



GARAGE MANAGEMENT SYSTEM

R.HARIHARAN - 922222104012

N.NAVEEN KUMAR - 922222104032

N.GOKUL PRASATH - 922222104011

M.VENKATESHWARAN - 92222210453

Project Overview

The **Garage Management System** is designed to automate and streamline the operations of a vehicle service center. It manages customer details, service appointments, repair records, billing, and feedback through a centralized Salesforce application.

This system minimizes manual data entry and ensures efficient tracking of service processes — from appointment scheduling to billing and feedback collection.

The project leverages **Salesforce automation tools** such as *Custom Objects, Lookup Relationships, Validation Rules, Flows, Apex Triggers, and Reports/Dashboards* to create a smart and efficient garage management experience.

Objective

The primary objective of the Garage Management System is to simplify and automate the vehicle service process, enabling smooth interaction between customers, mechanics, and the management team.

Business Goals:

A. Simplify Customer and Appointment Management

Create a digital system that stores and manages all customer and appointment information efficiently.

B. Automate Billing and Service Records

Generate accurate billing details and automatically calculate service costs using triggers and flows.

C. Enhance Transparency and Feedback

Provide customers with clear billing summaries and enable feedback collection for service quality improvement.

D. Improve Workflow Efficiency

Automate repetitive tasks using Salesforce automation tools to save time and reduce human error.

E. Build Analytical Dashboards

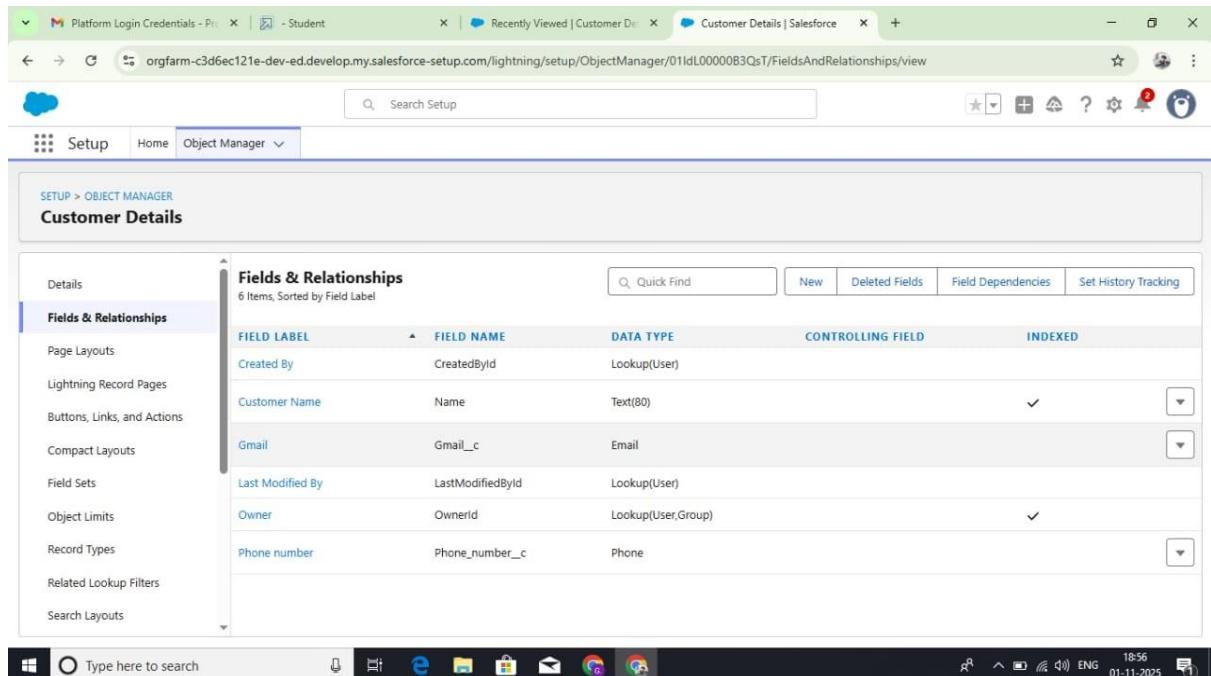
Generate insightful reports and dashboards to track service performance, customer satisfaction, and revenue trends.

Salesforce Key Features and Concepts Utilized Custom Objects

1. Customer Details

Stores customer information such as name, phone number, and email. Fields include:

- Customer Name (Record Name)
- Phone Number (Phone)
- Gmail (Email)



The screenshot shows the Salesforce Object Manager interface. The left sidebar has 'Fields & Relationships' selected. The main area displays a table titled 'Fields & Relationships' with 6 items. The table columns are FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The data is as follows:

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		

2. Appointment

Manages all service appointments with customers.

Record Name: Auto Number (app-{000})

- Key Fields: Appointment Date, Vehicle Number Plate, Service Amount, Maintenance Service, Repairs, Replacement Parts

Fields & Relationships
20 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Appointment Date	Appointment_Date_c	Date		
Appointment Id	Appointment_Id_c	Long Text Area(32768)		
Appointment Name	Name	Text(80)		✓
Contact	Contact_c	Lookup(Contact)		✓
Created By	CreatedBy	Lookup(User)		
Customer Details	Customer_Details_c	Lookup(Customer Details)		✓
Customer Id	Customer_Id_c	Text(60)		

3. Service Records

Tracks all service details linked to appointments.

Record Name: Auto Number (ser-{000})

- Key Fields: Service Status (Picklist), Quality Check Status (Checkbox), Service Date (Formula)

Fields & Relationships
9 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Appointment	Appointment_c	Lookup(Appointment)		✓
Appointment Date	Appointment_Date_c	Date		
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)		

4. Billing Details and Feedback

Handles payment details and customer feedback after services.

- Record Name: Auto Number (bill-{000})

- Key Fields: Payment Paid (Currency), Payment Status (Picklist), Rating for Service (Text)

Billing details and feedback

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Billing details and feedback Name	Name	Auto Number		✓
Created By	CreatedById	Lookup(User)		✓
Last Modified By	LastModifiedById	Lookup(User)		✓
Owner	OwnerId	Lookup(User,Group)		✓
Payment Paid	Payment_Paid__c	Currency(18, 0)		✓
Payment Status	Payment_Status__c	Picklist		✓
Rating for service	Rating_for_service__c	Text(1)		✓

Relationships

1. **Appointment ↔ Customer Details (Lookup Relationship)** ○ Each appointment record is linked to a customer. ○ Ensures easy tracking of which customer booked which appointment.

Edit Battery Check

* = Required Information

* Appointment Name	Battery Check	Owner	Srinidhi P
Customer Details	Mac		
* Appointment Date	10/23/2025		
Maintenance service	<input checked="" type="checkbox"/>		
Repairs	<input checked="" type="checkbox"/>		
Replacement Parts	<input type="checkbox"/>		
Service Amount	\$1000		

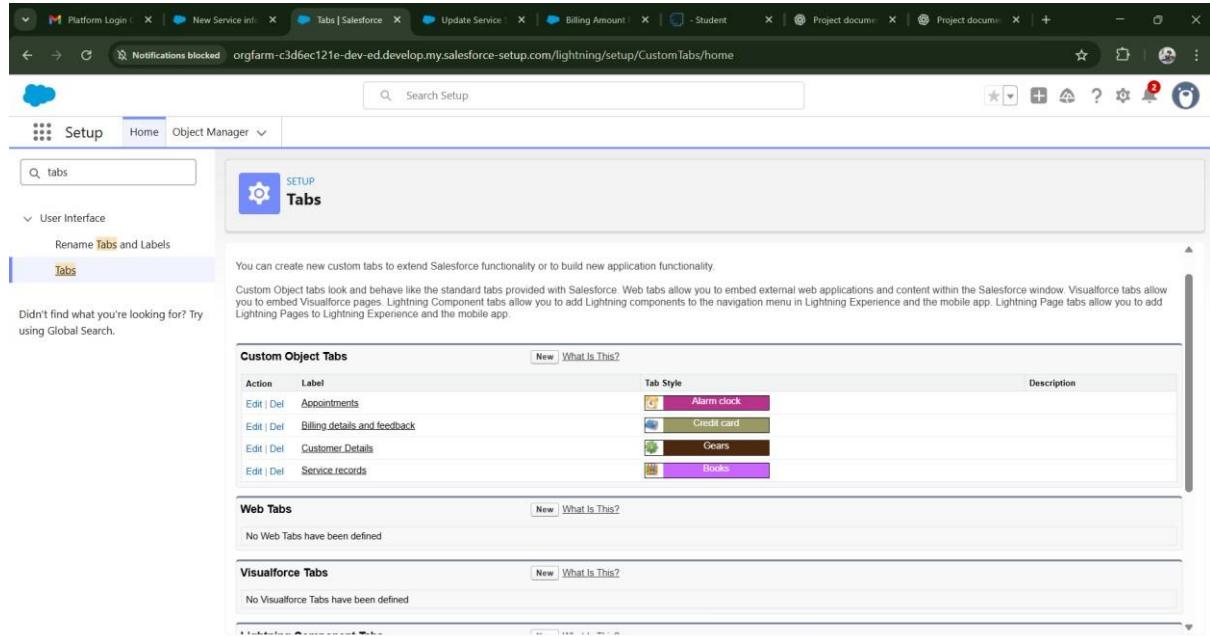
- 2. Service Records ↔ Appointment (Lookup Relationship)**
- Each service record belongs to an appointment.
 - Automatically updates service status based on quality checks.

- 3. Billing Details and Feedback ↔ Service Records (Lookup Relationship)**
- Each billing record connects to a service record.

- Ensures that billing and feedback are tied to the correct service instance

Tabs:

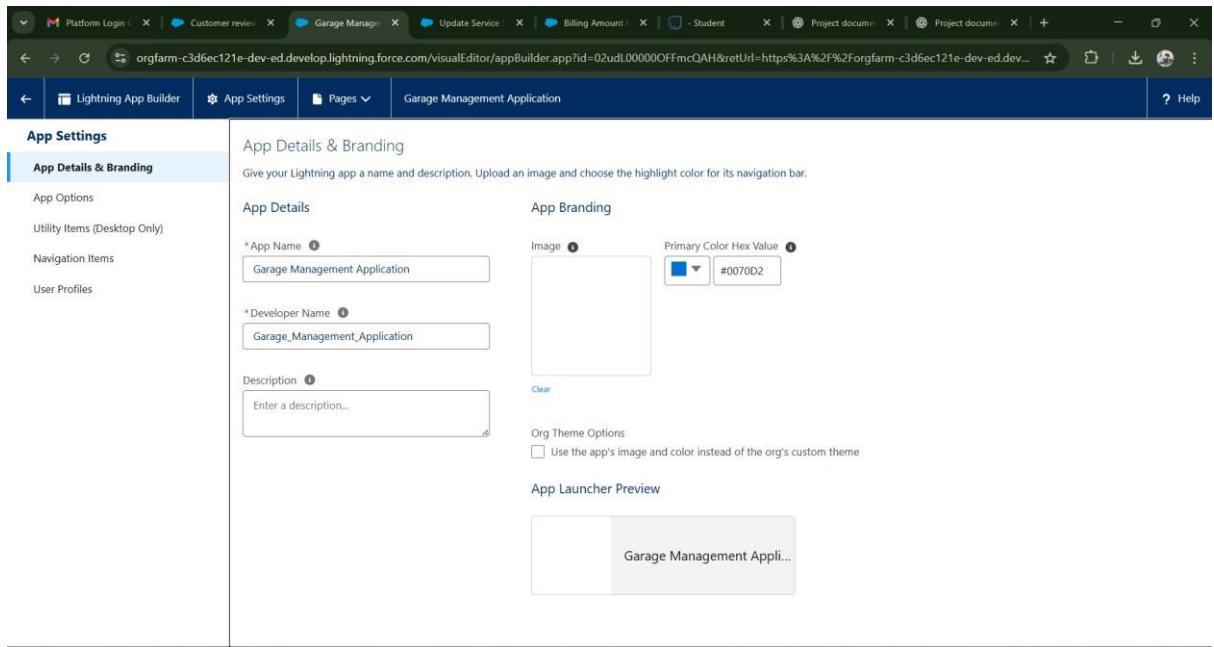
Custom tabs were created for **Customer Details**, **Appointments**, **Service Records**, and **Billing Details & Feedback** to enable easy navigation within the Garage Management System. Each tab helps users quickly access and manage related records, improving workflow efficiency.



The screenshot shows the Salesforce Setup interface with the 'Tabs' page selected. The top navigation bar includes links for Platform Login, New Service info, Tabs | Salesforce, Update Service, Billing Amount, Student, Project document, and another Project document. The main content area has a search bar labeled 'Search Setup.' and a sidebar with 'Setup' and 'Object Manager' buttons. The 'User Interface' section is expanded, showing 'Rename Tabs and Labels' and 'Tabs'. A note says 'Didn't find what you're looking for? Try using Global Search.' Below this, there are three sections: 'Custom Object Tabs', 'Web Tabs', and 'Visualforce Tabs'. The 'Custom Object Tabs' section lists four tabs: 'Appointments' (Alarm clock style), 'Billing details and feedback' (Credit card style), 'Customer Details' (Gears style), and 'Service records' (Books style). The 'Web Tabs' and 'Visualforce Tabs' sections both state 'No [Type] Tabs have been defined'.

Lightning App Development

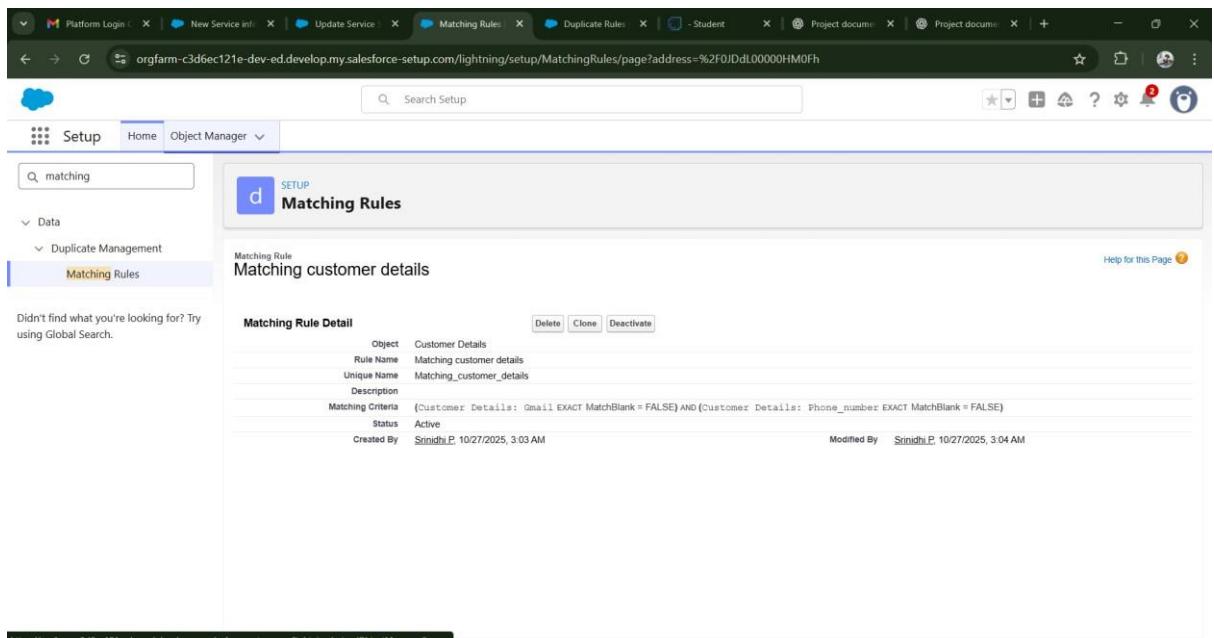
- **App Name:** Garage Management Application
- Added Tabs: Customer Details, Appointments, Service Records, Billing Details & Feedback, Reports, Dashboards
- Profile Access: System Administrator
- Ensures all essential modules are accessible within one interface.



Duplicate Rules:

Matching Rule:

A matching rule was created on the **Customer Details** object to identify duplicate records based on the **Gmail** and **Phone Number** fields. It ensures that each customer is unique by comparing new entries with existing records, maintaining clean and accurate customer data.



Duplicate

Rule:

A duplicate rule was configured for the **Customer Details** object using the created matching rule. It prevents users from adding duplicate customer records by displaying a warning or blocking the save action when a matching Gmail or phone number already exists.

The screenshot shows the 'Duplicate Rules' page in the Salesforce Setup. A single rule is listed:

- Rule Name:** Customer Detail duplicate
- Object:** Customer Details
- Record-Level Security:** Enforce sharing rules
- Action On Create:** Allow
- Action On Edit:** Allow
- Alert Text:** Use one of these records?
- Active:** ✓
- Matching Rule:** Matching_customer_details (Mapped)
- Matching Criteria:** {Customer_Details: Gmail_exact MatchBlank = FALSE} AND {Customer_Details: Phone_number exact MatchBlank = FALSE}
- Created By:** Srinidhi P. 10/27/2025, 3:06 AM
- Modified By:** Srinidhi P. 10/27/2025, 3:06 AM

Validation Rules

- Appointment Object – Vehicle Number Plate Validation** Ensures that vehicle numbers follow a proper format.

Error Message: “Please enter valid number.”

The screenshot shows the 'Validation Rules' page for the 'Appointment' object. One rule is listed:

- Validation Rule Detail:** Appointment Validation Rule
- Rule Name:** Vehicle
- Error Condition Formula:** NOT(REGEX(Vehicle_number_plate__c, "[A-Z]{2}[0-9]{2}[A-Z]{2}[0-9]{4}"))
- Error Message:** Please enter valid number
- Description:**
- Created By:** Srinidhi P. 10/27/2025, 2:59 AM
- Modified By:** Srinidhi P. 10/27/2025, 2:59 AM

- Billing Details and Feedback – Rating Validation** Ensures feedback rating is between 1 and 5.

Error Message: “Rating should be from 1 to 5.”

The screenshot shows the Salesforce Setup interface with the path **SETUP > OBJECT MANAGER > Billing details and feedback**. On the left, a sidebar lists various setup categories like Details, Fields & Relationships, Page Layouts, etc. The main content area displays the **Billing details and feedback Validation Rule**. The rule is named **rating_should_be_less_than_5** and is active. The validation formula is `NOT(REGEX(Rating_for_service__c, '[1-5]{1}'))`, which means the rating should be from 1 to 5. The error message is "rating should be from 1 to 5". The rule was created by Srinidhi P. on 10/27/2025, 3:01 AM, and modified by the same user on 10/27/2025, 3:01 AM.

Profiles

1. Manager

- Full access to all objects.
- Session timeout: 8 hours.
- Passwords never expire.

The screenshot shows the Salesforce Setup interface with the path **SETUP > Profiles**. The search bar at the top has "profiles" typed into it. The main content area displays the **Manager** profile. The profile name is **Manager** and the user license is **Salesforce**. The profile is a custom profile. The page layouts section shows standard object layouts for Global, Email Application, and Home Page, each with their respective assignment details.

2. Sales Person

- Limited access (create/view own records).
- Default app: Garage Management.

The screenshot shows the Salesforce Setup interface for managing profiles. The left sidebar shows 'Profiles' selected under 'Users'. The main content area is titled 'Profiles' and displays the 'sales person' profile. It includes sections for 'Profile Detail' (Name: sales person, User License: Salesforce Platform), 'Page Layouts' (Standard Object Layouts: Global [View Assignment], Email Application [Not Assigned]), and 'Permissions' (a long list of various access checkboxes). A message at the top says, "Didn't find what you're looking for? Try using Global Search." The bottom status bar shows the date as 01-11-2025 and the time as 20:50.

Roles

- **Manager Role (top level)**
- **Sales Person Role (under Manager)**

The screenshot shows the Salesforce Setup interface for managing roles. The left sidebar shows 'Roles' selected under 'Users'. The main content area is titled 'Roles' and displays the 'Creating the Role Hierarchy' section. It shows a tree view of roles: 'Theni Kamnavar sangam college of technology' (with 'CEO', 'COO', 'Manager', and 'Sales person' roles), 'SVP_Customer Service & Support' (with 'Customer Support International', 'Customer Support North America', and 'Installation & Repair Services' roles), 'SVP_Human Resources', and 'SVP_Sales & Marketing'. A message at the top says, "Didn't find what you're looking for? Try using Global Search." The bottom status bar shows the date as 01-11-2025 and the time as 20:54.

User Details:

Multiple users were created to manage different roles within the Garage Management System. The **Manager** user oversees all operations and data access, while **Salesperson** users handle appointments, service records, and billing activities. This setup helps test role-based permissions and data-sharing functionalities effectively.

Active Users

Action	Full Name	Alias	Username	Role	Active	Profile
<input type="checkbox"/>	Charter	Charter	sharmi.00dd000000frzhu0@hkvsfslqjwud@chatter.salesforce.com		<input checked="" type="checkbox"/>	Chatter Free User
<input type="checkbox"/>	EPIC_OrgFarm	epic_7od89ba8274e@confirm.salesforce.com			<input checked="" type="checkbox"/>	System Administrator
<input type="checkbox"/>	Kim	kim	kimashni78@gmail.com	salesperson	<input checked="" type="checkbox"/>	sales person
<input type="checkbox"/>	Lorette_Maya	maya	maya@corinne.maya!	salesperson	<input checked="" type="checkbox"/>	sales person
<input type="checkbox"/>	Mikaelson_Niklaus	niklaus	niklaus@mikaelson.nik	Manager	<input checked="" type="checkbox"/>	Manager
<input type="checkbox"/>	P_Srinidhi	pi	srinidhiandian76527@apexforce.com	salesperson	<input checked="" type="checkbox"/>	System Administrator
<input type="checkbox"/>	Para_Ted	para	ted@jeana.it		<input checked="" type="checkbox"/>	sales person
<input type="checkbox"/>	User_Integration	integ	integration@00dd000000frzhu0.com		<input checked="" type="checkbox"/>	Analytics Cloud Integration User
<input type="checkbox"/>	User_Security	sec	insightssecurity@00dd000000frzhu0.com		<input checked="" type="checkbox"/>	Analytics Cloud Security User

Public Group

- **Group Name:** Sales Team
- **Members:** Users with Sales Person Role.

Sales Team

Name	Type
sales.person	Role

Sharing Settings

- Service Records → Private.
- Sharing Rule:

- Records owned by Sales Person are shared with Manager (Read/Write access).

The screenshot shows the 'Sharing Settings' page in the Salesforce Setup. The left sidebar has 'Sharing' selected under 'Security'. The main area displays sharing rules for different objects:

Object	Sharing Rule Type	Access Level	Setting
Appointment	Public Read/Write	Private	<input checked="" type="checkbox"/>
Billing details and feedback	Public Read/Write	Private	<input checked="" type="checkbox"/>
Customer Details	Public Read/Write	Private	<input checked="" type="checkbox"/>
Service records	Private	Private	<input checked="" type="checkbox"/>

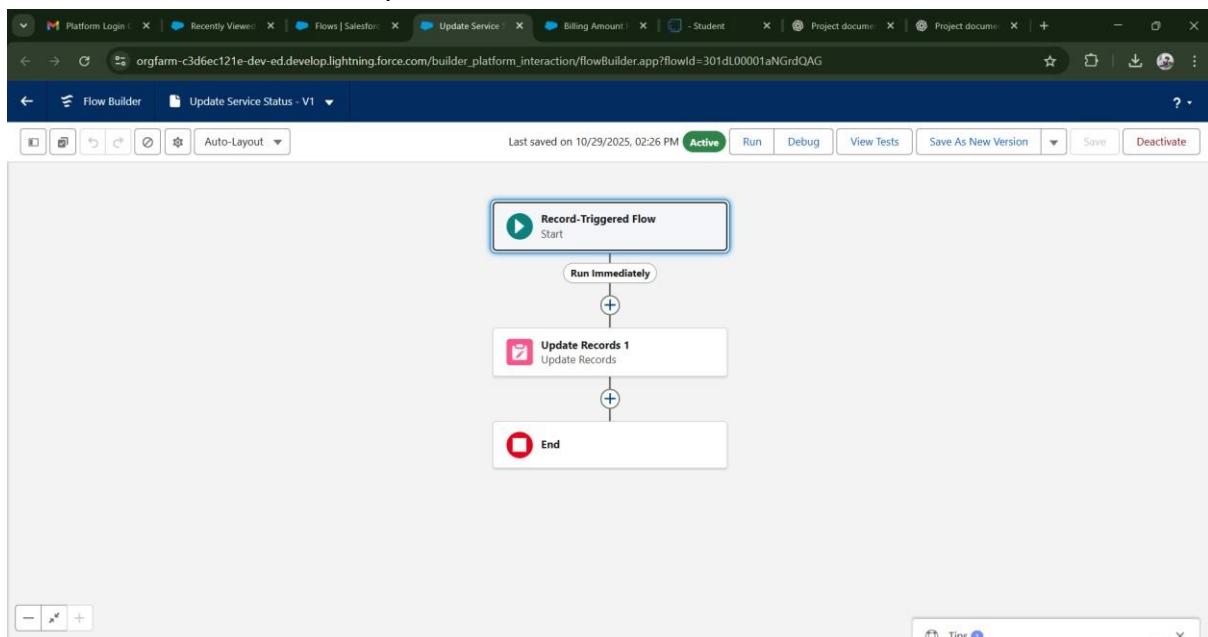
Below this is the 'Other Settings' section with checkboxes for 'Manager Groups', 'Secure guest user record access', and 'Require permission to view record names in lookup fields'.

The 'Sharing Rules' section shows 'Lead Sharing Rules' with a note: 'No sharing rules specified.'

Automations and Flows

Update Service Status Flow:

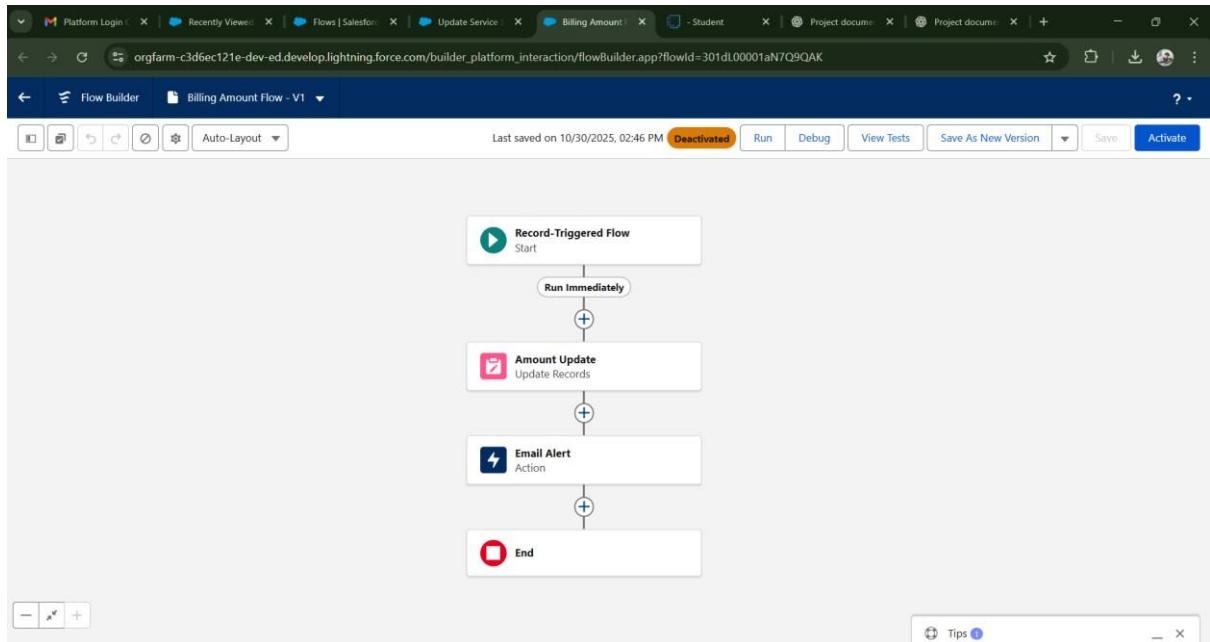
This flow automatically updates the *Service Status* field in the Service Records object to *Completed* when the *Quality Check Status* checkbox is marked true, ensuring that completed services are tracked accurately without manual intervention.



Billing Amount Flow:

This flow automatically updates the *Payment Paid* field in the Billing Details and Feedback object based on the related *Service Amount* from the Appointment object.

Once the payment status is marked as *Completed*, it also sends a confirmation email to the customer.



Apex Trigger and Handler

1. Apex Trigger:

The **AmountDistribution** trigger runs before insert and update operations in the *Appointment* object, calling the handler to execute the service amount calculation automatically.

```
trigger AmountDistribution on Appointment__c (before insert, before update) {
    if(trigger.isbefore && trigger.isinsert || trigger.isupdate){
        AmountDistributionHandler.amountDist(trigger.new);
    }
}
```

2. Apex Handler:

The **AmountDistributionHandler** class automatically calculates the total *Service Amount* based on selected services like Maintenance, Repairs, and Replacement Parts, ensuring accurate and consistent billing.

The screenshot shows the Salesforce Developer Console interface. The title bar reads "Developer Console - Google Chrome" and the URL is "orgfarm-c3d6ec121e-dev-ed.develop.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage". The menu bar includes File, Edit, Debug, Test, Workspace, Help, and a search bar. Below the menu is a toolbar with tabs for "AmountDistributionHandler.apxc" (selected), "AmountDistribution.apxt", Code Coverage (None), API Version (65), and a "Go To" button. The main area displays the Apex code for the "AmountDistributionHandler" class:

```
1 public class AmountDistributionHandler {  
2  
3  
4  
5 public static void amountDist(list<Appointment__c> listApp){  
6  
7     list<Service__records__c> serList = new list <Service__records__c>();  
8  
9  
10    for(Appointment__c app : listApp){  
11        if(app.Maintenance_Service__c == true && app.Repairs__c == true && app.Replacement_Parts__c == true){  
12            app.Service_Amount__c = 10000;  
13        }  
14    }  
15  
16  
17 }  
18
```

1

Record Creation

1. Customer Details: Created records with customer name, phone number, and Gmail to store client information.

Customer Details

All

11 items • Sorted by Customer Name • Updated a few seconds ago

	Customer Name	Actions
1	Aarav Kumar	<input type="checkbox"/>
2	Ananya Singh	<input type="checkbox"/>
3	Arjun Patel	<input type="checkbox"/>
4	Diya Sharma	<input type="checkbox"/>
5	Isha Nair	<input type="checkbox"/>
6	Kabir Joshi	<input type="checkbox"/>
7	Mac	<input type="checkbox"/>
8	Rohan Mehta	<input type="checkbox"/>
9	Sanya Kapoor	<input type="checkbox"/>
10	Tara Verma	<input type="checkbox"/>
11	Vivaan Rao	<input type="checkbox"/>

2. Appointment: Created records linked to customers with appointment date, vehicle number plate, and selected service options.

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

Appointments

Recently Viewed

11 items • Updated a few seconds ago

	Appointment Name
1	Battery Check
2	Battery Check
3	Tire Rotation
4	Oil Replacement
5	Brake Inspection
6	Engine Checkup
7	Full Service
8	AC Repair
9	Transmission Flush
10	Wheel Alignment
11	General Maintenance

3. Service Records: Generated records connected to appointments, marking service progress and performing quality checks.

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

Service records

All

11 items • Sorted by Service records Name • Updated a few seconds ago

	Service records Name ↑
1	ser-010
2	ser-011
3	ser-012
4	ser-013
5	ser-014
6	ser-015
7	ser-016
8	ser-017
9	ser-018
10	ser-019
11	ser-020

4. Billing Details & Feedback: Added billing records with payment status, payment amount, and service rating to verify automation and flows.

Billing details and feedback

All

10 items • Sorted by Billing details and feedback Name • Updated a few seconds ago

	Billing details and feedback Name
1	bill-006
2	bill-007
3	bill-008
4	bill-009
5	bill-010
6	bill-011
7	bill-012
8	bill-013
9	bill-014
10	bill-015

Report Type: “Service Information”

- **Primary Object:** Customer Details
- **Related Objects:** Appointment → Service Records → Billing Details and Feedback
- Displays: Customer Name, Appointment Date, Service Status, Payment Paid, Rating for Service.

Customer Details

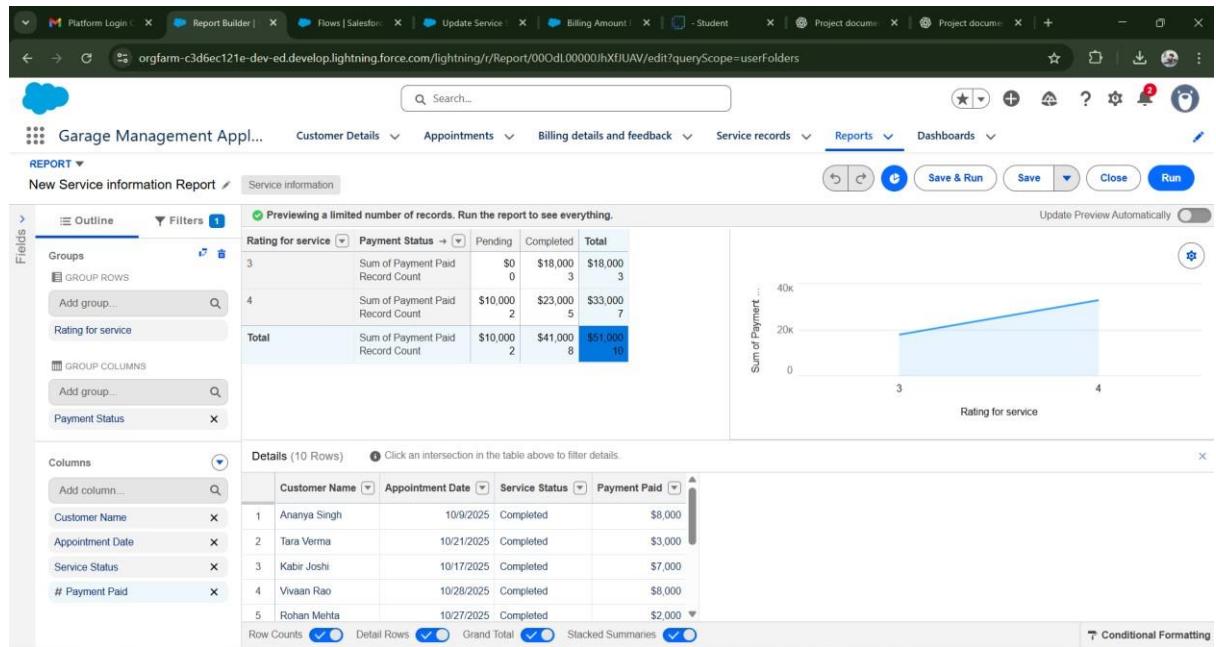
Recently Viewed

2 items • Updated a few seconds ago

	Customer Name
1	Mac
2	Aarav Kumar

Report Creation

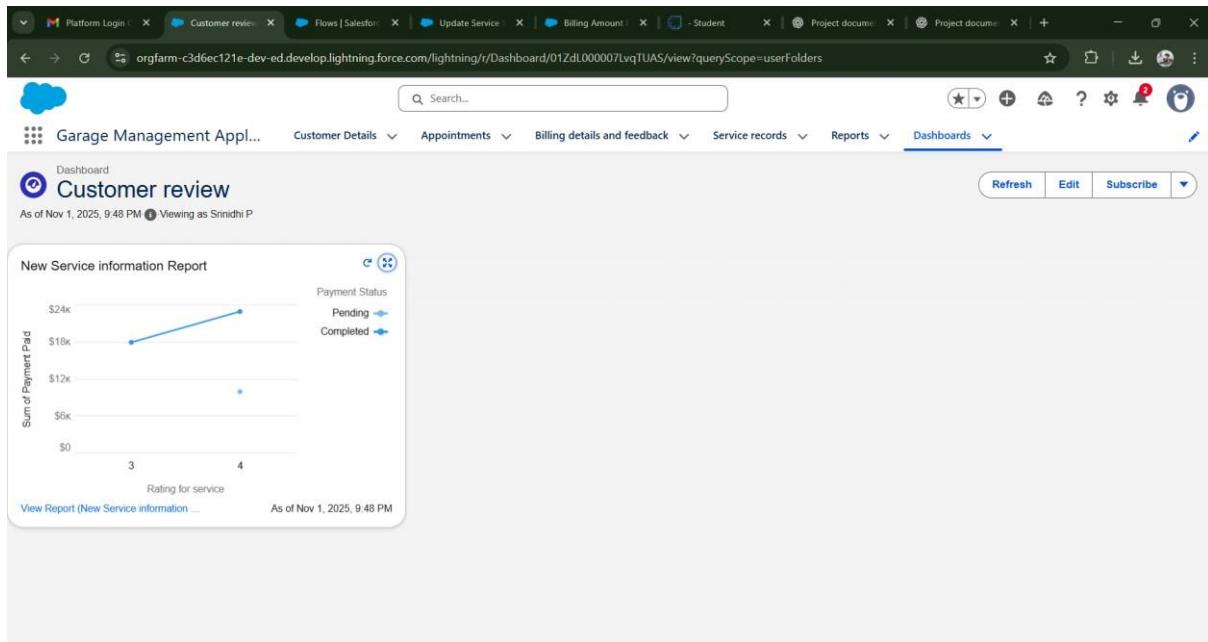
- Filters unnecessary fields.
- Groups by *Payment Status* and *Rating for Service*.
- Adds a **Line Chart** for payment insights.



Dashboard:

Dashboard Creation

- Folder Name: *Service Rating Dashboard*
- Displays visual analytics of:
 - Service Completion Rate ○ Payment Status Summary
 - Customer Ratings Overview
- Subscription set to **Weekly (Every Monday)**.



Key Scenarios Addressed by Salesforce in the Implementation Project:

- **Efficient Customer Management:**
Salesforce centralized all customer details, making it easy to track contact information and service history.
- **Automated Appointment Scheduling:**
The system managed appointment creation and linking with customers, reducing manual scheduling errors.
- **Service Tracking and Quality Updates:**
Automated flows updated service status to *Completed* when quality checks were done, ensuring real-time tracking.
- **Billing and Payment Automation:**
The Billing Amount Flow updated payment details and sent confirmation emails automatically when payments were completed.
- **Feedback and Performance Monitoring:**
Customer feedback was collected through billing records, helping assess service quality and customer satisfaction.
- **Role-Based Access and Security:**
Different profiles and roles ensured that managers and salespersons had proper data access and sharing permissions.
- **Reporting and Dashboard Insights:**
Custom reports and dashboards provided visual insights into payments, service performance, and customer ratings for better decision-making.

12. Conclusion

The **Garage Management System** provides an integrated, automated solution for managing all aspects of vehicle servicing.

This screenshot shows a report titled "New Service information Report" from the "Garage Management Appl..." application. The report displays 10 service records. At the top, it shows "Total Records: 10" and "Total Payment Paid: \$51,000". Below this is a horizontal bar chart showing the distribution of service ratings (3 to 4). A table below the chart lists the details of each service record, including Customer Name, Appointment Date, Service Status, and Payment Paid. The table has columns for Customer Name, Appointment Date, Service Status, and Payment Paid. The data is as follows:

	Customer Name	Appointment Date	Service Status	Payment Paid
1	Ananya Singh	10/9/2025	Completed	\$8,000
2	Tara Verma	10/21/2025	Completed	\$3,000
3	Kabir Joshi	10/17/2025	Completed	\$7,000
4	Vivaan Rao	10/28/2025	Completed	\$8,000
5	Rohan Mehta	10/27/2025	Completed	\$2,000

This screenshot shows the same "New Service information Report" from the "Garage Management Appl..." application. The report displays 10 service records. At the top, it shows "Total Records: 10" and "Total Payment Paid: \$51,000". Below this is a horizontal bar chart showing the distribution of service ratings (3 to 4). A table below the chart lists the details of each service record, including Customer Name, Appointment Date, Service Status, and Payment Paid. The table has columns for Customer Name, Appointment Date, Service Status, and Payment Paid. The data is as follows:

	Customer Name	Appointment Date	Service Status	Payment Paid
7	Sanya Kapoor	10/22/2025	Completed	\$8,000
8	Aarav Kumar	10/12/2025	Completed	\$2,000
9	Arijun Patel	10/2/2025	Completed	\$2,000
10	Isha Nair	10/15/2025	Completed	\$8,000
11				\$51,000