

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

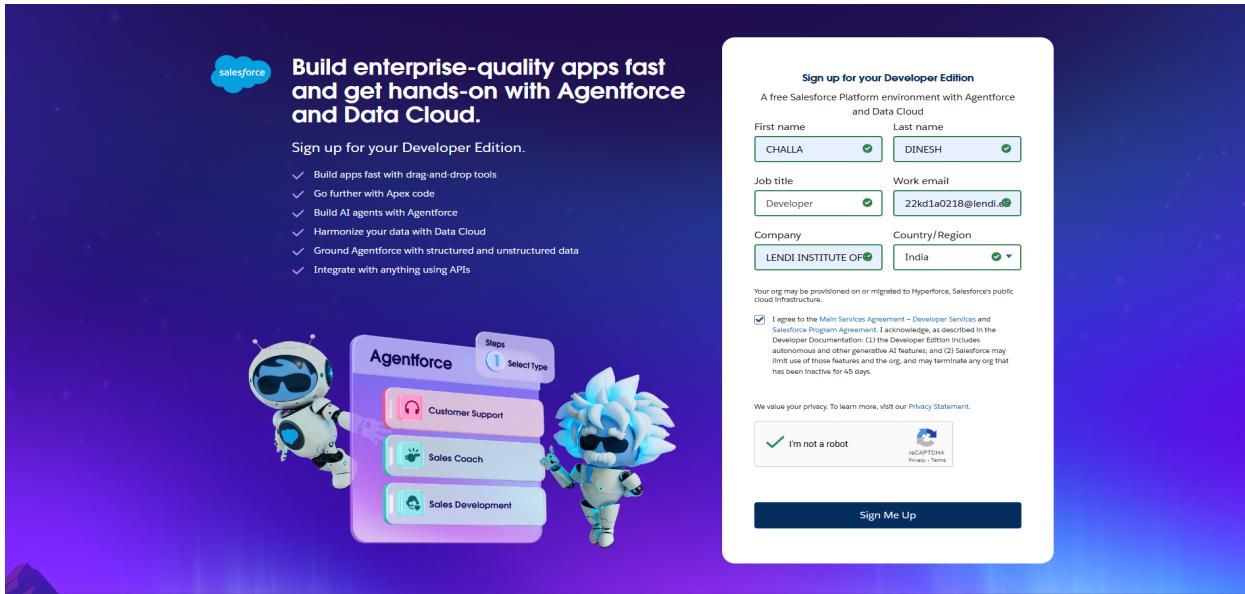
Salesforce platform, a cloud-based CRM solution that provides tools for managing customer relationships, streamlining operations, and securely storing data. Key components utilized in this project include:

- **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.



We have received a mail to our registered email ID.

A screenshot of an email from support@salesforce.com. The subject is "Welcome to Salesforce: Reset your password". The email body starts with "Welcome to your Developer Edition" and "HI CHALLA," followed by a message about signing up for a Developer Edition. It includes a "Reset Password" button and a URL: https://orgfarm-d554694697-dev-ed.develop.my.salesforce.com. Below this, it provides the developer edition username: 22kd1a0218304@agentforce.com. The email ends with a note about the account being active for 45 days and a "Again, welcome to Salesforce! Developer Relations" message. The footer contains the copyright notice: "© Copyright 2000-2025 salesforce.com, inc. All rights reserved. Various trademarks held by their respective owners."

2. Custom Object Development:

Four custom objects—Buyer, Fuel Details, Gas Station, and Supplier—were created to store and manage key business data.

The image displays four separate browser windows, each showing the 'Details' tab of a custom object in the Salesforce Setup interface. The objects shown are:

- Supplier**: API Name: Supplier__c. Fields include Description, Enable Reports (✓), Track Activities (✓), Task Field History, Deployment Status (Deployed), and Help Settings (Standard salesforce.com Help Window).
- Fuel details**: API Name: Fuel_details__c. Fields include Description, Enable Reports (✓), Track Activities, Task Field History, Deployment Status (Deployed), and Help Settings (Standard salesforce.com Help Window).
- Gas Station**: API Name: Gas_Station__c. Fields include Description, Enable Reports (✓), Track Activities, Task Field History, Deployment Status (Deployed), and Help Settings (Standard salesforce.com Help Window).
- Buyer**: API Name: Buyer__c. Fields include Description, Enable Reports (✓), Track Activities, Task Field History, Deployment Status (Deployed), and Help Settings (Standard salesforce.com Help Window).

3. Custom Tabs Creation:

Tabs were created for each custom object to allow easy navigation within the Lightning App.

The image shows the 'Tabs' page in the Salesforce Setup interface. The left sidebar shows a search bar and a 'User Interface' section with 'Rename Tabs and Labels' and 'Tabs' selected. The main content area is titled 'Custom Tabs' and contains the following information:

You can create new custom tabs to extend Salesforce functionality or to build new application functionality. Custom Object tabs look and behave like the standard tabs provided with Salesforce. Web tabs allow you to embed external web applications and content within the Salesforce window. Visualforce tabs allow you to embed Visualforce pages. Lightning Component tabs allow you to add Lightning components to the navigation menu in Lightning Experience and the mobile app. Lightning Page tabs allow you to add Lightning Pages to Lightning Experience and the mobile app.

Custom Object Tabs

Action	Label	Tab Style	Description
Edit Del	Buyers	Credit card	
Edit Del	Fuel details	Factory	
Edit Del	Gas Stations	Moon	
Edit Del	Suppliers	Globe	

Web Tabs

New | What Is This?

No Web Tabs have been defined.

Visualforce Tabs

New | What Is This?

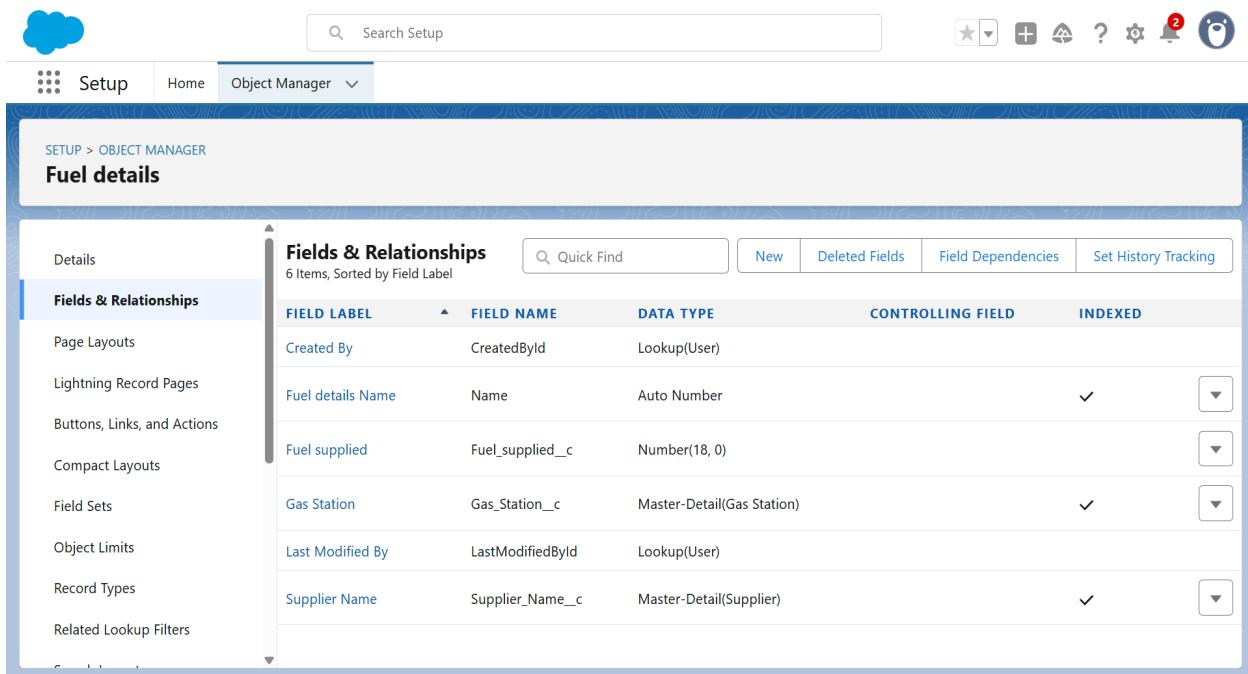
4. Application Configuration: A Lightning App named "GAS STATION" was created and configured with the custom objects and fields to manage the CRM operations.

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)

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount Paid	Amount_Paid__c	Formula (Number)		
Buyer Name	Name	Auto Number		
Created By	CreatedBy	Lookup(User)		
Customer name	Customer_name__c	Formula (Text)		
email	email__c	Email		
First name	First_name__c	Text(20)		
Fuel filled in vehicle	Fuel_filled_in_vehicle__c	Number(5, 0)		
Gas Station name	Gas_Station_name__c	Master-Detail(Gas Station)		
Last Modified By	LastModifiedBy	Lookup(User)		
Last name	Last_name__c	Text(20)		
Mode of payment	Mode_of_payment__c	Picklist		
Phone number	Phone_number__c	Phone		
Vehicle type	Vehicle_type__c	Picklist		

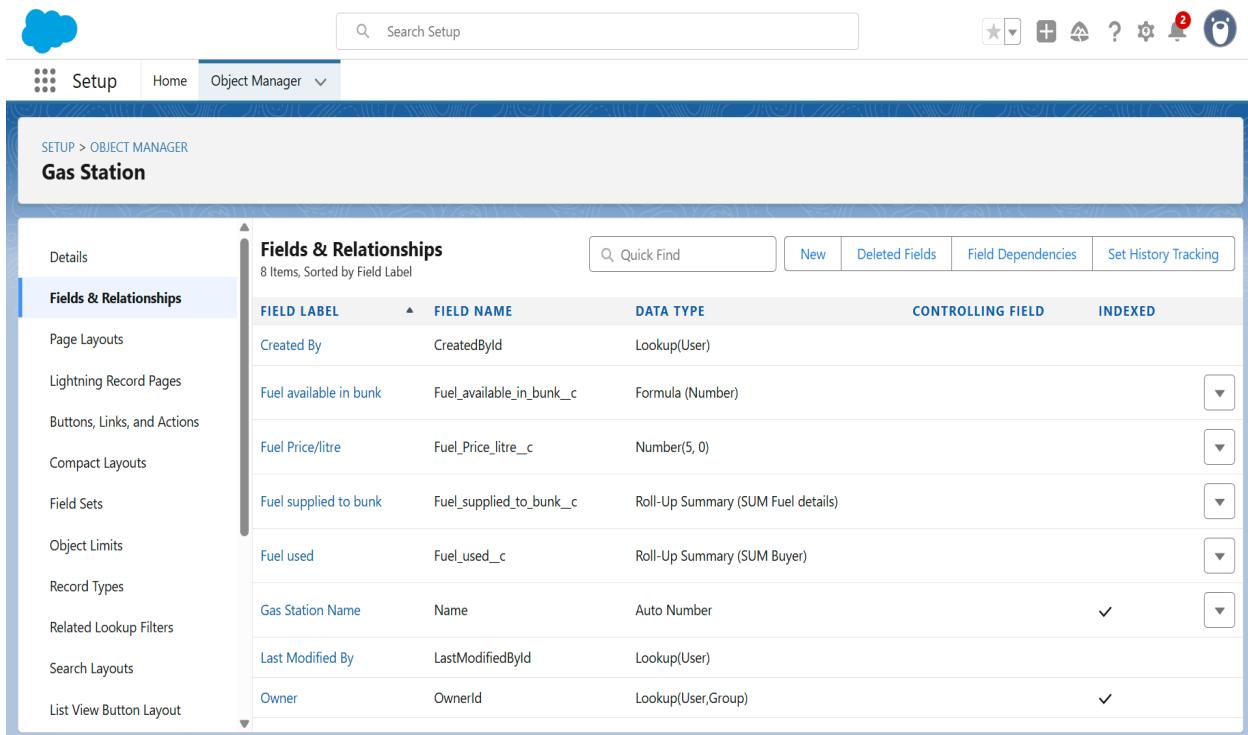
- **Fuel_details__c:** Fuel Supplied (Number), Supplier Name (Master-Detail), Gas Station (Master-Detail)



The screenshot shows the Salesforce Setup interface with the following details:

- Object Manager:** Fuel details
- Fields & Relationships:** 6 Items, Sorted by Field Label
- Table Headers:** FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, INDEXED
- Table Data:**
 - Created By: CreatedByld, Lookup(User)
 - Fuel details Name: Name, Auto Number
 - Fuel supplied: Fuel_supplied__c, Number(18, 0)
 - Gas Station: Gas_Station__c, Master-Detail(Gas Station)
 - Last Modified By: LastModifiedByld, Lookup(User)
 - Supplier Name: Supplier_Name__c, Master-Detail(Supplier)

- **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)



The screenshot shows the Salesforce Setup interface with the following details:

- Object Manager:** Gas Station
- Fields & Relationships:** 8 Items, Sorted by Field Label
- Table Headers:** FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, INDEXED
- Table Data:**
 - Created By: CreatedByld, Lookup(User)
 - Fuel available in bunk: Fuel_available_in_bunk__c, Formula (Number)
 - Fuel Price/litre: Fuel_Price_litre__c, Number(5, 0)
 - Fuel supplied to bunk: Fuel_supplied_to_bunk__c, Roll-Up Summary (SUM Fuel details)
 - Fuel used: Fuel_used__c, Roll-Up Summary (SUM Buyer)
 - Gas Station Name: Name, Auto Number
 - Last Modified By: LastModifiedByld, Lookup(User)
 - Owner: OwnerId, Lookup(User,Group)

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

SETUP > OBJECT MANAGER
Supplier

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FILE...	INDEXED
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)	✓	
Sum of fuel supplied	Sum_of_fuel_supplied__c	Roll-Up Summary (SUM Fuel details)		
Supplier Name	Name	Text(80)	✓	

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

SETUP > OBJECT MANAGER
Buyer

Buyer Detail

Fields	Field Name
Section	Created By
Blank Space	Fuel filled in ve...
Amount Paid	Customer name
	Gas Station name
	Phone number
Buyer Name	email
	Last Modified By
	Vehicle type
	First name
	Last name

Personal details

First name: Sample Text
Last name: Sample Text
Customer name: Sample Text
Phone number: 1-415-555-1212
email: sarah.sample@company.com
Gas Station name: Sample Text

Information (Header visible on edit only)
Buyer Name: GEN-2004-001234

Vehicle info

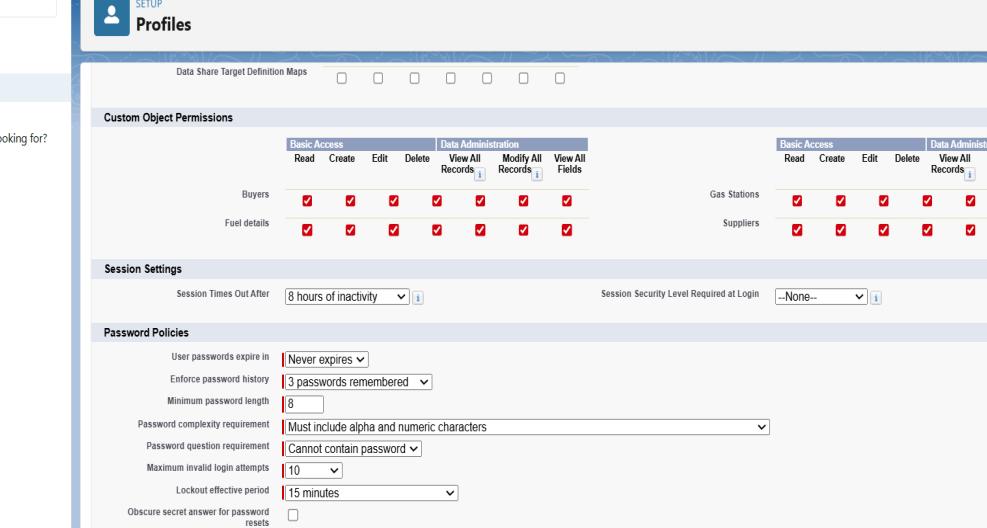
Fuel filled in vehicle: 61,205
Vehicle type: Sample Text

Receipt details

Mode of payment: Sample Text
Amount Paid: 21.03

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.

The screenshot shows the Salesforce Setup interface. The top navigation bar includes the Salesforce logo, a search bar labeled "Search Setup", and various global icons. The main menu bar has "Setup" selected, followed by "Home" and "Object Manager". A sidebar on the left is titled "profil" and contains sections for "Users" and "Profiles". The main content area is titled "Profiles" and shows a list of profiles. The list includes columns for "Action", "Profile Name", "User License", and "Custom". The profiles listed are: Manager (Salesforce, checked), Marketing User (Salesforce, unchecked), Minimum Access - API Only Integrations (Salesforce Integration, unchecked), and Minimum Access - Salesforce (Salesforce, unchecked). At the bottom, there are pagination controls and a page number indicator.



The screenshot shows the Salesforce Setup Home page with the following details:

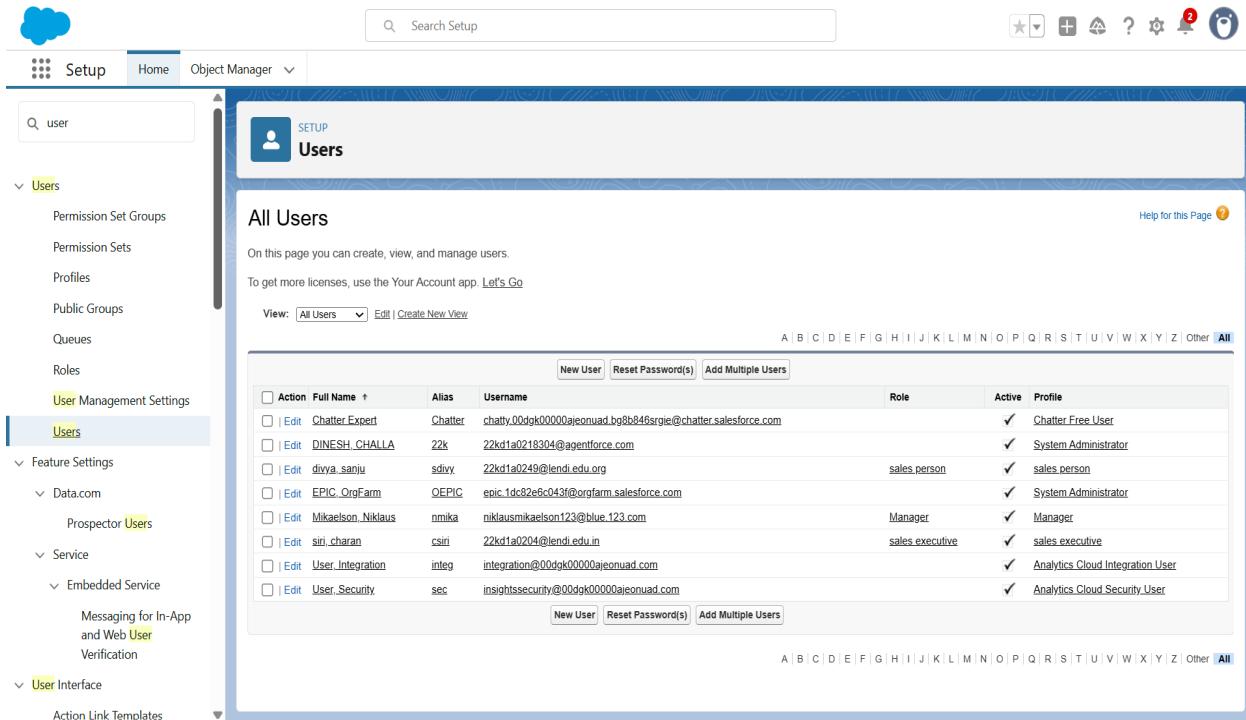
- Header:** Includes the Salesforce logo, a search bar labeled "Search Setup", and various system navigation icons.
- Left Navigation Bar:** Shows "Setup" as the active tab, followed by "Home" and "Object Manager". Below these are search and user profile links, and sections for "Users" and "Profiles". A message says "Didn't find what you're looking for? Try using Global Search."
- Current Page:** The "Profiles" page under the "SETUP" section.
- Content Area:**
 - Custom Object Permissions:** A grid showing permissions for Buyers, Fuel details, Gas stations, and Suppliers across Basic Access and Data Administration categories.
 - Session Settings:** Set "Session Times Out After" to "8 hours of inactivity" and "Session Security Level Required at Login" to "-None-".
 - Password Policies:** Configuration for password expiration, history, length, complexity, and other security requirements.
 - Buttons at the bottom:** "Save", "Save & New", and "Cancel".

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

The screenshot shows the Salesforce Setup interface under the 'Roles' section. On the left, there's a sidebar with links like Setup Home, Service Setup Assistant, and a expanded 'Users' section containing Roles. The main content area is titled 'Understanding Roles' and shows a 'Sample Role Hierarchy'. The hierarchy starts with 'Executive Staff' at the top, which includes 'CEO - President', 'CFO', and 'VP, Sales'. Arrows point down to 'Western Sales Director', 'Eastern Sales Director', and 'International Sales Director', each with their own sub-roles like 'Sales Rep' or 'Sales Rep' for different regions. To the right of the hierarchy, there's a list of permissions: 'View & edit data, roll up forecasts, & generate reports for all users directly below', 'Can't access data of other Executive Staff', 'View & edit data, roll up forecasts, & generate reports for all users directly above or at same level', and 'View & edit data, roll up forecasts, & generate reports only for own data and can't access data of users above or at same level'. At the bottom right of the main area are 'Set Up Roles' and 'Don't show this page again' buttons.

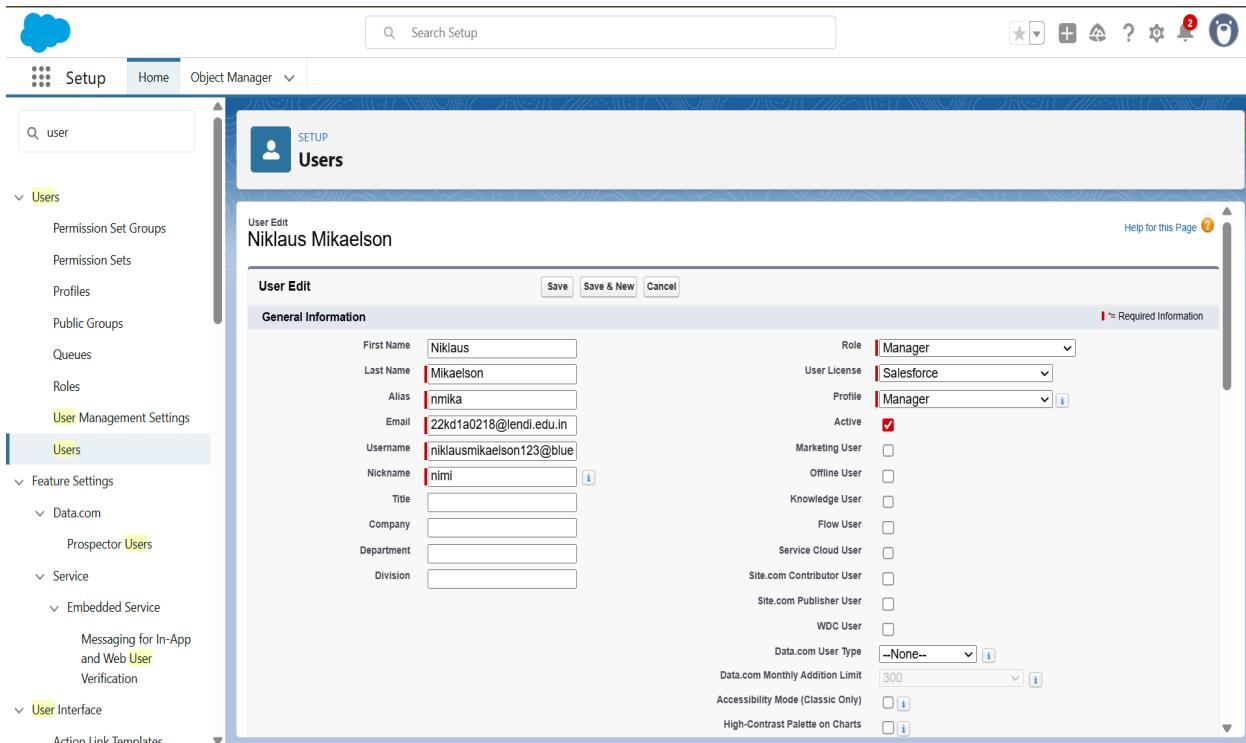
The screenshot shows the 'Creating the Role Hierarchy' section of the Salesforce Setup. The left sidebar has sections for Users (with Roles selected), Feature Settings, Sales (with Contact Roles on Contracts and Opportunities), Service, Case Teams (with Case Team Roles), and Cases (with Contact Roles). A note at the bottom says 'Didn't find what you're looking for? Try using Global Search.' The main content area shows a tree view of the 'Your Organization's Role Hierarchy'. The root node is 'LENDI INSTITUTE OF ENGINEERING AND TECHNOLOGY', which has children 'CEO', 'CFO', 'COO', 'Manager', and 'sales_executive'. 'sales_executive' has a child 'sales_person'. 'Manager' has a child 'SVP, Customer Service & Support', which in turn has children 'Customer Support, International' and 'Customer Support, North America'. There are also 'Add Role' buttons next to each node. A 'Show in tree view' button is located at the top right of the hierarchy tree.

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



The screenshot shows the Salesforce Setup interface under the 'Users' tab. On the left, a sidebar lists various user management settings like Permission Set Groups, Profiles, and Roles. The main area displays a table titled 'All Users' with columns for Action, Full Name, Alias, Username, Role, Active, and Profile. The table lists several users, including Chatter Expert, DINESH_CHALLA, divya_sanju, EPIC_OrgFarm, Mikaelson_Niklaus, siri_charan, User_Integration, and User_Security. Each user has a corresponding edit icon next to their name. The 'Active' column shows checkboxes, all of which are checked for the listed users. The 'Role' column indicates their respective roles: Chatter Free User, System Administrator, sales person, System Administrator, Manager, sales executive, Analytics Cloud Integration User, and Analytics Cloud Security User.

- Mikaelson, Niklaus – Manager



The screenshot shows the 'User Edit' screen for the user 'Niklaus Mikaelson'. The 'General Information' section contains fields for First Name (Niklaus), Last Name (Mikaelson), Alias (nmika), Email (22kd1a0218@lendi.edu.in), Username (niklausmikaelson123@blue), Nickname (nimi), Title, Company, Department, and Division. To the right of these fields are dropdown menus for Role (Manager), User License (Salesforce), Profile (Manager), and Active status (checked). Below these are checkboxes for Marketing User, Offline User, Knowledge User, Flow User, Service Cloud User, Site.com Contributor User, Site.com Publisher User, WDC User, and Data.com User Type (set to 'None'). At the bottom of the form are additional settings: Data.com Monthly Addition Limit (300), Accessibility Mode (Classic Only), and High-Contrast Palette on Charts.

- Exec Sales – Sales Executive

User Edit

General Information

First Name	charan	Role	sales executive
Last Name	siri	User License	Salesforce Platform
Alias	csiri	Profile	sales executive
Email	22kd1a0218@lendi.edu.in	Active	<input checked="" type="checkbox"/>
Username	22kd1a0204@lendi.edu.in	Marketing User	<input type="checkbox"/>
Nickname	bava	Offline User	<input type="checkbox"/>
Title		Knowledge User	<input type="checkbox"/>
Company		Flow User	<input type="checkbox"/>
Department		Service Cloud User	<input type="checkbox"/>
Division		Site.com Contributor User	<input type="checkbox"/>
		Site.com Publisher User	<input type="checkbox"/>
		WDC User	<input type="checkbox"/>
		Data.com User Type	-None-
		Data.com Monthly Addition Limit	300
		Accessibility Mode (Classic Only)	<input type="checkbox"/>
		High-Contrast Palette on Charts	<input type="checkbox"/>

- Person, Sales – Sales Person

User Edit

General Information

First Name	sanju	Role	sales person
Last Name	divya	User License	Salesforce Platform
Alias	sdvyy	Profile	sales person
Email	22kd1a0218@lendi.edu.in	Active	<input checked="" type="checkbox"/>
Username	22kd1a0249@lendi.edu.org	Marketing User	<input type="checkbox"/>
Nickname	godogu	Offline User	<input type="checkbox"/>
Title		Knowledge User	<input type="checkbox"/>
Company		Flow User	<input type="checkbox"/>
Department		Service Cloud User	<input type="checkbox"/>
Division		Site.com Contributor User	<input type="checkbox"/>
		Site.com Publisher User	<input type="checkbox"/>
		WDC User	<input type="checkbox"/>
		Data.com User Type	-None-
		Data.com Monthly Addition Limit	300
		Accessibility Mode (Classic Only)	<input type="checkbox"/>
		High-Contrast Palette on Charts	<input type="checkbox"/>

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

The screenshot shows the Salesforce Setup interface. On the left, the navigation pane is open with the 'Permission Sets' option selected under 'Users'. The main content area displays the 'Permission Sets' page for 'P1'. Key details shown include:

- API Name:** P1
- License:** --
- Created By:** CHALLA DINESH
- Last Modified By:** CHALLA DINESH
- Namespace Prefix:** --
- Session Activation Required:** Not Required
- Created Date:** 9/4/2025, 3:10 AM
- Last Modified Date:** 9/4/2025, 3:12 AM
- Related Permission Set Groups:** 0
- Assigned Users:** 1
- Description:** --

Below this, the 'Permission Set Information' section shows the permissions granted to the object 'Fuel details'. The table includes columns for Label, Object API Name, Read, Create, Edit, Delete, View All Records, Modify All Rec., and View All Fields. The 'Fuel details' row has 'Read' and 'Create' checked with green checkmarks, while 'Edit', 'Delete', 'View All Records', 'Modify All Rec.', and 'View All Fields' are marked with red X's.

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.

The screenshot shows the Salesforce Setup interface. On the left, the navigation pane is open with the 'Sharing Settings' option selected under 'Security'. The main content area displays the 'Sharing Settings' page for 'Organization-Wide Sharing Defaults Edit'. The table lists various objects and their sharing defaults:

Object	Default Internal Access	Default External Access	Grant Access Using Hierarchies
Lead	Public Read/Write/Transfer	Private	checkbox
Account and Contract	Public Read/Write	Private	checkbox
Order	Controlled by Parent	Controlled by Parent	checkbox
Contact	Controlled by Parent	Controlled by Parent	checkbox
Asset	Controlled by Parent	Controlled by Parent	checkbox
Opportunity	Public Read/Write	Private	checkbox
Case	Public Read/Write/Transfer	Private	checkbox
Campaign	Public Full Access	Private	checkbox
Campaign Member	Controlled by Campaign	Controlled by Campaign	checkbox
User	Public Read Only	Private	checkbox
Individual	Public Read/Write	Private	checkbox
Voice Call	Private	Private	checkbox
Activity	Private	Private	checkbox
Calendar	Hide Details and Add Events	Hide Details and Add Events	checkbox
Price Book	Use	Use	checkbox
Product	Public Read/Write	Public Read/Write	checkbox
Agent Work	Public Read Only	Private	checkbox
Alternative Payment Method	Private	Private	checkbox
Analytics User Attribute Function Token	Public Read Only	Private	checkbox

Sharing Settings

Object	Sharing Rule	Action
Service Resource	Public Read/Write	Private
Service Territory	Public Read/Write	Private
Shift	Private	Private
Shipment	Private	Private
Shipping Carrier	Public Read Only	Private
Shipping Carrier Method	Public Read Only	Private
Shipping Configuration Set	Public Read Only	Private
Streaming Channel	Public Read/Write	Private
Tableau Host Mapping	Public Read Only	Private
User Presence	Public Read Only	Private
Waitlist	Private	Private
Web Cart Document	Private	Private
Work Order	Private	Private
Work Plan	Private	Private
Work Plan Template	Private	Private
Work Step Template	Private	Private
Work Type	Private	Private
Work Type Group	Public Read/Write	Private
Gas Station	Public Read Only	Private
Supplier	Public Read Only	Private

Other Settings

Standard Report Visibility Manual User Record Sharing Manager Groups Secure guest user record access Require permission to view record names in lookup fields

Save Cancel

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

Create:

New Fuel details

* = Required Information

Information

Fuel details Name

* Supplier Name
BHARAT

* Gas Station
Gas-008

Fuel supplied
120000

Cancel Save & New Save

View:

The screenshot shows a CRM application interface for a 'GAS STATION'. The top navigation bar includes links for 'Suppliers', 'Gas Stations', 'Buyers', and 'Fuel details'. A search bar and various tool icons are also present. The main content area displays a 'Fuel details' record for 'fuel-001'. The record includes fields for 'Fuel details Name' (fuel-001), 'Supplier Name' (BHARAT), 'Gas Station' (Gas-001), 'Fuel supplied' (100,000), and 'Created By' (CHALLA DINESH). The 'Details' tab is selected. A blue bar at the bottom contains the text 'javascript:void(0);'.

Delete:

The screenshot shows a CRM application interface for a 'GAS STATION'. The top navigation bar includes links for 'Suppliers', 'Gas Stations', 'Buyers', and 'Fuel details'. A search bar and various tool icons are also present. The main content area displays a 'Fuel details' record for 'fuel-001' under the 'Recently Viewed' section. The record includes fields for 'Fuel details Name' (fuel-001). On the right side, there are buttons for 'New', 'Import', and 'Assign Label'. Below these are buttons for 'Edit' and 'Delete', with 'Delete' being highlighted. A blue bar at the bottom contains the text 'javascript:void(0);'.

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

The screenshot shows a report titled "Report: Gas Stations with Buyers Amount range". The table displays the following data:

	Fuel available in bunk	Gas Station: Gas Station Name	Buyer: Buyer Name	Fuel filled in vehicle	Amount Paid	Customer name
-1,000.00 (1)	Gas-002	Buyer-001		1,000	109,000.00	jack son
Subtotal				1,000	109,000.00	
-850.00 (1)	Gas-007	Buyer-006		850	107,950.00	sharmila candyshappy
Subtotal				850	107,950.00	
-750.00 (1)	Gas-005	Buyer-004		750	88,500.00	bhargav challa
Subtotal				750	88,500.00	
-675.00 (1)	Gas-009	Buyer-008		675	103,950.00	sai sanjay
Subtotal				675	103,950.00	
-567.00 (1)	Gas-011	Buyer-010		567	102,060.00	lohit krishna sai santhosh
Subtotal				567	102,060.00	
-500.00 (1)	Gas-003	Buyer-002		500	51,000.00	yash win
Subtotal				500	51,000.00	
-445.00 (1)	Gas-008	Buyer-007		445	58,740.00	charan sai
Subtotal				445	58,740.00	
-300.00 (1)	Gas-006	Buyer-005		300	35,100.00	rayansh dontala

Row Counts: ✓ Detail Rows: ✓ Subtotals: ✓ Grand Total: ✓

The screenshot shows a report titled "Report: Gas Stations with Buyers Amount range". The chart displays the "Sum of Fuel filled in vehicle" for different fuel amounts. The Y-axis is labeled "Fuel available in bunk" and ranges from -1,000.00 to -188.00. The X-axis ranges from 0 to 1k. The chart shows the following data points:

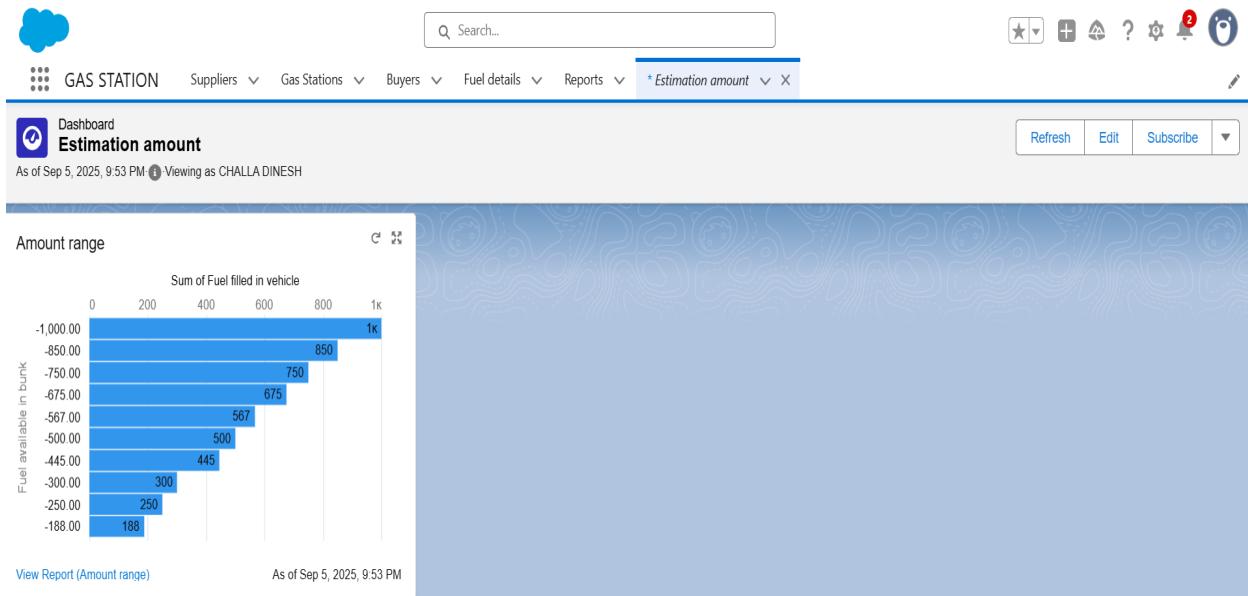
Fuel available in bunk	Sum of Fuel filled in vehicle
-1,000.00	~850
-850.00	~750
-750.00	~675
-675.00	~567
-500.00	~500
-445.00	~445
-300.00	~300
-250.00	~250
-188.00	~188

The report also includes a table of fuel purchases:

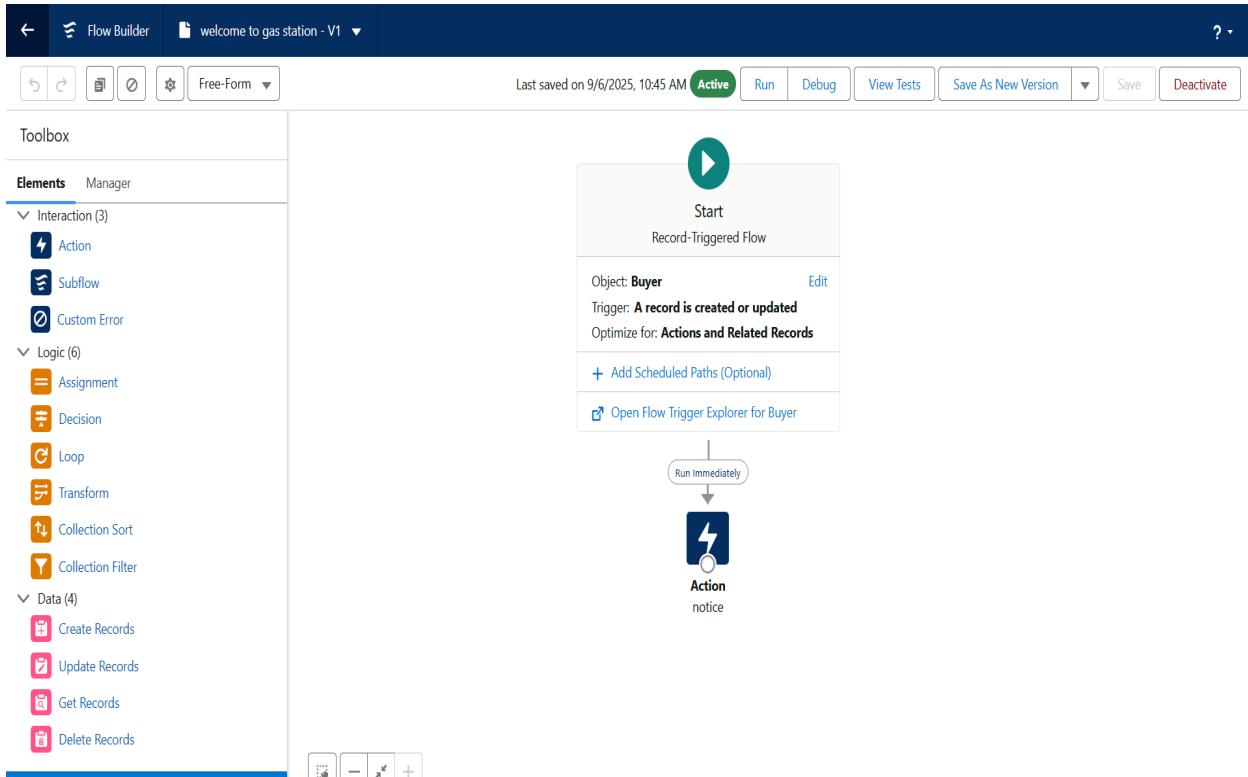
	Fuel available in bunk	Gas Station: Gas Station Name	Buyer: Buyer Name	Fuel filled in vehicle	Amount Paid	Customer name
-1,000.00 (1)	Gas-002	Buyer-001		1,000	109,000.00	jack son

Row Counts: ✓ Detail Rows: ✓ Subtotals: ✓ Grand Total: ✓

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:

The screenshot shows the Salesforce IDE interface with the FuelRecordHandler.apxc file open. The code defines two static void methods: beforeDeleteInfo and beforeDeleteGas. The beforeDeleteInfo method iterates through a list of Fuel_details__c records and adds an error if the Fuel_supplied__c value is greater than 500. The beforeDeleteGas method iterates through a list of Gas_Station__c records and adds an error if the Fuel_Price_litre__c value is less than or equal to 50. The code editor includes syntax highlighting and line numbers. Below the editor is a logs panel with tabs for Logs, Tests, Checkpoints, Query Editor, View State, Progress, and Problems. The Logs tab is selected, showing a table with columns for User, Application, Operation, Time, Status, Read, and Size. A filter bar at the bottom allows users to search the log list.

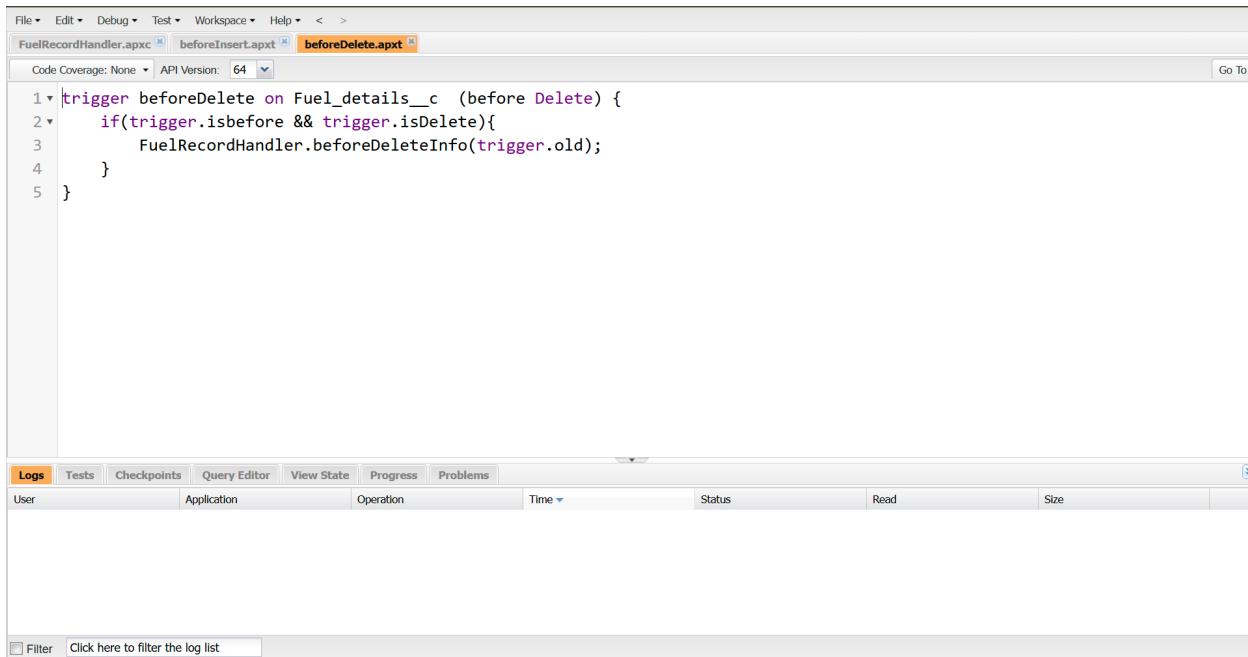
```
1 public class FuelRecordHandler {
2     public static void beforeDeleteInfo(list<Fuel_details__c> fuellist){
3         //fuellist = [select Id from Fuel_details__c];
4         for(Fuel_details__c ful : fuellist){
5             if(ful.Fuel_supplied__c > 500){
6                 ful.addError('you cannot delete the fuel details record because it is associated with supplier and Gas sta');
7             }
8         }
9     }
10    public static void beforeDeleteGas(list<Gas_Station__c> gasList){
11        //fuelList = [select Id from Fuel_details__c];
12        for(Gas_Station__c gas : gasList){
13            if(gas.Fuel_Price_litre__c <= 50){
14                gas.addError('enter the fuel price before saving the record, Minimum price should be 50');
15            }
16        }
17    }
18 }
```

Apex Trigger of Gas Station:

The screenshot shows the Salesforce IDE interface with the beforeInsert.apxt trigger file open. The trigger code is a single block that checks if the trigger is before insert and if the record is a Gas_Station__c. If both conditions are met, it calls the FuelRecordHandler.beforeDeleteGas method on the trigger.new record. Below the editor is a logs panel with tabs for Logs, Tests, Checkpoints, Query Editor, View State, Progress, and Problems. The Logs tab is selected, showing a table with columns for User, Application, Operation, Time, Status, Read, and Size. A filter bar at the bottom allows users to search the log list.

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

Apex Trigger of Fuel Details:



The screenshot shows the Salesforce IDE interface. At the top, there's a menu bar with File, Edit, Debug, Test, Workspace, Help, and a Go To button. Below the menu, tabs for FuelRecordHandler.apxc, beforeInsert.apxt, and beforeDelete.apxt are visible, with beforeDelete.apxt being the active tab. The API Version is set to 64. A code coverage indicator shows 'None' and an 'API Version' dropdown. The code editor contains the following Apex trigger:

```
trigger beforeDelete on Fuel_details__c (before Delete) {
    if(trigger.isbefore && trigger.isDelete){
        FuelRecordHandler.beforeDeleteInfo(trigger.old);
    }
}
```

Below the code editor is a navigation bar with tabs for Logs, Tests, Checkpoints, Query Editor, View State, Progress, and Problems. The Logs tab is selected. The main area below the navigation bar is currently empty, indicating no logs are present.

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.