
NAAN MUDHALVAN PROJECT REPORT

SB8067- SALESFORCE DEVELOPER

“GARAGE MANAGEMENT SYSTEM “

Submitted by:

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1.ABSTRACT

The Garage Management System (GMS) developed using Salesforce is a comprehensive cloud-based application designed to streamline operations in automotive repair facilities. This system automates the management of customer details, appointments, service records, and billing processes.

By leveraging Salesforce's CRM (Customer Relationship Management) capabilities, the project integrates standard and custom objects, flows, validation rules, and dashboards to deliver an efficient workflow. The system reduces manual paperwork, minimizes data entry errors, and provides managers with real-time visibility into service performance.

Salesforce's cloud infrastructure ensures data is securely stored, easily accessible, and scalable. With automation tools like Flow Builder and Apex triggers, key tasks such as calculating service costs, updating statuses, and sending email alerts are executed automatically.

Ultimately, the Garage Management System enhances customer satisfaction, ensures transparency, and demonstrates the power of low-code Salesforce development in real-world business solutions.

Thus this is the Garage Management System's Abstract that system automates the management of customer details, appointments, service records, and billing processes. The system reduces manual paperwork, minimizes data entry errors, and provides managers with real-time visibility into service performance.

2.INTRODUCTION

The Garage Management System is a valuable tool for automotive repair facilities, helping them deliver top-notch service, increase operational efficiency, and build lasting customer relationships. With its user-friendly interface and powerful features, GMS empowers garages to thrive in a competitive market while ensuring a seamless and satisfying experience for both customers and staff.

Salesforce is a customer success platform designed to help users sell, service, market, analyze, and connect with customers. It provides everything needed to run a business from anywhere, including managing relationships with prospects and customers, collaborating with employees and partners, and storing data securely in the cloud. Before Salesforce, contacts, emails, follow-up tasks, and prospective deals were often disorganized. This project utilizes Salesforce to create a developer account, define custom objects, and implement automation for garage management.

To begin, a developer org was created at <https://developer.salesforce.com/signup> by entering details such as name, email, role (Developer), company (College Name), country (India), postal code, and a unique username in the format username@organization.com. The account was activated via email verification, and a password was set, redirecting to the Salesforce setup page.

Salesforce objects are database tables for storing organization-specific data. Standard objects include users, contracts, reports, and dashboards, while custom objects are user-created for unique information. Custom objects form the core of the application.

In this project, custom objects were created via the Setup page > Object Manager > Create > Custom Object. The objects include:

- Customer Details: Label "Customer Details", Plural "Customer Details", Record Name "Customer Name" (Text), with options for reports, field history, and search.

- Appointment: Label "Appointment", Plural "Appointments", Record Name "Appointment Name" (Auto Number, format "app-{000}", starting 1), with reports, field history, and search.
- Service Records: Label "Service records", Plural "Service records", Record Name "Service records Name" (Auto Number, format "ser-{000}", starting 1), with reports, field history, and search.
- Billing Details and Feedback: Label "Billing details and feedback", Plural "Billing details and feedback", Record Name "Billing details and feedback Name" (Auto Number, format "bill-{000}", starting 1), with reports, field history, and search.

Tabs were created for these objects to provide user interfaces. Tabs include Custom Tabs, Web Tabs, Visualforce Tabs, Lightning Component Tabs, and Lightning Page Tabs. Custom tabs were created for each object via Setup > Tabs > New, selecting the object, style, and saving.

A Lightning App named "Garage Management Application" was created, adding navigation items for the objects, reports, and dashboards, and assigning to the System Administrator profile.

3.OBJECTIVES

The primary objectives of the Garage Management System using Salesforce are:

- To automate the management of customer details, appointments, service records, and billing in automotive garages.
- To ensure data integrity through validation rules, duplicate rules, and lookup relationships.
- To provide role-based access control for managers and salespersons.
- To implement automation using flows and Apex triggers for efficient workflow.
- To generate reports and dashboards for insights into service information and performance.
- To enhance customer satisfaction by sending automated email alerts upon payment completion.

4. SYSTEM REQUIREMENTS

4.1 HARDWARE REQUIREMENTS:

- Processor: Intel Core i5 or equivalent
-  RAM: 8 GB minimum
-  Hard Disk: 256 GB SSD
-  Internet Connection: High-speed broadband for cloud access

4.2 SOFTWARE REQUIREMENTS:

- Operating System: Windows 10/11, macOS, or Linux
- Salesforce Platform: Developer Edition (free signup at developer.salesforce.com)
- No additional installations required as Salesforce is cloud-based

5. MODULES OF THE SYSTEM:

The system comprises several modules implemented through Salesforce customizations:

1. **Customer Details Module:** Manages customer information. Fields include Phone Number (Phone type) and Gmail (Email type). Matching and duplicate rules ensure uniqueness based on Gmail and Phone Number.
2. **Appointment Module:** Handles scheduling. Fields include Appointment Date (Date, required), Vehicle Number Plate (Text, length 10, required, unique), Service Amount (Currency, read-only), and checkboxes for Maintenance Service, Repairs, and Replacement Parts. Validation rule enforces vehicle number format (e.g., NOT(REGEX(Vehicle_number_plate__c, "[A-Z]{2}[0-9]{2}[A-Z]{2}[09]{4}")) with error "Please enter valid number").
3. **Service Records Module:** Tracks services. Fields include Service Status (Picklist: Started, Completed), Quality Check Status (Checkbox, default unchecked), and Service Date (Formula: CreatedDate). Lookup to Appointment with filter (Appointment Date < Created Date, required).

-
4. **Billing Details and Feedback Module**: Manages payments and feedback. Fields include Payment Status (Picklist: Pending, Completed), Payment Paid (Currency), and Rating for Service (assumed Text). Lookup to Service Records.

- Validation rule for rating (NOT(REGEX(Rating_for_service__c, "[1-5]{1}")) with error "rating should be from 1 to 5").
- Lookup relationships connect modules: Appointment to Customer Details, Service Records to Appointment, Billing Details and Feedback to Service Records.
- Profiles were created: Manager (cloned from Standard User, with full access to objects, session timeout 8 hours, passwords never expire, min length 8) and Sales Person (cloned from Salesforce Platform User, with limited access).
- Roles include Manager and Sales Person under CEO. Users were created (e.g., Niklaus Mikaelson as Manager, and three Sales Persons).
Public Group "Sales Team" includes Sales Person role.
Sharing Settings: OWD for Service Records set to Private. Sharing rule shares Sales Person records with Manager (Read/Write).
-

6.TECHNOLOGIES USED

- **Salesforce Platform:** Cloud-based CRM for custom objects, tabs, apps, fields, flows, Apex, reports, and dashboards.
- **Apex Triggers and Classes:** For custom logic, e.g., AmountDistributionHandler class and trigger on Appointment for calculating Service Amount based on selected services (e.g., all three: 10000, Maintenance+Repairs: 5000).
- **Flows:** Record-triggered flows for updating records (e.g., update Payment Paid on completion, send email alerts, update Service Status on quality check).

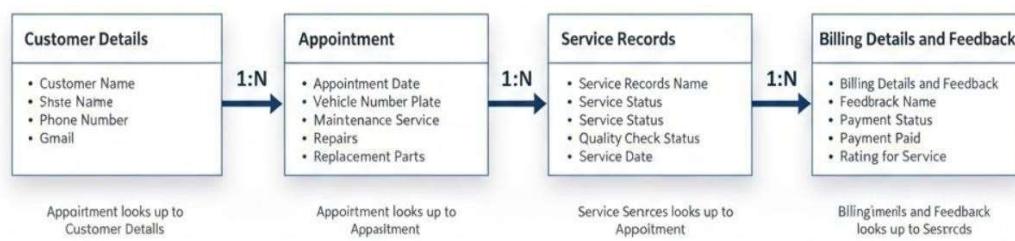
Validation and Matching Rules: For data integrity.

- **Reports and Dashboards**: For analytics on service information.

7. SYSTEM DESIGN

ER DIAGRAM

The Entity-Relationship (ER) diagram represents the database structure with entities and relationships based on the custom objects created.



Relationships (Lookup, One-to-Many):

- Customer Details --(1:N)-- Appointment (Appointment looks up to Customer Details)
- Appointment --(1:N)-- Service Records (Service Records looks up to Appointment)
- Service Records --(1:N)-- Billing Details and Feedback (Billing Details and Feedback looks up to Service Records)

8. WORKFLOW DESCRIPTION

The workflow automates garage operations:

1. **Customer Registration:** Create Customer Details record with phone and email.
2. **Appointment Booking:** Create Appointment linked to Customer, enter date (must be < created date), vehicle plate (validated), select services. Apex trigger calculates Service Amount (before insert/update).
3. **Service Recording:** Create Service Records linked to Appointment. On save, if Quality Check Status is true, flow updates Service Status to Completed.
4. **Billing and Feedback:** Create Billing record linked to Service Records. On payment completion, flow updates Payment Paid from Appointment's Service Amount and sends email alert: "Dear [Customer Name], ... Amount paid: [Amount]. Thank you."
5. **Validation and Duplicates:** Rules prevent invalid data; matching rules on Customer Details prevent duplicates.
6. **Access Control:** Managers have full access; Sales Persons have limited. Sharing rules allow Managers to view/edit Sales Person records.
7. **Reports and Dashboards:** Report Type "Service Information" joins objects. Report "New Service Information Report" groups by Rating and Payment Status, with columns for Customer Name, Appointment Date, Service Status, Payment Paid. Dashboard "Service Rating Dashboard" uses line chart, subscribed weekly.

Records were created (10+ per object) to test.

9.IMPLEMENTED STEPS

1.Creating Developer Account:

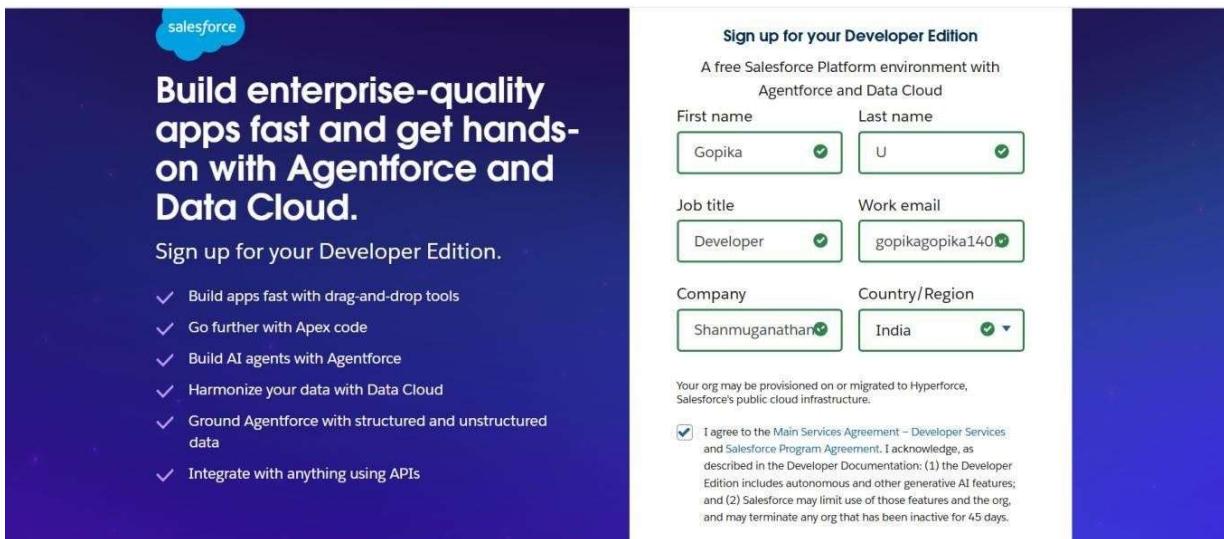


Fig:1.1 Developer Account 2.

Account Activation:

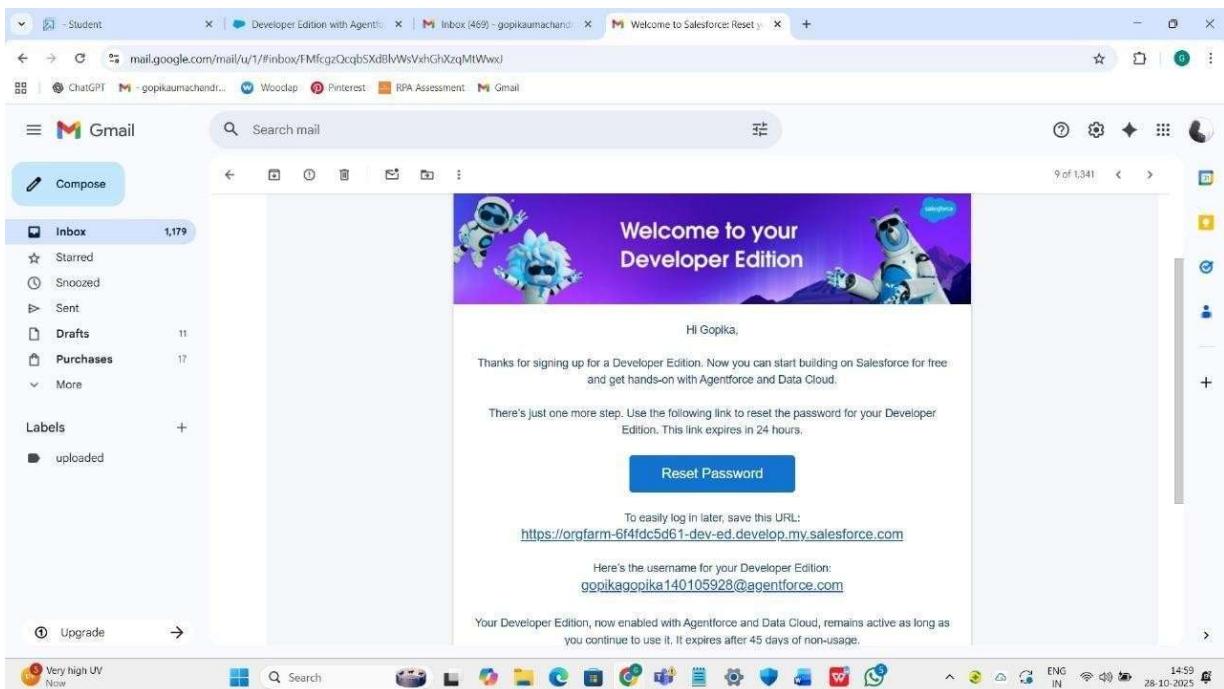


Fig:2.1 Verifying Account

3. Object Creation:

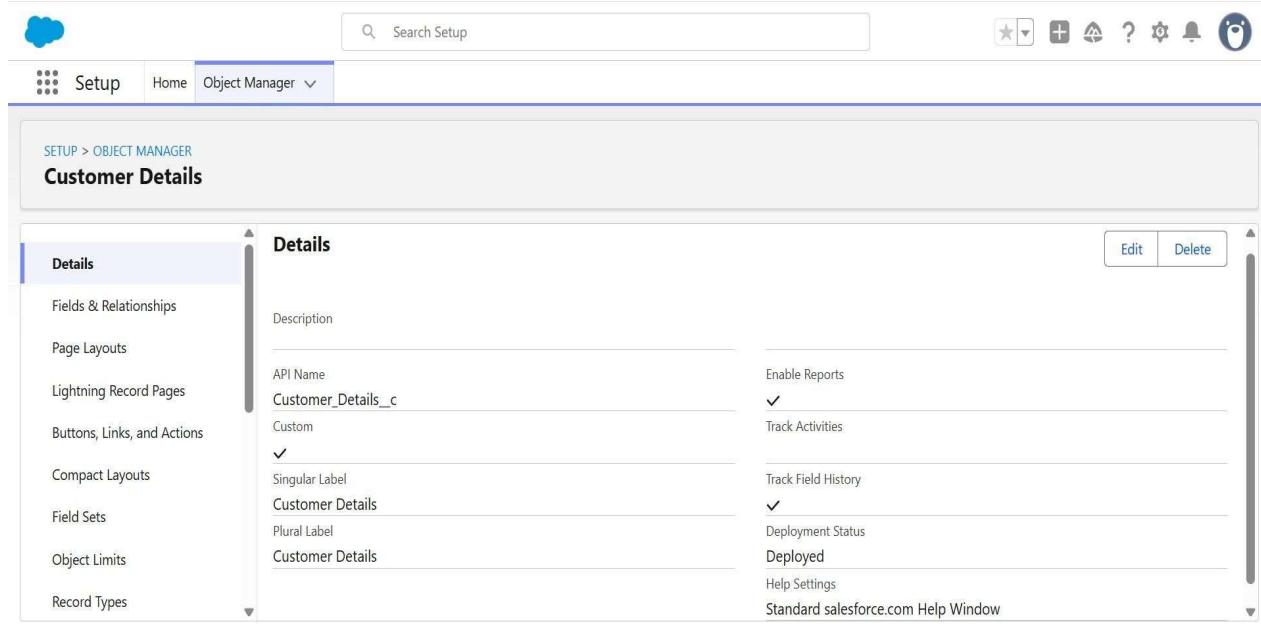


Fig :3.1 Creation of Customer details Object

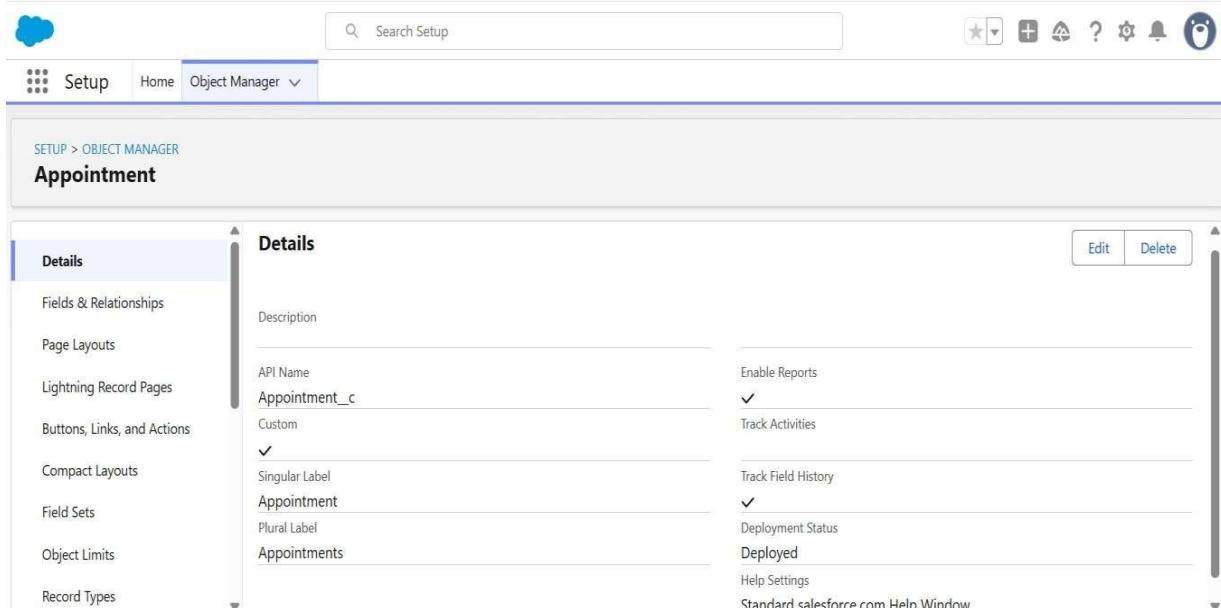


Fig :3.2 Creation of Appointment Object

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

Header: Search Setup, Home, Object Manager

Breadcrumbs: SETUP > OBJECT MANAGER

Section: Service records

Left Sidebar (Details):

- Fields & Relationships
- Page Layouts
- Lightning Record Pages
- Buttons, Links, and Actions
- Compact Layouts
- Field Sets
- Object Limits
- Record Types

Right Panel (Details):

Setting	Value
Description	
API Name	Service_records_c
Custom	✓
Singular Label	Service records
Plural Label	Service records
Enable Reports	✓
Track Activities	
Track Field History	✓
Deployment Status	Deployed
Help Settings	Standard salesforce.com Help Window

Actions: Edit, Delete

Fig :3.3 Creation of Service records Object

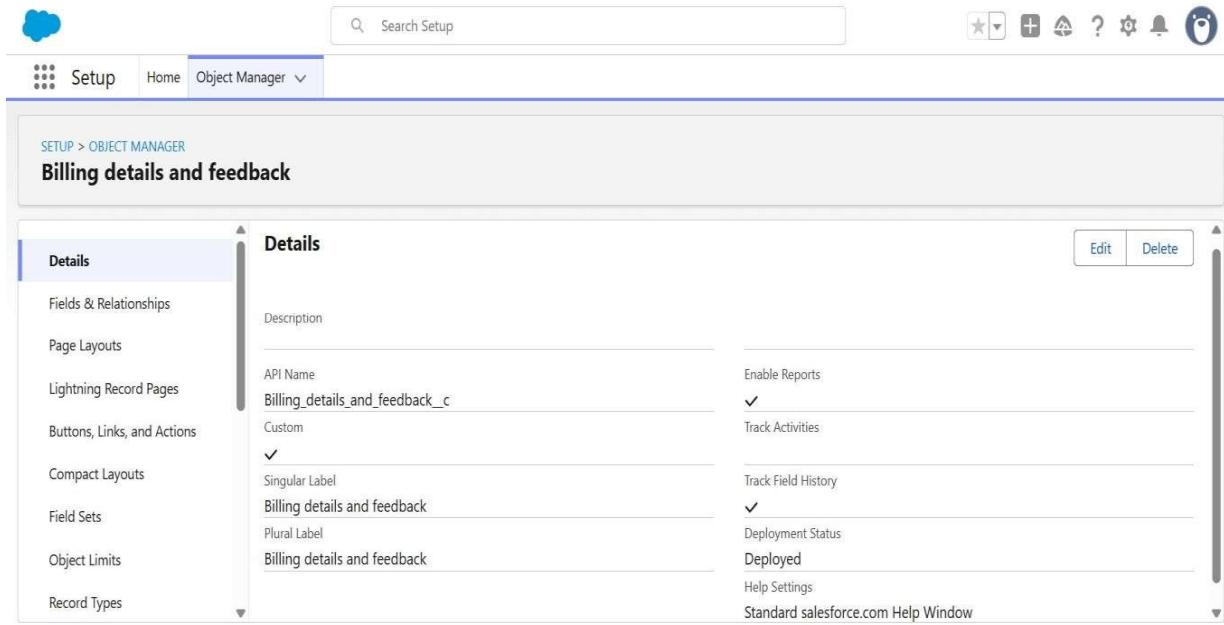


Fig :3.4 Creation of Billing details and Feedback Object

4. Tabs:

The screenshot shows the Salesforce Setup interface. At the top, there's a search bar labeled "Search Setup" and various navigation icons. Below the header, the "Setup" tab is selected. In the main content area, a search bar shows "tabs". A section titled "Tabs" is displayed under "User Interface > Rename Tabs and Labels". It contains a table titled "Custom Object Tabs" with four rows:

Action	Label	Tab Style	Description
Edit Del	Appointments	Bell	
Edit Del	Billing details and feedback	Bell	
Edit Del	Customer Details	Circle	
Edit Del	Service records	Bell	

Below this is a section titled "Web Tabs" which states "No Web Tabs have been defined". The URL in the browser bar is <https://orgfarm-6f4fdc5d61-dev-ed.develop.my.salesforce-setup.com/lightning/setup/CustomTabs/home>.

Fig :4.1 Creation of a Custom Tab

5.The Ligtning App:

The screenshot shows the Lightning App Builder interface. The top navigation bar includes "Lightning App Builder", "App Settings", "Pages", and "Garage Management Application". The left sidebar has a "App Settings" section with "App Details & Branding" selected. The main content area displays "App Details & Branding" settings:

- App Details:**
 - * App Name: Garage Management Application
 - * Developer Name: Garage_Management_Application
- App Branding:**
 - Image: A placeholder box with an "Upload" button.
 - Primary Color Hex Value: #0070D2
- Description:** Enter a description...
- Org Theme Options:** A checkbox for "Use the app's image and color instead of the org's custom theme".

At the bottom, there's an "App Launcher Preview" section showing a blue icon with "GM" and the text "Garage Management Appl...".

Fig :5.1 Garage Management Application

6.Fields:

The screenshot shows the Salesforce Setup interface with the 'Object Manager' selected. Under 'Customer Details', the 'Fields & Relationships' tab is active. A table lists six fields: Created By (CreatedById, Lookup(User)), Customer Name (Name, Text(80), indexed), Gmail (Gmail_c, Email), Last Modified By (LastModifiedById, Lookup(User)), Owner (OwnerId, Lookup(User,Group), indexed), and Phone number (Phone_number_c, Phone).

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Customer Name	Name	Text(80)		✓
Gmail	Gmail_c	Email		▼
Last Modified By	LastModifiedById	Lookup(User)		▼
Owner	OwnerId	Lookup(User,Group)		✓
Phone number	Phone_number_c	Phone		▼

Fig :6.1 Creation of fields for the Customer Details object

The screenshot shows the Salesforce Setup interface with the 'Object Manager' selected. Under 'Appointments', the 'Fields & Relationships' tab is active. A table lists eleven fields: Appointment Date (Appointment_Date_c, Date), Appointment Name (Name, Auto Number), Created By (CreatedById, Lookup(User)), Customer Details (Customer_Details_c, Lookup(Customer Details)), and Last Modified By (LastModifiedById, Lookup(User)).

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Appointment Date	Appointment_Date_c	Date		▼
Appointment Name	Name	Auto Number		▼
Created By	CreatedById	Lookup(User)		▼
Customer Details	Customer_Details_c	Lookup(Customer Details)		✓
Last Modified By	LastModifiedById	Lookup(User)		▼

Fig :6.2 Creation of fields for the Appointments object

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

- Header:** Includes the Salesforce logo, a search bar labeled "Search Setup", and various navigation icons.
- Breadcrumbs:** "SETUP > OBJECT MANAGER".
- Section:** "Service records".
- Left Sidebar:** A vertical sidebar titled "Fields & Relationships" containing links to "Page Layouts", "Lightning Record Pages", "Buttons, Links, and Actions", "Compact Layouts", "Field Sets", "Object Limits", and "Record Types".
- Table:** "Fields & Relationships" table showing 8 items, sorted by Field Label. The table has columns: FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED.
- Table Data:**

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Appointment	Appointment_c	Lookup(Appointment)		✓
Created By	CreatedBy	Lookup(User)		
Last Modified By	LastModifiedBy	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Quality Check Status	Quality_Check_Status_c	Checkbox		
service date	service_date_c	Formula (Date)		

Fig :6.3 Creation of fields for the Service records object

7.Validation Rules:

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

- Header:** Includes a cloud icon, a search bar labeled "Search Setup", and various navigation icons.
- Breadcrumbs:** "SETUP > OBJECT MANAGER".
- Object Name:** "Appointment".
- Left Sidebar:** A vertical sidebar with links: Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, and Record Types.
- Table:** Titled "Validation Rules" with the sub-instruction "1 Items, Sorted by Rule Name".

RULE NAME	ERROR LOCATION	ERROR MESSAGE	ACTIVE	MODIFIED BY
Vehicle	Vehicle number plate	Please enter valid number	✓	Gopika U, 10/26/2025, 9:29 AM
- Buttons:** A "New" button in the top right corner of the Validation Rules section.

Fig :7.1 Validation Rules for Appointment

The screenshot shows the Salesforce Setup interface. At the top, there is a blue header bar with the Salesforce logo, a search bar labeled "Search Setup", and various navigation icons. Below the header, the main menu has three items: "Setup" (selected), "Home", and "Object Manager".

The main content area is titled "SETUP > OBJECT MANAGER" and "Billing details and feedback". On the left, a sidebar lists several setup categories: Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits (which is selected and highlighted in blue), and Record Types.

The right side of the screen displays a table titled "Validation Rules" with the subtitle "1 Items, Sorted by Rule Name". The table has columns: RULE NAME, ERROR LOCATION, ERROR MESSAGE, ACTIVE, and MODIFIED BY. There is one item in the table:

RULE NAME	ERROR LOCATION	ERROR MESSAGE	ACTIVE	MODIFIED BY
rating_should_be_less_than_5	Rating for service	rating should be from 1 to 5	✓	Gopika U, 10/26/2025, 9:31 AM

A "New" button is located in the top right corner of the validation rules section.

Fig :7.2 Validation Rules for Billing details and feedback

8.Duplicate Rule:

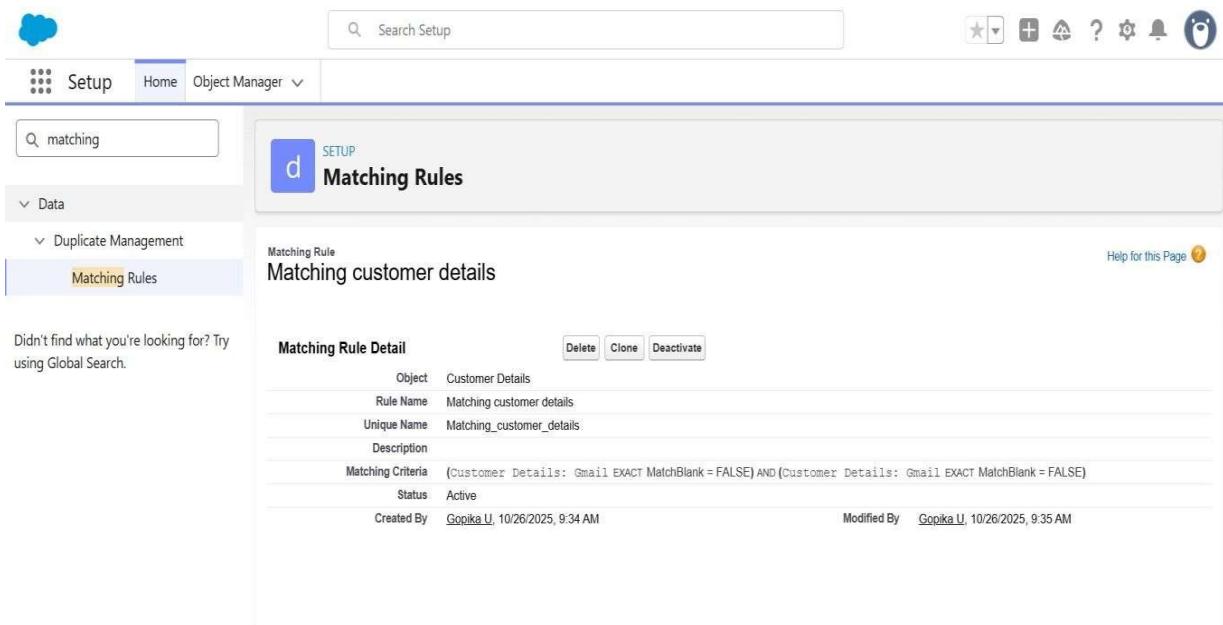


Fig :8.1 Matching rule to an Customer details Object

The screenshot shows the Salesforce Setup interface. The top navigation bar includes a blue cloud icon, a search bar labeled "Search Setup", and various global buttons. The main menu bar has "Setup" selected, followed by "Home" and "Object Manager". A sidebar on the left is titled "Data" and contains sections for "Duplicate Management" (selected), "Duplicate Error Logs", "Duplicate Rules" (highlighted with a blue selection bar), and "Matching Rules". A message at the bottom of the sidebar says, "Didn't find what you're looking for? Try using Global Search." The main content area is titled "SETUP" and "d Duplicate Rules". It shows a "Customer Details Duplicate Rule" named "Customer Detail duplicate". The rule details are as follows:

Rule Name	Customer Detail duplicate	Order	1 of 1 [Reorder]
Description			
Object	Customer Details		
Record-Level Security	Enforce sharing rules		
Action On Create	Allow	Operations On Create	<input checked="" type="checkbox"/> Alert <input checked="" type="checkbox"/> Report
Action On Edit	Allow	Operations On Edit	<input type="checkbox"/> Alert <input type="checkbox"/> Report
Alert Text	Use one of these records?		
Active	<input checked="" type="checkbox"/>		
Matching Rule	<input checked="" type="checkbox"/> Matching customer details <input checked="" type="checkbox"/> Mapped	Matching Criteria	(Customer Details: Gmail EXACT MatchBlank = FALSE) AND (Customer Details: Gmail EXACT MatchBlank = FALSE)
Conditions			

Fig :8.2 Duplicate rule to an Customer details Object

9.Profile:

The screenshot shows the Salesforce Setup interface with the 'Profiles' tab selected under the 'Users' category. The page title is 'Profiles'. A search bar at the top right contains the text 'Search Setup'. Below the search bar are several icons: a star, a plus sign, a downward arrow, a question mark, a gear, a bell, and a refresh symbol. The main content area displays a table of profiles. The columns are 'Action', 'Profile Name', 'User License', and 'Custom'. The 'Profile Name' column includes links for 'Edit | Clone' and the profile name itself. The 'User License' column lists the license type. The 'Custom' column has a checkbox. One row, 'Manager', has its checkbox checked and is highlighted with a blue background. Other profiles listed include 'High Volume Customer Portal User', 'Identity User', 'Marketing User', 'Minimum Access - API Only Integrations', 'Minimum Access - Salesforce', and 'Partner App Subscription User'. At the bottom of the table, there are navigation links for '1-45 of 45' and '2 Selected'. There are also 'Previous' and 'Next' buttons. The bottom right corner shows 'Page 1 of 1'.

Action	Profile Name	User License	Custom
<input type="checkbox"/>	Edit Clone High Volume Customer Portal User	High Volume Customer Portal	<input type="checkbox"/>
<input type="checkbox"/>	Edit Clone Identity User	Identity	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Edit Del ... Manager	Salesforce	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Edit Clone Marketing User	Salesforce	<input type="checkbox"/>
<input type="checkbox"/>	Edit Clone Minimum Access - API Only Integrations	Salesforce Integration	<input type="checkbox"/>
<input type="checkbox"/>	Edit Clone Minimum Access - Salesforce	Salesforce	<input type="checkbox"/>
<input type="checkbox"/>	Edit Clone Partner App Subscription User	Partner App Subscription	<input type="checkbox"/>

Fig :9.1 Manager Profile

SETUP Profiles			
Profiles			
All Profiles		Edit Delete Create New View	
New Profile 		A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Other All	
Action	Profile Name	User License	Custom
<input type="checkbox"/>	Edit Clone <u>Partner App Subscription User</u>	Partner App Subscription	<input type="checkbox"/>
<input type="checkbox"/>	Edit Clone <u>Partner Community Login User</u>	Partner Community Login	<input type="checkbox"/>
<input type="checkbox"/>	Edit Clone <u>Partner Community User</u>	Partner Community	<input type="checkbox"/>
<input type="checkbox"/>	Edit Del ... <u>Read Only</u>	Salesforce	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Edit Del ... <u>sales.person</u>	Salesforce Platform	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Edit Del ... <u>Salesforce API Only System Integrations</u>	Salesforce Integration	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Edit Clone <u>Silver Partner User</u>	Silver Partner	<input type="checkbox"/>
1-45 of 45  		   	
		Page <input type="text" value="1"/> of 1 	

Fig :9.2 Salesperson Profile

10.Role and Role Hierarchy:

The screenshot shows the Salesforce Setup interface with the 'Roles' tab selected in the left sidebar. The main content area displays the 'Creating the Role Hierarchy' page. At the top right, there is a 'Help for this Page' link. Below it, a 'Your Organization's Role Hierarchy' tree view is shown. The hierarchy starts with 'Shanmuganathan Engineering College', which has four children: 'CEO', 'CFO', 'COO', and 'Manager'. Each of these four roles has an 'Add Role' option below it. The 'CEO' role also has a child node 'SVP Customer Service & Support'. The sidebar on the left includes sections for 'Users', 'Sales', 'Service', and 'Case Teams', with various contact role options listed under each.

```
graph TD; Root[Shanmuganathan Engineering College] --> CEO[CEO]; Root --> CFO[CFO]; Root --> COO[COO]; Root --> Manager[Manager]; CEO --> SVP[SVP Customer Service & Support]; CEO --> AddRole1[Add Role]; CFO --> AddRole2[Add Role]; COO --> AddRole3[Add Role]; Manager --> AddRole4[Add Role]; Manager --> AddRole5[Add Role];
```

Fig :10.1 Manager Role

The screenshot shows the Salesforce Setup interface. The top navigation bar includes a cloud icon, a search bar labeled "Search Setup", and various global buttons. The main menu bar has "Setup" selected, along with "Home" and "Object Manager". On the left, a sidebar menu is open under "Users", with "Roles" highlighted. The main content area is titled "SETUP Roles" and displays a hierarchical list of roles for "Shanmuganathan Engineering College". The roles listed are: CEO, CFO, COO, Manager, sales_person, SVP, Customer Service & Support, SVP, Human Resources, and SVP, Sales & Marketing. Each role entry includes "Edit | Del | Assign" links and an "Add Role" button.

Shanmuganathan Engineering College

- CEO
- CFO
- COO
- Manager
- sales_person
- SVP, Customer Service & Support
- SVP, Human Resources
- SVP, Sales & Marketing

Add Role

javascript:srcUp(%27%2F00Eg50000000uFZ%3Fsetupid%3DRoles%26isdp%3Dp1%27);

Fig :10.2 Salesperson Role

11.Users:

Action	Full Name	Alias	Username	Role	Active	Profile
<input type="checkbox"/>	Chatter Expert	Chatter	chatty.00dg5000000hdteag.fstuywghmaoz@chatter.salesforce.com		<input checked="" type="checkbox"/>	Chatter Free User
<input type="checkbox"/>	EPIC_OrgFarm	QEPIC	epic.fd7e23e84f0@orgfarm.salesforce.com		<input checked="" type="checkbox"/>	System Administrator
<input type="checkbox"/>	Mikaelson_James	jmkia	james@nm.salesforce	Sales Person	<input checked="" type="checkbox"/>	sales person
<input type="checkbox"/>	Mikaelson_Niklaus	CSE	garbage@salesforce.com	Manager	<input checked="" type="checkbox"/>	Manager
<input type="checkbox"/>	Smith_Jhon	jsmit	jhon@nm.salesforce	Sales Person	<input checked="" type="checkbox"/>	sales person
<input type="checkbox"/>	U_Gopika	gop	gopikagopika140105928@agenforce.com		<input checked="" type="checkbox"/>	System Administrator
<input type="checkbox"/>	User_Integration	integ	integration@00dg5000000hdteag.com		<input checked="" type="checkbox"/>	Analytics Cloud Integration User
<input type="checkbox"/>	User_Security	sec	insightssecurity@00dg5000000hdteag.com		<input checked="" type="checkbox"/>	Analytics Cloud Security User

Fig :11.1 Creating Users

12.Public Groups:

The screenshot shows the Salesforce Setup interface. The left sidebar is titled "User" and includes sections for Permission Set Groups, Permission Sets, Profiles, Public Groups (which is selected), Queues, Roles, User Management Settings, and Users. The main content area is titled "SETUP Public Groups" and shows a group named "sales team". The group details are as follows:

Label	sales team
Group Name	sales_team
Grant Access Using Hierarchies	✓
Description	
Created By	Gopika.U, 10/26/2025, 10:13 AM
Modified By	Gopika.U, 10/26/2025, 10:13 AM

Below the group details, there is a section titled "All Users in Group" with a "View Group Members" button. The members listed are:

Full Name	Reason For Membership
Niklaus Mikaelson	Manager of Group Member
Jhon Smith	Group Member

Fig:12.1 New Public Group

13.Sharing Setting:

The screenshot shows the Salesforce Setup interface with the 'Sharing Settings' page selected. The left sidebar has 'Sharing Settings' under the 'Security' category. The main content area is titled 'Sharing Settings' and displays the following information:

This page displays your organization's sharing settings. These settings specify the level of access your users have to each others' data. Go to [Background Jobs](#) to monitor the progress of a change to an organization-wide default or a parallel sharing recalculation.

Manage sharing settings for: [Service records](#)

Disable External Sharing Model

Default Sharing Settings

Organization-Wide Defaults		Organization-Wide Defaults Help	
Object	Default Internal Access	Default External Access	Grant Access Using Hierarchies
Service records	Public Read/Write	Private	<input checked="" type="checkbox"/>

Other Settings

Manager Groups	<input type="checkbox"/> Edit
Secure guest user record	<input checked="" type="checkbox"/> Edit

Fig:13.1 Creating Sharing Setting

14.Flows:

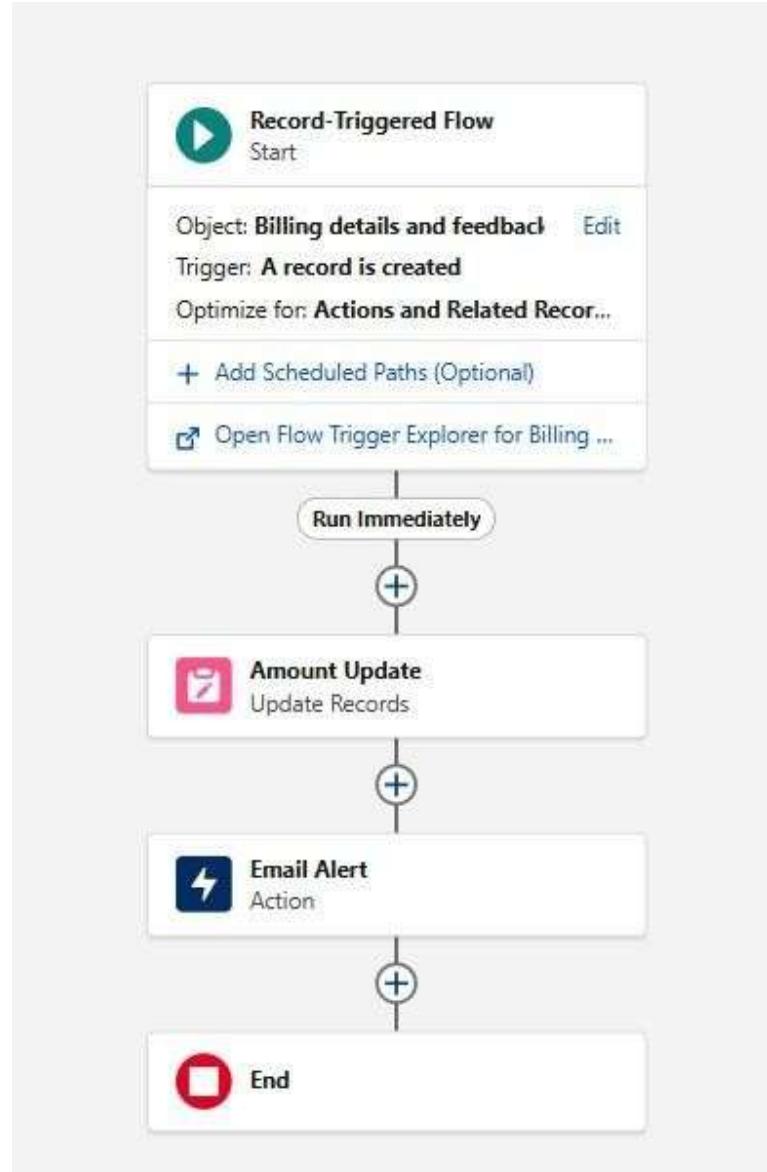


Fig:14.1 Creating a flow

15.Apex Trigger:

```

1 public class AmountDistributionHandler {
2
3     public static void amountDist(list<Appointment__c> listApp){
4
5         list<Service_records__c> serList = new list <Service_records__c>();
6
7         for(Appointment__c app : listApp){
8
9             if(app.Maintenance_service__c == true && app.Repairs__c == true && app.Replacement_Parts__c == true){
10
11                 app.Service_Amount__c = 1000;
12             }
13
14             else if(app.Maintenance_service__c == true && app.Repairs__c == true){
15
16                 app.Service_Amount__c = 500;
17             }
18
19             else if(app.Maintenance_service__c == true && app.Replacement_Parts__c == true){
20
21

```

Fig:15.1 Apex Handler **16.Reports:**

Garage Management Appl... Customer Details Appointments Service records Billing details and feedback Reports *More

Reports

Recent

2 items

REPORTS	Report Name	Description	Folder	Created By	Created On	Subscribed
Recent	Copy of New Service information Report		Garage Management Folder	Gopika U	10/27/2025, 7:17 AM	
Created by Me	New Service information Report		Private Reports	Gopika U	10/27/2025, 7:16 AM	
Private Reports						
Public Reports						
All Reports						
FOLDERS						
All Folders						
Created by Me						
Shared with Me						

Fig:16.1 Report Folder

Screenshot of the Salesforce Setup interface showing the Object Manager details for a 'Report' object.

The left sidebar shows the navigation menu under 'Reports & Dashboards' with 'Report Types' selected.

The main area displays the following details:

- Display L...**: Service information
- API Name**: Service_information
- Description...**: Shows detailed service information for each customer, including appointments, service records, billing details, and feedback.
- Created By**: Gopika U, 10/27/25, 5:15 PM
- Store in ...**: other
- Deploy...**: Deployed
- Modifie...**: Gopika U, 10/27/25, 5:15 PM

The 'Object Relationships' section shows associations:

- Customer Details (A) with at least one related record from Appointmen
- with at least one related record from Service
- with at least one related record from E

A Venn diagram illustrates the intersection of four sets (A, B, C, D) with a downward arrow pointing to a grid labeled A, B, C, D.

Fig:16.2 Report Types



Fig:16.3 Creation of Report

17.Dashboard:

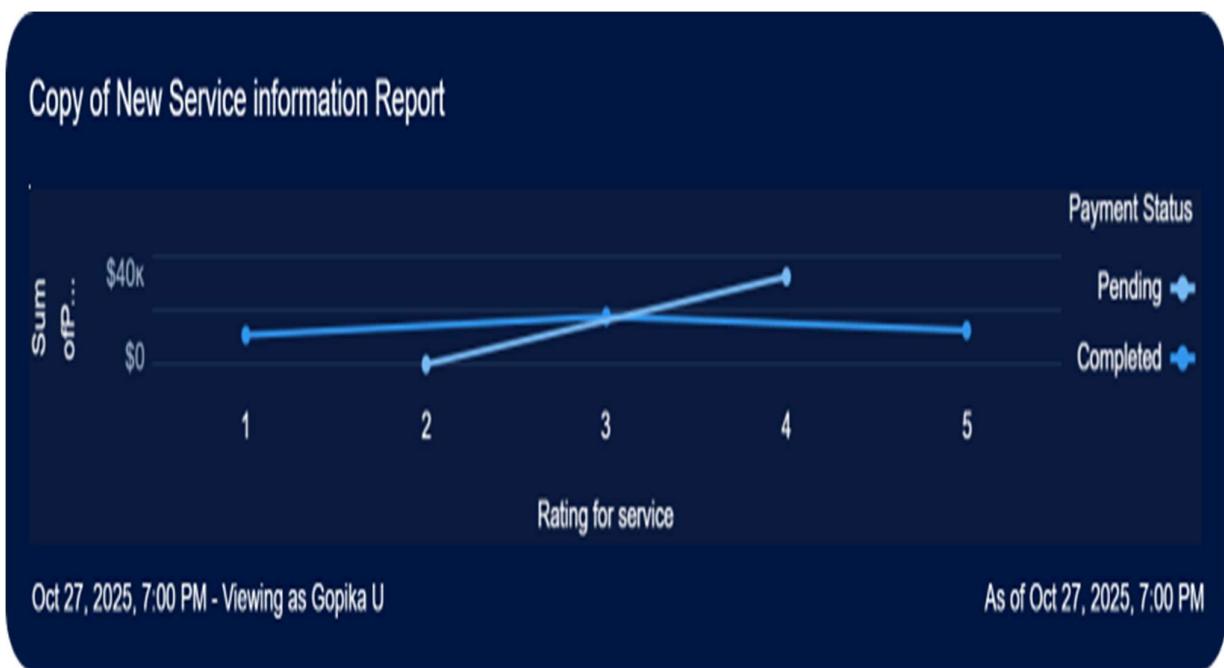


Fig:17.1 Creation of Dashboard

18.User Adoption:

The figure is a screenshot of the Garage Management Application interface, showing a customer record for "Mac". The "Customer Details" tab is selected. The record includes the following details:

Customer Name	Owner
Mac	Gopika U
Phone number	(567) 876-5567
Gmail	mac@gmail.com
Created By	Gopika U, 10/27/2025, 7:26 AM
Last Modified By	Gopika U, 10/27/2025, 7:26 AM

At the top right, there are buttons for "New Contact", "Edit", and "New Opportunity".

Fig:18.1 Creating Records

10.EXPECTED OUTCOMES

The **Garage Management System (GMS)** developed using Salesforce is expected to deliver a range of outcomes that enhance the overall efficiency and customer experience within automotive service centers. By integrating automation, cloud technology, and CRM features, the system transforms traditional manual workflows into a digital, intelligent, and reliable process.

The first major outcome is the **automation of garage operations**. Through Salesforce Flows, Apex Triggers, and Validation Rules, all major processes — including customer registration, appointment scheduling, service tracking, billing, and feedback — are automated. This reduces manual effort, ensures faster execution, and minimizes human error across the workflow.

The second expected outcome is **improved data accuracy and transparency**. Salesforce's in-built validation and duplicate management features ensure that every piece of data stored in the system is verified and consistent. Managers can monitor service records, payments, and customer feedback in real time, promoting accountability and trust between staff and customers.

A third key result is **simplified management and faster billing**. The system automatically calculates the total service amount based on the selected services, generates invoices instantly, and updates payment records upon completion. This automation significantly reduces billing time, providing a smooth experience for both customers and garage staff.

The project also ensures **high scalability and reliability** through Salesforce's cloud infrastructure. As the business grows, new users, branches, or services can be easily integrated without additional system reconfiguration. The multi-tenant cloud model ensures secure data handling, automatic backups, and uninterrupted access from anywhere.

Finally, the system enhances **customer engagement and satisfaction** through

automated notifications and feedback collection. Customers receive instant email alerts regarding appointment confirmations, service completion, and payment updates, ensuring transparency and consistent communication.

Overall, the expected outcomes of the project include improved operational efficiency, better decision-making through analytics, and an enhanced customer relationship experience. The Garage Management System thus serves as a complete, scalable, and future-ready solution for modern automotive service centers.

11. ADVANTAGES

The **Garage Management System (GMS)** built on the **Salesforce platform** provides several advantages that make it a powerful, efficient, and modern solution for managing automotive service operations. Its cloud-based nature, automation capabilities, and integrated analytics ensure improved productivity and customer satisfaction.

One of the primary advantages is that the system is **cloud-based and accessible from anywhere**. Since Salesforce operates entirely on the cloud, authorized users can access garage data securely from any device with an internet connection. This allows managers, staff, and customers to stay connected at all times, ensuring flexibility and continuity of operations without the need for physical infrastructure or local installations.

Another key advantage is **high security and data protection**. Salesforce provides

multiple layers of security, including role-based access control, data encryption, and secure authentication. Each user has a defined level of access, which prevents unauthorized data manipulation. This ensures that sensitive customer and billing information is always protected.

The system also offers **extensive automation**, which significantly reduces manual work. Tasks such as calculating service charges, updating payment status, generating invoices, and sending email alerts are handled automatically through Salesforce Flows and Apex Triggers. This leads to faster service delivery, fewer human errors, and more accurate records.

A further advantage is the **ease of customization and scalability**. The system can be easily modified to meet specific business requirements—new services, fields, or workflows can be added without extensive coding. Salesforce's flexible architecture allows the same system to scale from a single small garage to a multi-branch enterprise with minimal effort.

The **reporting and dashboard features** are another major benefit. Managers can generate analytical reports and visualize real-time performance metrics such as total revenue, service ratings, and completed appointments. These insights help in data-driven decision-making and continuous process improvement.

The system also contributes to **enhanced customer engagement**. Automated notifications, timely service updates, and post-service feedback collection build strong communication between the garage and its customers. This not only improves transparency but also strengthens trust and long-term relationships.

Lastly, the system supports **environmental sustainability** by minimizing the need for paper-based records and manual documentation. All data is stored digitally in the Salesforce cloud, promoting an eco-friendly and organized working environment.

12. FUTURE ENHANCEMENT

While the **Garage Management System (GMS)** developed using Salesforce successfully automates the core operations of automotive service centers, there remains ample scope for further enhancement to make the system more intelligent, user-friendly, and connected to emerging technologies. The following future improvements can extend the project's functionality and make it even more impactful in real-world scenarios.

A key enhancement would be the **integration of online payment gateways** such as PayPal, Razorpay, or UPI-based systems. This would allow customers to make secure digital payments directly from the system, enabling real-time billing and reducing the dependency on manual cash handling. Automatic receipts and payment confirmations could also be generated and sent via email or SMS.

Another valuable improvement is the **development of a dedicated mobile application** using Salesforce Mobile or Experience Cloud. This would allow customers to book appointments, check service status, and provide feedback conveniently from their smartphones. Service advisors and mechanics could also use the mobile app to update records instantly, improving communication and workflow efficiency on the go.

The system can further evolve through **integration with Internet of Things (IoT)** devices. Modern vehicles are equipped with sensors that can transmit data about fuel levels, engine health, and maintenance requirements. Connecting these IoT signals to Salesforce could enable automatic service scheduling or alerts for preventive maintenance, thereby reducing breakdowns and enhancing customer trust.

Another major future direction is the **use of Artificial Intelligence (AI) and**

Predictive Analytics through Salesforce Einstein. By analyzing service patterns, customer feedback, and vehicle history, the AI module could predict future service needs, identify potential issues before they occur, and recommend personalized offers or maintenance schedules to customers. This would add an intelligent decision-making layer to the system.

Expanding the project to include **inventory and spare parts management** would further strengthen its capabilities. Tracking parts availability, ordering new stock automatically, and linking inventory data with service records can help garages operate more efficiently while reducing downtime due to unavailable components.

In addition, **multi-language and regional support** can make the application more inclusive, allowing users from different locations and linguistic backgrounds to use the system comfortably. Salesforce's localization features can easily support this enhancement, improving accessibility for diverse customer bases.

Finally, the system could be extended to support **franchise or multi-branch operations**, where multiple garages under the same brand are managed through a centralized Salesforce org. This would enable unified reporting, performance monitoring, and customer tracking across different service centers.

In conclusion, these enhancements — including digital payment integration, mobile accessibility, AI-based predictions, IoT connectivity, and multi-branch scalability — will elevate the **Garage Management System** from a functional automation platform to a **smart, intelligent, and future-ready enterprise solution**. Implementing these features will help garages adopt a truly digital and data-driven approach, aligning with the vision of next-generation cloud-based business transformation.

13. CONCLUSION

The **Garage Management System (GMS)** developed using **Salesforce** successfully demonstrates how cloud-based technologies can transform traditional garage operations into an automated, efficient, and customer-centric process. The project integrates key Salesforce features such as **custom objects, validation rules, flows, triggers, reports, and dashboards**, enabling a complete digital solution for managing customers, appointments, services, and billing.

Through the implementation of automation tools, the system eliminates manual errors, reduces operational time, and ensures seamless coordination between different functional modules. Managers can easily monitor ongoing services, generate analytical reports, and make data-driven decisions, while customers benefit from transparency, timely updates, and accurate billing.

The project also highlights the potential of **Salesforce as a low-code platform**, showcasing its adaptability beyond conventional CRM functions. It serves as a practical example of how industry-relevant technologies can be used in real-world applications to improve productivity and service quality.

Overall, the Garage Management System stands as an innovative and scalable solution that not only simplifies business processes but also strengthens customer relationships. This project experience has enhanced technical knowledge in Salesforce development and provided valuable insights into the importance of automation and data management in modern business environments.

14. REFERENCES

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