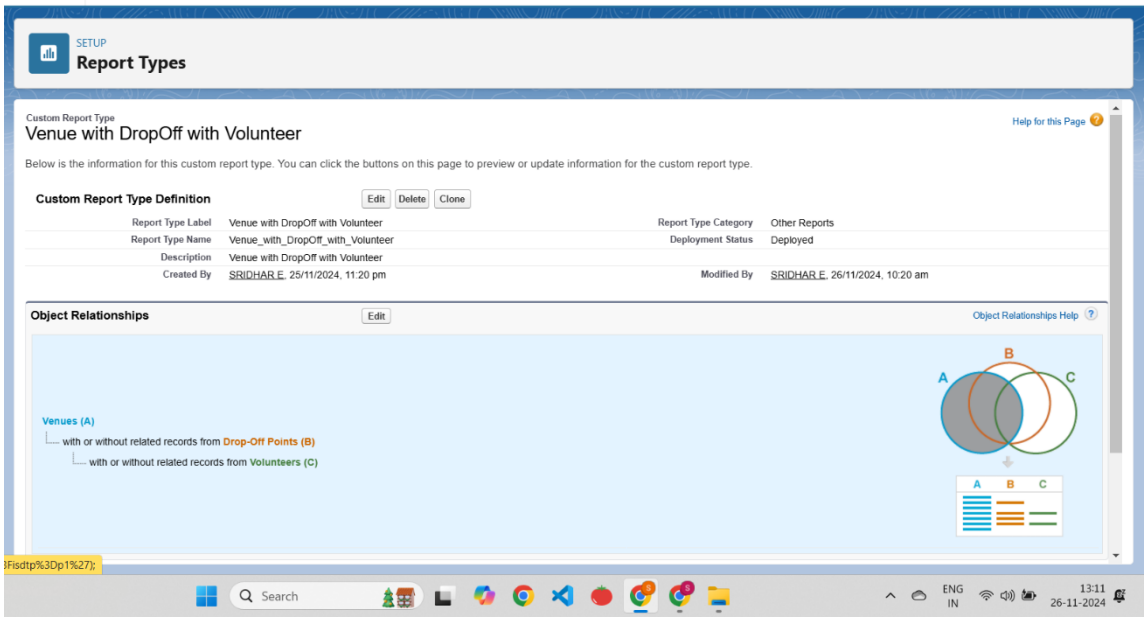


10. Defined Report Types

- Custom report types were created to structure data relationships, such as "Drop off Points with Volunteers with Execution Details."
- These report types were essential in providing a foundation for generating reports tailored to the project's needs.

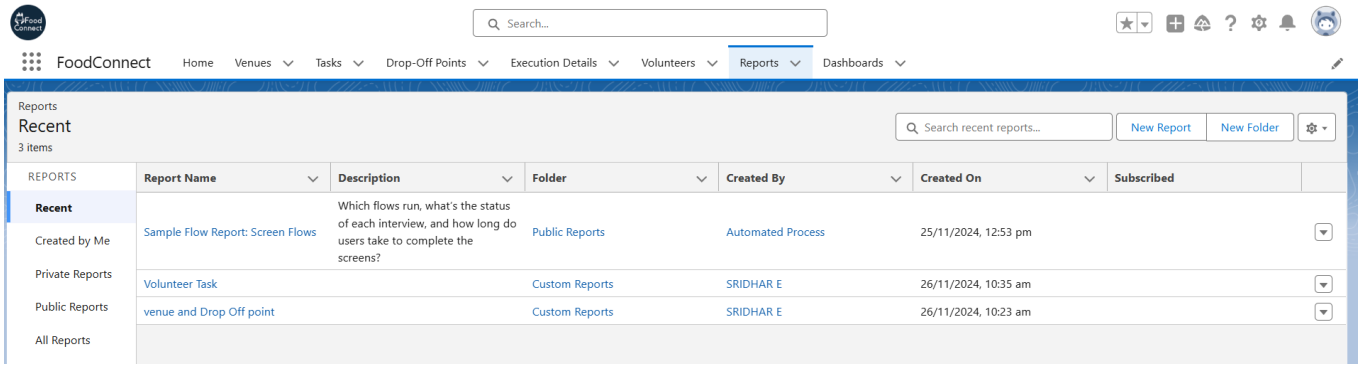


Edit | Del	Drop-Off Points with Volunteers with Execution Details	Drop-Off Points with Volunteers with Execution Details	Other Reports	✓	SE	25/11/2024
Edit | Del	Orchestration Run Logs Spring '24	Find out which orchestration run logs were created and what happened in their associated orchestration runs.	Other Reports	✓	autoproc	25/11/2024
Edit | Del	Orchestration Runs Spring '24	Find out which orchestration runs were created.	Other Reports	✓	autoproc	25/11/2024
Edit | Del	Orchestration Stage Runs Spring '24	Find out which orchestration stage runs were created and the current status of each run.	Other Reports	✓	autoproc	25/11/2024
Edit | Del	Orchestration Step Runs Spring '24	Find out which orchestration step runs were created and the current status of each run.	Other Reports	✓	autoproc	25/11/2024
Edit | Del	Orchestration Work Items Spring '24	Find out which orchestration work items were created, who's the associated assignee, and what's the current status of each work item.	Other Reports	✓	autoproc	25/11/2024
Edit | Del	Program Definition Spring '24	Review your analytics with a program-like structure. See each program task, target day, results, and more directly in a report and dashboard.	Other Reports	✓	autoproc	25/11/2024
Edit | Del	Program Definition Summer '24	Review your analytics with a program-like structure. See each program task, target day, results, and more directly in a report and dashboard.	Other Reports	✓	autoproc	25/11/2024
Edit | Del	Program Item Progress Spring '24	Report on tasks like exercises, milestones, and outcomes progress. Overall program progress isn't captured in this report.	Other Reports	✓	autoproc	25/11/2024
Edit | Del	Program Item Progress Summer '24	Report on tasks like exercises, milestones, and outcomes progress. Overall program progress isn't captured in this report.	Other Reports	✓	autoproc	25/11/2024
Edit | Del	Program Progress Spring '24	Report on program progress. Specific progress on milestones and exercises aren't captured in this report.	Other Reports	✓	autoproc	25/11/2024
Edit | Del	Program Progress Summer '24	Report on program progress. Specific progress on milestones and exercises aren't captured in this report.	Other Reports	✓	autoproc	25/11/2024
Edit | Del	Screen Flows	Find out which flows get executed and how long users take to complete each flow screen.	Other Reports	✓	autoproc	25/11/2024
Edit | Del	Venue with DropOff with Volunteer	Venue with DropOff with Volunteer	Other Reports	✓	SE	25/11/2024
Edit | Del	Volunteers with Execution Details and Tasks	Volunteers with Execution Details and Tasks	Other Reports	✓	SE	26/11/2024



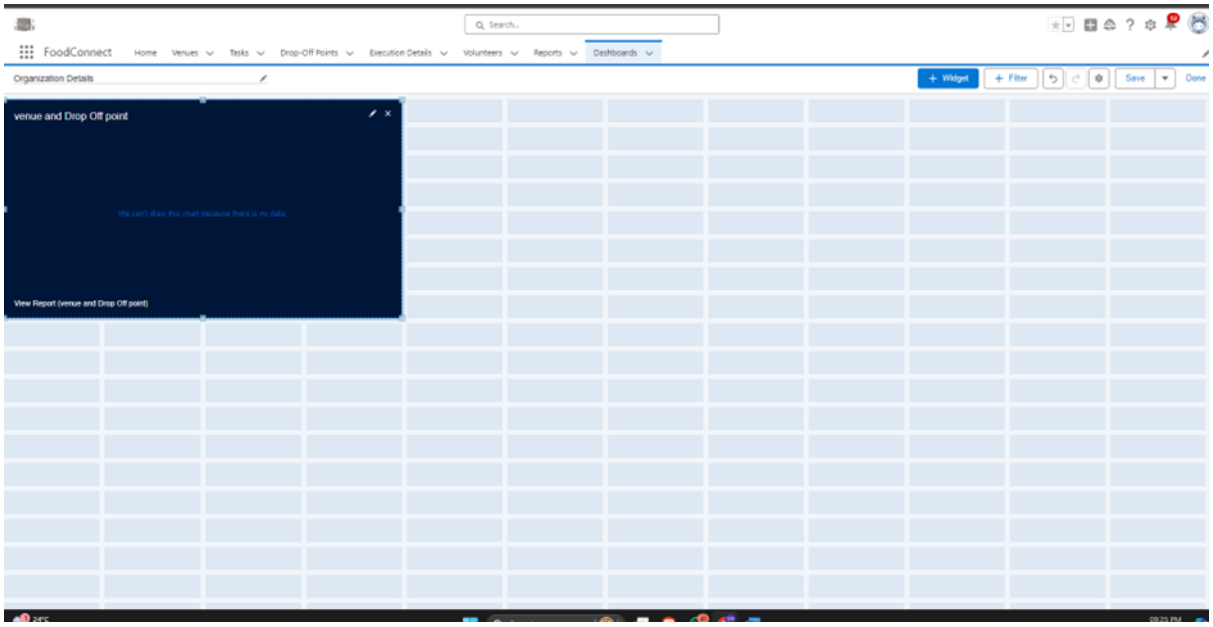
11. Created Custom Reports

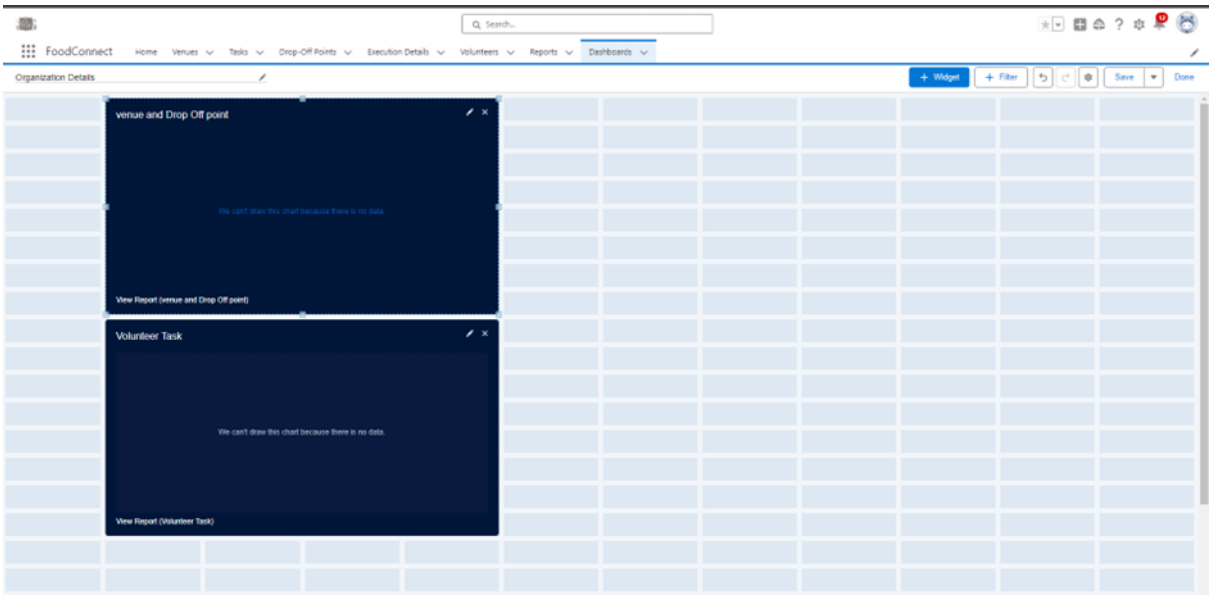
- We built several custom reports to monitor key performance metrics, such as volunteer activity, drop-off locations, and distribution data.
- Scheduled reports were configured to send regular updates to stakeholders, ensuring they were informed about project progress and performance.

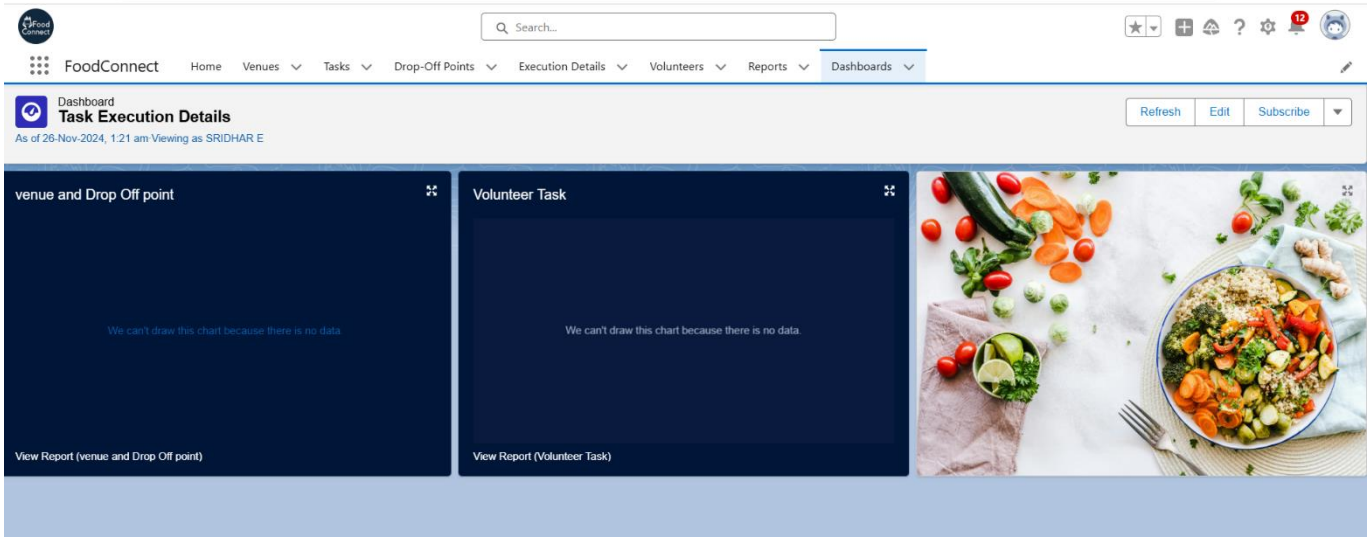


12. Developed a Dashboard

- A centralized dashboard was designed to display project metrics, including the number of venues, volunteer activities, food quantities, and distributions.
- The dashboard provided a real-time overview, improving transparency and making data easily accessible for quick decision-making.





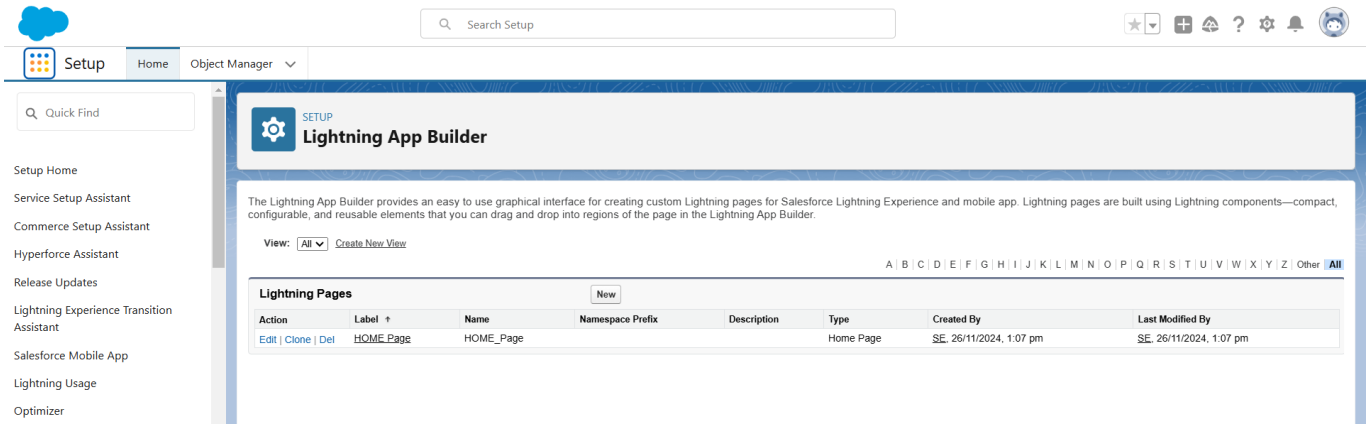


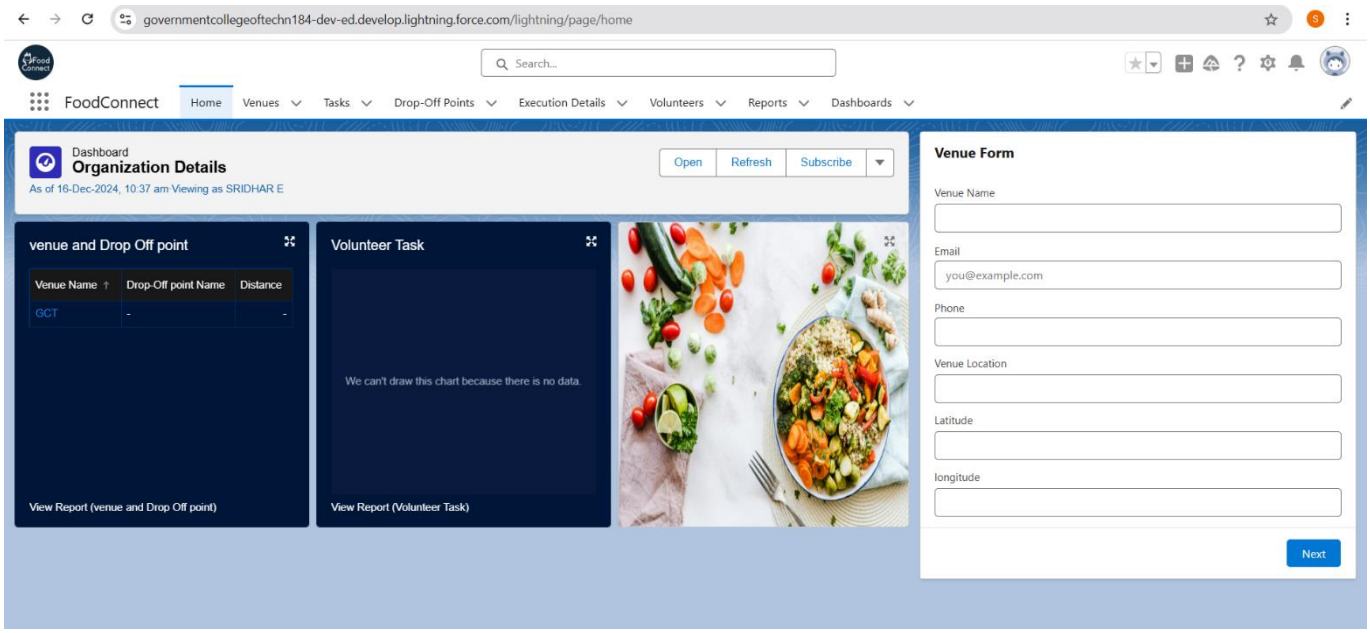
13. Configured Sharing Rules

- Sharing rules were set up to control record-level access, allowing specific groups to view or edit relevant data.
- This ensured that data privacy was maintained, while also enabling collaborative efforts where necessary.

14. Integrated Dashboard with Homepage

- The dashboard was integrated into the Salesforce homepage to centralize access and enhance visibility.
- Key metrics, recent activities, and tasks were displayed on the homepage, making it convenient for team members to monitor the project's status at a glance.





5. Testing and Validation

i. Unit Testing (Apex Classes, Triggers)

Apex Trigger:

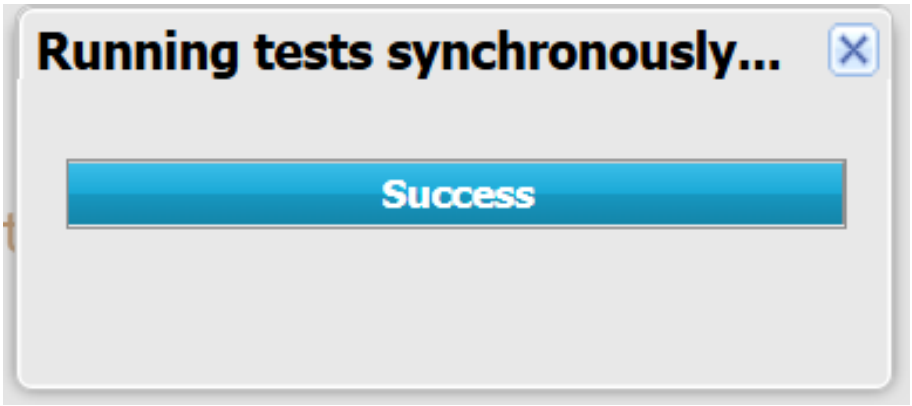
```
trigger DropOffTrigger on Drop_Off_Point__c (before insert) {
        for (Drop_Off_Point__c drop : Trigger.new) {
            drop.Distance__c = drop.distance_calculation__c;
        }
    }
```

Test Class:

```
@isTest
private class TestDropOffTrigger {
    @isTest
    static void testDropOffTrigger() {
        Drop_Off_Point__c dropOffPoint = new Drop_Off_Point__c(
            Name = 'Test Drop Off Point'
        );
        insert dropOffPoint;
        Drop_Off_Point__c queriedPoint = [SELECT Distance__c FROM
Drop_Off_Point__c WHERE Id = :dropOffPoint.Id];
        System.assert(queriedPoint.Distance__c != null, 'Distance__c should be
populated by the trigger');
    }
}
```

STEPS:

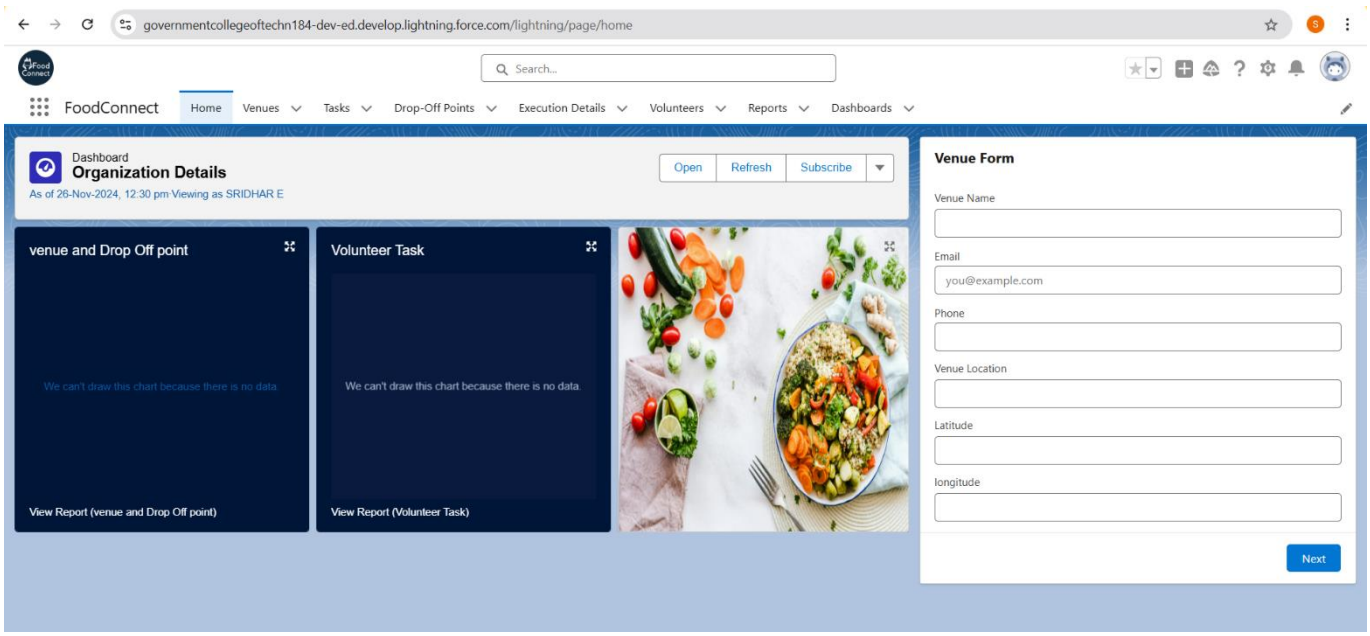
- Created a Test Record: Created a simple Drop_Off_Point__c record.
- Inserted the Record: Insert the record to trigger the trigger.
- Verified the Update: Check if the Distance__c field is updated by the trigger.
- Go to Setup > Apex Test Execution.
- Click Run after selecting your test.



ii. User Interface Testing

User Interface have been tested with various types of data and edge cases.

- Verify Layout: Ensure the dashboard loads correctly with all components (charts, reports, tables) visible.
- Check Data Accuracy: Validate that the displayed data matches the source reports or records.
- Test Filters: Ensure dashboard filters (e.g., date, region) update data correctly when applied.
- Check Interactivity: Verify clickable elements (charts, links) lead to the expected actions or pages.
- Test Responsiveness: Confirm the dashboard displays correctly across different devices (desktop, tablet, mobile).



6. Conclusion

Summary of Achievements:
The Salesforce Food Supply Project successfully created an efficient, transparent, and scalable system to manage the collection and distribution of surplus food to those in need. Key accomplishments include:

- Comprehensive Data Management: Implemented custom objects, tabs, and fields to manage critical data on venues, drop-off points, volunteers, tasks, and execution details, ensuring organized and accessible records.
- Automated Processes: Developed flows and Apex triggers for data entry and automation, enhancing operational efficiency by reducing manual input and improving accuracy.
- Enhanced Collaboration: Configured user profiles, public groups, and sharing rules to enable secure collaboration among participating organizations while protecting data privacy.
- Real-Time Monitoring: Created custom reports and a centralized dashboard integrated with the homepage to provide stakeholders with real-time visibility into project metrics and activities.
- Improved Decision-Making: Designed a structured, user-friendly system that streamlined the food distribution process, facilitating quick and informed decision-making.

The project achieved its primary objectives by leveraging Salesforce's platform, resulting in a robust system that supports the mission of providing food to the needy efficiently and transparently. This initiative exemplifies how technology can be used for impactful, community-driven projects.