A Salesforce CRM Solution for Streamlining Petroleum Station Operations (Developer)

Executive Summary:

Efficiently managing customer interactions and daily operations is a major challenge for any business, including gas stations. This project addresses this challenge by developing a customized application using Salesforce CRM to automate and streamline the gas fueling process. By creating dedicated objects for customers, fuel, suppliers, and stations, the system centralizes vital information, making it easier to manage and ensuring transparency and reliability.

The application also focuses on robust security and clear responsibilities by implementing user roles, profiles, and permissions. Security is enhanced through features like password policies and access levels. Ultimately, this application shows how Salesforce CRM can be adapted for a real-world business, simplifying daily tasks for staff and improving the customer experience at gas filling stations.

Core Objectives:

This Salesforce CRM project for petroleum stations is designed to improve both customer service and station management. Its key objectives are:

- **Improve Operational Efficiency:** Centralize the management of all customer, fuel, supplier, and station data on a single CRM platform.
- **Enhance Customer Management:** Maintain accurate records of customer details, vehicles, and transaction receipts.
- **Implement Role-Based Security:** Securely assign roles to users, such as Manager, Executive, and Salesperson.
- **Automate Key Processes:** Reduce manual work and human error by automating tasks like managing buyer data, fuel entries, and payment processing.
- **Strengthen Data Protection:** Safeguard sensitive information using defined policies and permissions.
- **Ensure Future Growth:** Support future needs with the ability to create new reports and dashboards.

Technological Foundation:

The project is built on the

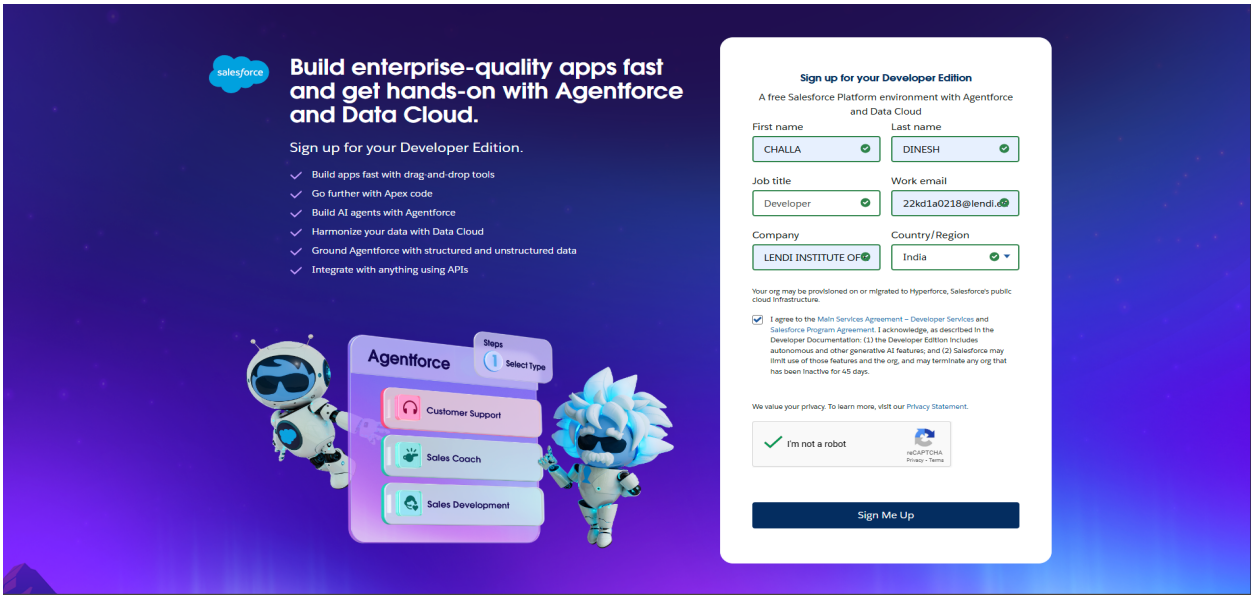
Salesforce platform, a cloud-based CRM solution that provides tools for managing customer relationships, streamlining operations, and securely storing data. Key components utilized in this project include:

- **Custom Objects:** User-defined database tables that store business-specific information. For this project, custom objects were created for
- **Buyers**, **Fuel Details**, **Gas Stations**, and **Suppliers**.
- **Tabs:** User interface elements that provide quick access to custom objects and apps.
- **Lightning App:** A collection of objects, tabs, and utilities bundled together to serve a specific business function, providing a branded and user-friendly interface.
- **Page Layouts:** Tools for organizing fields and sections on a record page to make data entry more structured and user-friendly.
- **Profiles & Permissions:** Profiles define a user's permissions and access, while permission sets grant additional access rights without altering a user's profile.
- **Roles & Hierarchy:** Control record-level access based on a user's position in the organizational structure.
- **Organization-Wide Defaults (OWD):** Sets the baseline level of access users have to records they do not own, which is crucial for data security.
- **Reports & Dashboards:** Provide visual insights and summaries of business data to help track performance and analyze trends.
- **Flows:** Automation tools that reduce manual effort by updating and managing data based on user actions or record changes.
- **Apex Triggers:** Custom code that automates complex business logic by executing before or after specific record events.

Project Implementation:

The implementation of the Gas Station CRM application followed a structured process:

1. **Salesforce Developer Environment Setup:** A free Developer Org was created to serve as the development environment.



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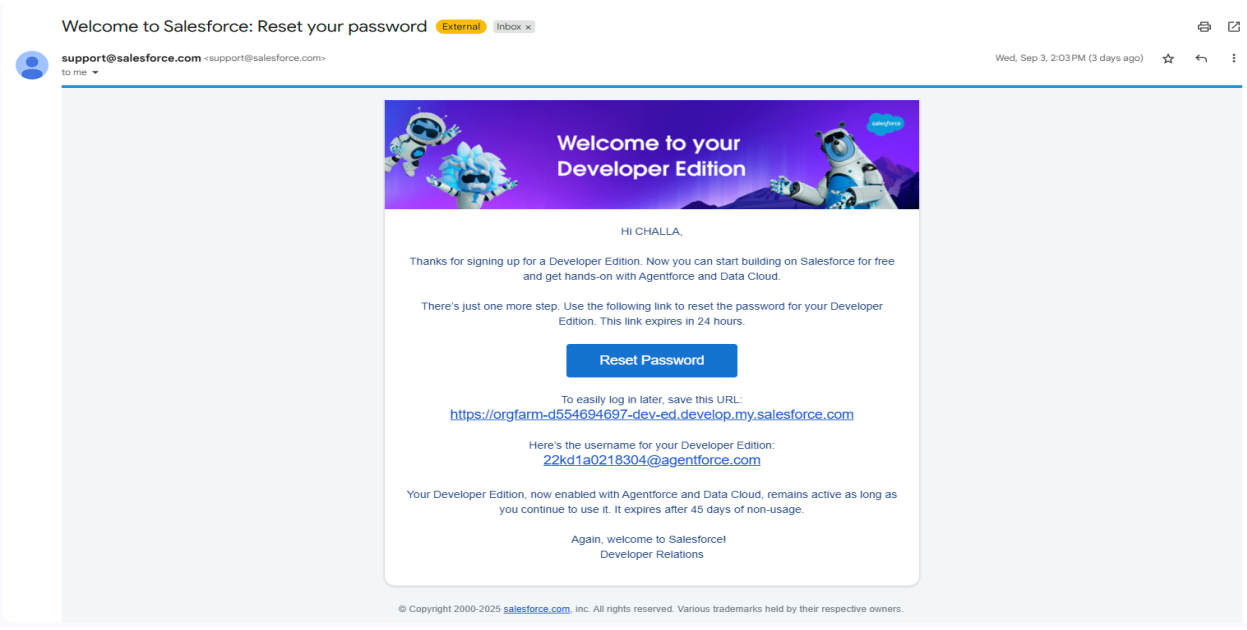
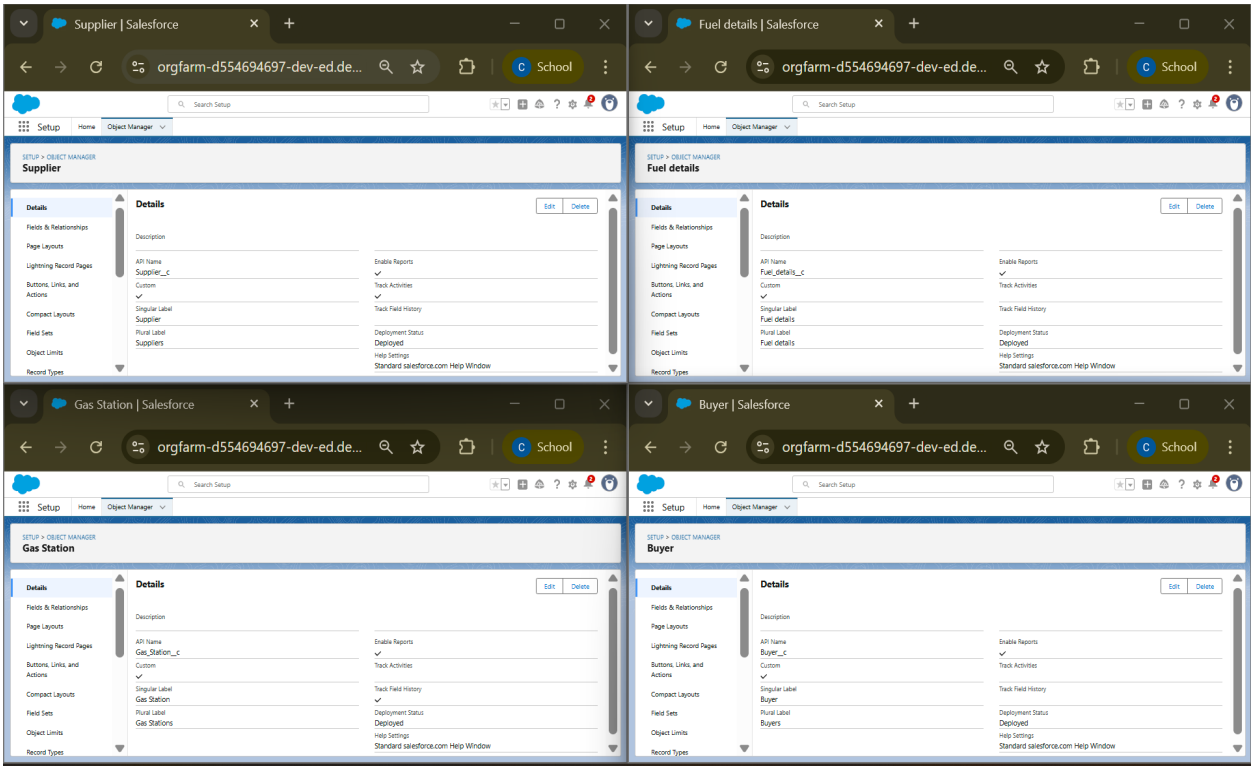
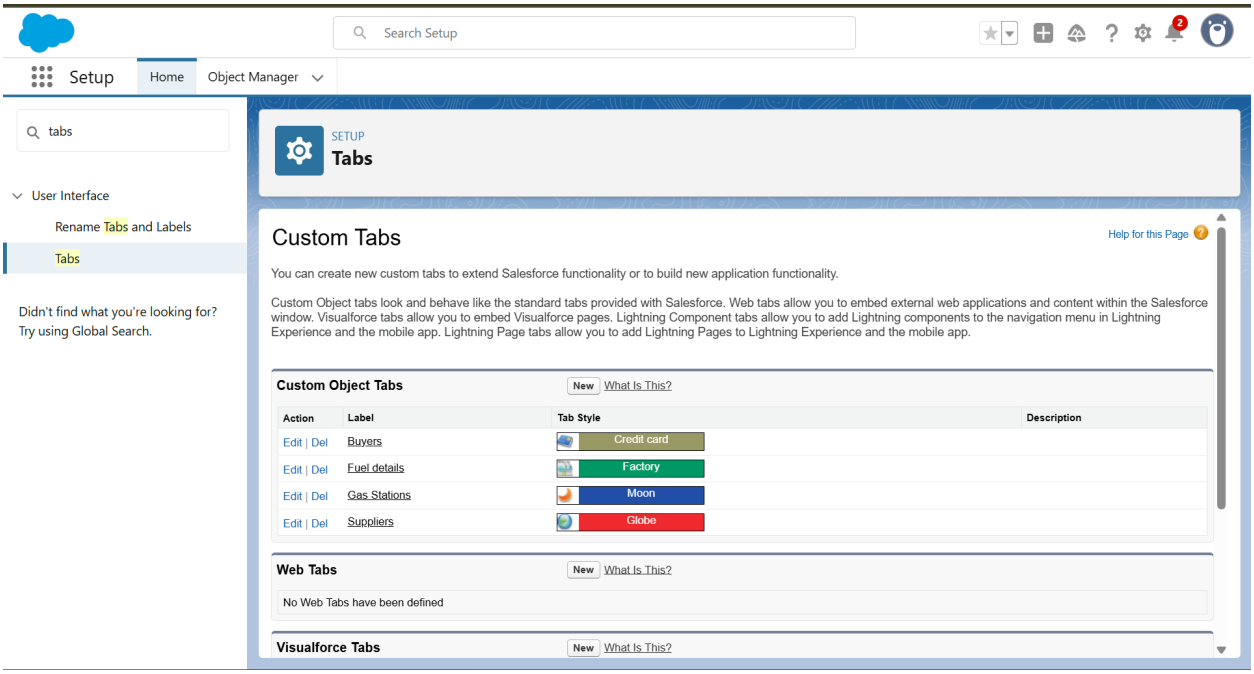


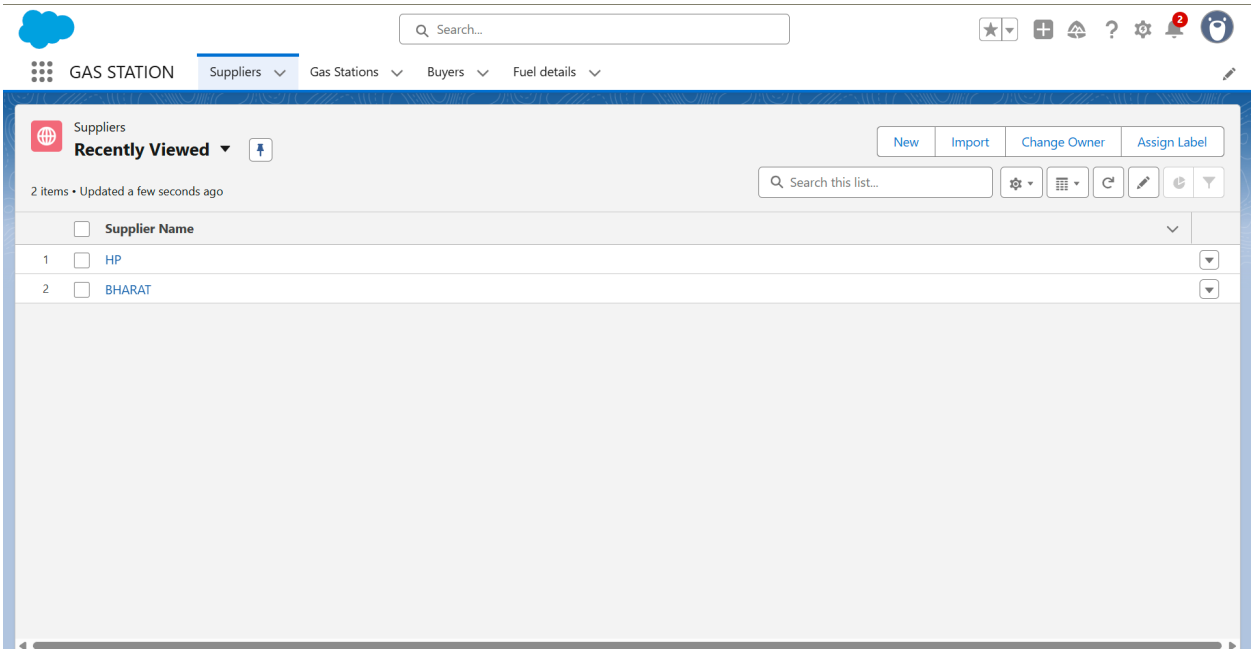
2. **Custom Object Development:** Four custom objects—Buyer, Fuel Details, Gas Station, and Supplier—were created to store and manage key business data.



3. **Custom Tabs Creation:** Tabs were created for each custom object to allow easy navigation within the Lightning App.

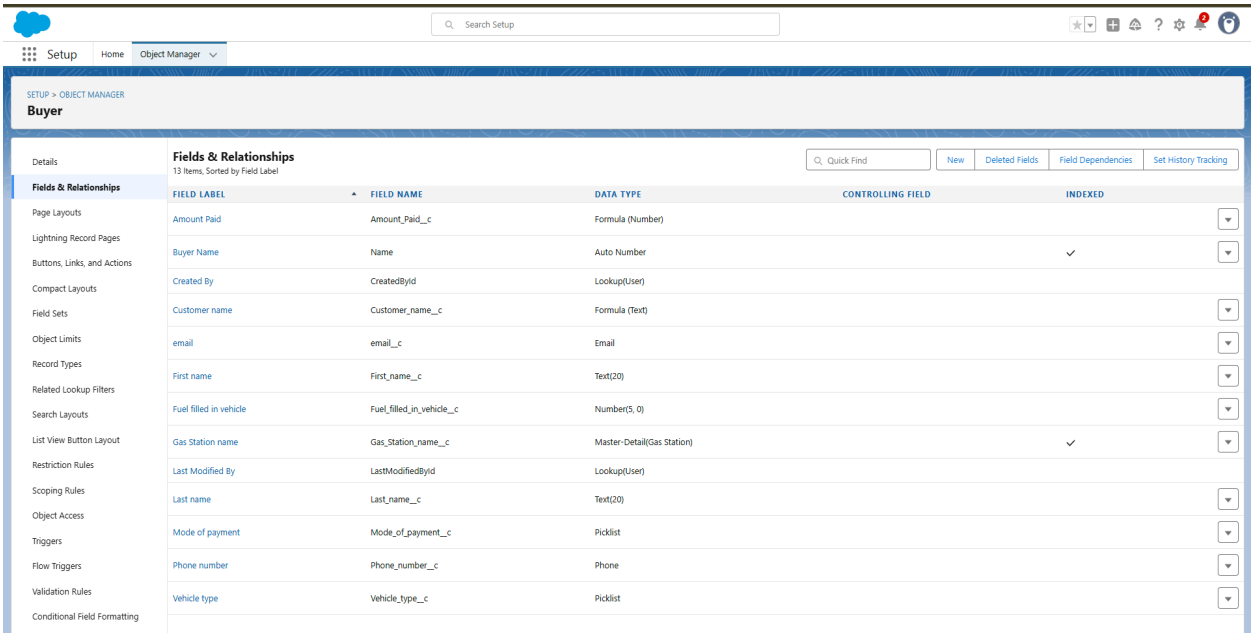


4. **Application Configuration:** A Lightning App named "GAS STATION" was created and configured with the custom objects and fields to manage the CRM operations.

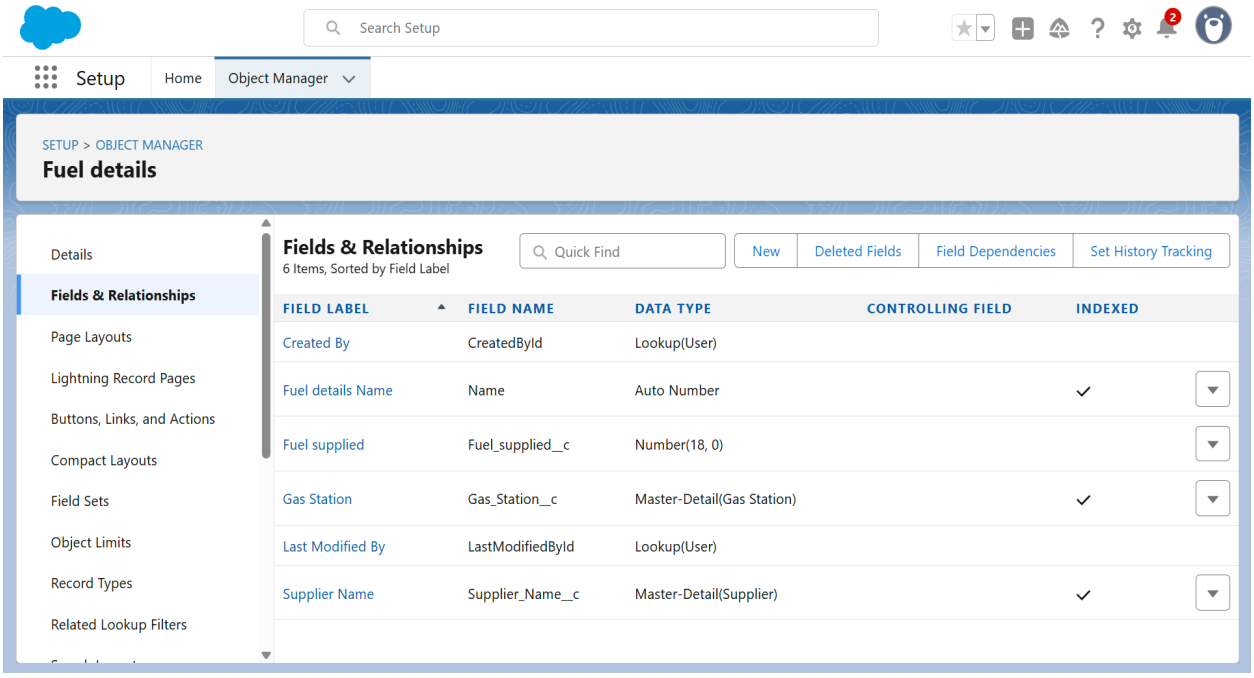


5. **Fields & Relationships Creation:**

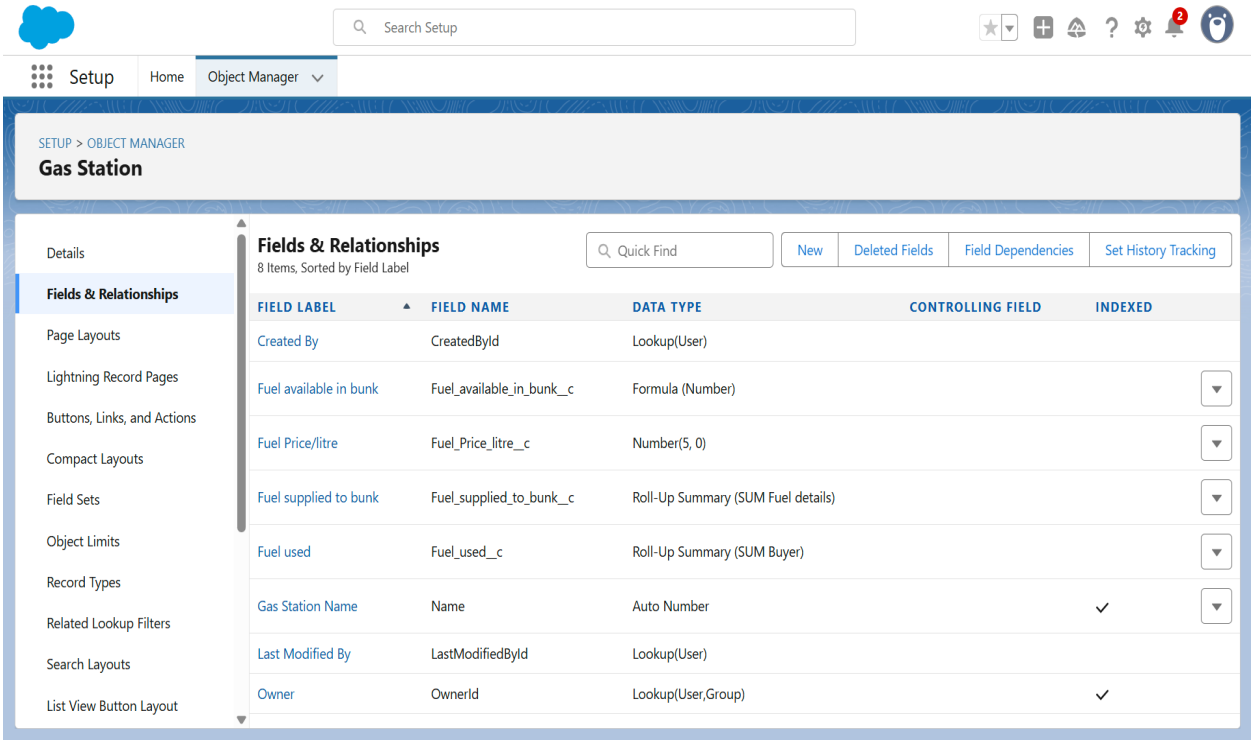
• **Buyer__c:** First Name, Last Name, Customer Name (Formula), Phone Number, Email, Vehicle Type (Picklist), Fuel Filled in Vehicle, Mode of Payment (Picklist), Amount Paid (Formula)



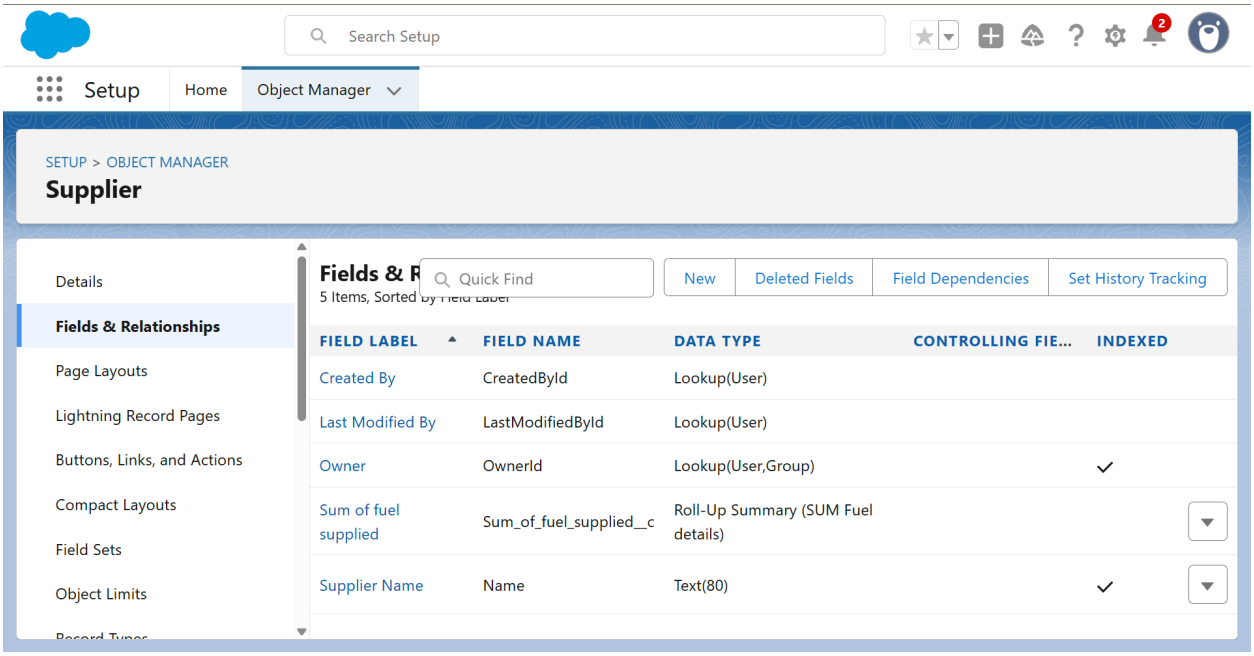
• **Fuel_details__c:** Fuel Supplied (Number), Supplier Name (Master-Detail), Gas Station (Master-Detail)



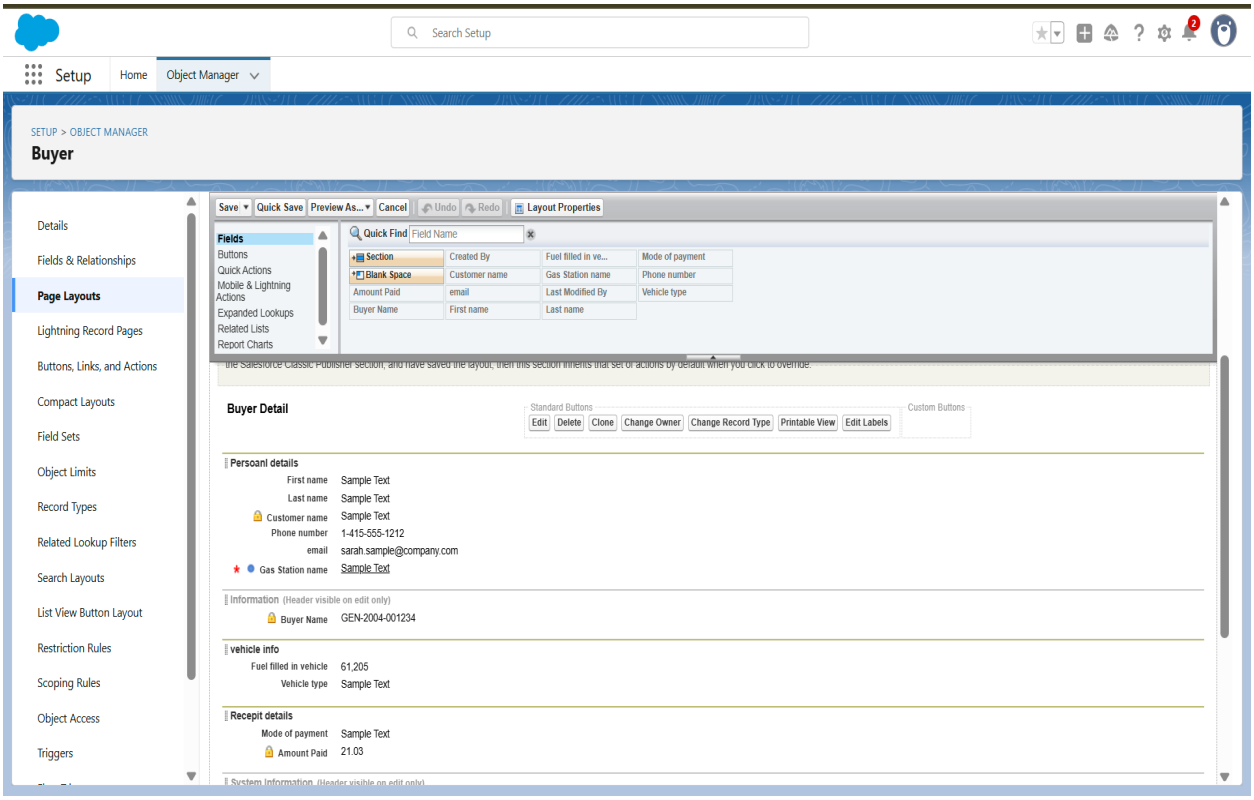
• **Gas_Station__c:** Fuel Price per Liter (Number), Fuel Supplied to Bunk (Roll-up Summary), Fuel Used (Roll-up Summary), Fuel Available in Bunk (Formula)



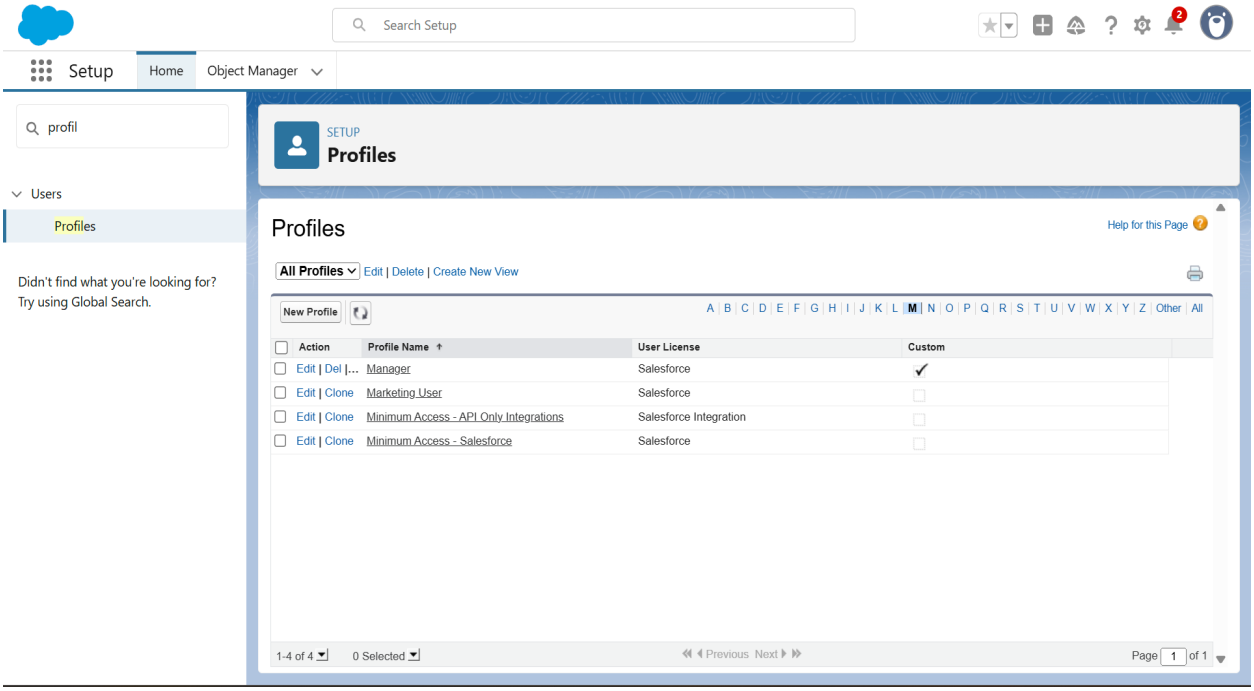
• **Supplier__c:** Sum of Fuel Supplied (Roll-up Summary)

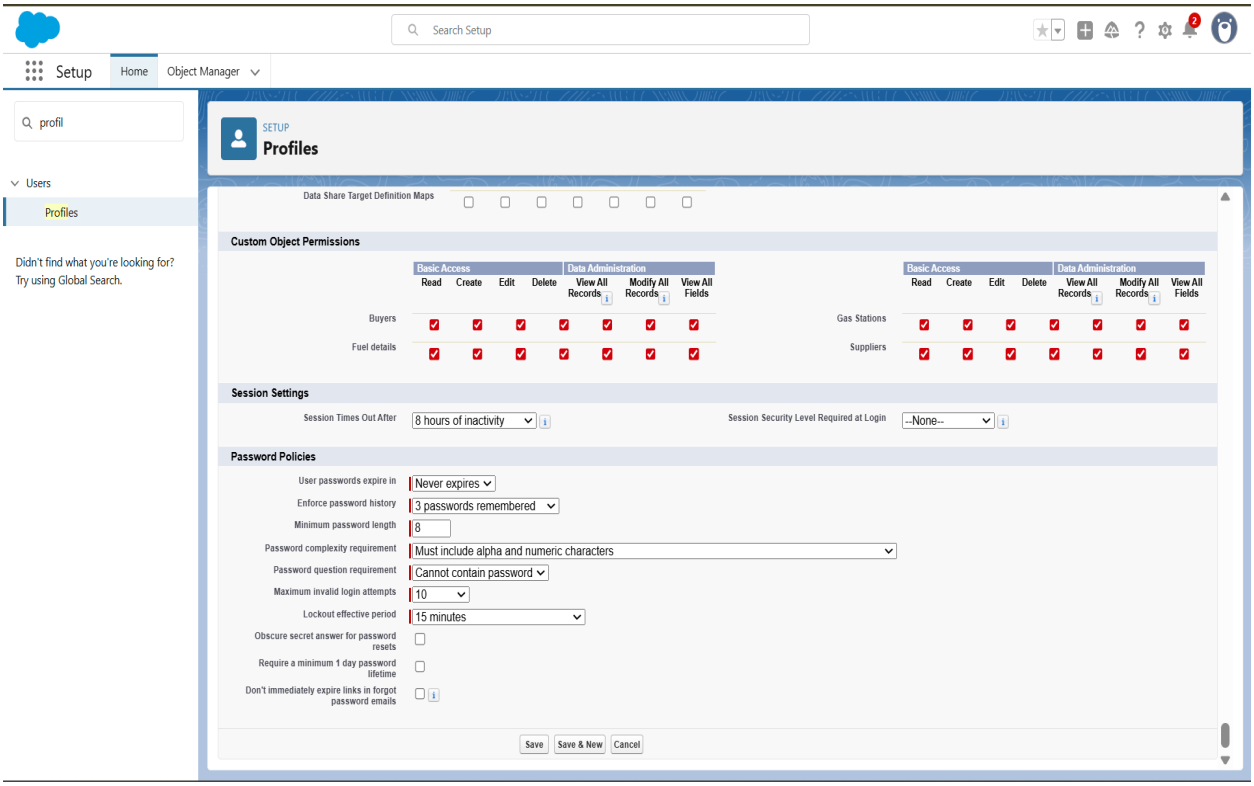


6. **Page Layout Design:** Page layouts were created for each object with organized sections and fields to improve usability.

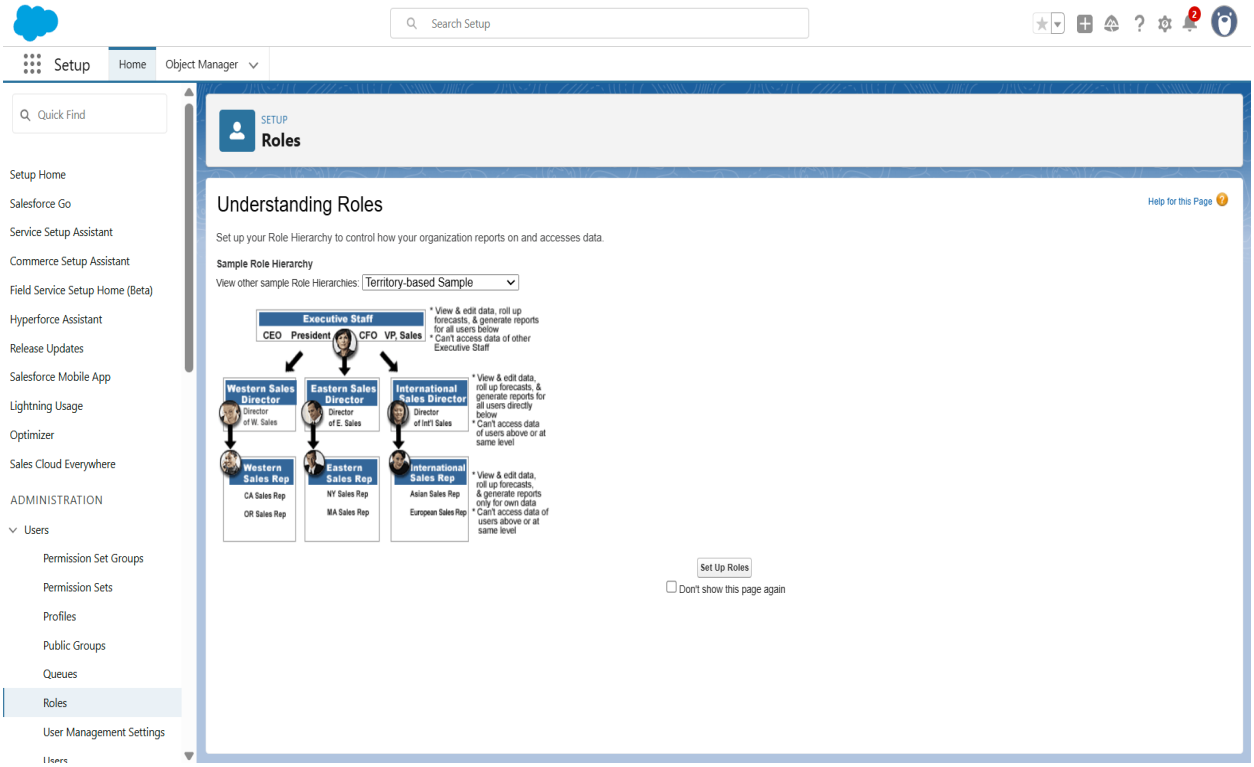


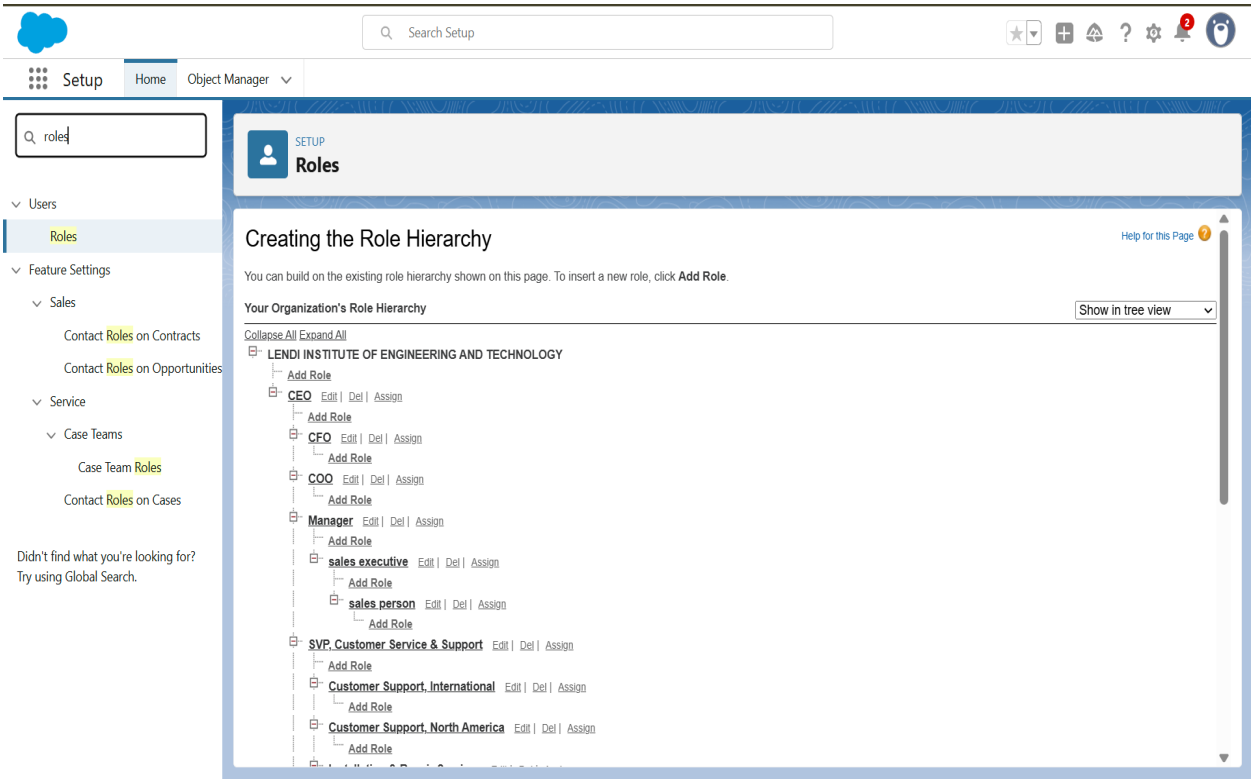
7. **Profile Creation:** Profiles were cloned from existing ones to create new profiles for Manager, Sales Executive, and Sales Person, ensuring proper access control and data security.



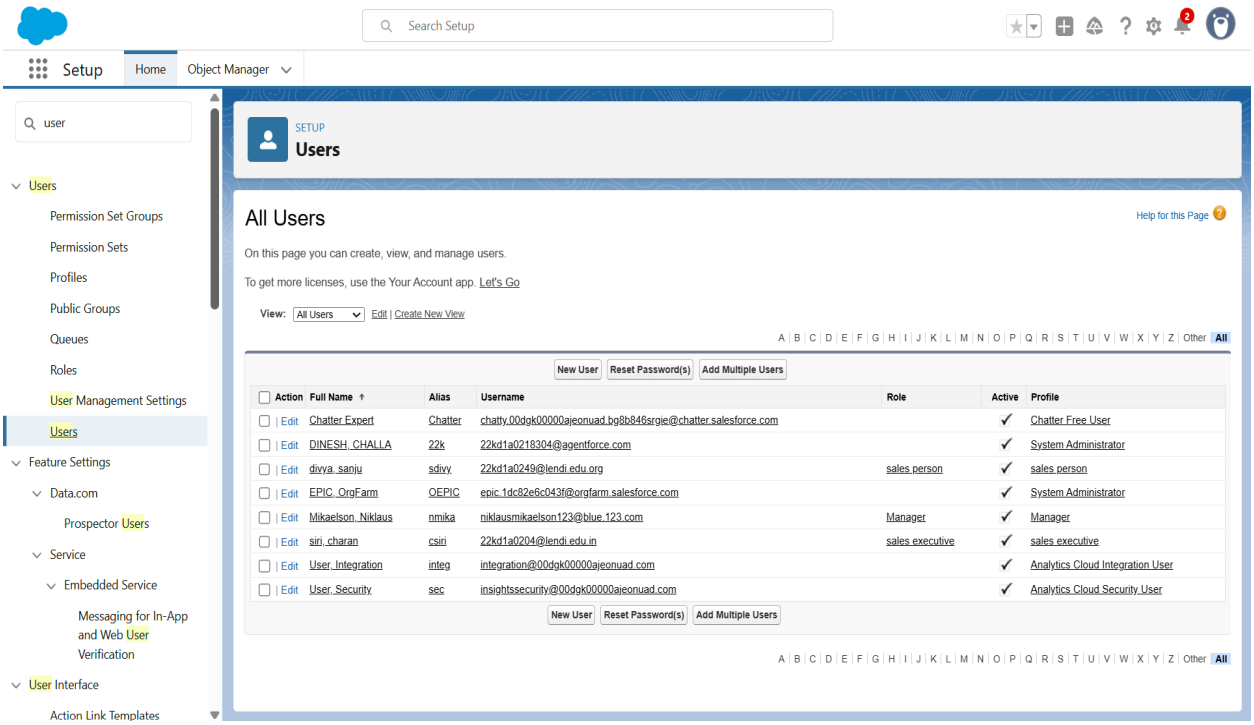


8. **Role & Hierarchy Definition:** Roles for Manager, Sales Executive, and Sales Person were created to establish a clear reporting hierarchy.

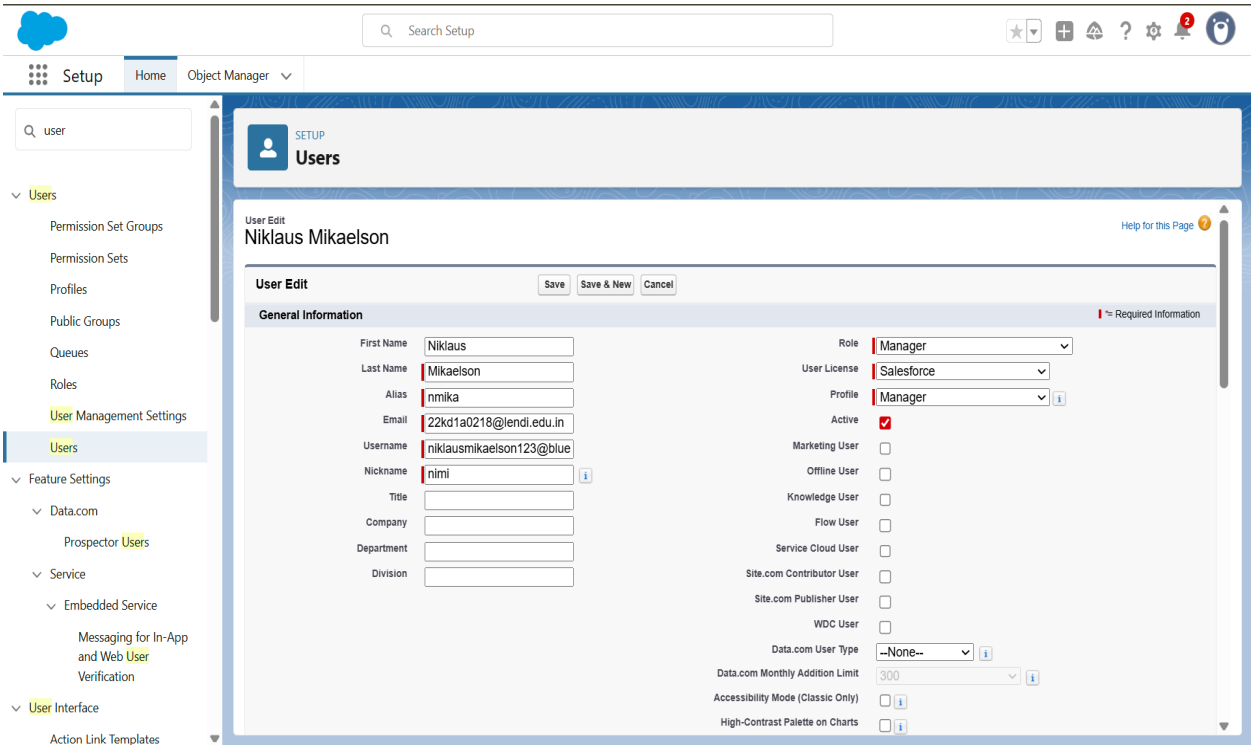




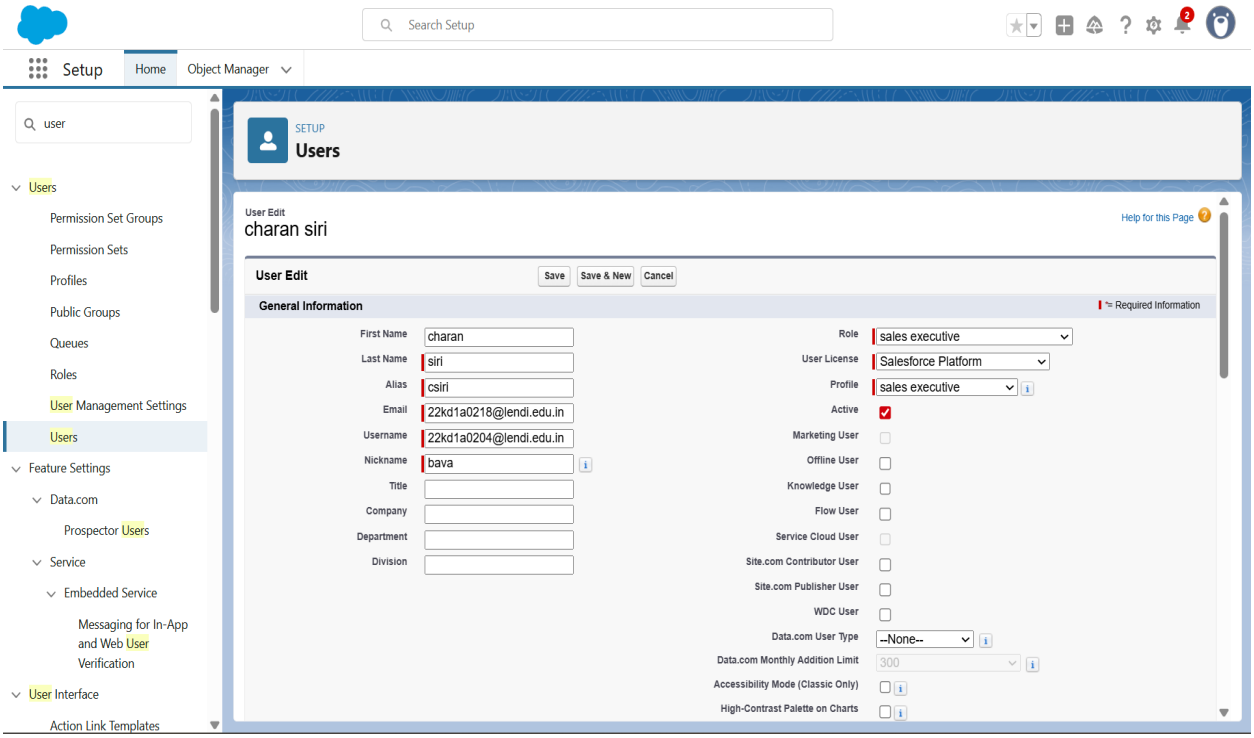
9. **User Provisioning:** Individual user accounts were created for each role, with permissions and roles assigned based on their responsibilities.



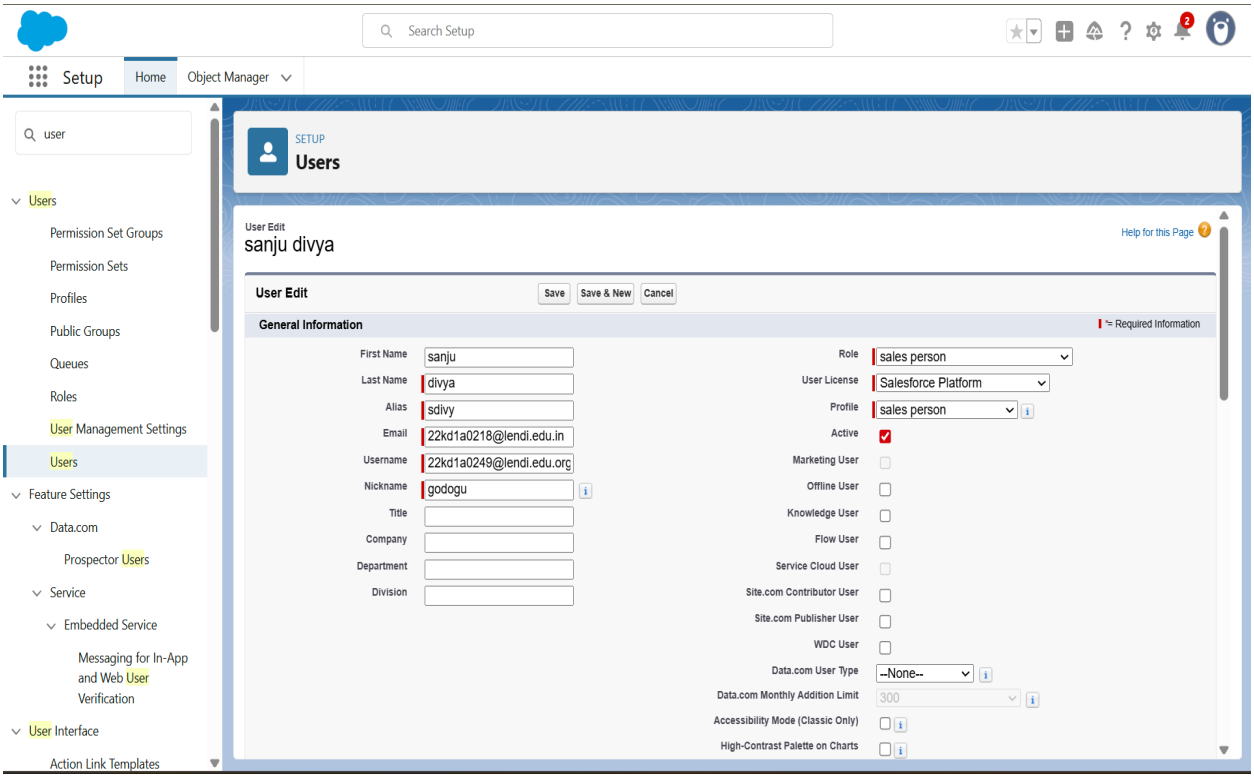
• Mikaelson, Niklaus – Manager



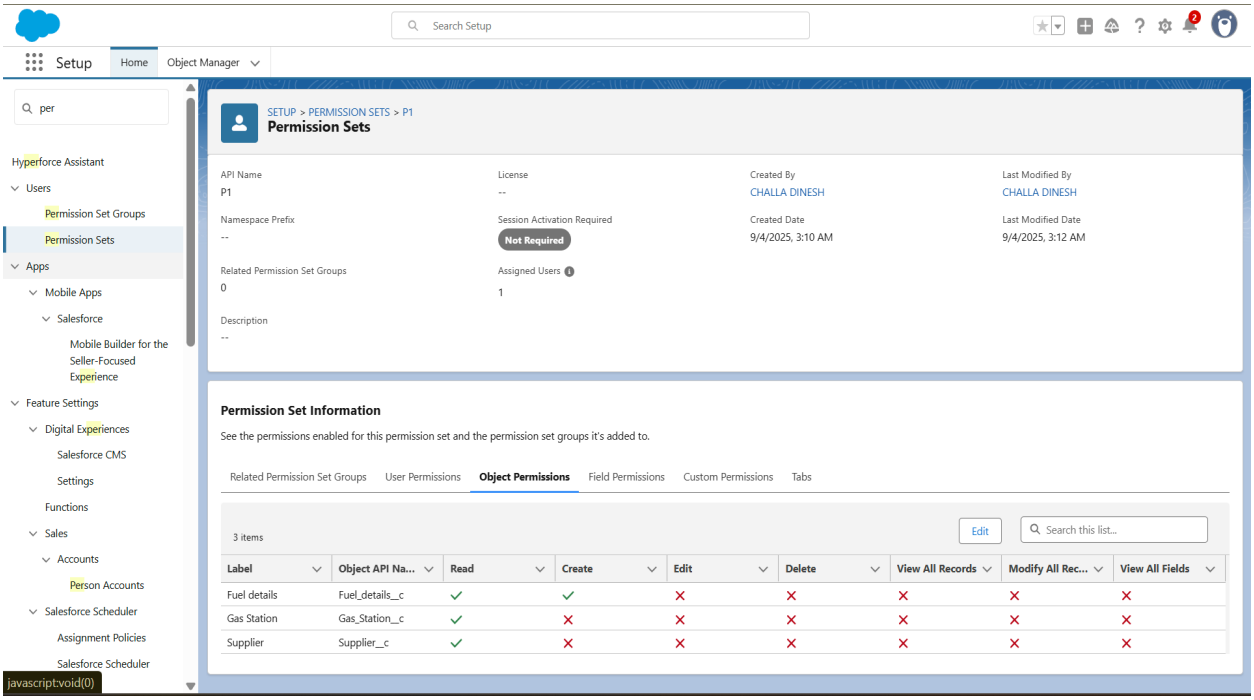
• Exec Sales – Sales Executive



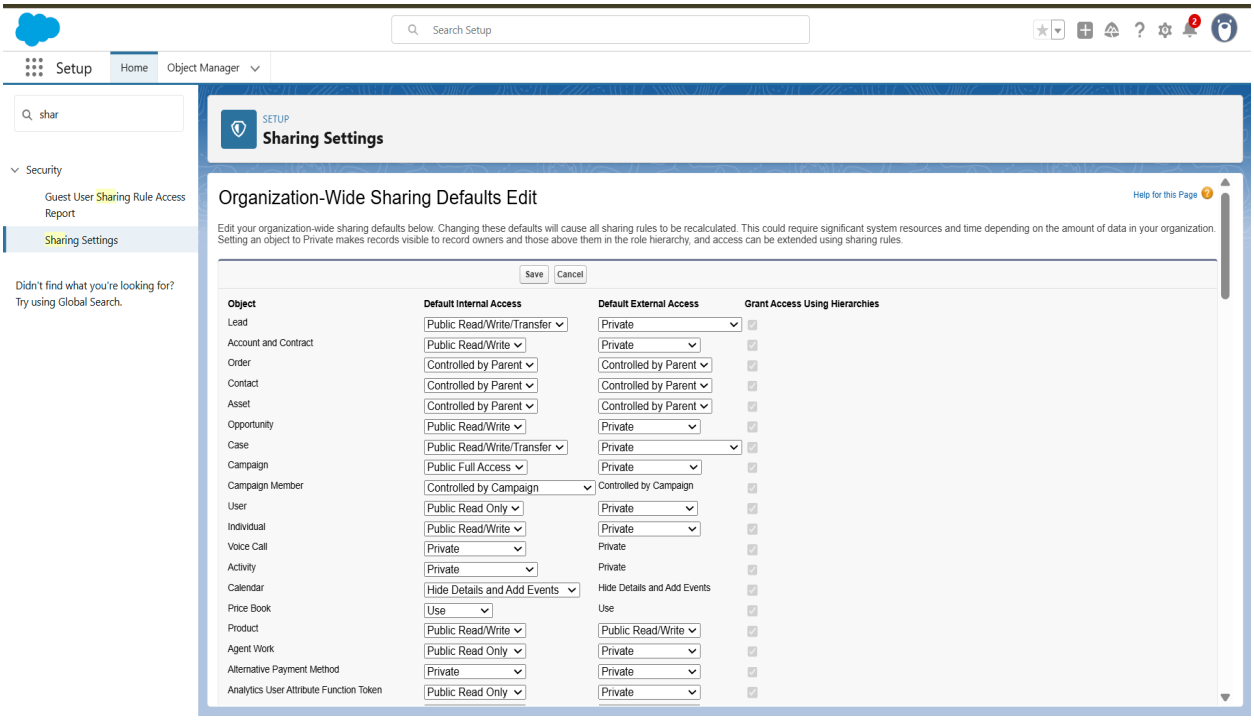
• Person, Sales – Sales Person

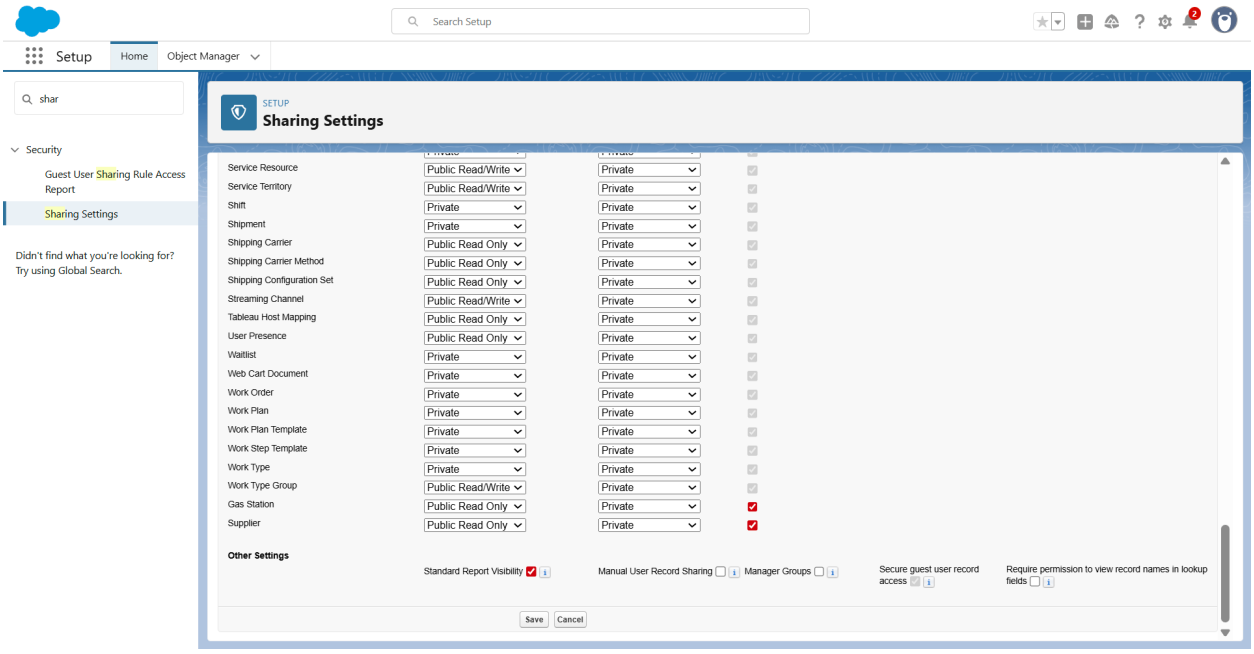


10. **Permission Set Assignment:** A permission set was created and assigned to the Sales Executive to grant additional access rights without modifying their profile.



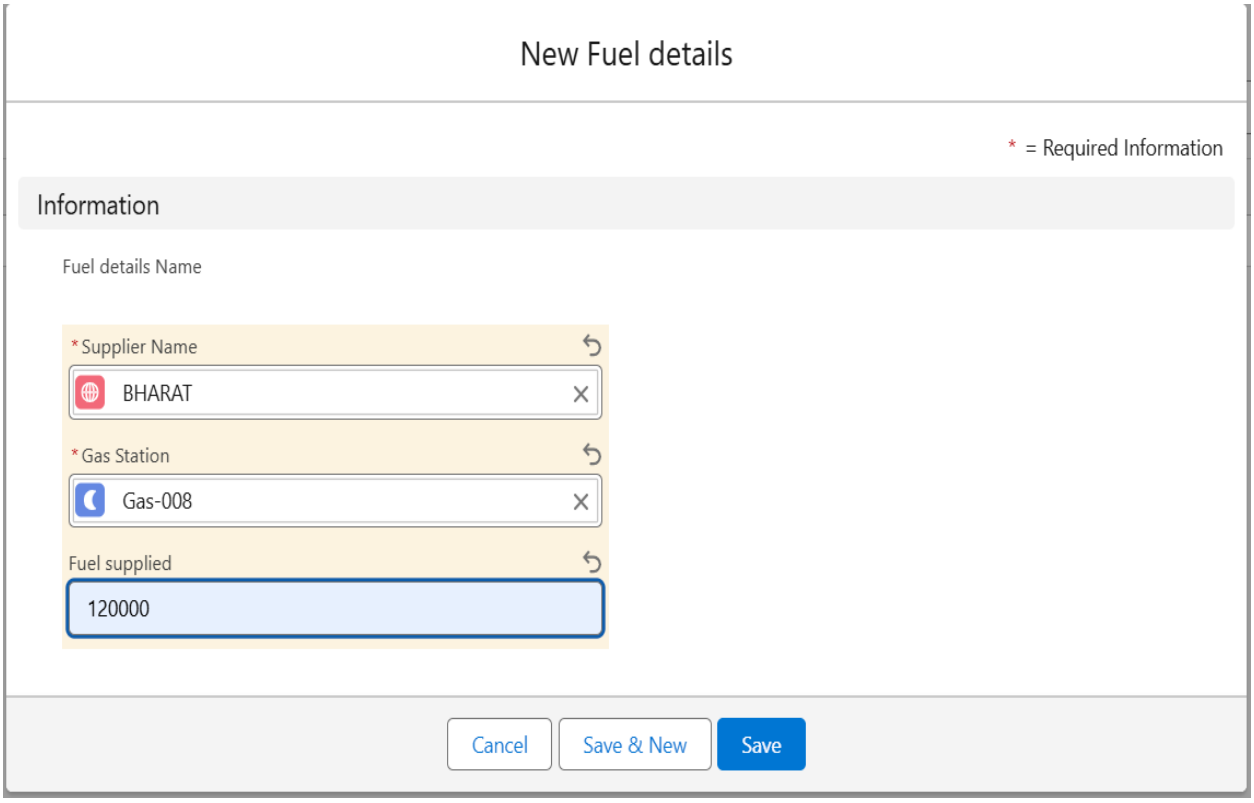
11. **Organizational-Wide Defaults (OWD) Configuration:** OWD settings for the Gas Station and Supplier objects were set to 'Public Read-Only' to define the baseline level of data access.



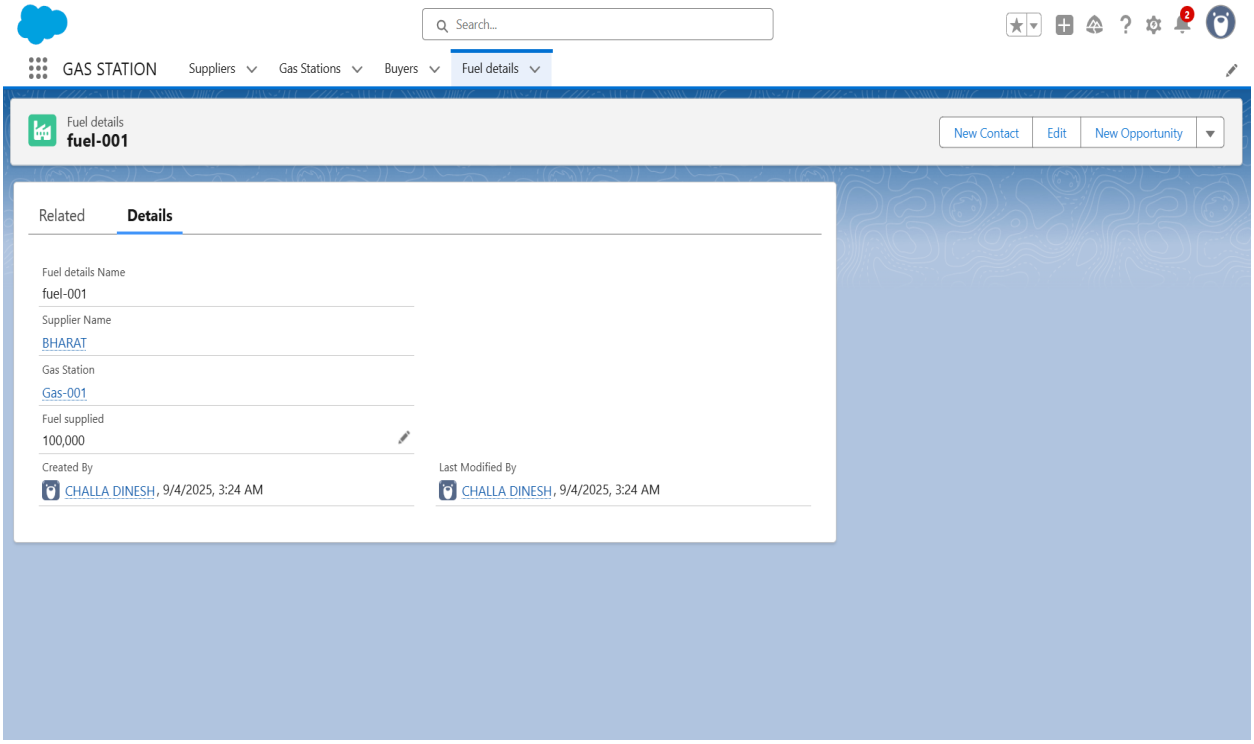


12. **Record Management:** The intuitive layouts, roles, and profiles ensured smooth user adoption, allowing users to easily create, view, and delete records.

Create:



View:


Search...
GAS STATION
Suppliers
Gas Stations
Buyers
Fuel details
Fuel details
fuel-001
New Contact
Edit
New Opportunity
Related
Details
Fuel details Name
fuel-001
Supplier Name
BHARAT
Gas Station
Gas-001
Fuel supplied
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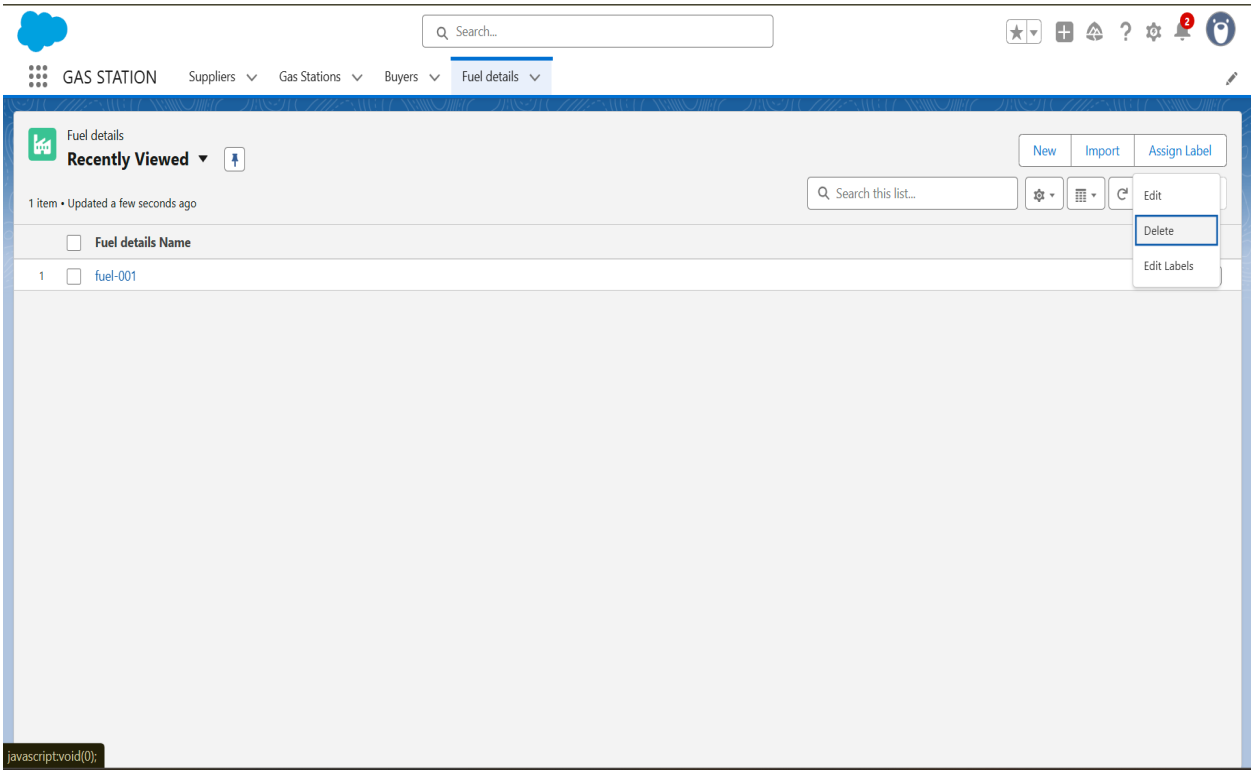
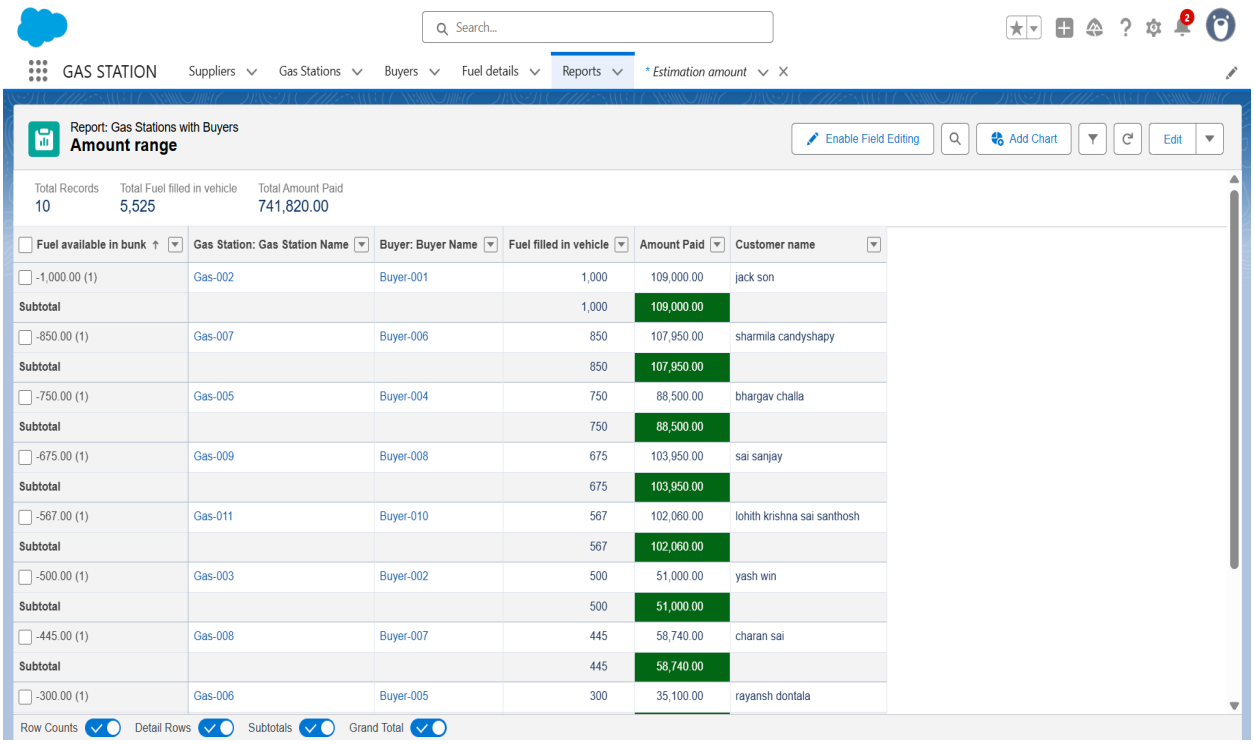
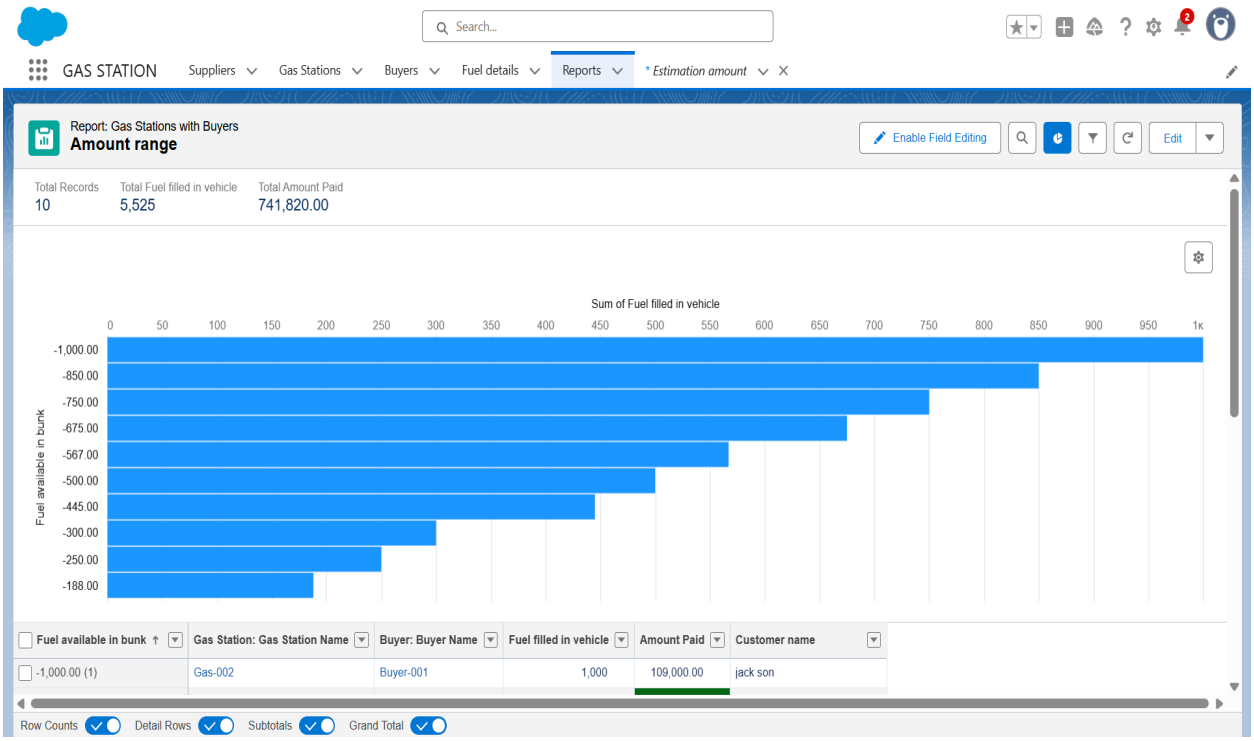
Created By
CHALLA DINESH, 9/4/2025, 3:24 AM
Last Modified By
CHALLA DINESH, 9/4/2025, 3:24 AM

Delete:

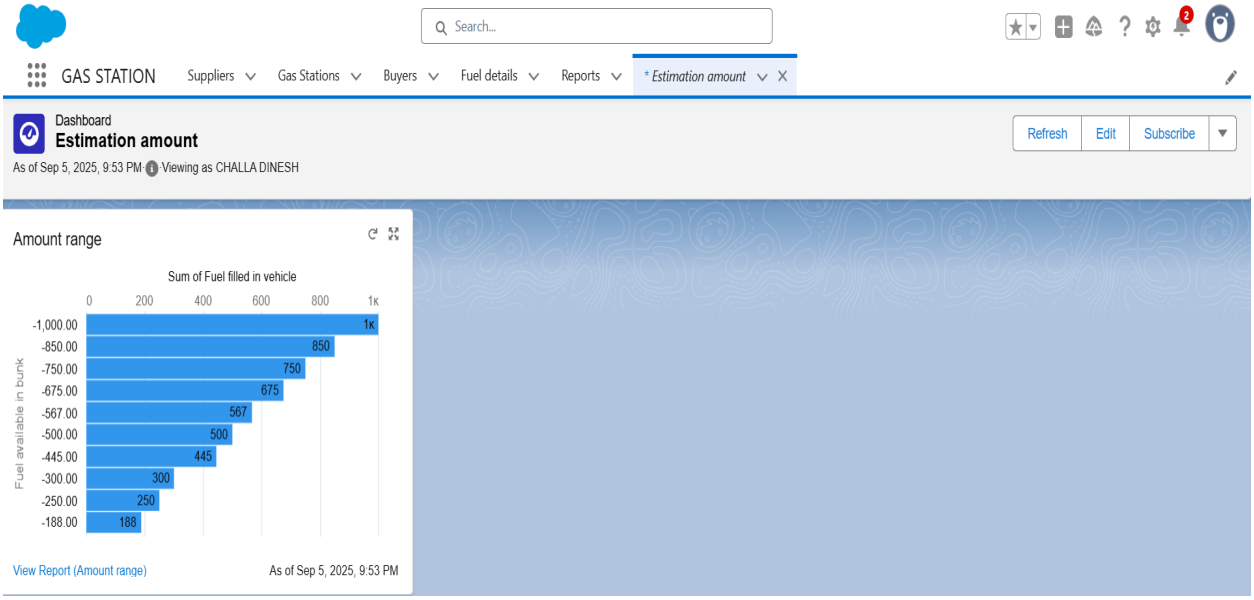

Search...
GAS STATION
Suppliers
Gas Stations
Buyers
Fuel details
Fuel details
Recently Viewed
1 item • Updated a few seconds ago
New
Import
Assign Label
Search this list...
Edit
Delete
Edit Labels
Fuel details Name
1
fuel-001
javascript:void(0);

13. **Report Generation:** Custom reports were created to track fuel usage, customer activity, and sales to aid in decision-making.

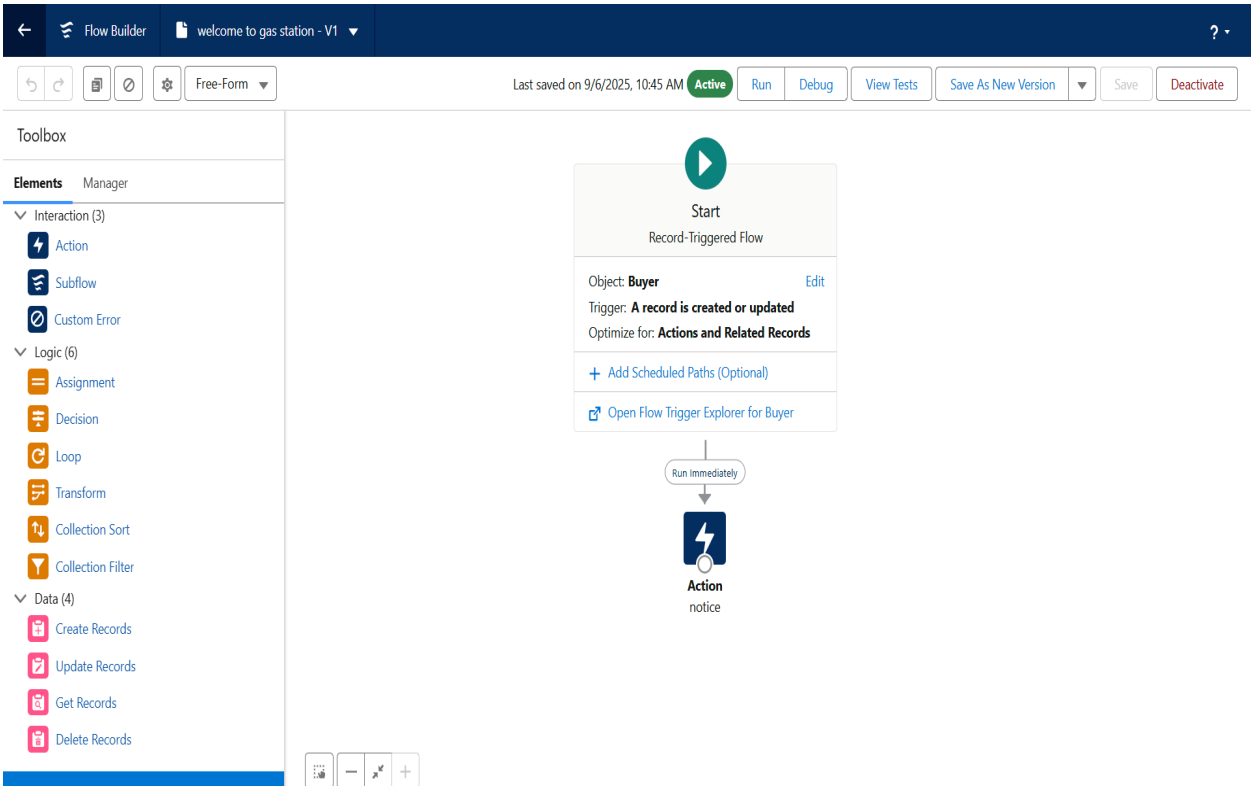




14. **Dashboard Creation:** Dashboards were created to visually display key metrics and provide insights into fuel estimates, sales, and customer activity.

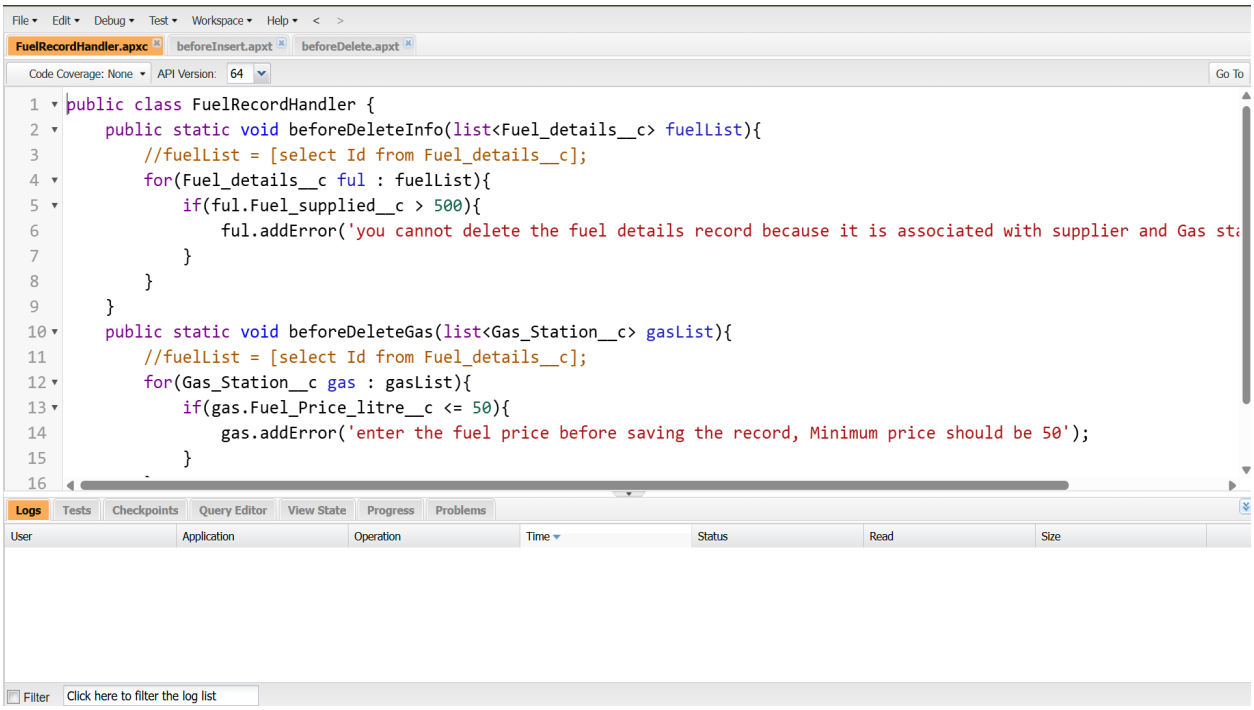


15. **Flow Automation:** A record-triggered flow was implemented on the Buyer object to automatically send an email receipt to the customer after a transaction, reducing manual effort.



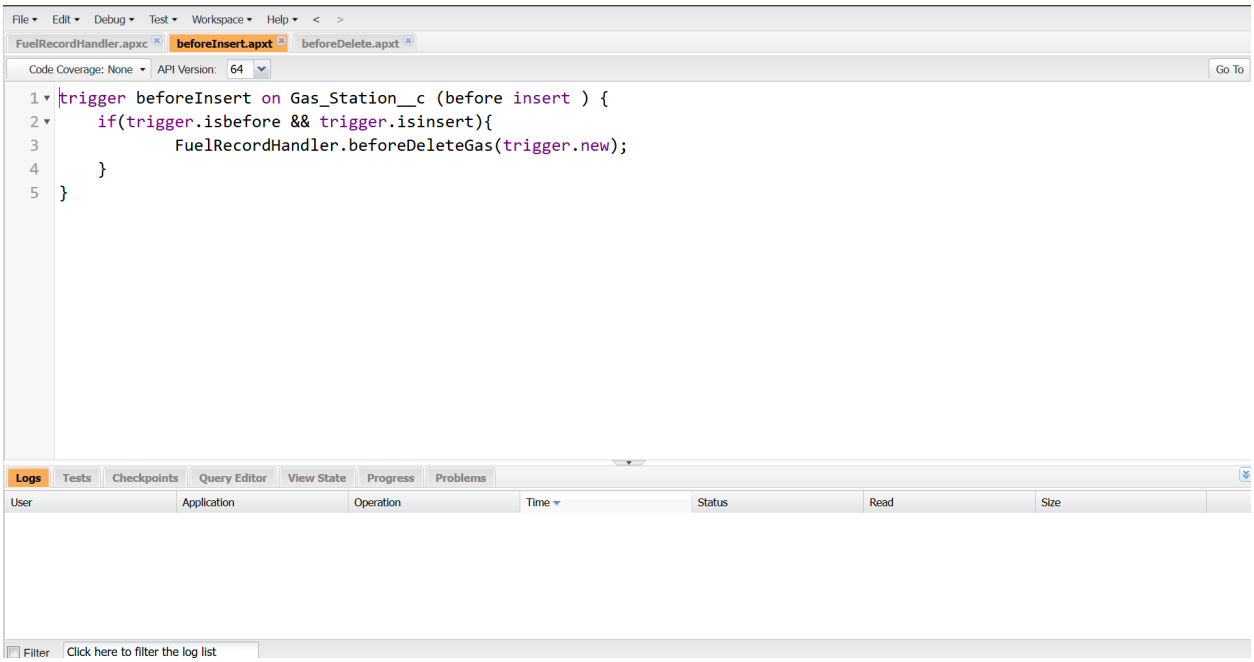
16. **Apex Trigger Development:** Apex triggers were coded to prevent the deletion of fuel detail records and to validate fuel prices upon record creation, ensuring data accuracy.

Apex class of Fuel Record Handler:



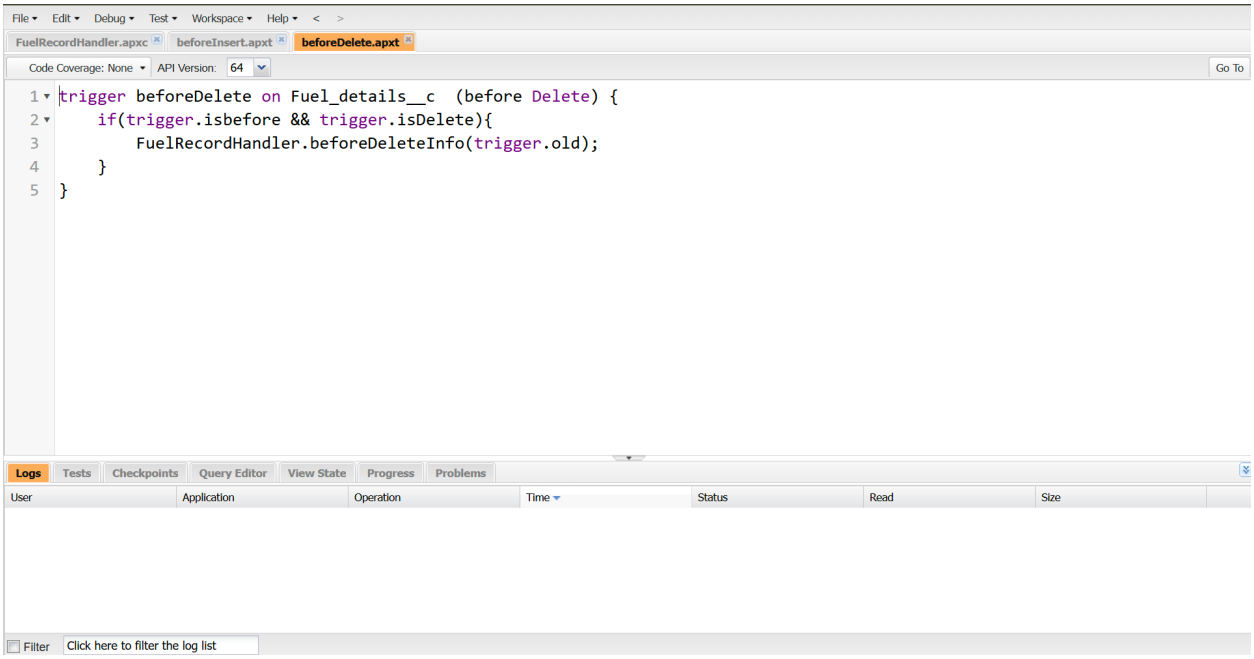
```
public class FuelRecordHandler {
    public static void beforeDeleteInfo(list<Fuel_details__c> fuelList){
        //fuelList = [select Id from Fuel_details__c];
        for(Fuel_details__c ful : fuelList){
            if(ful.Fuel_supplied__c > 500){
                ful.addError('you cannot delete the fuel details record because it is associated with supplier and Gas sta
            }
        }
    }
    public static void beforeDeleteGas(list<Gas_Station__c> gasList){
        //fuelList = [select Id from Fuel_details__c];
        for(Gas_Station__c gas : gasList){
            if(gas.Fuel_Price_litre__c <= 50){
                gas.addError('enter the fuel price before saving the record, Minimum price should be 50');
            }
```

Apex Trigger of Gas Station:



```
trigger beforeInsert on Gas_Station__c (before insert ) {
    if(trigger.isbefore && trigger.isinsert){
            FuelRecordHandler.beforeDeleteGas(trigger.new);
    }
}
```

Apex Trigger of Fuel Details:



Potential System Enhancements

To further improve the application, several Salesforce Einstein features could be integrated:

- **Einstein Chatbots:** Implement AI-powered chatbots to answer customer questions and automatically generate transaction receipts.
- **Einstein Next Best Action:** Provide personalized offers and discounts to customers based on their past fuel purchase history.
- **Einstein Activity Capture:** Automatically log customer communications like emails to improve tracking and engagement.
- **Einstein Analytics Dashboard:** Utilize advanced analytics to visualize and analyze sales trends, supplier performance, and customer demand.
- **Einstein Prediction Builder:** Predict customer return behavior to help with targeted marketing strategies.

Conclusion

The Salesforce CRM project for gas stations successfully addresses core operational and customer management challenges. By leveraging Salesforce's capabilities to create custom objects, profiles, and page layouts, the application ensures organized data and secure access for all users, including managers, sales executives, and salespersons.

The implementation of automated flows for customer receipts and Apex triggers for data validation has significantly improved efficiency and data accuracy. Furthermore, the use of reports and dashboards provides valuable insights for performance monitoring and strategic decision-making. This project effectively demonstrates how Salesforce can be a powerful tool for improving efficiency, reducing manual work, and enhancing the customer experience in the petroleum industry.