

Garage Management System

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1. Project Overview

This project is focused on developing a Garage Management System using Salesforce. The primary objective is to streamline garage operations, enhance service efficiency, and improve customer experience. The solution aims to digitize and automate tasks related to appointment scheduling, service tracking, billing, and customer feedback. By leveraging Salesforce's features, the project intends to boost operational efficiency, ensure accurate data management, and support the long-term goals of garage businesses.

2. Objectives

Business Goals:

- Enhance customer satisfaction by providing a seamless experience.
- Improve operational efficiency by automating scheduling, service tracking, and payment processes.
- Centralize data for better decision-making and reporting.

Specific Outcomes:

- Implement a digital solution for managing customer details, appointments, service records, and billing.
- Provide real-time insights through reports and dashboards.
- Automate workflows to reduce manual effort and errors.

3. Salesforce Key Features and Concepts Utilized

- **Custom Objects:** Customer Details, Appointments, Service Records, Billing Details & Feedback.
- **Custom Tabs:** User-friendly navigation for accessing key objects.
- **Lightning App:** Centralized access to essential tools for the garage management process.
- **Custom Fields:** Multiple field types like lookup, picklist, checkbox, and formula fields to ensure robust data capture.
- **Validation Rules:** Enforced data integrity and error prevention.
- **Profiles & Roles:** Role-based access control for managers and salespersons.
- **Public Groups:** Simplified team-based access to records.
- **Flows:** Automation of record updates and email alerts.
- **Apex Triggers:** Automated calculation of service amounts.
- **Reports & Dashboards:** Data visualization and performance tracking.

4. Detailed Steps to Solution Design

Step 1: Creating the Developer Account

1. **Sign Up** at Salesforce Developer Signup.
2. **Fill in details:** Name, email, role as 'Developer', and company as 'College Name'.
3. **Username** format: username@organization.com.
4. **Activate the account** through the email link.

Your Setup page would look like this:

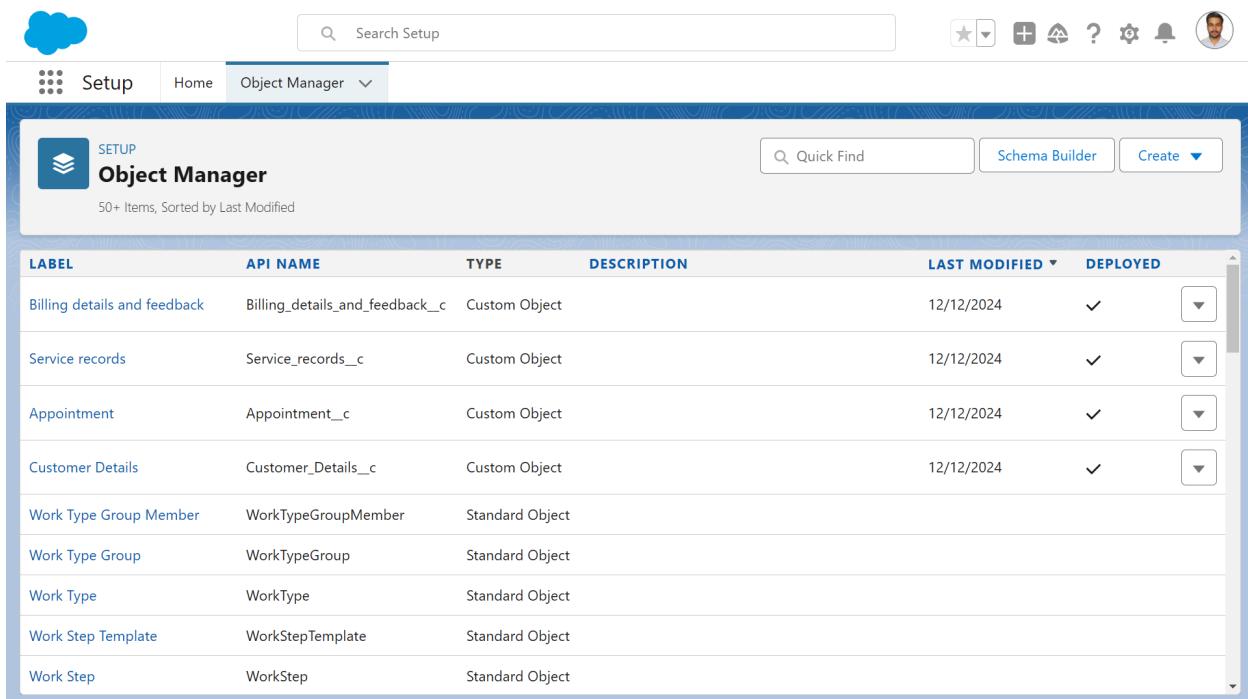
The screenshot shows the Salesforce Setup Home page. At the top, there's a navigation bar with icons for Home, Object Manager, and a search bar labeled 'Search Setup'. Below the navigation is a sidebar with links for Setup Home, Administration (Users, Data, Email), and Platform Tools (Subscription Management, Apps, Feature Settings). The main content area has a 'SETUP Home' header and three featured sections: 'Get Started with Einstein Bots', 'Mobile Publisher', and 'Real-time Collaborative Docs'. Each section includes a brief description and a 'Get Started' or 'Learn More' button. Below these is a 'Most Recently Used' section showing 10 items, including 'Service information' (Custom Report Type), 'AmountDistribution' (Apex Trigger), and 'AmountDistributionHandler' (Apex Class). The bottom right corner of the page shows a user profile icon.

Step 2: Creating Custom Objects

- To Navigate to Setup page: Click on gear icon ? click setup.
- To create an object: From the setup page > Click on Object Manager > Click on Create > Click on Custom Object.
- On Custom object defining page: Enter the label name, plural label name, click on Allow reports, Allow search.
- Click on Save.

For our project we need to create four objects

- **Customer Details:** Text-based customer names with search and report options.
- **Appointment:** Auto-numbering system with fields like appointment name and display format.
- **Service Records:** Auto-numbered service records with fields for tracking service status.
- **Billing Details & Feedback:** Auto-numbered billing records with fields for payment tracking and feedback.



The screenshot shows the Salesforce Object Manager interface. At the top, there's a navigation bar with icons for Setup, Home, and Object Manager. A search bar labeled "Search Setup" is also at the top. Below the navigation, the title "Object Manager" is displayed, along with a message "50+ Items, Sorted by Last Modified". There are three buttons: "Quick Find", "Schema Builder", and "Create". The main area is a table listing custom objects:

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
Billing details and feedback	Billing_details_and_feedback__c	Custom Object		12/12/2024	✓
Service records	Service_records__c	Custom Object		12/12/2024	✓
Appointment	Appointment__c	Custom Object		12/12/2024	✓
Customer Details	Customer_Details__c	Custom Object		12/12/2024	✓
Work Type Group Member	WorkTypeGroupMember	Standard Object			
Work Type Group	WorkTypeGroup	Standard Object			
Work Type	WorkType	Standard Object			
Work Step Template	WorkStepTemplate	Standard Object			
Work Step	WorkStep	Standard Object			

Step 3: Custom Tabs

- Custom tabs for **Customer Details, Appointments, Service Records, and Billing Details & Feedback.**
- Tabs are displayed for easy navigation and user access.

I followed these 4 steps to create all required custom tab

- (i) Go to setup page >> type Tabs in Quick Find bar >> click on tabs >> New (under custom object tab).
- (ii) Select Object(Customer Details) >> Select the tab style >> Next (Add to profiles page) keep it as default >> Next (Add to Custom App) uncheck the include tab .
- (iii) Make sure that the Append tab to users' existing personal customizations is checked.
- (iv) Click save.

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

- Header:** Search Setup, Setup Home, Object Manager.
- Search Bar:** Q tabs.
- Section:** User Interface > Rename Tabs and Labels > **Tabs**.
- Custom Tabs Section:** Header: Custom Tabs. Sub-section: Custom Object Tabs. It lists four tabs:

Action	Label	Tab Style	Description
Edit Del	Appointments	Computer	
Edit Del	Billing details and feedback	Cell phone	
Edit Del	Customer Details	People	
Edit Del	Service records	Desk	
- Web Tabs Section:** No Web Tabs have been defined.
- Visualforce Tabs Section:** No Visualforce Tabs have been defined.

Step 4: Building the Lightning App

1. **Name:** Garage Management Application.
2. **Navigation Items:** Customer Details, Appointments, Service Records, Billing, Reports, and Dashboards.
3. **User Profiles:** Assign access to the System Administrator role.

To create a lightning app page:

1. Go to setup page >> search “app manager” in quick find >> select “app manager” >> click on New lightning App.
2. Fill the app name in app details as Garage Management Application >> Next >> (App option page) keep it as default >> Next >> (Utility Items) keep it as default >> Next.
3. To Add Navigation Items
4. Select the items (Customer Details, Appointments, Service records, Billing details and feedback, Reports and Dashboards) from the search bar and move it using the arrow button >> Next.
5. To Add User Profiles: Search profiles (System administrator) in the search bar >> click on the arrow button >> save & finish.

App Name	Developer Name	Description	Last Modified	Ap...	Vi...
Garage Management Syst...	Garage_Management_Syst...	The Garage Management System is ...	12/12/2024, 1:03 pm	Lightning	✓
Automation	FlowsApp	Automate business processes and re...	25/11/2024, 6:11 pm	Lightning	✓
Bolt Solutions	LightningBolt	Discover and manage business soluti...	25/11/2024, 6:10 pm	Lightning	✓
Salesforce Scheduler Setup	LightningScheduler	Set up personalized appointment sc...	25/11/2024, 6:10 pm	Lightning	✓
Queue Management	QueueManagement	Create and manage queues for your ...	25/11/2024, 6:06 pm	Lightning	✓
All Tabs	AllTabSet		25/11/2024, 6:06 pm	Classic	✓
Subscription Management	RevenueCloudConsole	Get started automating your revenu...	25/11/2024, 6:06 pm	Lightning	✓
Data Manager	DataManager	Use Data Manager to view limits, mo...	25/11/2024, 6:06 pm	Lightning	✓
Digital Experiences	SalesforceCMS	Manage content and media for all of...	25/11/2024, 6:06 pm	Lightning	✓
Platform	Platform	The fundamental Lightning Platform	25/11/2024, 6:06 pm	Classic	✓
Sales	Sales	The world's most popular sales force...	25/11/2024, 6:06 pm	Classic	✓
Service	Service	Manage customer service with accou...	25/11/2024, 6:06 pm	Classic	✓
Marketing CRM Classic	Marketing	Track sales and marketing efforts wit...	25/11/2024, 6:06 pm	Classic	✓
App Launcher	AppLauncher	App Launcher tabs	25/11/2024, 6:06 pm	Classic	✓

Step 5: Creating Custom Fields

- **Customer Details:** Phone and email fields.

1. To create fields in an object:

- Go to setup >> click on Object Manager >> type object name(Customer Details) in search bar >> click on the object.
- Now click on "Fields & Relationships" >> New
- Select Data Type as a "Phone"
- Click on next.
- Fill the Above as following:
Field Label: Phone number
Field Name : gets auto generated
- Click on Next >> Next >> Save and new.

2. To create another fields in an object:

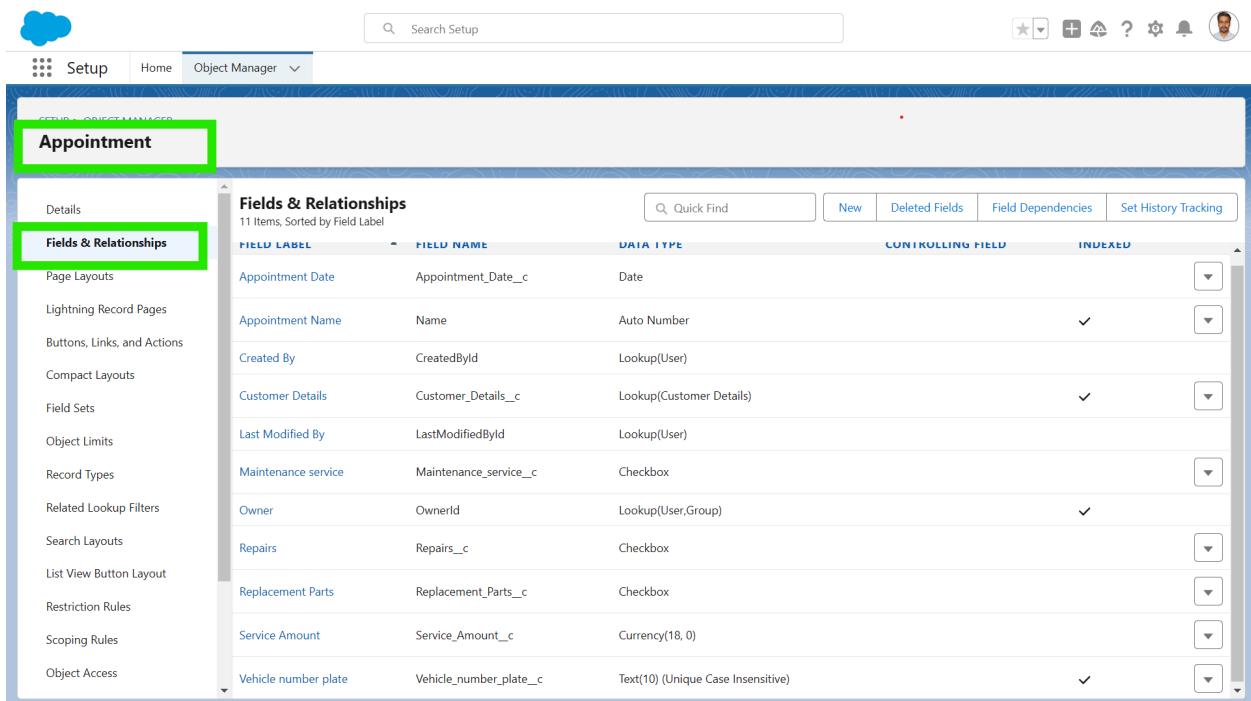
- Go to setup >> click on Object Manager >> type object name(Customer Details) in search bar >> click on the object.
- Now click on "Fields & Relationships" >> New
- Select Data type as a "Email" and Click on Next
- Fill the Above as following:
Field Label : Gmail
Field Name : gets auto generated
- Click on Next >> Next >> Save and new.

The screenshot shows the Salesforce Object Manager for the 'Customer Details' object. The left sidebar lists various settings like Page Layouts, Lightning Record Pages, Buttons, etc. The main area is titled 'Fields & Relationships' and shows a table of fields. Two specific rows are highlighted with orange boxes: 'Gmail' (Field Label: Gmail__c, Data Type: Email) and 'Phone number' (Field Label: Phone_number__c, Data Type: Phone). Both rows have a checkmark in the 'INDEXED' column and dropdown arrows in the 'CONTROLLING FIELD' column.

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		

- **Lookup Fields:** Link Appointments to Customers, Service Records to Appointments, and Billing Details to Service Records.
- **Picklist Fields:** Service status (Started, Completed) and payment status (Pending, Completed).
- **Formula Fields:** Calculate service date from created date.
- **Text Fields:** Vehicle number plate (10 characters, unique) and customer feedback rating (1 character).

Appointments - all fields & relationship:



The screenshot shows the Salesforce Object Manager interface for the 'Appointment' object. The top navigation bar includes a cloud icon, 'Search Setup', and various global buttons. The main area has a title bar 'SETFUP - OBJECT MANAGER' and a sub-title 'Appointment'. On the left, a sidebar lists various setup options like Page Layouts, Lightning Record Pages, and Buttons. The central panel is titled 'Fields & Relationships' and displays 11 items, sorted by Field Label. 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
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)		
Vehicle number plate	Vehicle_number_plate__c	Text(10) (Unique Case Insensitive)		✓

Setup Home Object Manager

SETUP > OBJECT MANAGER

Service records

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

Fields & Relationships 8 Items, Sorted by Field Label

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)		
Service records Name	Name	Auto Number		✓
Service Status	Service_Status_c	Picklist		

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 Restriction Rules

Fields & Relationships 8 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Billing details and feedback Name	Name	Auto Number		✓
Created By	CreatedBy	Lookup(User)		
Last Modified By	LastModifiedBy	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)		✓

Step 6: Validation Rules

Validation rules are applied when a user tries to save a record and are used to check if the data meets specified criteria. If the criteria are not met, the validation rule triggers an error message and prevents the user from saving the record until the issues are resolved.

- **Vehicle Number Plate:** Must follow a format (e.g., MH12AB1234).

To create a validation rule to an Appointment Object

1. Go to the setup page >> click on object manager >> From drop down click edit for Appointment object.
2. Click on the validation rule >> click New.
3. Enter the Rule name as “Vehicle”.
4. Insert the Error Condition Formula as :-
NOT(REGEX(Vehicle_number_plate__c , "[A-Z]{2}[0-9]{2}[A-Z]{2}[0-9]{4}"))
5. Enter the Error Message as “Please enter valid number”, select the Error location as Field and select the field as “Vehicle number plate”, and click Save.

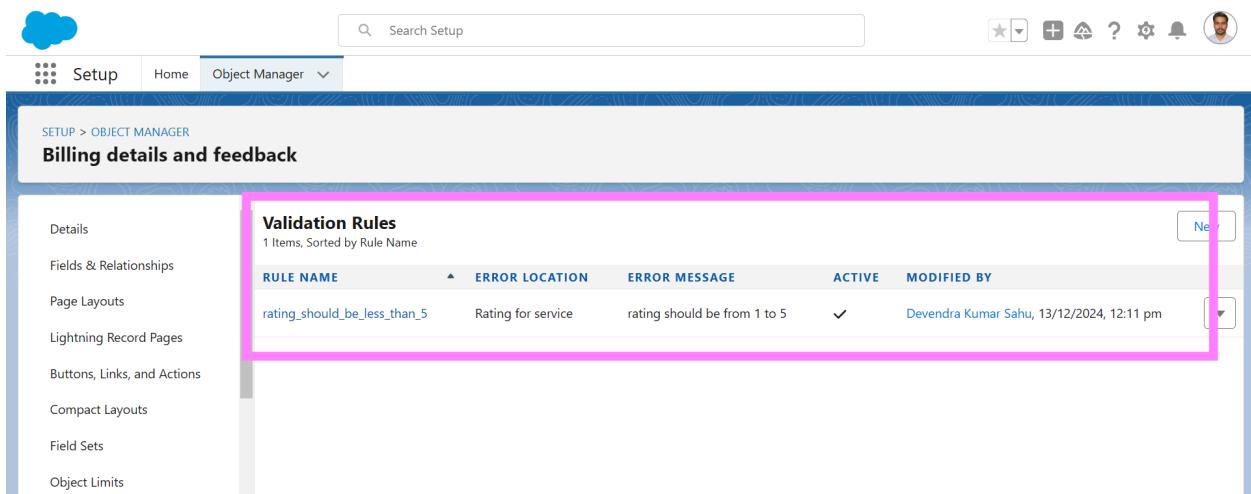
The screenshot shows the Salesforce Object Manager interface for the 'Appointment' object. On the left, there is a sidebar with various setup options like Details, Fields & Relationships, Page Layouts, etc. The main area is titled 'Validation Rules' and shows one item: 'Vehicle'. The table has columns for RULE NAME, ERROR LOCATION, ERROR MESSAGE, ACTIVE, and MODIFIED BY. The 'Vehicle' row has 'Vehicle number plate' in the ERROR LOCATION column and 'Please enter valid number' in the ERROR MESSAGE column. The ACTIVE column has a checked checkbox, and the MODIFIED BY column shows 'Devendra Kumar Sahu, 21/12/2024, 7:37 pm'. A pink rectangle highlights the 'Validation Rules' section.

RULE NAME	ERROR LOCATION	ERROR MESSAGE	ACTIVE	MODIFIED BY
Vehicle	Vehicle number plate	Please enter valid number	✓	Devendra Kumar Sahu, 21/12/2024, 7:37 pm

- **Service Status:** Must be set to "Completed" before record can be saved.
- **Rating:** Customer service rating must be between 1 and 5.

To create a validation rule to an Billing details and feedback Object

1. Go to the setup page >> click on object manager >> From drop down click edit for Billing details and feedback object.
2. Click on the validation rule >> click New.
3. Enter the Rule name as “ rating_should_be_less_than_5”.
4. Insert the Error Condition Formula as :-
NOT(REGEX(Rating_for_service__c , "[1-5]{1}"))
5. Enter the Error Message as “rating should be from 1 to 5”, select the Error location as Field and select the field as “Rating for Service”, and click Save.



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
- Page Title:** Billing details and feedback
- Left Sidebar:** A sidebar with links such as Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, and Object Limits.
- Main Content Area:**
 - Section Header:** Validation Rules
 - Table:** A list of validation rules with the following columns: RULE NAME, ERROR LOCATION, ERROR MESSAGE, ACTIVE, and MODIFIED BY.
 - Data in 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	✓	Devendra Kumar Sahu, 13/12/2024, 12:11 pm

Step 7: Duplicate Rules

- **Matching Rule:** Checks Gmail and phone number to identify duplicate customer details.

To create a matching rule to an Customer details Object

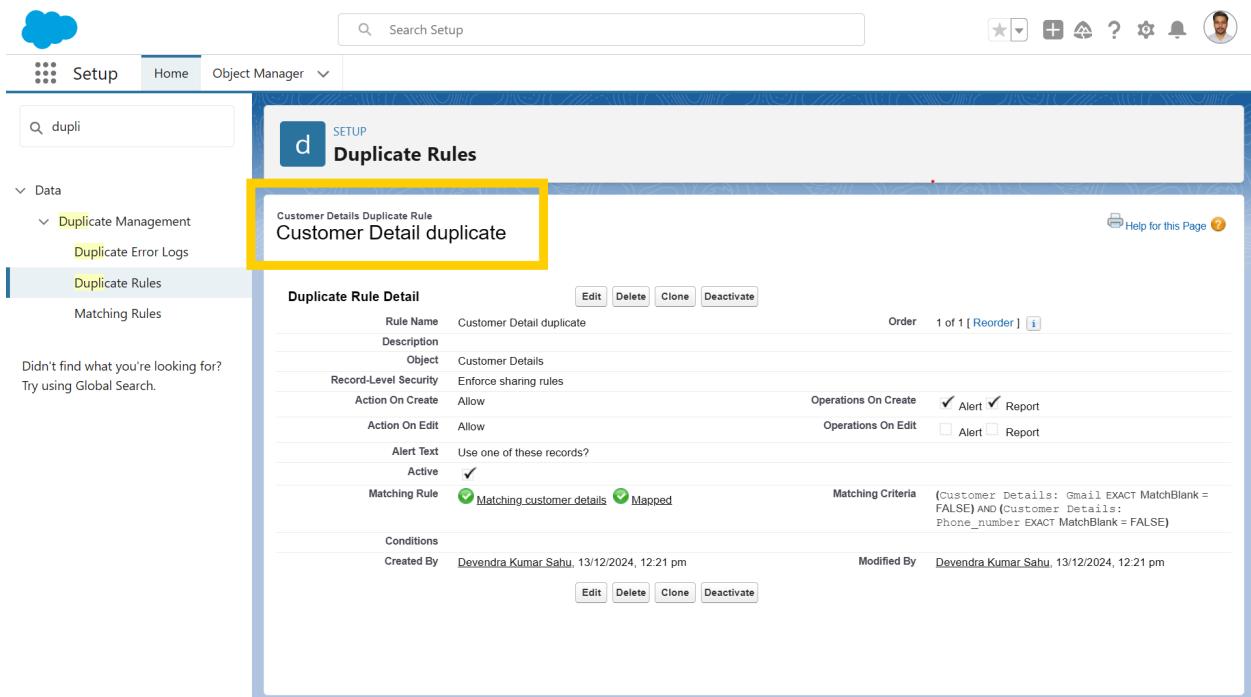
1. Go to quick find box in setup and search for matching Rule.
2. Click on matching rule >> click on New Rule.
3. Select the object as Customer details and click Next.
4. Give the Rule name : Matching customer details
5. Unique name : is auto populated
6. Define the matching criteria as
7. Field Matching Method
1. Gmail Exact
2. Phone Number Exact
8. Click save.
9. After Saving Click on Activate.

The screenshot shows the Salesforce Setup interface. The left sidebar has a search bar with 'matchin' typed in. Under 'Data', 'Duplicate Management' is expanded, and 'Matching Rules' is selected. A message at the bottom says 'Didn't find what you're looking for? Try using Global Search.' The main content area is titled 'Matching Rules' and shows a single record: 'Matching customer details'. This record is highlighted with a yellow box. The 'Matching Rule Detail' section includes fields like Object (Customer Details), Rule Name (Matching customer details), Unique Name (Matching_customer_details), Description, Matching Criteria ('(Customer Details: Gmail EXACT MatchBlank = FALSE) AND (Customer Details: Phone_number EXACT MatchBlank = FALSE)'), Status (Active), Created By (Devendra Kumar Sahu, 13/12/2024, 12:19 pm), and Modified By (Devendra Kumar Sahu, 13/12/2024, 12:19 pm). The top right of the page has a 'Help for this Page' link.

- **Duplicate Rule:** Prevents duplicate customer records.

To create a Duplicate rule to an Customer details Object

1. Go to quick find box in setup and search for Duplicate rules.
2. Click on Duplicate rule >> click on New Rule >> select customer details object.
3. Give the Rule name as : Customer Detail duplicate
4. Scroll a little in Matching rule section
5. Select the matching rule : Matching customer details
6. And Click on save.
7. After saving the Duplicate Rule, Click on Activate.



Step 8: Profiles

- **Manager Profile:** Access to all custom objects with extended session time and password settings.

The screenshot shows the Salesforce Setup interface with the 'Profiles' page selected. A specific profile, 'Manager', is highlighted with a red box. The 'Profile Detail' section shows the profile's name is 'Manager', user license is 'Salesforce', and it is a 'Custom Profile'. The 'Page Layouts' section lists various standard object layouts for different record types like Global, Email Application, Home Page Layout, and Account, along with their respective page layout assignments.

- **Sales Person Profile:** Limited access to objects with tailored permissions.

The screenshot shows the Salesforce Setup interface with the 'Profiles' page selected. A specific profile, 'sales person', is highlighted with a red box. The 'Profile Detail' section shows the profile's name is 'sales person', user license is 'Salesforce Platform', and it is a 'Custom Profile'. The 'Page Layouts' section shows a single entry for the 'Global' object layout assigned to the 'Fulfillment Order Item Tax' record type.

Step 9: Roles and Role Hierarchy

A role in Salesforce defines a user's visibility access at the record level. Roles may be used to specify the types of access that people in your Salesforce organization can have to data. Simply put, it describes what a user could see within the Salesforce organization.

- **Manager Role:** Directly under the CEO.

Creating Manager Role:

1. Go to quick find >> Search for Roles >> click on set up roles.
2. Click on Expand All and click on add role under whom this role works.
3. Give Label as "Manager" and Role name gets auto populated. Then click on Save.

- **Sales Person Role:** Reports to the Manager role.

Creating another two roles under manager

1. Go to quick find >> Search for Roles >> click on set up roles.
2. Click plus on CEO role, and click add role under manager.
3. Give Label as "sales person" and Role name gets auto populated. Then click on Save.

The screenshot shows the Salesforce Setup interface with the 'Roles' page open. The left sidebar shows navigation options like 'Setup', 'Home', and 'Object Manager'. Under 'Users', 'Roles' is selected. The main content area is titled 'Creating the Role Hierarchy' and displays the 'Your Organization's Role Hierarchy'. The hierarchy tree is as follows:

- VIT Bhopal
 - CEO
 - CFO
 - COO
 - Manager
 - sales.person
 - SVP Customer Service & Support
 - Customer Support International
 - Customer Support North America
 - Installation & Repair Services

Two orange arrows point to the 'Manager' and 'sales.person' nodes in the tree view.

Step 10: Users

A user is anyone who logs in to Salesforce. Users are employees at your company, such as sales reps, managers, and IT specialists, who need access to the company's records. Every user in Salesforce has a user account. The user account identifies the user, and the user account settings determine what features and records the user can access.

- **Manager User:** Role as Manager, Profile as Manager, Salesforce license.

User Detail

Name	Niklaus Mikaelson
Alias	nmika
Email	devendrasahu3837@gmail.com [Verify]
Username	nik@com.com
Nickname	nik
Title	
Company	
Department	
Division	
Address	
Time Zone	(GMT+05:30) India Standard Time (Asia/Kolkata)
Locale	English (India)
Language	English
Delegated Approver	
Manager	

Role	Manager
User License	Salesforce
Profile	Manager

Active

- **Sales Person Users:** Role as Sales Person, Profile as Sales Person, Salesforce Platform license.

User Detail

Name	Ayush Kumar
Alias	akuma
Email	devendrasahu3837@gmail.com [Verify]
Username	ayush@agog.com
Nickname	agog
Title	
Company	
Department	

Role	sales_person
User License	Salesforce Platform
Profile	sales_person

Active

Step 11: Public Groups

Public groups are a valuable tool for Salesforce administrators and developers to streamline user management, data access, and security settings. By creating and using public groups effectively, you can maintain a secure and organized Salesforce environment while ensuring that users have appropriate access to the resources they need.

- **Sales Team Group:** Contains all Sales Person roles for sharing access.

Creating New Public Group

1. Go to setup >> type users in quick find box >> select public groups >> click New.
2. Give the Label as “sales team”.
3. Group name is autopopulated.
4. Search for Roles.
5. In Available Members select Sales person and click on add it will be moved to selected member.
6. Click on save.

The screenshot shows the Salesforce Setup interface. On the left, there is a sidebar with navigation links: Home, Object Manager, and a search bar. Below these are sections for Users (with a 'Public Groups' link highlighted), Feature Settings (Salesforce Files, Content Deliveries and Public Links), and Company Settings (Calendars and Resources). 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 has a header "SETUP Public Groups". It displays a group named "sales team" with its details: Label (sales team), Group Name (sales_team), and Grant Access Using Hierarchies (checked). The "Edit" and "Delete" buttons are visible. At the bottom, there is a table titled "All Users in Group" with columns "Full Name" and "Reason For Membership". The table lists four users: Niklaus Mikaelson (Manager of Group Member), Tanjul sarathe, ashish.patel, and Ayush Kumar (all listed as Group Member).

Full Name	Reason For Membership
Niklaus Mikaelson	Manager of Group Member
Tanjul sarathe	Group Member
ashish.patel	Group Member
Ayush Kumar	Group Member

Step 12: Sharing Settings

- **Service Records OWD:** Set to Private.
- **Sharing Rule:** Grants read/write access to Manager for Sales Person's service records.

Creating Sharing settings

1. Go to setup >> type users in quick find box >> select Sharing Settings >> click Edit.
2. Change the OWD setting of the Service records Object to private as shown in fig.
3. Click on save and refresh.
4. Scroll down a bit, Click new on Service records sharing Rules.
5. Give the Label name as " Sharing setting"
6. Rule name is auto populated.
7. In step 3 : Select which records to be shared, members of " Roles " >> " Sales person "
8. In step 4: share with, select " Roles " >> " Manager "
9. In step 5 : Change the access level to " Read / write ".
10. Click on save.

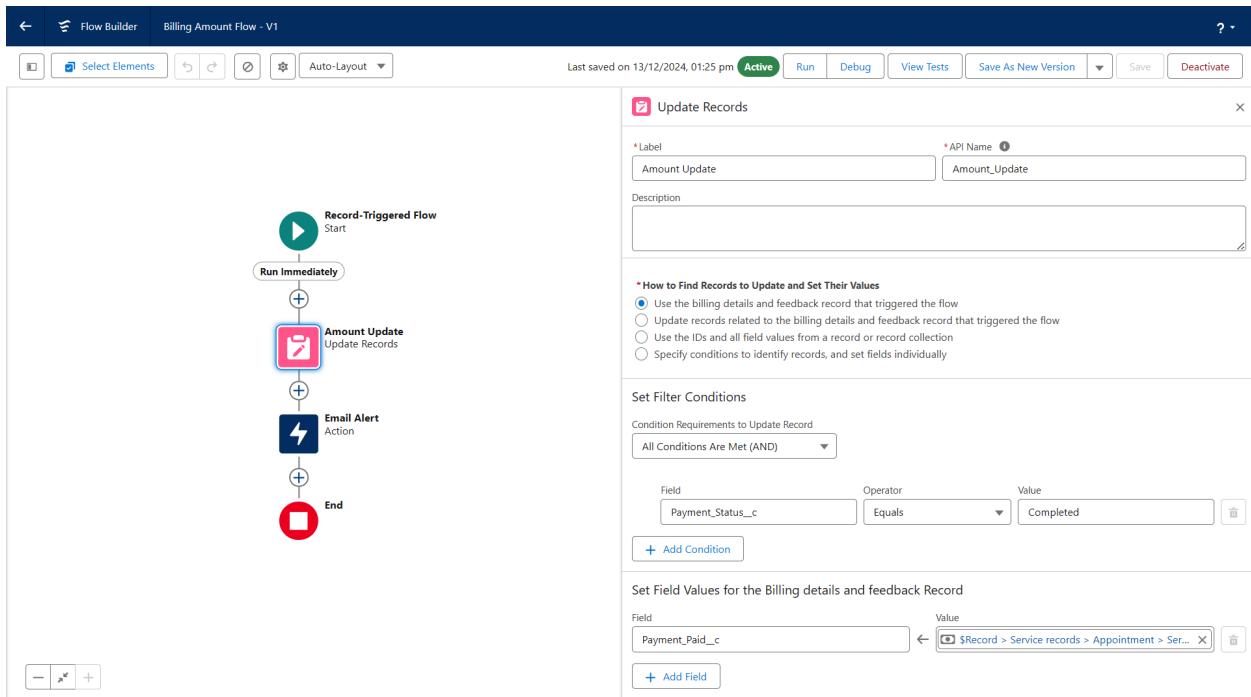
The screenshot shows the Salesforce Setup interface with the 'Sharing Settings' page open. The search bar at the top contains 'shar'. The left sidebar has 'Sharing Settings' selected under 'Security'. The main content area displays five sections: 'Work Type Group Sharing Rules', 'Appointment Sharing Rules', 'Billing details and feedback Sharing Rules', 'Customer Details Sharing Rules', and 'Service records Sharing Rules'. The 'Service records Sharing Rules' section is highlighted with a yellow box. It shows one rule: 'Action: Edit | Del, Criteria: Owner in Role: sales.person, Shared With: Role: Manager, Access Level: Read/Write'.

Step 13: Flows

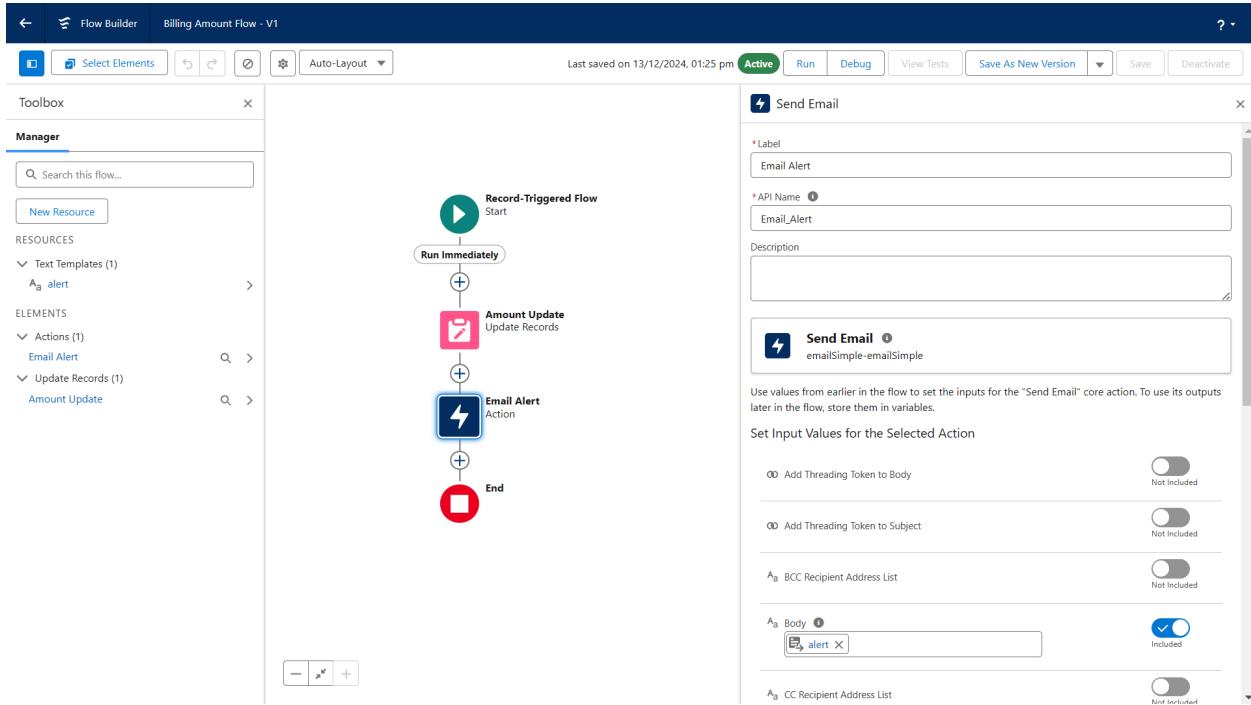
In Salesforce, a flow is a powerful tool that allows you to automate business processes, collect and update data, and guide users through a series of screens or steps. Flows are built using a visual interface and can be created without any coding knowledge.

- **Record-Triggered Flow:** Automates updates and email alerts for billing completion.

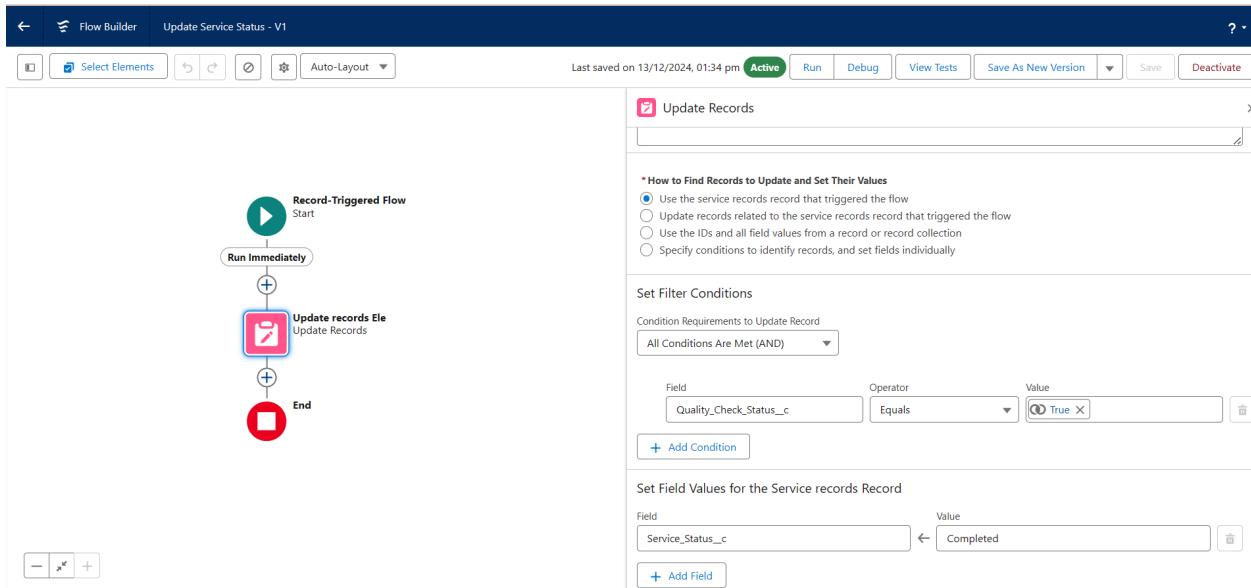
- Under the Record-triggered Flow Click on “+” Symbol and In the Drop down List select the “Update records Element”.



- **Email Alert:** Sends a "Thank you" message when payments are completed.



- **Another Flow - Update Service Status**



Step 14: Apex Triggers

Apex can be invoked by using triggers. Apex triggers enable you to perform custom actions before or after changes to Salesforce records, such as insertions, updates, or deletions.

- **Handler Class (AmountDistributionHandler):** Calculates service amounts based on selected services.

Code:

"AccountDistributionHandler.apxc"

```
public class AmountDistributionHandler {  
    public static void amountDist(list<Appointment__c> listApp){  
        list<Service_records__c> serList = new list  
<Service_records__c>();  
  
        for(Appointment__c app : listApp){  
  
            if(app.Maintenance_service__c == true &&  
app.Repairs__c == true && app.Replacement_Parts__c == true){  
                app.Service_Amount__c = 10000;  
            }  
            else if(app.Maintenance_service__c == true &&  
app.Repairs__c == true){  
                app.Service_Amount__c = 5000;  
            }  
            else if(app.Maintenance_service__c == true &&  
app.Replacement_Parts__c == true){  
                app.Service_Amount__c = 8000;  
            }  
            else if(app.Repairs__c == true &&  
app.Replacement_Parts__c == true){  
                app.Service_Amount__c = 7000;  
            }  
        }  
    }  
}
```

```

        }
        else if(app.Maintenance_service__c == true){
            app.Service_Amount__c = 2000;
        }
        else if(app.Repairs__c == true){
            app.Service_Amount__c = 3000;
        }
        else if(app.Replacement_Parts__c == true){
            app.Service_Amount__c = 5000;
        }
    }
}
}
}
}

```

- **Trigger (AmountDistribution):** Runs on appointment insert or update to update service amounts.

Code:

"AmountDistribution.apxt"

```

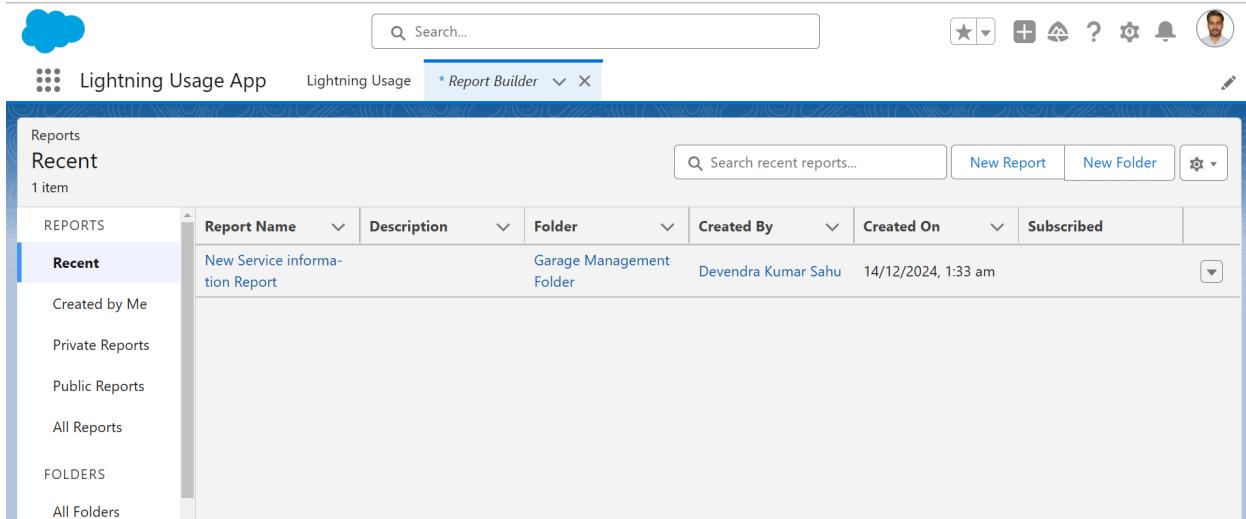
trigger AmountDistribution on Appointment__c (before insert, before
update) {
    if(trigger.isbefore && trigger.isinsert || trigger.isupdate){
        AmountDistributionHandler.amountDist(trigger.new);
    }
}

```

Step 15: Reports

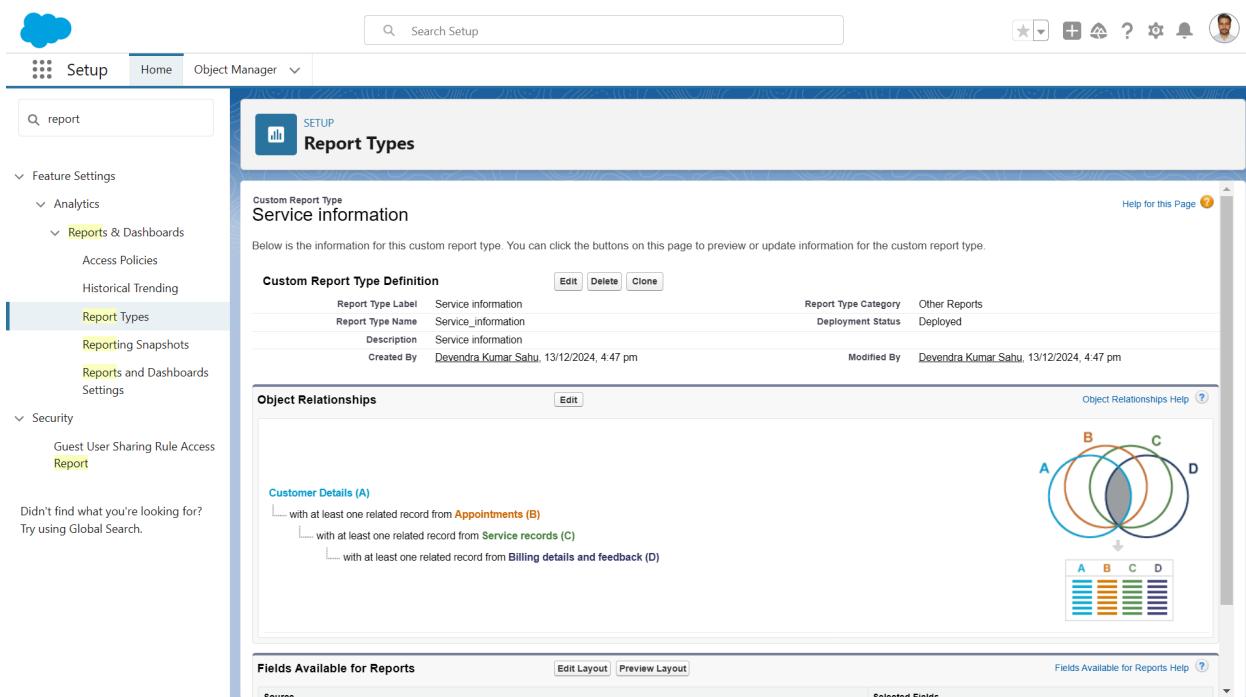
Reports give you access to your Salesforce data. You can examine your Salesforce data in almost infinite combinations, display it in easy-to-understand formats, and share the resulting insights with others. Before building, reading, and sharing reports, review these reporting basics.

- **Report Folder:** Organize all reports under "Garage Management Folder".



The screenshot shows the Salesforce Lightning Usage App Report Builder. The top navigation bar includes the Salesforce logo, a search bar, and various icons. The main area displays a table of reports under the 'Recent' tab. The table has columns for Report Name, Description, Folder, Created By, Created On, and Subscribed. One report is listed: 'New Service information Report' created by Devendra Kumar Sahu on 14/12/2024 at 1:33 am, located in the 'Garage Management Folder'. A sidebar on the left lists categories like Reports, Recent, and Folders.

- **Custom Report Type:** Combines Customer Details, Appointments, Service Records, and Billing.



The screenshot shows the Salesforce Setup Report Types page. The left sidebar includes sections like Feature Settings, Analytics, Reports & Dashboards, Historical Trending, Report Types (which is selected), Reporting Snapshots, Reports and Dashboards, and Settings. The main content area is titled 'Report Types' and shows a 'Custom Report Type Definition' for 'Service Information'. It includes fields for Report Type Label (Service information), Report Type Name (Service_information), Description (Service information), Created By (Devendra Kumar Sahu, 13/12/2024, 4:47 pm), Report Type Category (Other Reports), Deployment Status (Deployed), and Modified By (Devendra Kumar Sahu, 13/12/2024, 4:47 pm). Below this, the 'Object Relationships' section shows a Venn diagram with four overlapping circles labeled A, B, C, and D. A legend below the diagram identifies them: A (Customer Details), B (Appointments), C (Service records), and D (Billing details and feedback). The bottom section shows 'Fields Available for Reports' with a 'Selected Fields' dropdown.

- **Reports:** Custom report "Service Information Report" with fields for customer, appointment date, service status, and payments.

Create Report

1. Go to the app >> click on the reports tab
2. Click New Report.
3. Select the Category as other reports, search for Service Information, select that report, click on it. And click on start report.
4. Their outline pane is opened already, select the fields that mentioned below in column section.
 1. Customer name
 2. Appointment Date
 3. Service Status
 4. Payment paid
5. Remove the unnecessary fields.
6. Select the fields that mentioned below in GROUP ROWS section.
 1. Rating for Service
7. Select the fields that mentioned below in GROUP ROWS section.
 1. Payment Status
8. Click on Add Chart , Select the Line Chart.
9. Click on save, Give the report Name : New Service information Report
10. Report unique Name is auto populated.
11. Select the folder the created and Click on save.

The screenshot shows the Zoho Reports interface for creating a new report named "New Service information Report". The report is set to "Service information". The interface includes a search bar, navigation tabs, and various report settings like "Save & Run", "Close", and "Run".

Fields:

- Outline
- Filters (2)
- Groups (GROUP ROWS, Add group...)
- Rating for service (GROUP COLUMNS, Add group..., Payment Status X)
- Columns (Add column..., Customer Name X, Appointment Date X, Service Status X, # Payment Paid X)

Report Preview:

Previewing a limited number of records. Run the report to see everything.

	Rating for service	Payment Status	Completed	Total
3	Sum of Payment Paid Record Count	₹8,000 1	₹8,000 1	
4	Sum of Payment Paid Record Count	₹5,000 1	₹5,000 1	
Total	Sum of Payment Paid Record Count	₹13,000 2	₹13,000 2	

Chart:

Performance

Sum of Paym... vs Rating for service

Details:

Click an intersection in the table above to filter details.

	Customer Name	Appointment Date	Service Status	Payment Paid
1	Harsh Rathore	23/12/2024	Completed	₹8,000
2	Tanju Sarathe	24/12/2024	Completed	₹5,000
3				₹13,000

Row Counts, Detail Rows, Grand Total, Slacked Summaries, Conditional Formatting

Step 16: Dashboards

Dashboards help you visually understand changing business conditions so you can make decisions based on the real-time data you've gathered with reports. Use dashboards to help users identify trends, sort out quantities, and measure the impact of their activities. Before building, reading, and sharing dashboards, review these dashboard basics.

- **Dashboard Folder:** "Service Rating Dashboard" for organizing dashboards.

The screenshot shows the 'Dashboards' section of the Garage Management system. The top navigation bar includes 'Customer Details', 'Appointments', 'Service records', 'Dashboards', 'More', and user profile icons. A search bar at the top says 'Search...'. Below it, a sub-navigation bar shows 'All Folders > Service Rating dashboard' with a count of '1 item'. The main table lists one dashboard entry:

DASHBOARDS	Name	Description	Folder	Created By	Created On	Subscribed
Recent	Customer Review	Service Rating dashboard	Devendra Kumar Sahu	14/12/2024, 1:49 am		
Created by Me						
Private Dashboards						
All Dashboards						

- **Dashboard Components:** Visualizes service ratings, payment statuses, and operational KPIs.

The screenshot shows the 'Customer Review' dashboard. The top navigation bar includes 'Customer Details', 'Appointments', 'Service records', 'Billing details and feedback', 'Reports', 'Dashboards', and user profile icons. A search bar at the top says 'Search...'. Below it, a sub-navigation bar shows 'Dashboard Customer Review' with a note 'As of 22-Dec-2024, 12:32 am-Viewing as Devendra Kumar Sahu'. The main area features a chart titled 'New Service information Report' with the subtitle 'Sum of Payment Paid' on the Y-axis and 'Rating for service' on the X-axis. The chart shows two data points: a blue dot at (3, ₹8k) and a red dot at (4, ₹4k). To the right, a 'Payment Status' section shows 'Completed' with a progress bar. A link 'View Report (New Service information Report)' is at the bottom.

Also Subscribe added:- Set the Frequency as “ weekly ”. >> Set a day as monday.

- and then we saved it.

User Adoption

In our Garage Management System we created records for all objects.

The screenshots show the 'Recently Viewed' section of the Garage Management System. Each section includes a search bar, a toolbar with various icons, and a list of recently viewed items with checkboxes.

Customer Details:

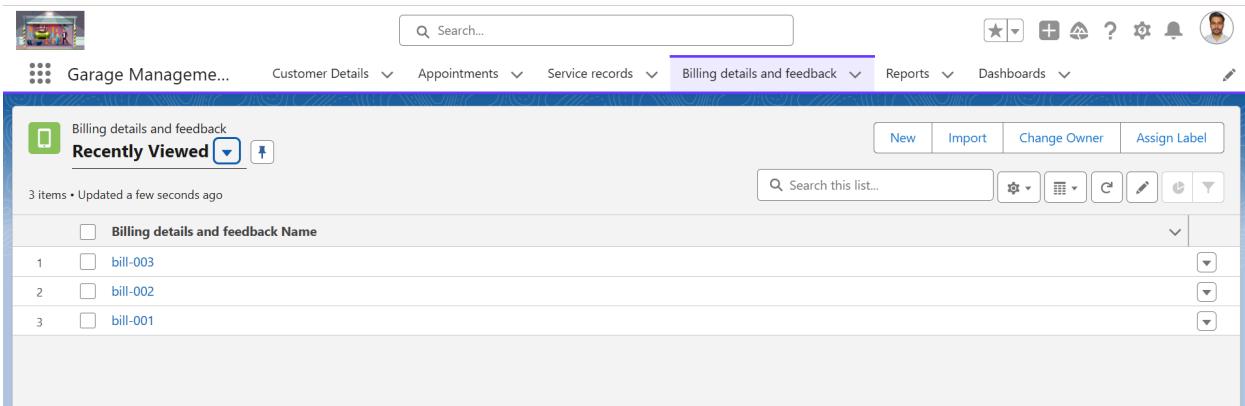
- Customer Details tab is active.
- Recently Viewed: Customer Details
- 5 items • Updated a few seconds ago
- Customer Name: Mee, Pushraj Dubey, Ashish Patel, Tanjul Sarathe, Harsh Rathore

Appointments:

- Appointments tab is active.
- Recently Viewed: Appointments
- 3 items • Updated a few seconds ago
- Appointment Name: app-007, app-006, app-005

Service records:

- Service records tab is active.
- Recently Viewed: Service records
- 3 items • Updated a few seconds ago
- Service records Name: ser-014, ser-013, ser-012



5. Testing and Validation

5.1. Unit Testing

- Comprehensive testing of individual components, including Apex classes and triggers, to ensure code accuracy and functionality.
- Each module will be tested in isolation to detect and fix issues at an early stage.

5.2. User Interface Testing

- Ensure the user interface is user-friendly, responsive, and works on different devices (desktop, tablet, mobile).
- Validate the functionality of buttons, links, forms, and navigation.

6. Key Scenarios Addressed by Salesforce in the Implementation Project

This section outlines the key scenarios that Salesforce addresses in the implementation of the Garage Management System:

- **Service Appointment Booking:** Customers can book appointments via a self-service portal.
- **Customer Communication:** Automated notifications and reminders are sent to customers.
- **Inventory Management:** Salesforce tracks spare parts and sends reordering alerts.
- **Job Tracking:** Service advisors and technicians can track the status of jobs and update customers in real time.
- **Billing and Payments:** Generate invoices and process payments through an integrated payment gateway.

- **Customer Feedback Collection:** Customers provide feedback after service completion, which is used to improve service quality.

Conclusion

The Garage Management System built on Salesforce provides a comprehensive platform for managing appointments, services, and billing. Through the use of custom objects, tabs, profiles, flows, validation rules, and Apex triggers, the system ensures smooth operations, efficient record management, and enhanced customer satisfaction. This project enables better tracking of garage operations, fosters data-driven decision-making, and supports the long-term growth of garage businesses.

Thank You