M.Kumarasamy College of Engineering
NAAC Accredited Autonomous Institution
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Thalavapalayam, Karur - 639 113, TAMILNADU.

TO SUPPLY LEFTOVER FOOD TO POOR

SALESFORCE PROJECT DOCUMENT

SUBMITTED BY:

VINOTH B

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND BUSINESS SYSTEMS

M.KUMARASAMY COLLEGE OF ENGINEERING

(Autonomous)

KARUR - 639 113

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To Supply Leftover Food to Poor

Project Overview:

FoodConnect is an innovative Salesforce CRM project aimed at reducing food waste while supporting communities in need. The platform bridges the gap between food donors—such as restaurants, event venues, and households—and NGOs that distribute meals to underserved populations. By offering dedicated access to donors, volunteers, NGOs, and administrators, FoodConnect ensures smooth coordination and secure data handling within a single centralized system.

The solution leverages Salesforce capabilities like custom objects, automation with Flows and Process Builders, and insightful Reports and Dashboards to oversee the entire donation journey—from donor registration to food delivery. Automated volunteer assignments based on location, streamlined workflows, and strict data integrity measures reduce manual tasks and improve operational efficiency. By combining technology with a social mission, FoodConnect transforms the way surplus food is managed, creating a smarter and more impactful approach to fighting hunger.

Key Features:

- ✓ Unified platform to manage venues, food donations, and volunteer records
- ✓ Automated workflows for assigning tasks and coordinating volunteer activities
- ✓ Location-based rules to ensure efficient and timely food delivery
- ✓ Role-specific access to maintain security for different user groups
- ✓ Interactive reports and dashboards for monitoring the entire process
- ✓ Scalable framework ready for future enhancements like AI and chatbots

Business Need:

To cut down on food waste while fighting hunger, utilizing automation, efficient tracking, and scalable coordination among food donors, NGOs, and volunteers.

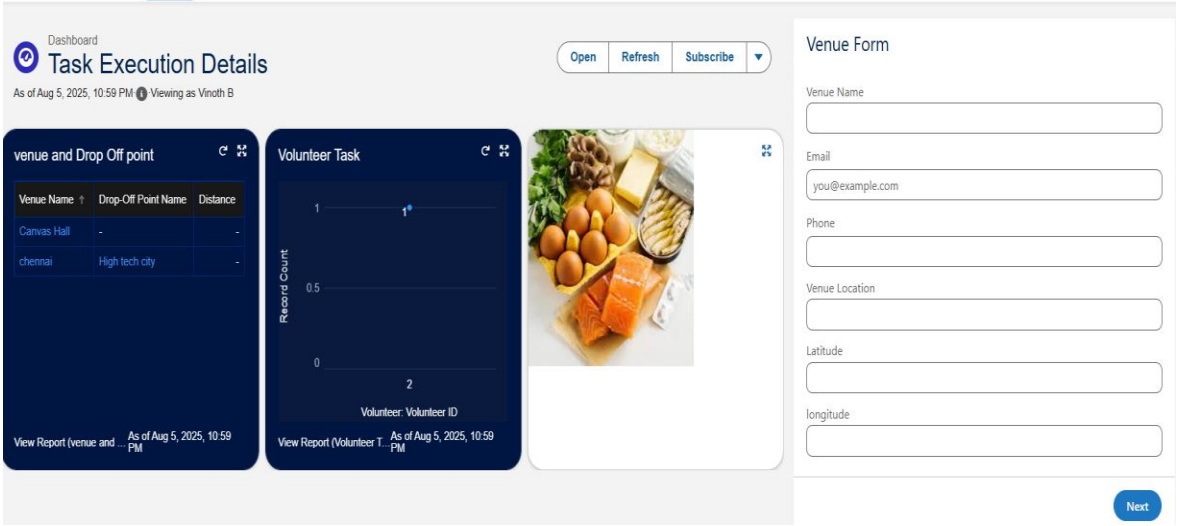

Fig 1 : Home Page

Objectives:

The primary objective of the FoodConnect CRM is to simplify and digitize the process of collecting and distributing surplus food. It brings together donors, NGOs, volunteers, and administrators on a single Salesforce platform to manage, track, and deliver food donations effectively. By reducing manual processes, the system enhances coordination and accelerates the entire workflow.

Another key focus is automating critical operations such as assigning volunteers, creating tasks, and updating delivery statuses. Leveraging Salesforce features like Flows, Process Builder, and Approval Processes, FoodConnect ensures that the right volunteer is matched based on location and availability, improving efficiency and accuracy while saving time.

The CRM uses role-based access control, allowing each user to manage only relevant data. Real-time dashboards and reports offer insights into donation status, delivery timelines, and volunteer activity. This helps users make better decisions, promotes transparency, and ensures accountability throughout the donation process.

Ultimately, FoodConnect aims to minimize food wastage and empower communities by streamlining the logistics of food donations.

Phase 1: Requirement Analysis and Planning

The first phase of the FoodConnect project focused on collecting and analyzing requirements to address the issues in food donation and distribution. Discussions and interviews were conducted with potential users, including donors, NGOs, volunteers, and administrators, to understand their needs and challenges. This process helped define the project's goal: to build a centralized and automated Salesforce CRM that connects all stakeholders and streamlines the process of delivering surplus food.

Important requirements were identified during this stage. Donors wanted a simple way to submit details of available food. NGOs required quick updates on new donations to plan their collection efficiently. Volunteers needed task assignments based on location for smoother operations. Administrators required a single platform to monitor and manage all activities effectively.

Once the requirements were finalized, the project scope was clearly defined. It included automating the creation of tasks and volunteer assignments, tracking food distribution, providing secure role-based access, and generating real-time dashboards and reports. The system also needed to be scalable, transparent, and aligned with Salesforce security and automation best practices.

The data model and security setup were planned carefully. Custom objects such as Venue, Drop-Off Point, Task, Volunteer, and Execution Detail were created with the required Master-Detail and Lookup relationships. Role Hierarchies, Public Groups, and Sharing Rules were implemented to ensure that each user could only access data relevant to their role.

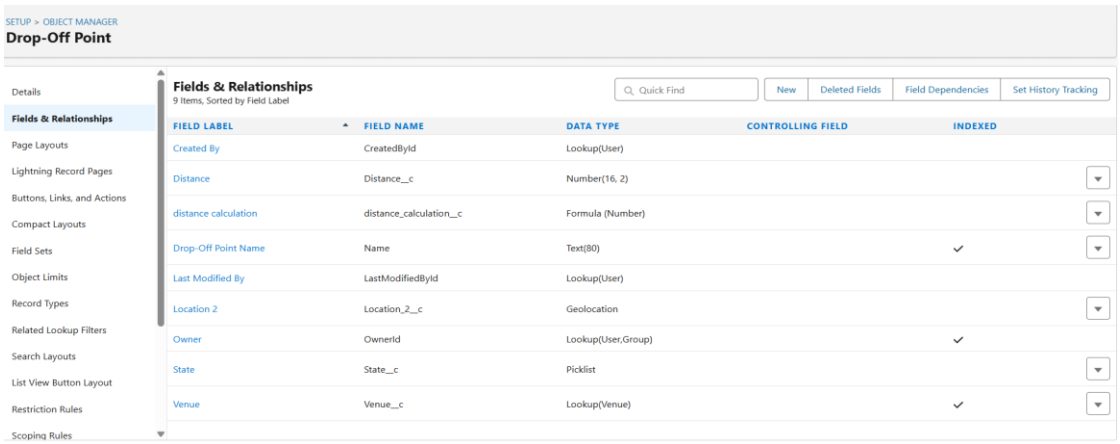

Fig 2 : Drop off Point Custom objects

Fig 3 : Venue Custom objects

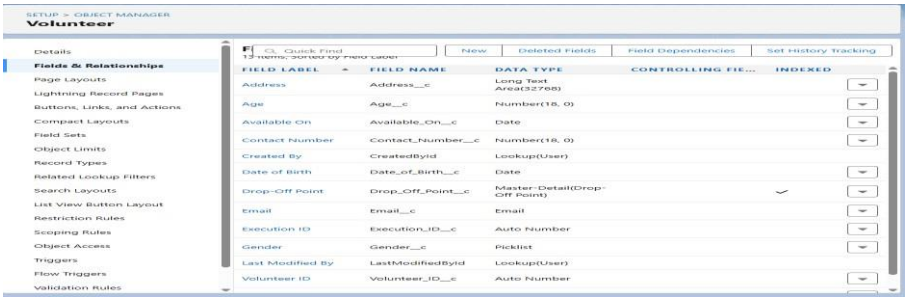

Fig 4: Volunteer Custom objects

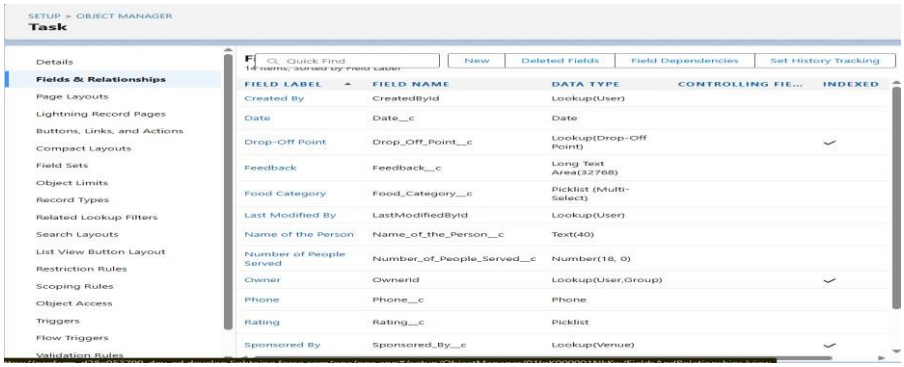

Fig 5 : Task Custom objects

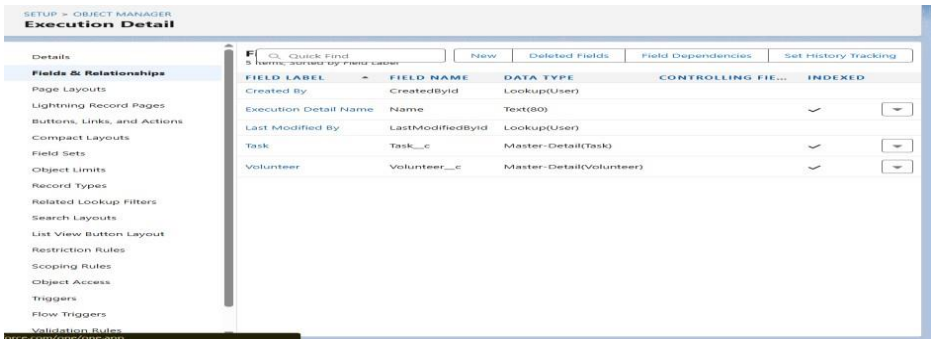

Fig 6 : Execution Detail Custom objects

Phase 2: Salesforce Development - Backend & Configurations

In this phase, the team concentrated on developing the core functionalities of the FoodConnect application using Salesforce backend tools and configuration features. Following the blueprint from Phase 1, the work began by setting up a dedicated Salesforce Developer Org. The environment was prepared to create custom objects, implement automation processes, and add validations to ensure smooth and efficient food collection and distribution operations.

The team configured custom objects like Venue, Drop-Off Point, Volunteer, Task, and Execution Detail with the right fields and relationships. They created validation rules to ensure data accuracy, such as checking that donation expiry dates are in the future, that food quantity is a positive number, and that required fields are not left empty. These rules help keep data accurate throughout the process.

Automation was important in this phase. Flows were used to automatically create task records and assign volunteers based on where the food donation was located. The team also used Process Builder and Approval Processes to simplify approvals and notifications. When more flexibility was necessary, they wrote Apex triggers to manage backend logic. This included calculating and storing distances between venues and drop-off points for sharing rule conditions.

The team paid attention to security and performance as well. They enabled field history tracking on critical fields like task status and volunteer assignment. Lookup and master-detail relationships were set up to ensure data consistency. This backend development phase made sure the core system was functional, automated, and ready to support the user interface in the next phase.

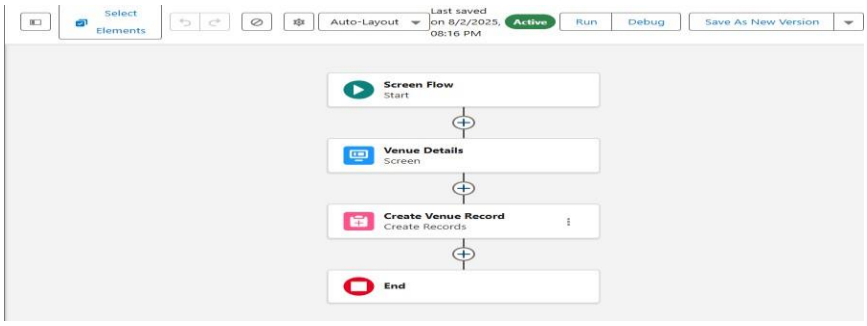

Fig 7 : Screen Flow

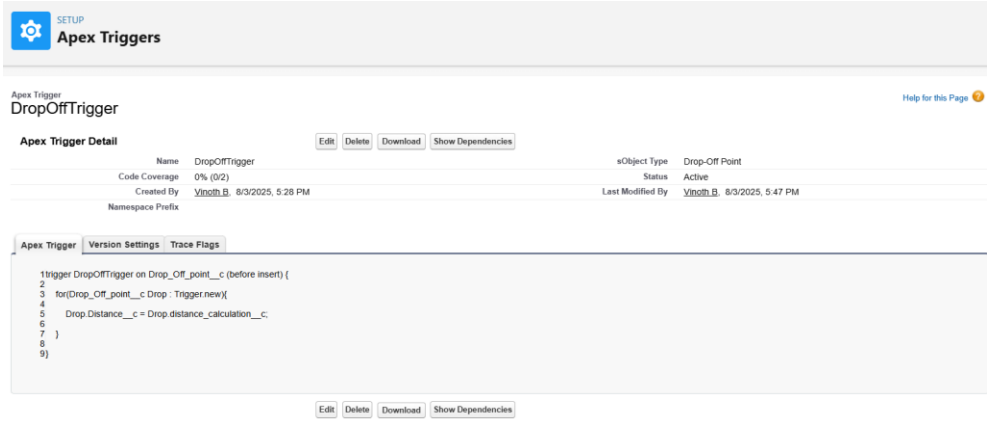

Fig 8 : Apex Trigger

Phase 3: UI/UX Development & Customization

In this phase, the focus was on creating a simple, interactive, and efficient interface for all users, including donors, NGOs, volunteers, and administrators. Using Salesforce Lightning tools, we designed clear navigation and customized layouts so users could easily access features and complete their tasks without confusion or extra steps.

A dedicated Lightning App named FoodConnect was built using the App Manager to serve as a central hub for all records and functionalities. Custom tabs were added for objects such as Venue, Drop-Off Point, Volunteer, Task, and Execution Detail. These tabs provided users with a structured and organized way to view, update, and manage the data required for their role.

Page Layouts were customized according to user roles, ensuring that each user only interacted with fields and sections relevant to their responsibilities. Dynamic Forms were used to control the visibility of specific fields based on record conditions, improving clarity and reducing screen clutter. Lightning Record Pages were designed with Lightning App Builder to arrange components such as related lists, flow screens, and report charts for better usability.

To enhance the overall experience, we embedded real-time dashboards and reports that offered visual insights into donation status, volunteer activity, and food distribution metrics. A Flow-based form was used to simplify venue creation, and optional Lightning Web Components (LWC) were explored to deliver modern, responsive, and engaging UI elements.

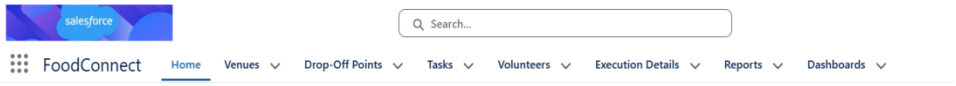

Fig 9 : App Builder

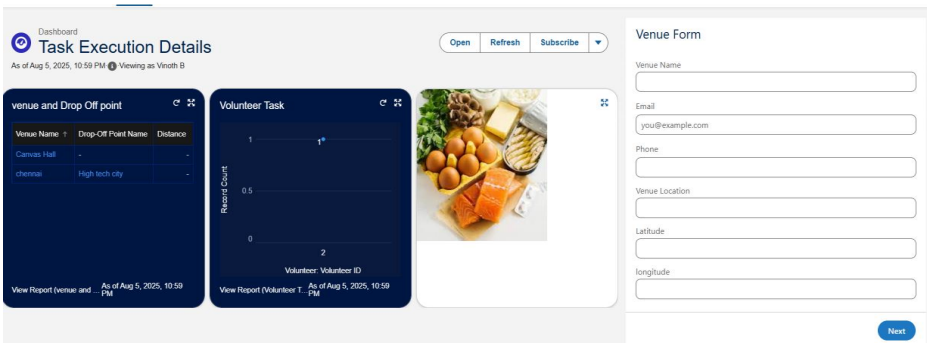

Fig 10 : App Page

Phase 4: Data Migration, Testing & Security

In this phase, the primary focus was on migrating initial data into the application, performing thorough testing of all functionalities, and applying strict security measures to ensure safe and controlled access for every user role. Careful execution of these steps was crucial to guarantee that the FoodConnect system would run reliably in real-world conditions while maintaining both data integrity and a smooth user experience.

Data migration included importing records such as donors, NGOs, volunteers, and food donation details into the respective custom objects. For smaller uploads like NGO or donor data, the Data Import Wizard was utilized for quick imports. For larger datasets, including multiple donation or task records, the Data Loader tool was used for faster and more precise data entry. Predefined templates matching the object field structure were prepared, which minimized errors and maintained consistency during migration.

Testing activities were conducted through both manual and automated approaches. Manual test cases validated the end-to-end processes, including venue creation, volunteer assignment, task updates, and donation delivery completion.

Security configurations were also applied during this phase to protect sensitive data and limit access based on roles. Salesforce's Role Hierarchy was set up so that Admins had full access, while NGOs and Volunteers had restricted views. Profiles and Permission Sets were customized for each user group. Sharing Rules were created using distance criteria to make

sure that records were only visible to users operating within relevant geographic areas. Additional measures included enabling field history tracking, duplicate rules, and matching rules to improve data accuracy and auditability. This phase ensured that the system was stable, secure, and ready for deployment. All features were tested thoroughly, data was structured and imported correctly, and the right access was granted to the right users.

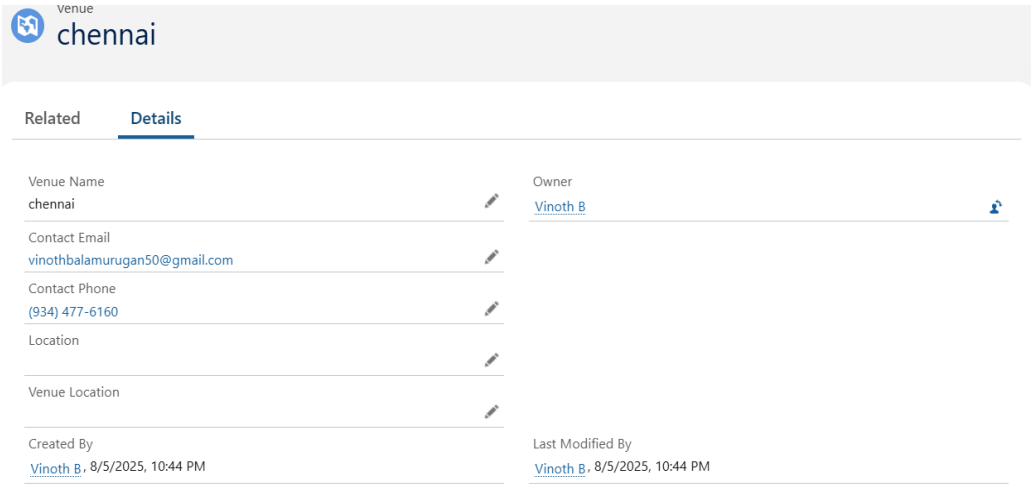

Fig 11 : Testing

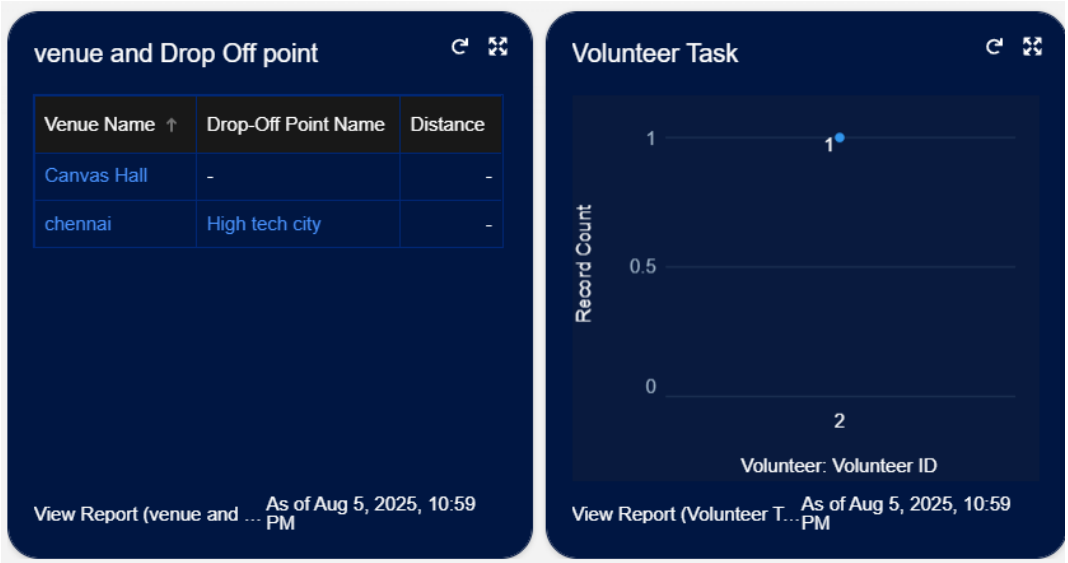

Fig 12 : Data

Phase 5: Deployment, Documentation & Maintenance

The final phase of the FoodConnect project concentrated on releasing the application to the production environment, creating detailed documentation for reference, and establishing a maintenance plan for long-term support. This phase ensured that the system was fully prepared for practical use and could be efficiently monitored and enhanced in the future.

For deployment, Salesforce Change Sets were used to migrate metadata components such as custom objects, fields, flows, validation rules, and dashboards from the development sandbox to the production org. Each component was thoroughly reviewed and tested prior to deployment to minimize errors. After migration, the team activated flows, adjusted profile permissions, and verified role access to ensure the application worked correctly in the live environment.

Comprehensive documentation was prepared to support users, administrators, and future developers. It included explanations of custom objects, field relationships, automation processes, test cases, and assigned user roles. Visual aids like screenshots of page layouts, dashboards, reports, and flow diagrams were added to make the documentation clear and easy to follow. This serves as a reference guide for ongoing use and future enhancements.

To ensure smooth operation after go-live, a maintenance strategy was implemented. Administrators will routinely review dashboards, monitor automation runs, and check for any failed flows or triggers. Debug logs and email alerts will help quickly identify and resolve issues. Regular feedback from users will also be collected to drive continuous improvements and keep the system aligned with organizational needs.

Conclusion

The **FoodConnect** project successfully leveraged the Salesforce platform to develop a smart, automated, and user-friendly solution for managing surplus food distribution. By connecting donors, NGOs, and volunteers in one centralized system, the project made food donation more organized, efficient, and trackable.

The FoodConnect project successfully utilized the Salesforce platform to build a smart, automated, and user-friendly solution for surplus food management. By connecting donors, NGOs, and volunteers in a centralized system, the platform streamlined food donation, making the process more efficient, organized, and easy to track.

Key features like automated volunteer allocation, live status updates, and secure role-based access reduced manual efforts and improved coordination among all stakeholders. Interactive dashboards and reports provided clear insights for monitoring donations, tracking deliveries, and supporting data-driven decisions. This ensured that surplus food consistently reached the right people at the right time while promoting transparency and accountability.

Beyond operational efficiency, FoodConnect also strengthened collaboration between different community stakeholders. Donors could contribute food with confidence, NGOs could plan distribution more effectively, and volunteers could participate in a structured and rewarding way. This collaboration not only streamlined the donation workflow but also fostered a stronger sense of community engagement and social responsibility.

The project also set the stage for future improvements and scalability. Features like AI-based donation prediction, chatbot support for quick reporting, and mobile app integration can be added to make the system even more responsive and accessible. With these enhancements, FoodConnect has the potential to expand to new regions, supporting larger communities and maximizing its social impact.

Overall, FoodConnect demonstrated how a digital CRM solution can address real-world challenges and create meaningful social impact. By leveraging Salesforce capabilities, the project not only minimized food wastage but also optimized resource utilization, supporting community welfare through a streamlined and reliable food distribution process.

Future Enhancements

Although the current version of FoodConnect fulfills the core requirements of surplus food management, several enhancements can further improve usability, scalability, and operational efficiency.

1. Chatbot for Donation Tracking:

A chatbot can be integrated into the system to allow donors and NGOs to check the status of their donations instantly through a conversational interface. This will simplify the user experience by eliminating the need to navigate multiple pages and provide quick, real-time updates.

2. AI-Based Volunteer Route Optimization:

Implementing artificial intelligence can help generate the most efficient routes for volunteers based on their current location, traffic conditions, and delivery priorities. This enhancement would reduce travel time, lower transportation costs, and improve the punctuality of food deliveries.

3. Mobile App Support using Salesforce Mobile SDK:

To enhance accessibility, a dedicated mobile application can be developed using the Salesforce Mobile SDK. Volunteers could use the app to check assigned tasks, update delivery progress, and receive instant notifications, ensuring smoother on-the-go operations.

These planned improvements will make FoodConnect more intelligent, interactive, and convenient for all users, while expanding its impact and reach in the fight against food wastage.

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