

Garage Management System

Project Overview:

The **Garage Management System (GMS)** is a Salesforce-based solution designed to modernise and streamline garage operations. Traditional garage workflows often rely on physical registers, spreadsheets, or fragmented tools, which result in:

- **Delays** in booking and service tracking.
- **Errors** in billing and spare parts stock handling.
- **Poor customer experience** due to lack of updates and transparency.

The GMS addresses these challenges by integrating **customer, vehicle, service, billing, and inventory** data into a single platform. It enables:

- Efficient service management.
- Real-time notifications and reminders.
- Stock monitoring with low-inventory alerts.
- Dashboards for decision-making.

The system enhances **operational efficiency, customer satisfaction, and scalability**, while also laying the groundwork for future integration with **mobile apps, IoT, and AI recommendations**.

Objectives:

The main goals of the Garage Management System are:

1. **Service Bookings & Job Tracking** – Streamline vehicle service booking, create digital job cards, and monitor progress.
2. **Centralized Information** – Maintain a single repository for customer profiles, vehicles, service history, and payments.
3. **Alerts & Notifications** – Send automated reminders for service due dates, job completion, and billing.
4. **Analytics** – Provide dashboards for revenue trends, popular services, staff productivity, and customer reviews.
5. **Inventory Control** – Track spare parts, notify for low stock, and prevent negative stock entries.
6. **Role-Based Access** – Ensure different access levels for admins, managers, technicians, and customers.
7. **Error Reduction** – Minimize manual mistakes with automation, validation rules, and

approval processes.

8. **Future-Proofing** – Prepare for integration with mobile apps, IoT devices (for vehicle monitoring), and AI-powered insights.

Phase 1: Requirement Analysis & Planning

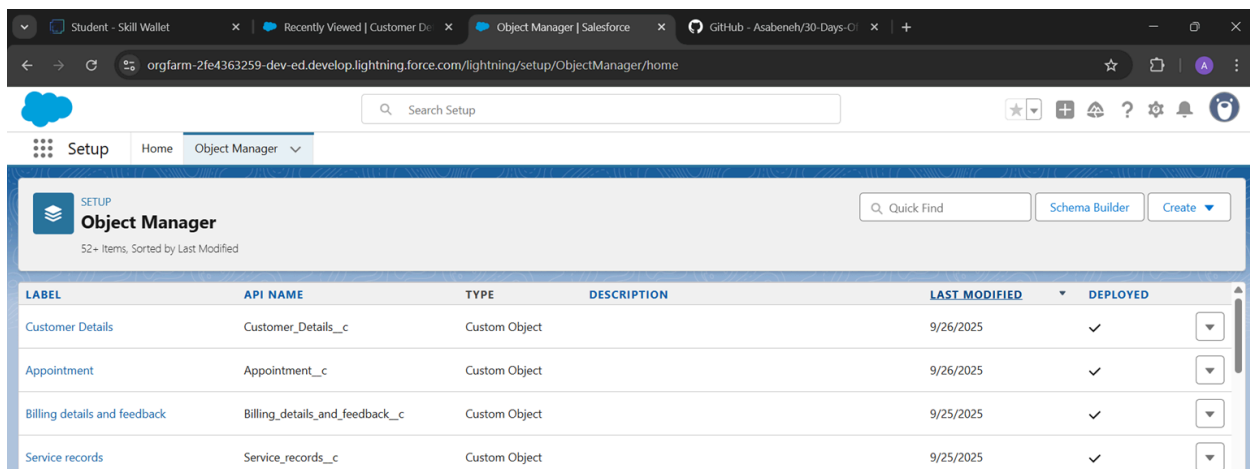
This stage focused on understanding the expectations of garage owners, employees, and customers.

Key Activities:

- Conducted **requirement analysis** through stakeholder interviews.
- Defined scope covering **bookings, vehicle tracking, billing, and stock management**.
- Designed a **data model** including entities like Customer, Vehicle, Service Request, Spare Parts, and Payments.
- Established **security hierarchy**:
 - **Admin** → **Service Manager** → **Mechanic** → **Customer**.
- Drafted a **project timeline**, dividing it into analysis, development, testing, and deployment.

Custom Objects Created:

- Appointment
- Service Records
- Customer Information
- Billing & Feedback



The screenshot shows the Salesforce Object Manager interface. The browser address bar indicates the URL: orgfarm-2fe4363259-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/home. The page title is "Object Manager" with a sub-header "52+ Items, Sorted by Last Modified". A table lists four custom objects:

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
Customer Details	Customer_Details__c	Custom Object		9/26/2025	✓
Appointment	Appointment__c	Custom Object		9/26/2025	✓
Billing details and feedback	Billing_details_and_feedback__c	Custom Object		9/25/2025	✓
Service records	Service_records__c	Custom Object		9/25/2025	✓

Object Manager

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Setup Home Object Manager

SETUP > OBJECT MANAGER
Service records

Details

Fields & Relationships
8 Items, Sorted by Field Label

Q Quick Find New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Appointment	Appointment__c	Lookup(Appointment)		✓
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Quality Check Status	Quality_Check_Status__c	Checkbox		
service date	service_date__c	Formula (Date)		
Service records Name	Name	Auto Number		✓
Service Status	Service_Status__c	Picklist		

Page Layouts
Lightning Record Pages
Buttons, Links, and Actions
Compact Layouts
Field Sets
Object Limits
Record Types
Related Lookup Filters
Search Layouts
List View Button Layout

Field And Relationships Of Service Records

SETUP > OBJECT MANAGER
Appointment

Details

Fields & Relationships
11 Items, Sorted by Field Label

Q Quick Find New Deleted Fields Field Dependencies Set History Tracking

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)		
Maintenance service	Maintenance_service__c	Checkbox		
Owner	OwnerId	Lookup(User,Group)		✓
Repairs	Repairs__c	Checkbox		
Replacement Parts	Replacement_Parts__c	Checkbox		
Service Amount	Service_Amount__c	Currency(\$,0)		

Page Layouts
Lightning Record Pages
Buttons, Links, and Actions
Compact Layouts
Field Sets
Object Limits
Record Types
Related Lookup Filters
Search Layouts
List View Button Layout
Restriction Rules
Scoping Rules

Field And Relationships For Appointment Object

The screenshot shows the Salesforce Setup interface for the 'Billing details and feedback' object. The left sidebar contains a navigation menu with options like Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, and List View Button Layout. The main content area is titled 'Fields & Relationships' and displays a table of 8 items, sorted by Field Label. The table has columns for FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The fields listed are: Billing details and feedback Name (Auto Number, indexed), Created By (Lookup(User)), Last Modified By (Lookup(User)), Owner (Lookup(User, Group), indexed), Payment Paid (Currency(18, 0)), Payment Status (Picklist), Rating for service (Text(1)), and Service records (Lookup(Service records), indexed). Buttons for 'New', 'Deleted Fields', 'Field Dependencies', and 'Set History Tracking' are visible at the top right of the table.

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)		
Service records	Service_records__c	Lookup(Service records)		✓

Field And Relationships For Billing Details And Feedback

Roles assigned for the system:

The screenshot shows the Salesforce Setup interface for the 'Roles' page. The left sidebar contains a navigation menu with options like Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, and List View Button Layout. The main content area is titled 'Creating the Role Hierarchy' and displays a tree view of the role hierarchy. The hierarchy starts with 'Eastpoint' at the top, followed by 'CEO', 'CFO', 'COO', 'Manager', 'sales person', 'SVP, Customer Service & Support', 'Customer Support, International', 'Customer Support, North America', and 'Installation & Repair Services'. Each role in the hierarchy has an 'Add Role' button next to it. A 'Show in tree view' dropdown is visible at the top right of the tree view.

Phase 2: Salesforce Development – Backend & Configurations

This stage involved building the **technical foundation** of the system.

Key Activities:

- **Custom Objects:** Customer, Vehicle, Service Request, Job Card, Spare Part, Payment.
- **Validation Rules:**
 - Service completion must be after the start date.
 - Stock values cannot be negative.
- **Workflow Rules & Flows:**
 - Notifications for upcoming services.
 - Low-inventory alerts.
 - Automatic billing reminders.
- **Apex Triggers:**
 - Update service status automatically.
 - Generate invoice numbers dynamically.
- **Page Layouts:**
 - Customized layouts for **mechanics, managers, and customers.**

The screenshot shows the Salesforce Setup interface for the 'Service records' object. The left sidebar contains a navigation menu with options: Details, Fields & Relationships (selected), Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, and List View Button Layout. The main content area is titled 'Service records' and displays the 'Fields & Relationships' section. It shows a table of 8 fields, sorted by Field Label. The table has columns for FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The fields listed are: Appointment (Appointment_c, Lookup(Appointment), Indexed), Created By (CreatedBy, Lookup(User)), Last Modified By (LastModifiedById, Lookup(User)), Owner (OwnerId, Lookup(User,Group), Indexed), Quality Check Status (Quality_Check_Status_c, Checkbox), service_date (service_date_c, Formula (Date)), Service records Name (Name, Auto Number, Indexed), and Service Status (Service_Status_c, Picklist).

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Appointment	Appointment_c	Lookup(Appointment)		✓
Created By	CreatedBy	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Quality Check Status	Quality_Check_Status_c	Checkbox		
service_date	service_date_c	Formula (Date)		
Service records Name	Name	Auto Number		✓
Service Status	Service_Status_c	Picklist		

SETUP > OBJECT MANAGER

Appointment

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Search Layouts

List View Button Layout

Restriction Rules

Scoping Rules

Fields & Relationships

11 Items, Sorted by Field Label

Q Quick Find

NewDeleted FieldsField DependenciesSet History Tracking

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)		
Maintenance service	Maintenance_service__c	Checkbox		
Owner	OwnerId	Lookup(User,Group)		✓
Repairs	Repairs__c	Checkbox		
Replacement Parts	Replacement_Parts__c	Checkbox		
Service Amount	Service_Amount__c	Currency(18, 0)		

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Setup

Home

Object Manager

SETUP > OBJECT MANAGER

Billing details and feedback

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Search Layouts

List View Button Layout

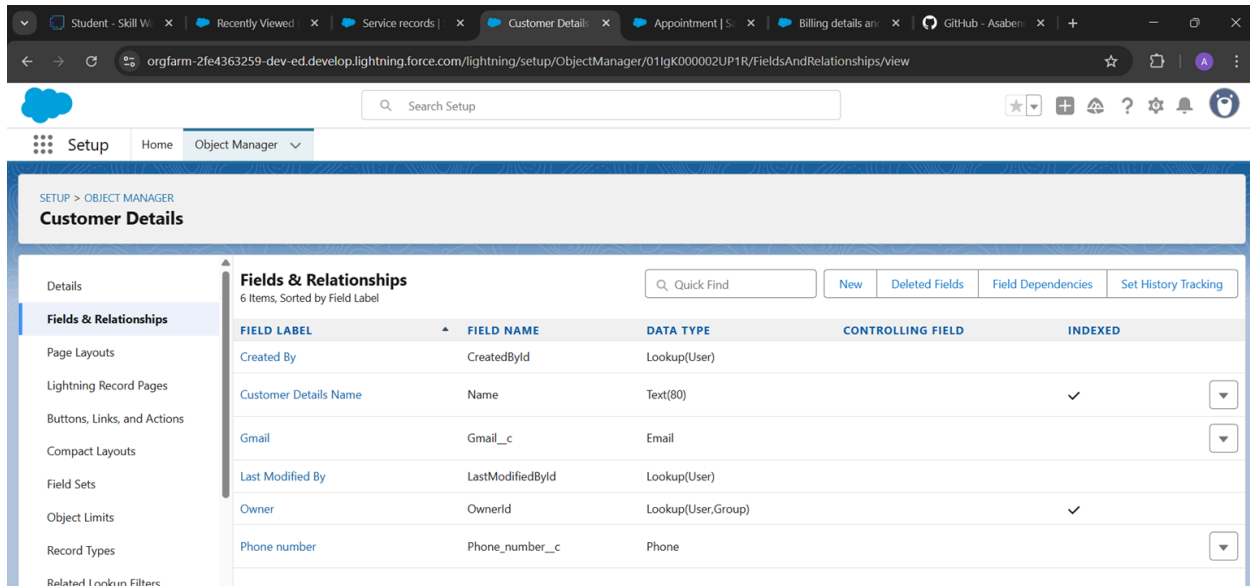
Fields & Relationships

8 Items, Sorted by Field Label

Q Quick Find

NewDeleted FieldsField DependenciesSet History Tracking

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)		
Service records	Service_records__c	Lookup(Service records)		✓



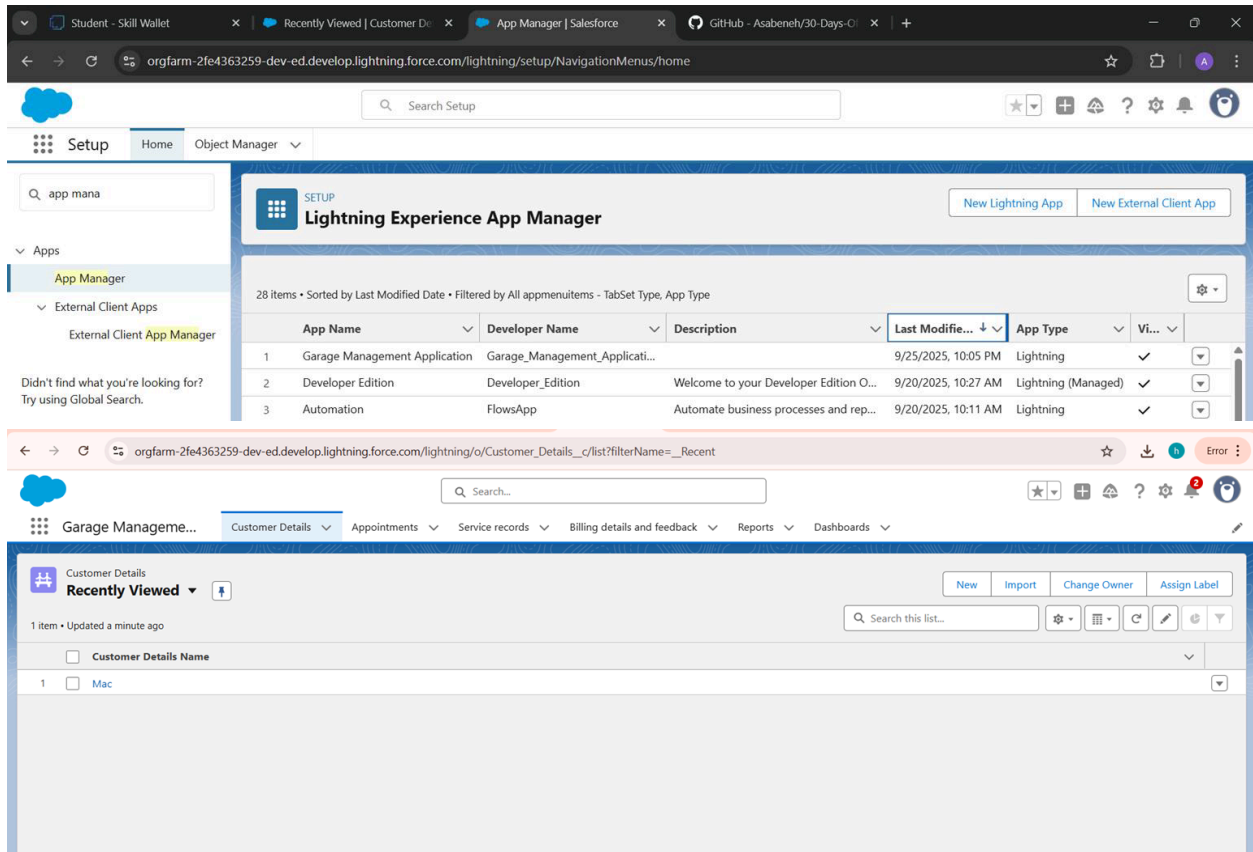
Phase 3: UI/UX Development & Customization

The **user interface** was designed for simplicity and daily usability.

Key Activities:

- **Lightning Pages** for Services, Job Cards, and Vehicle details.
- **Dynamic Forms** to display fields based on service type (repair, inspection, or maintenance).
- **Reports & Dashboards:**
 - Service demand trends.
 - Customer satisfaction reviews.
 - Revenue and productivity tracking.
- **Lightning Web Components (LWCs)** for:
 - Online service booking.
 - Spare part search.

This phase ensured **usability for technicians, managers, and customers alike**.



Tab View Of Lightning App

Phase 4: Data Migration, Testing & Security

Before going live, the system was populated with old records and tested thoroughly.

Key Activities:

- **Data Migration:** Imported legacy records (customers, vehicles, inventory) using Salesforce Data Loader.
- **Testing:**
 - **Unit Testing** – service creation, billing, and appointment scheduling.
 - **Integration Testing** – billing + inventory updates together.
 - **User Acceptance Testing (UAT)** with garage managers.
- **Security Measures:**
 - Role-based restrictions (mechanics limited to job-level data).

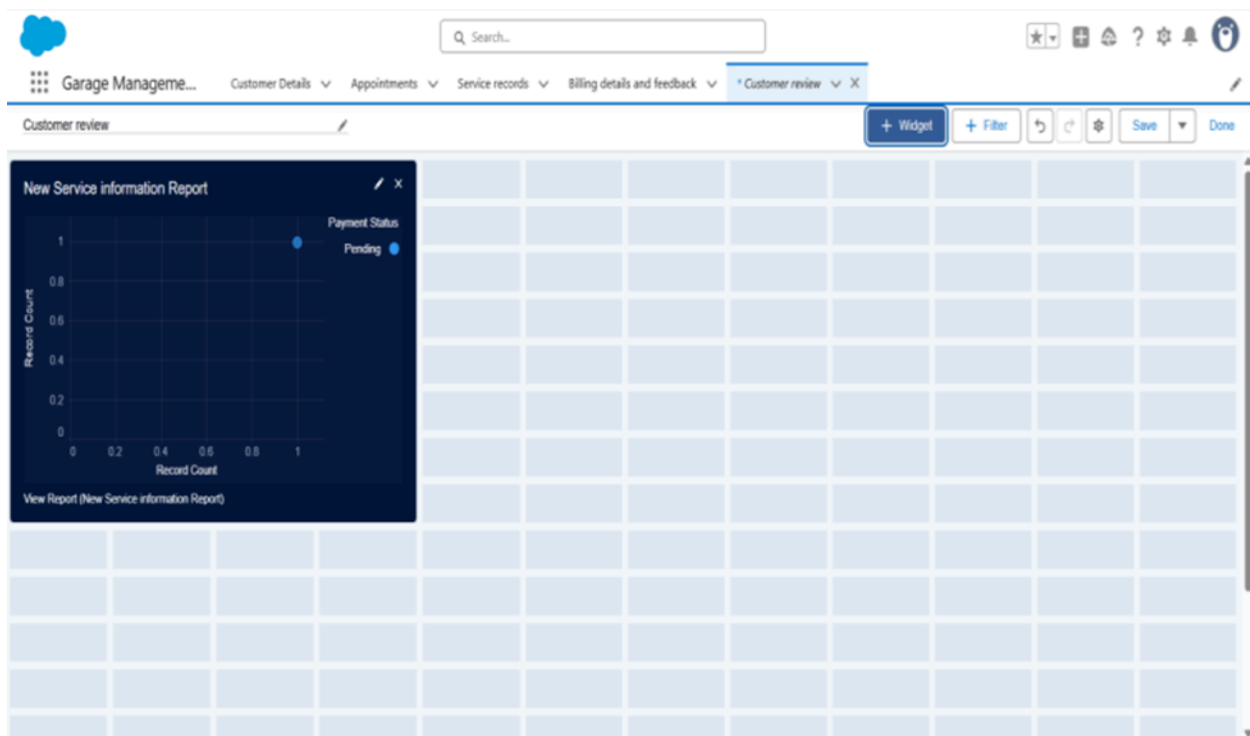
- Managers with approval authority.
- Customers with self-service portals for tracking.
- **Compliance:** Enforced password rules, audit trails, and field history tracking.

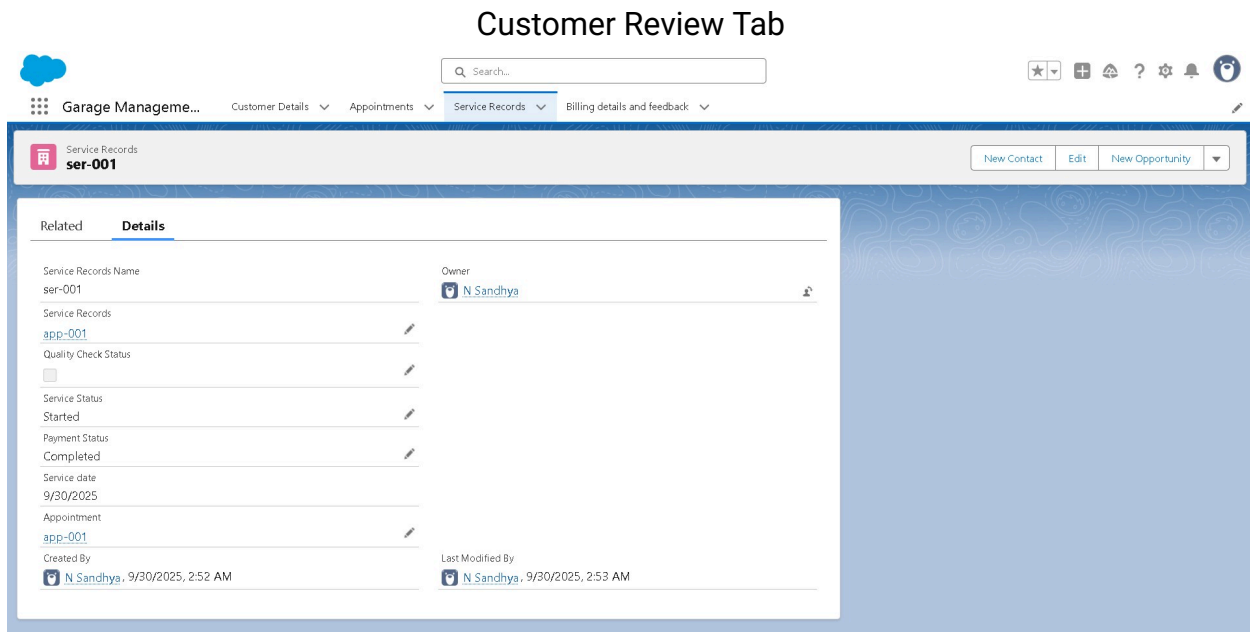
Phase 5: Deployment, Documentation & Maintenance

The system was rolled out for production use.

Key Activities:

- **Deployment Tools:** Salesforce Change Sets and CLI.
- **User Training:** Prepared manuals for mechanics, managers, and administrators.
- **Ongoing Maintenance:**
 - Bug fixes.
 - Regular updates for new spare parts.
 - Improved service templates.
- **Future Enhancements:**
 - AI-driven service recommendations.
 - Customer mobile apps for real-time updates.
 - IoT-based vehicle health monitoring.





Customer Details Tab Of Garage Management App

Conclusion

The **Garage Management System** provides a **comprehensive digital platform** for managing vehicles, customers, inventory, and billing. Its benefits include:

- **Operational efficiency** through automation.
- **Improved customer trust** with timely reminders and transparent updates.
- **Real-time insights** into performance and revenue.

Looking ahead, the system can evolve into a **smart garage solution** with IoT integration, AI-powered service forecasting, and mobile accessibility, making it scalable for future garage business needs.