Garage Management System

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Abstract

This project aims to design and implement a comprehensive garage management system leveraging Salesforce's robust platform. The system will streamline operations, enhance customer engagement, and boost productivity for garage owners and managers. Key features include:

Vehicle management: tracking maintenance, repairs, and inspections
Customer relationship management: managing customer interactions, appointments, and feedback
Inventory management: monitoring parts, supplies, and equipment
Work order management: assigning, tracking, and completing tasks
Reporting and analytics: providing insights into business performance and customer behavior

By harnessing Salesforce's cloud-based technology, this system will enable garage owners to:

Improve customer satisfaction through personalized service and timely communication
Increase operational efficiency through automated workflows and real-time tracking
Drive business growth through data-driven decision-making and targeted marketing

This project will demonstrate how Salesforce can be successfully adapted to meet the unique needs of the garage management industry, providing a scalable and flexible solution for businesses of all sizes.

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Introduction

A Garage Management System (GMS) in Salesforce is a specialized application designed to streamline and optimize the operations of a garage or automotive service center by leveraging Salesforce's robust and customizable platform. This system integrates various functionalities essential for managing automotive service businesses, including customer relationship management (CRM), inventory management, service scheduling, invoicing, and analytics. Key features include a comprehensive customer database to manage customer information and service history, automated communication tools for service reminders and follow-ups, and an efficient service scheduling system that integrates with calendars to manage technician schedules and service bays. It also includes work order management, inventory tracking, and automated reordering to ensure parts availability, as well as supplier management. Billing and invoicing features allow for the creation of service estimates, detailed invoicing, and secure payment processing through integrated payment gateways. Performance dashboards and custom reporting tools help visualize key performance indicators and analyze various aspects of the business. Mobile access through a dedicated app enables technicians and managers to access schedules and update work orders on the go. The system supports extensive customization to meet specific business needs, scalability to accommodate growth, and integrates with other systems for seamless operation. Being cloud-based, it ensures data accessibility from anywhere, enhances security to protect sensitive information, and automates routine tasks to reduce manual effort and errors. Implementing a GMS in Salesforce involves analyzing requirements, customizing the platform, integrating with existing systems, training staff, deploying the system, and providing ongoing support and maintenance. This implementation can significantly enhance operational efficiency, improve customer satisfaction, and drive business growth for automotive service centers.

Objects

Salesforce objects are database tables that permit you to store data that is specific to an organization. What are the types of Salesforce objects

Salesforce objects are of two types:

1. **Standard Objects**: Standard objects are the kind of objects that are provided by salesforce.com such as users, contracts, reports, dashboards, etc.
2. **Custom Objects**: Custom objects are those objects that are created by users. They supply information that is unique and essential to their organization. They are the heart of any application and provide a structure for sharing data.

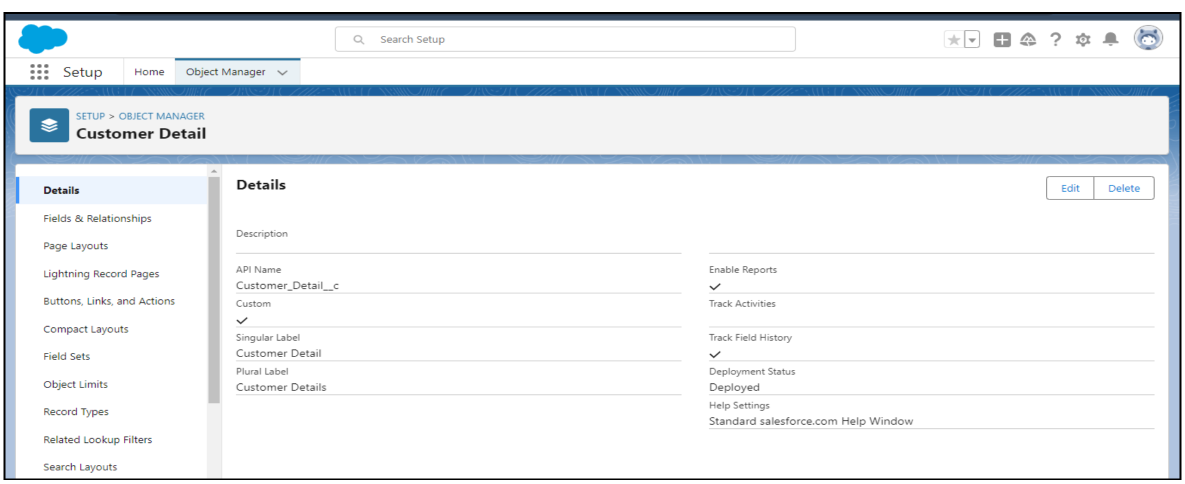
Create Customer DetailsObject

To create an object:

1. From the setup page >> Click on Object Manager >> Click on Create >> Click on Custom Object.
1. Enter the label name >> Customer Details
2. Plural label name >> Customer Details
3. Enter Record Name Label and Format

- Record Name >> Customer Name
- Data Type >> Text

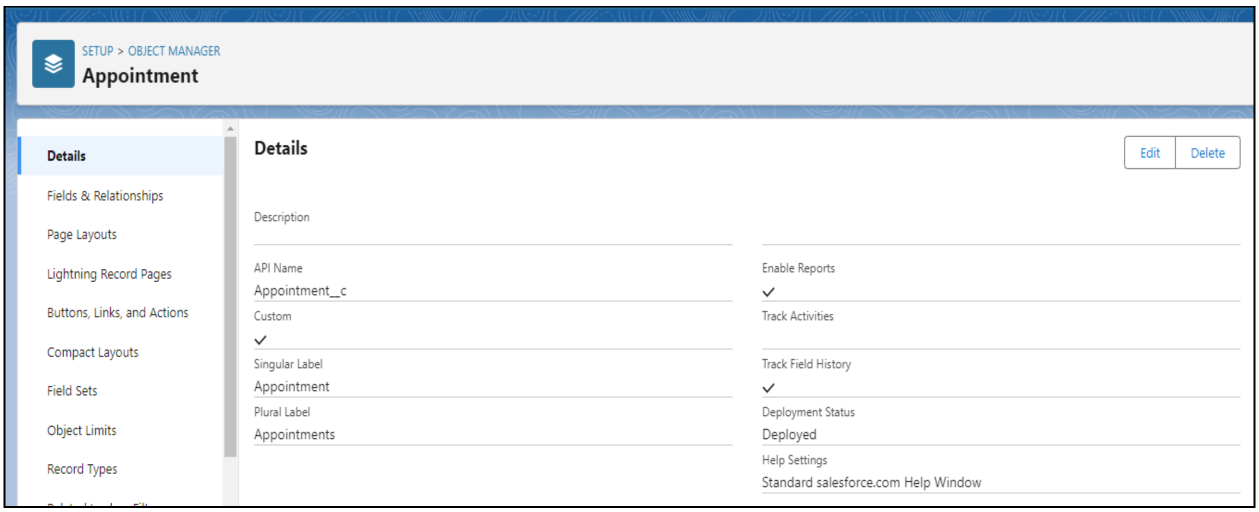
2. Click on Allow reports and Track Field History,
3. Allow search >> Save.



Create Appointment Object

To create an object:

1. From the setup page >> Click on Object Manager >> Click on Create >> Click on Custom Object.
1. Enter the label name >> Appointment
2. Plural label name >> Appointments
3. Enter Record Name Label and Format
- Record Name >> Appointment Name
- Data Type >> Auto Number
- Display Format >> app-{000}
- Starting number >> 1
2. Click on Allow reports and Track Field History,
3. Allow search >> Save.



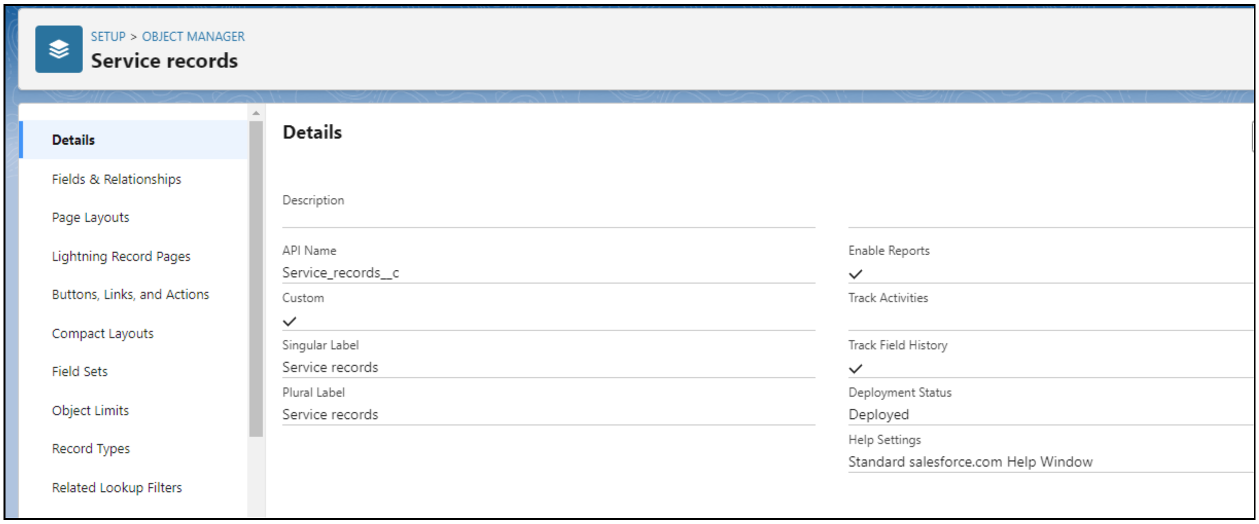
Create Service records Object

To create an object:

1. From the setup page >> Click on Object Manager >> Click on Create >> Click on Custom Object.
1. Enter the label name >> Service records
2. Plural label name >> Service records
3. Enter Record Name Label and Format
- Record Name >>Service records Name

- Data Type >> Auto Number
- Display Format >> ser-{000}
- Starting number >> 1

2. Click on Allow reports and Track Field History,
3. Allow search >> Save.



<u>Create Billing details and feedback Object</u>

To create an object:

1. From the setup page >> Click on Object Manager >> Click on Create >> Click on Custom Object.
1. Enter the label name >> Billing details and feedback
2. Plural label name >> Billing details and feedback
3. Enter Record Name Label and Format

- Record Name >> Billing details and feedback Name
- Data Type >> Auto Number
- Display Format >> bill-{000}
- Starting number >> 1

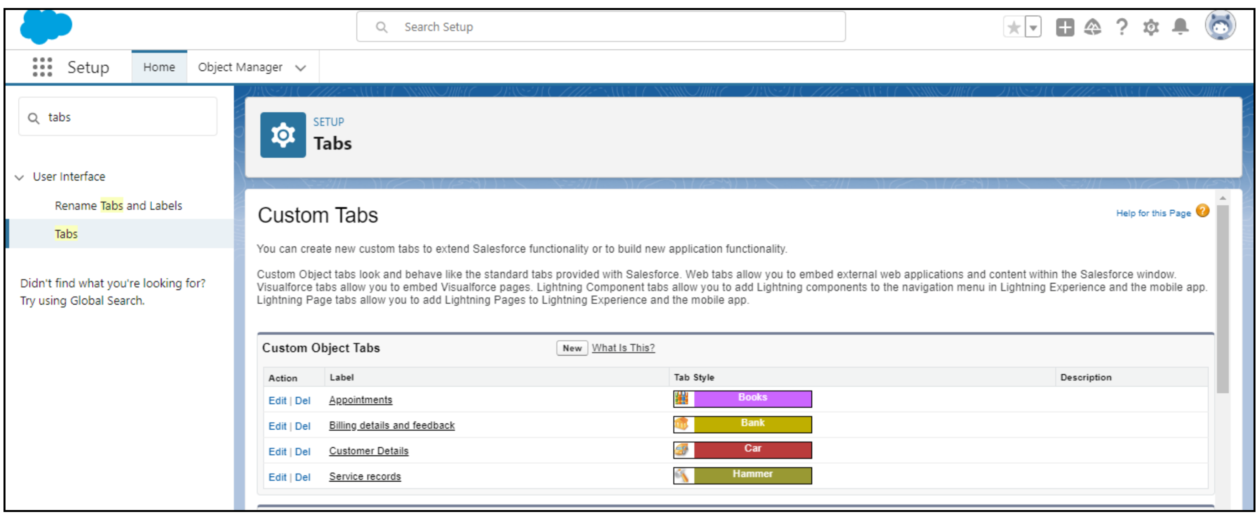
2. Click on Allow reports and Track Field History,
3. Allow search >> Save.

Tabs

A tab is like a user interface that is used to build records for objects and to view the records in the objects.

To create a Tab:

1. Go to setup page >> type Tabs in Quick Find bar >> click on tabs >> New (under custom object tab)
2. 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 .
3. Make sure that the Append tab to users' existing personal customizations is checked.
4. Click save.
5. Repeat the step from 1 to 4 to make other tabs also .



The Lightning App

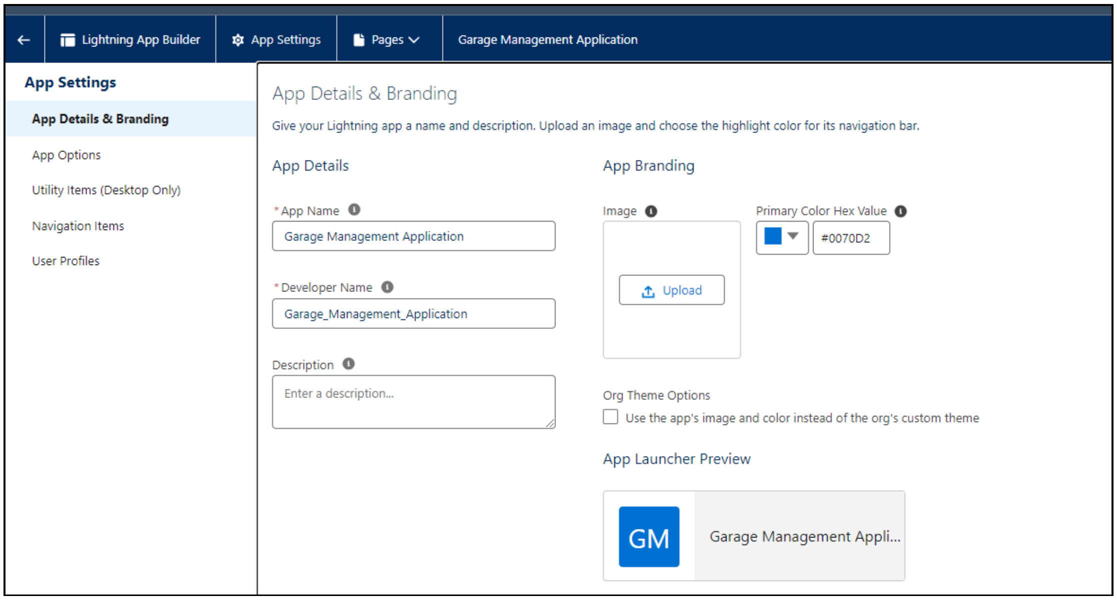
An app is a collection of items that work together to serve a particular function. In Lightning Experience, Lightning apps give your users access to sets of objects, tabs, and other items all in one convenient bundle in the navigation bar.

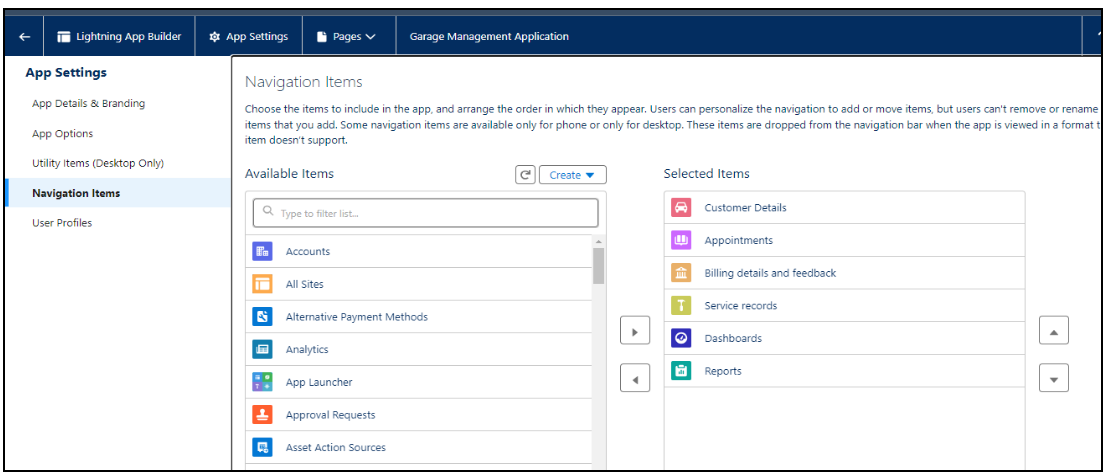
To create a lightning app page:

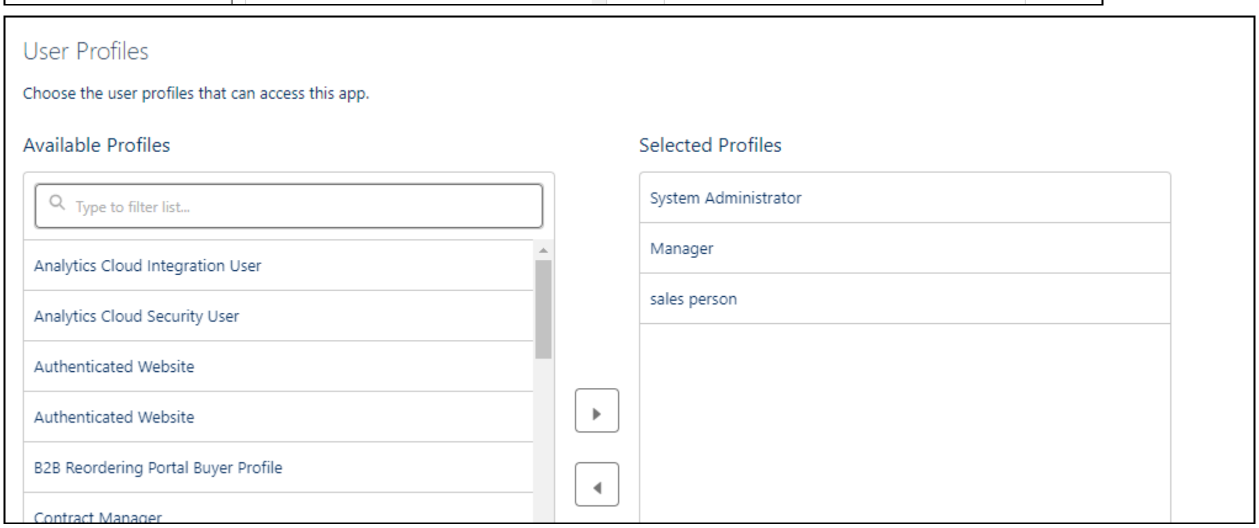
1. Go to setup page >> search “app manager” in quick find >> select “app manager” >> click on New lightning App.

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.


Lightning App Builder
App Settings
Pages
Garage Management Application
App Settings
App Details & Branding
App Options
Utility Items (Desktop Only)
Navigation Items
User Profiles
App Details & Branding
Give your Lightning app a name and description. Upload an image and choose the highlight color for its navigation bar.
App Details
* App Name
Garage Management Application
* Developer Name
Garage_Management_Application
Description
Enter a description...
App Branding
Image
Upload
Primary Color Hex Value
#0070D2
Org Theme Options
Use the app's image and color instead of the org's custom theme
App Launcher Preview
GM
Garage Management Appli...

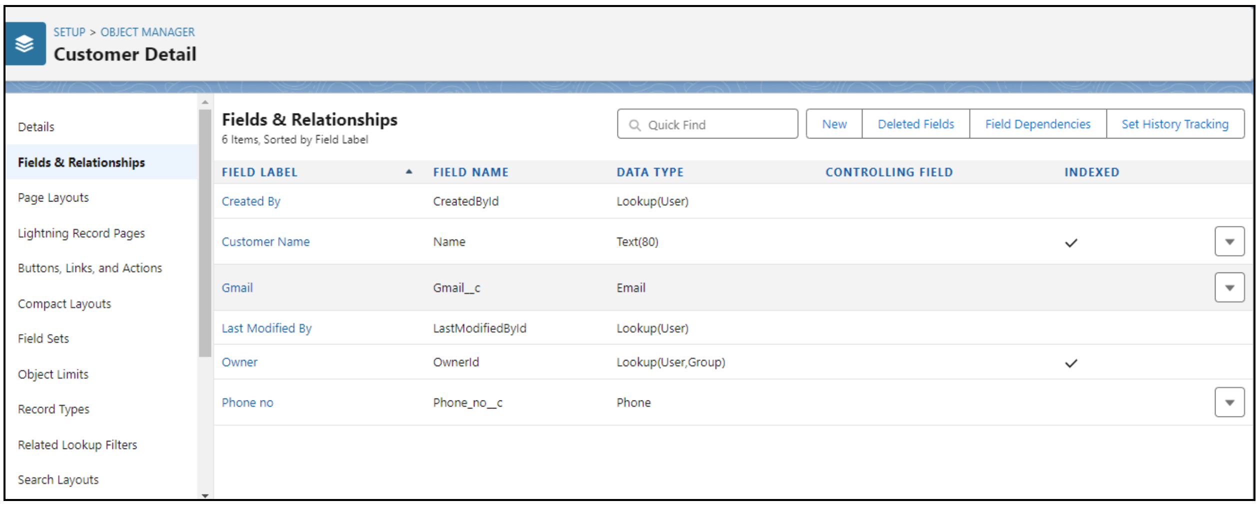

Lightning App Builder
App Settings
Pages
Garage Management Application
App Settings
App Details & Branding
App Options
Utility Items (Desktop Only)
Navigation Items
User Profiles
Navigation Items
Choose the items to include in the app, and arrange the order in which they appear. Users can personalize the navigation to add or move items, but users can't remove or rename items that you add. Some navigation items are available only for phone or only for desktop. These items are dropped from the navigation bar when the app is viewed in a format t item doesn't support.
Available Items
Create
Type to filter list...
Accounts
All Sites
Alternative Payment Methods
Analytics
App Launcher
Approval Requests
Asset Action Sources
Selected Items
Customer Details
Appointments
Billing details and feedback
Service records
Dashboards
Reports

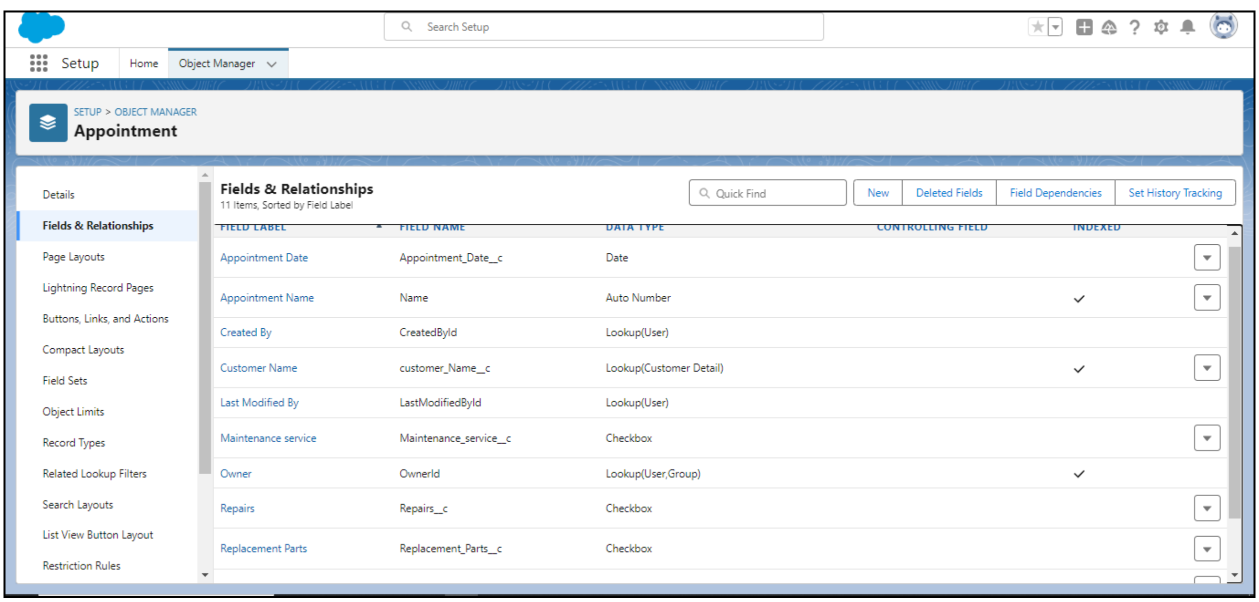

User Profiles
Choose the user profiles that can access this app.
Available Profiles
Type to filter list...
Analytics Cloud Integration User
Analytics Cloud Security User
Authenticated Website
Authenticated Website
B2B Reordering Portal Buyer Profile
Contract Manager
Selected Profiles
System Administrator
Manager
sales person

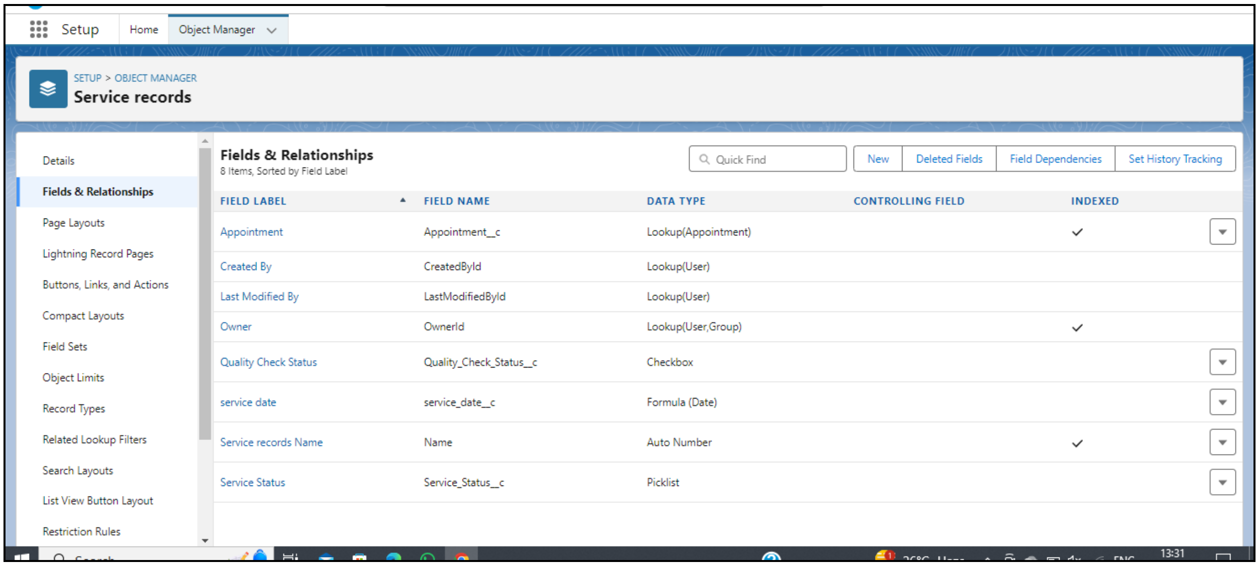
Fields

To create another fields in an object:

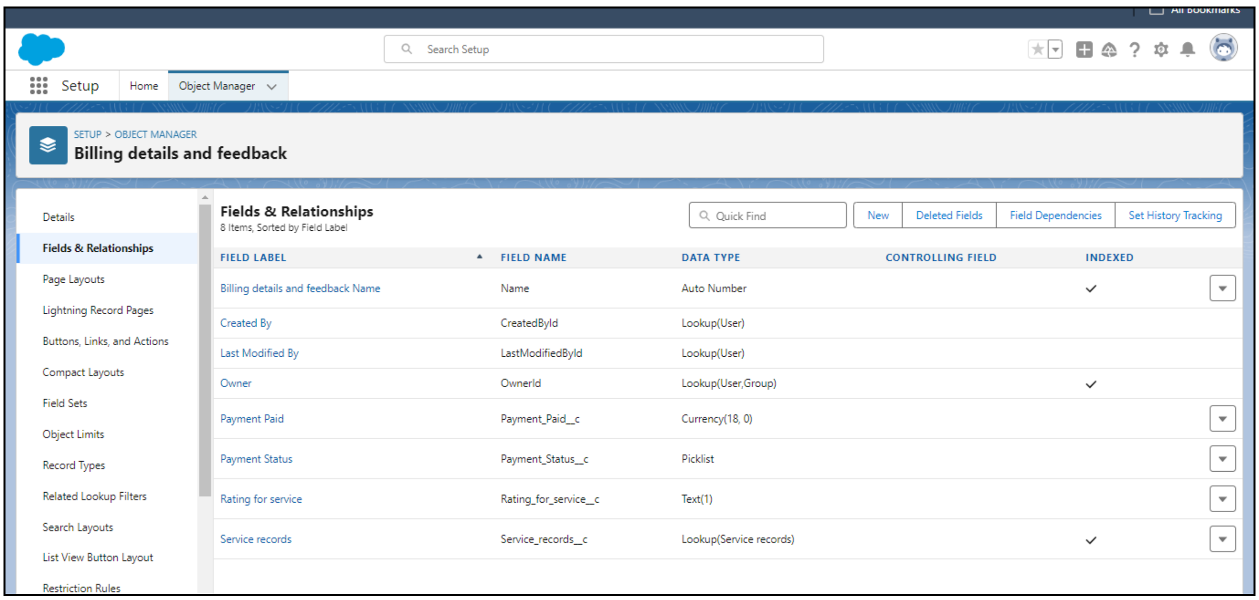
- Go to setup >> click on Object Manager >> type object name(Customer Details) in search bar >> click on the object.
- Now click on "Fields & Relationships" >> New
- Select Data type as a "Email" and Click on Next
- Fill the Above as following:
- Field Label : Gmail
- Field Name : gets auto generated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







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		

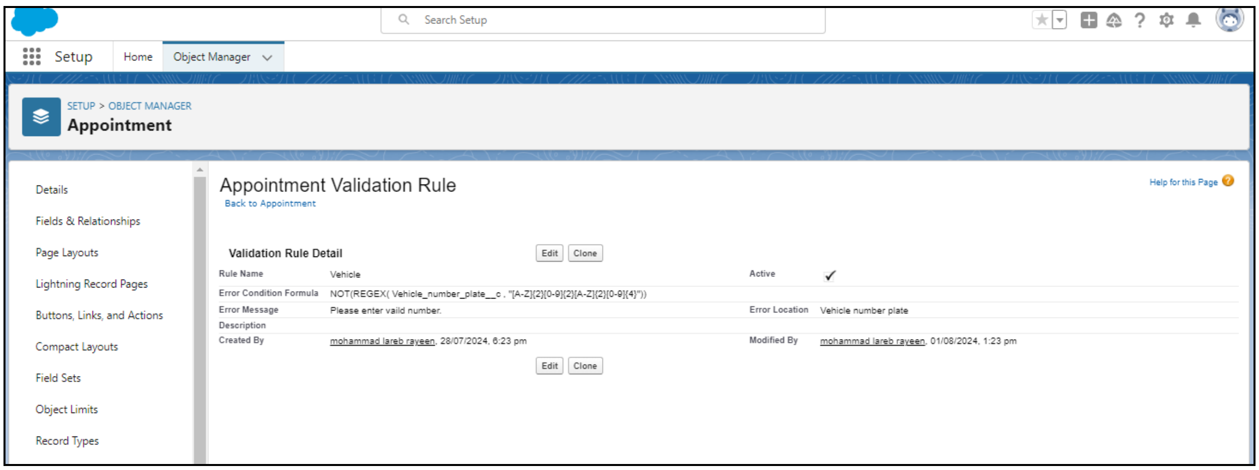


FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Billing details and feedback Name	Name	Auto Number		✓
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Payment Paid	Payment_Paid__c	Currency(18, 0)		
Payment Status	Payment_Status__c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

Validation Rule

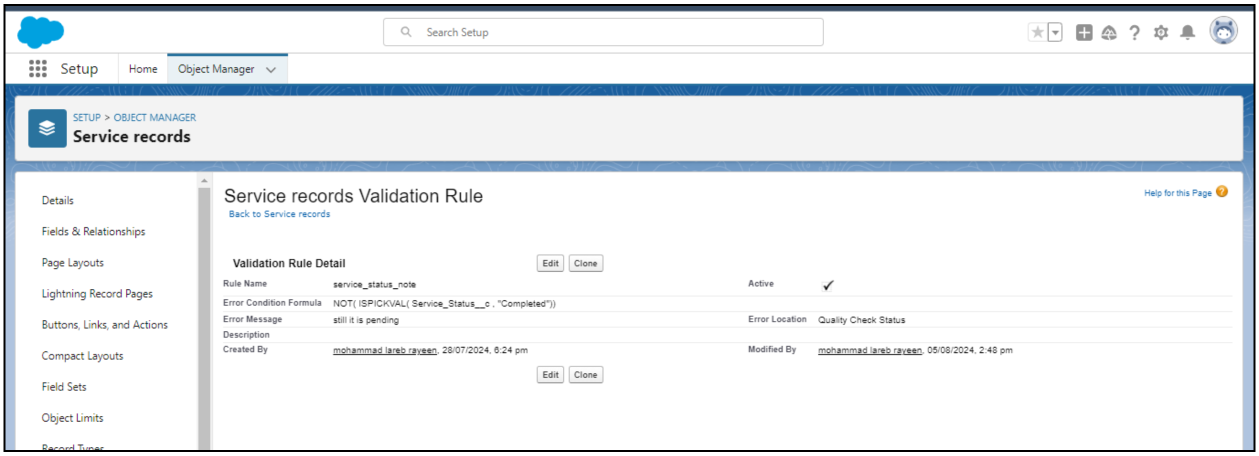
To create a validation rule

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 vaild number ”, select the Error location as Field and select the field as “Vehicle number plate”, and click Save.



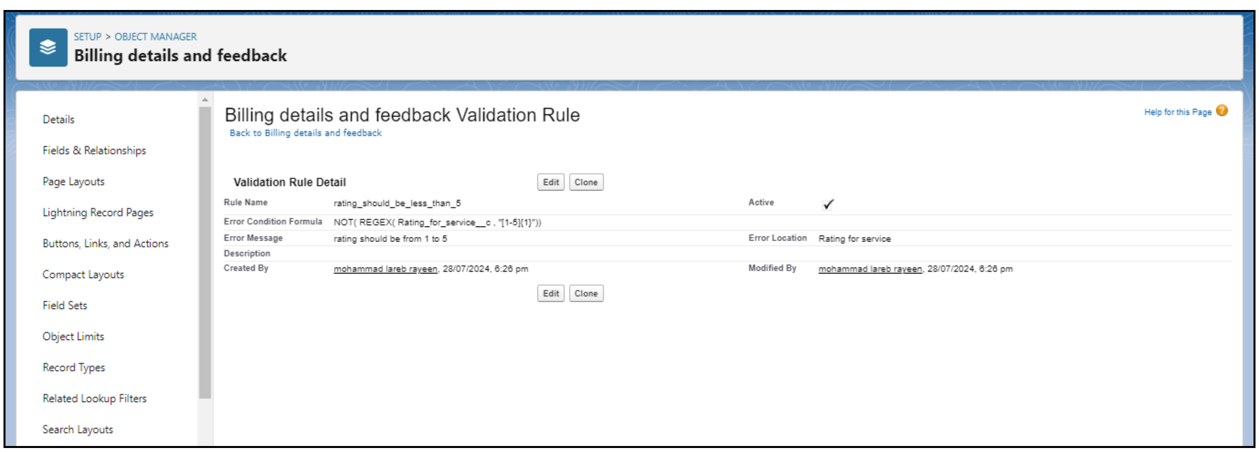
An Service records Object

1. Go to the setup page >> click on object manager >> From drop down click edit for Service records object.
2. Click on the validation rule >> click New.
3. Enter the Rule name as “ service_status_note ”.
4. Insert the Error Condition Formula as : -
   NOT(ISPICKVAL(Service_Status__c , "Completed"))
5. Enter the Error Message as “still it is pending”, select the Error location as Field and select the field as “Service status”, and click Save.



An Billing details and feedback Object

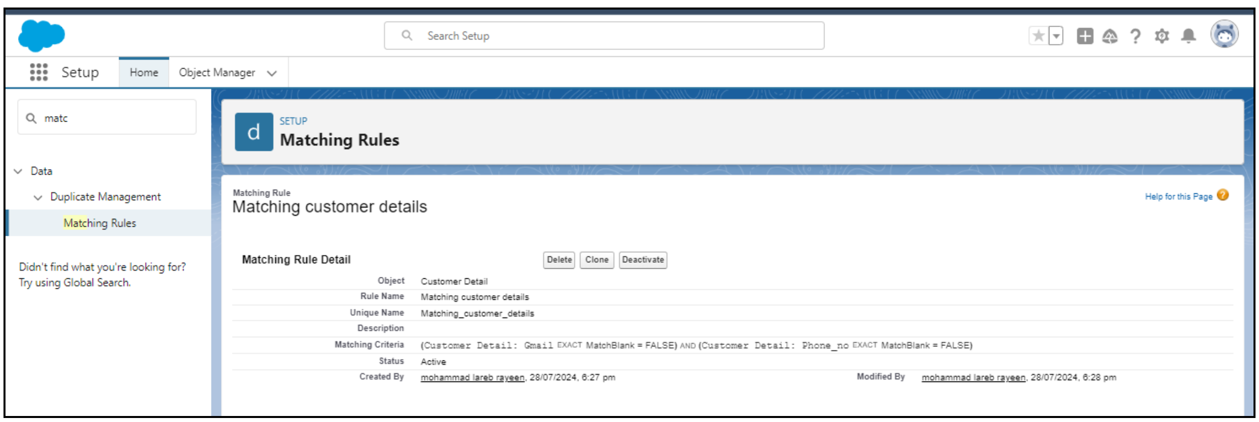
1. Go to the setup page >> click on object manager >> From drop down click edit for Billing details and feedback object.
2. Click on the validation rule >> click New.
3. Enter the Rule name as “ rating_should_be_less_than_5”.
4. Insert the Error Condition Formula as : -
   NOT(REGEX(Rating_for_service__c , "[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.



<u>Duplicates Rule</u>

To create a matching rule to an Customer details Object

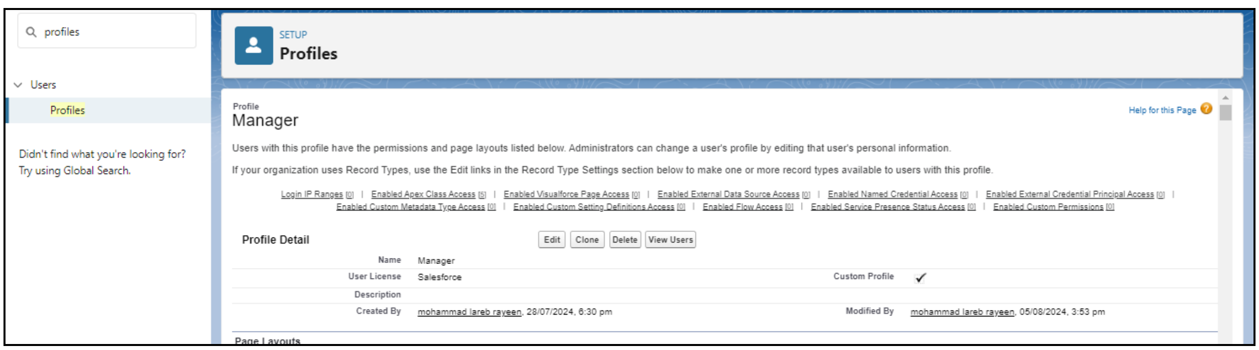
1. Go to quick find box in setup and search for matching Rule.
2. Click on matching rule >> click on New Rule.
3. Select the object as Customer details and click Next.
4. Give the Rule name : Matching customer details
5. Unique name : is auto populated
6. Define the matching criteria as
7. Field — Matching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

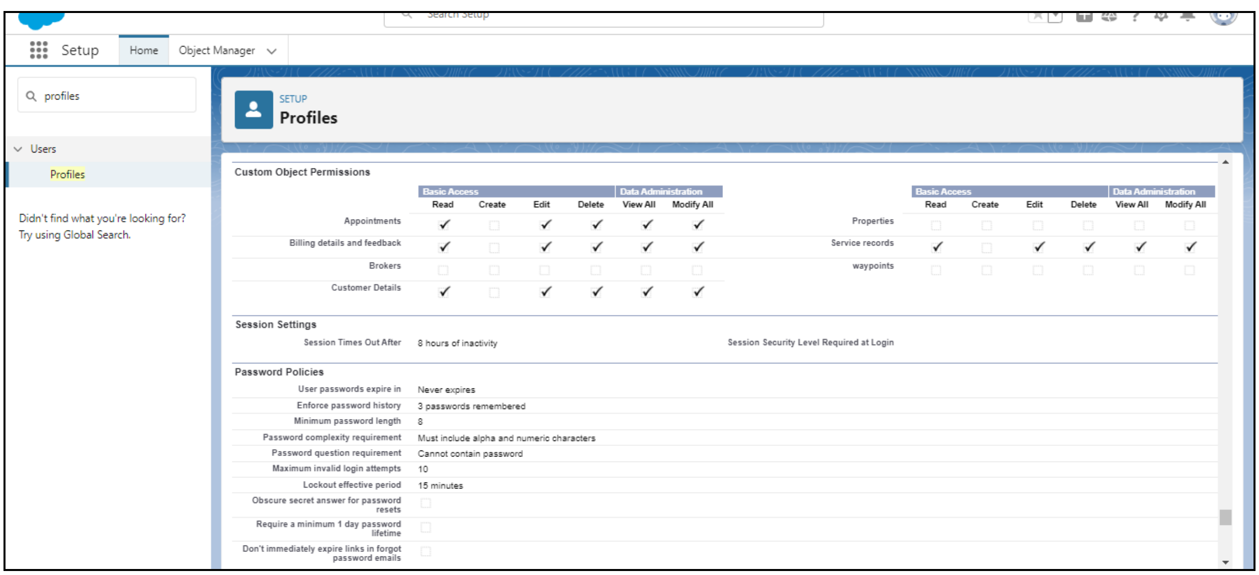


Profiles

To create a new profile:

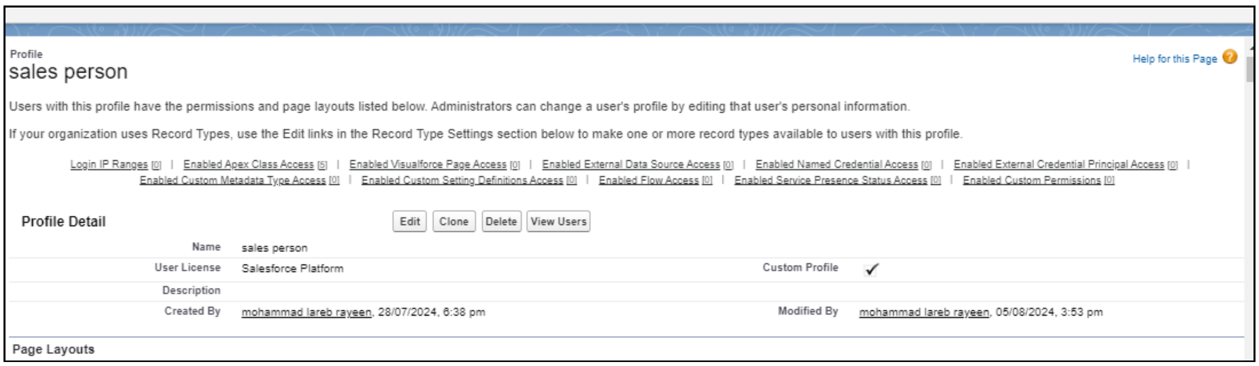
- Go to setup >> type profiles in quick find box >> click on profiles >> clone the desired profile (Standard User) >> enter profile name (Manager) >> Save.
- While still on the profile page, then click Edit.
- Select the Custom App settings as default for the Garage management.
- Scroll down to Custom Object Permissions and Give access permissions for Appointments,Billing details and feedback , service records and customer details objects as mentioned in the below diagram.
- Changing the session times out after should be “ 8 hours of inactivity”.
- Change the password policies as mentioned :
- User passwords expire in should be “ never expires ”.
- Minimum password length should be “ 8 ”, and click save

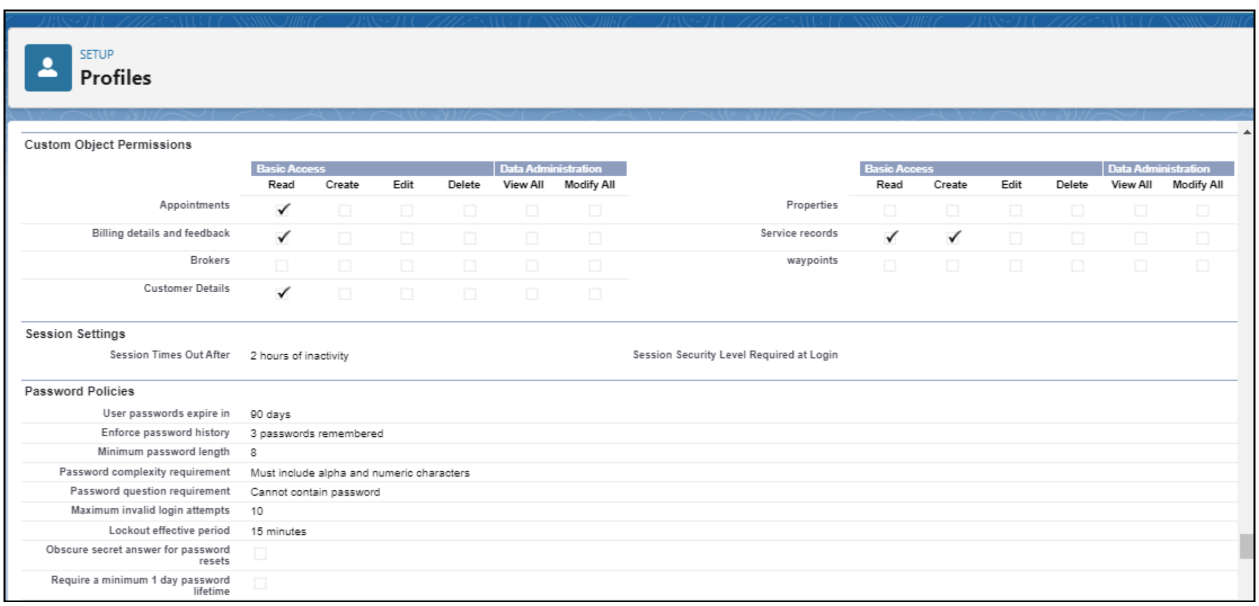




sales person Profile

1. Go to setup >> type profiles in quick find box >> click on profiles >> clone the desired profile (Salesforce Platform User) >> enter profile name (sales person) >> Save.
2. While still on the profile page, then click Edit.
3. Select the Custom App settings as default for the GArage management.
4. Scroll down to Custom Object Permissions and Give access permissions for Appointments,Billing details and feedback , service records and customer details objects as mentioned in the below diagram.
5. And click save.



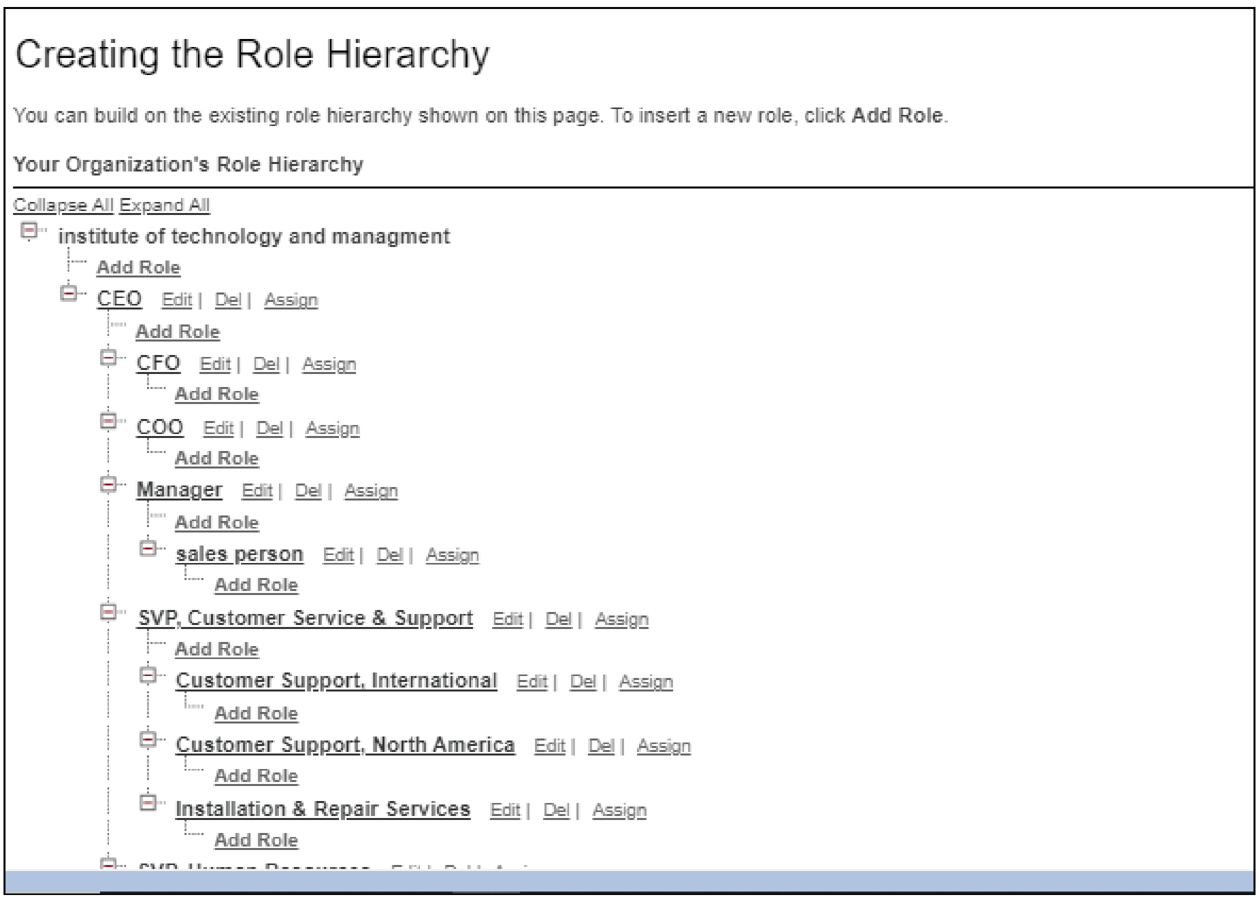


Role & Role Hierarchy

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.

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.



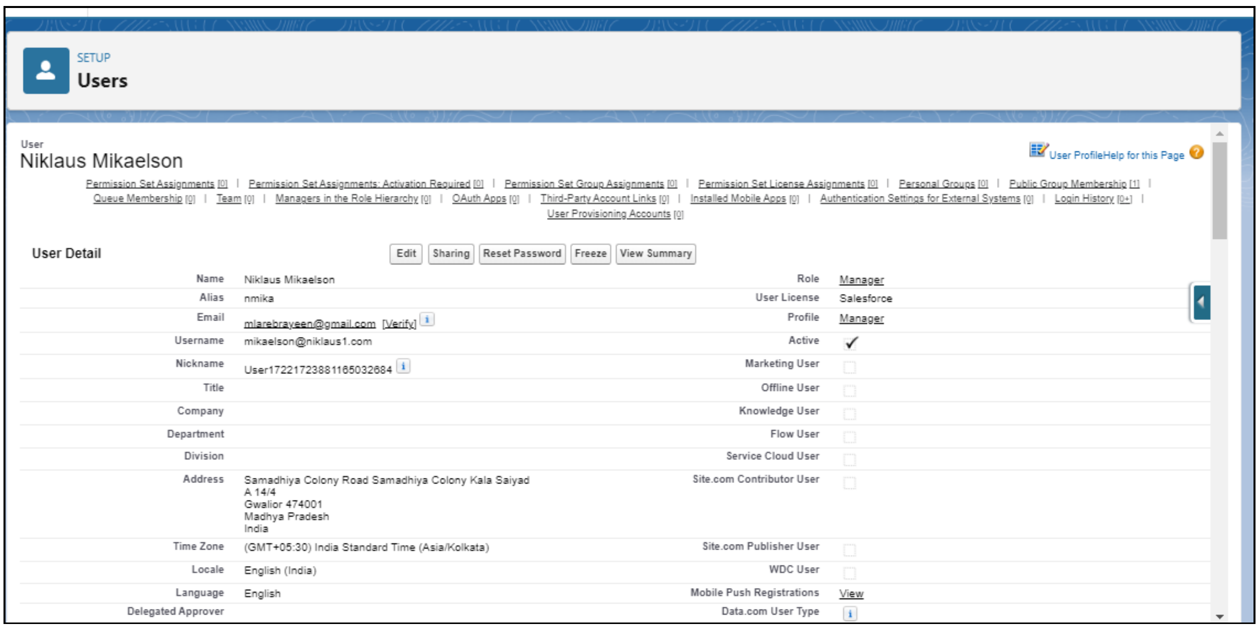
<u>Users</u>

Create User

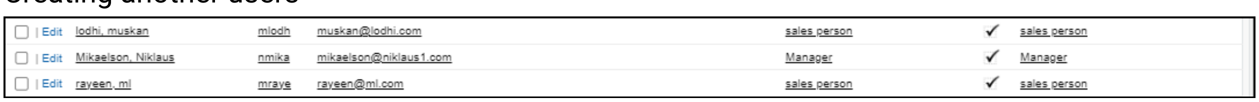
1. Go to setup >> type users in quick find box >> select users >> click New user.
2. Fill in the fields

- First Name : Niklaus
- Last Name : Mikaelson
- Alias : Give a Alias Name
- Email id : Give your Personal Email id
- Username : Username should be in this form: text@text.text
- Nick Name : Give a Nickname
- Role : Manager
- User licence : Salesforce
- Profiles : Manager

3. Save.



Creating another users

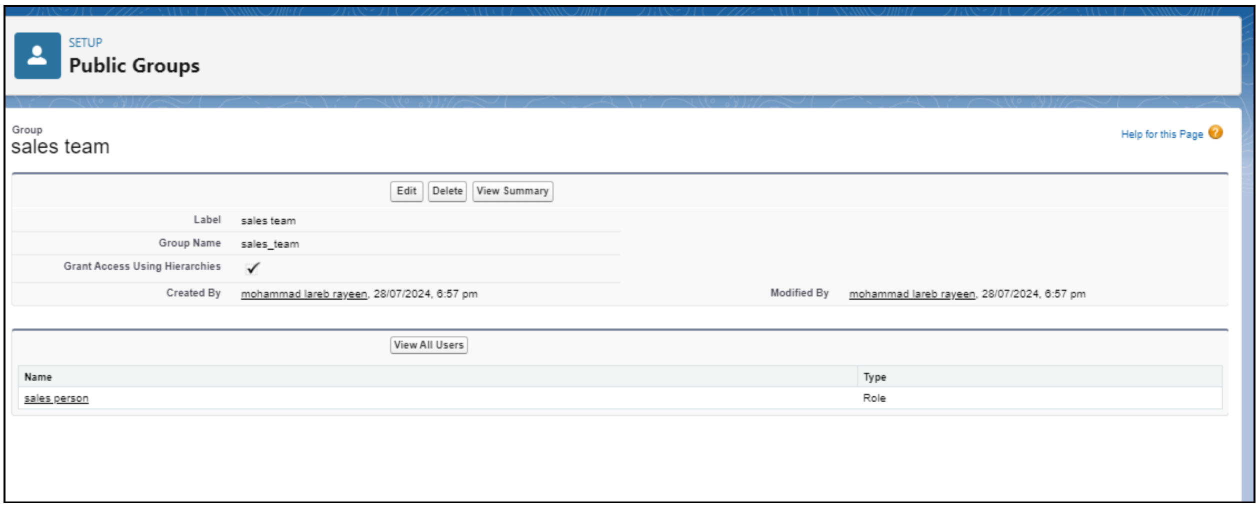


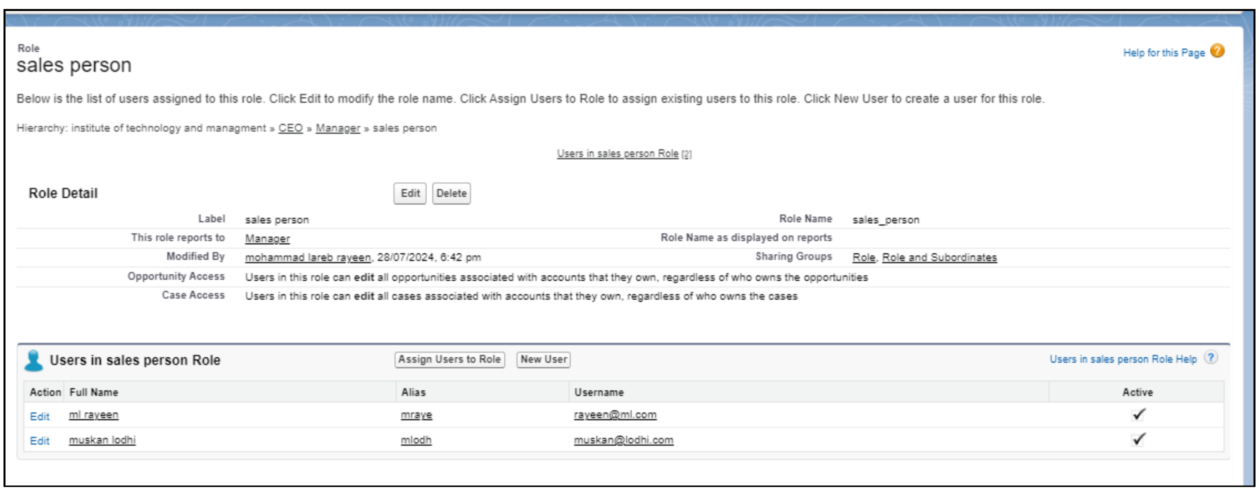
Edit	lodhi, muskan	mlodh	muskan@lodhi.com	sales person	✓	sales person
Edit	Mikaelson, Niklaus	nmika	mikaelson@niklaus1.com	Manager	✓	Manager
Edit	rayeen, ml	mraye	rayeen@ml.com	sales person	✓	sales person

Public Group

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.

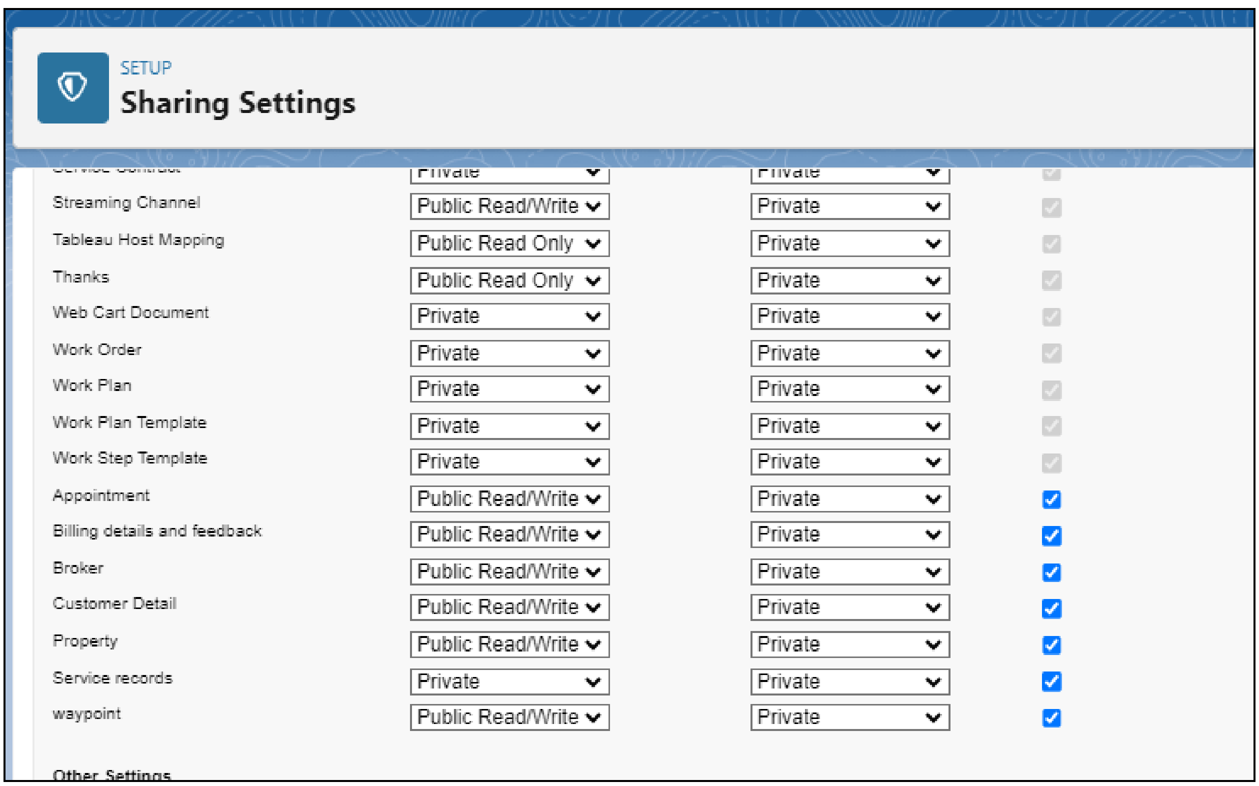




Sharing Settings

Creating Sharing settings

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



Streaming Channel	Public Read/Write	Private
Tableau Host Mapping	Public Read Only	Private
Thanks	Public Read Only	Private
Web Cart Document	Private	Private
Work Order	Private	Private
Work Plan	Private	Private
Work Plan Template	Private	Private
Work Step Template	Private	Private
Appointment	Public Read/Write	Private
Billing details and feedback	Public Read/Write	Private
Broker	Public Read/Write	Private
Customer Detail	Public Read/Write	Private
Property	Public Read/Write	Private
Service records	Private	Private
waypoint	Public Read/Write	Private

Other Settings

Flows

Create a Flow

1. Go to setup >> type Flow in quick find box >> Click on the Flow and Select the New Flow.
2. Select the Record-triggered flow and Click on Create.
3. Select the Object as “Billing details and feedback”in the Drop down list.
4. Select the Trigger Flow when: “A record is Created or Updated”.
5. Select the Optimize the flow for: “Actions and Related Records” and Click on Done.
6. Under the Record-triggered Flow Click on “+” Symbol and In the Drop down List select the “Update records Element”.
7. Give the Label Name : Amount Update
8. Api name : is auto populated
9. Set a filter condition : All Conditions are met(AND)
10. Field : Payment_Status__c
11. Operator : Equals
12. Value : Completed
13. And Set Field Values for the Billing details and feedback Record
14. Field : Payment_Paid__c
15. Value : {!$Record.Service_records__r.Appointment__r.Service_Amount__c}
16. Click On Done.
17. Before creating another Element. Create a New Resource form Toolbox form top left.
18. Click on the New Resource, And select Variable.
19. Select the resource type as text template.
20. Enter the API name as “ alert”.
21. Change the view as Rich Text ? View to Plain Text.
22. In body field paste the syntax that given below.

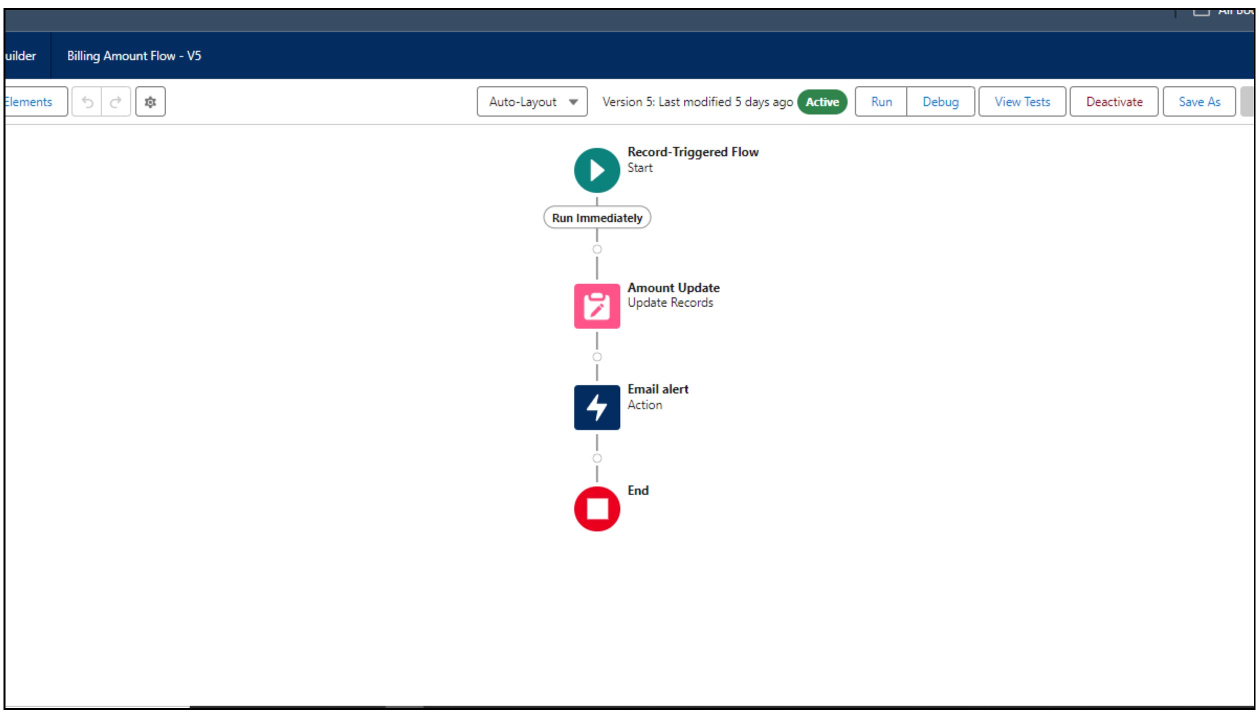
Dear {!$Record.Service_records__r.Appointment__r.Customer_Name__r.Name},

I hope this message finds you well. I wanted to take a moment to express my sincere gratitude for your recent payment for the services provided by our garage management team. Your prompt payment is greatly appreciated, and it helps us continue to provide top-notch services to you and all our valued customers.

Amount paid : {!$Record.Payment_Paid__c}

Thank you for Coming .

23. Click done.
24. Now Click on Add Element , select Action.
25. Their action bar will be opened in that search for “ send email ” and click on it.
26. Give the label name as “ Email Alert”
27. API name will be auto populated.
28. Enable the body in set input values for the selected action.
29. Select the text template that created , Body : {!alert}
30. Include recipient address list select the email form the record.
31. RecipientAddressList:
    {!$Record.Service_records__r.Appointment__r.Customer_Name__r.Gmail__c}
32. Include subject as “ Thank You for Your Payment - Garage Management”.
33. Click done.
34. Click on save. Give the Flow label , Flow Api name will be autopopulated.
35. And click save, and click on activate.

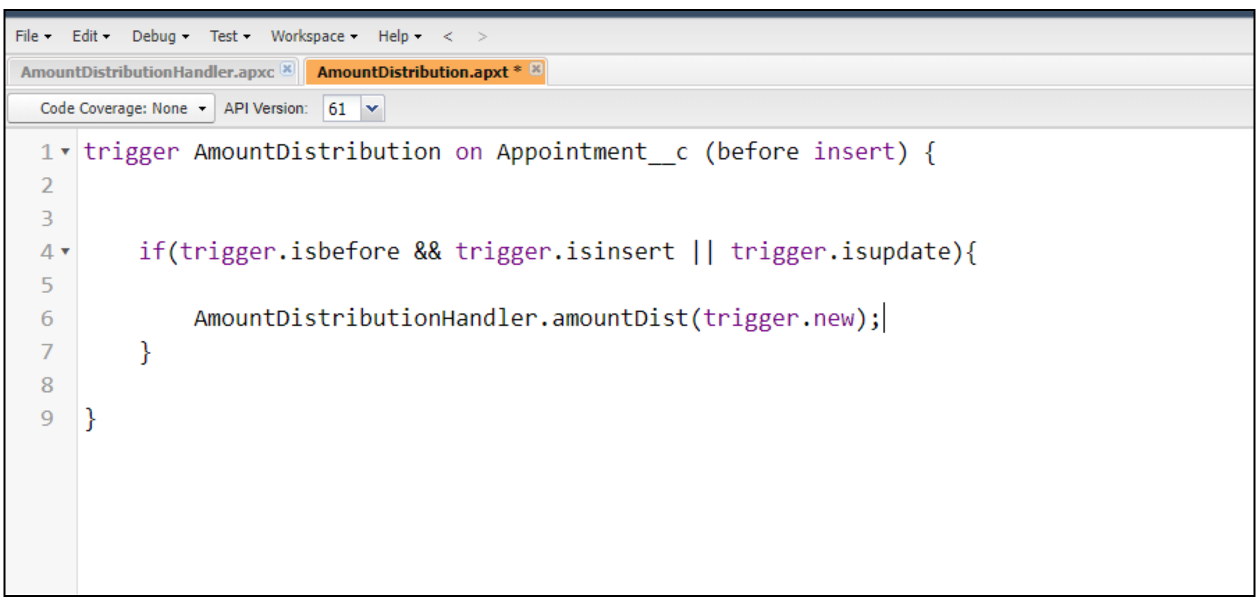


Apex Trigger

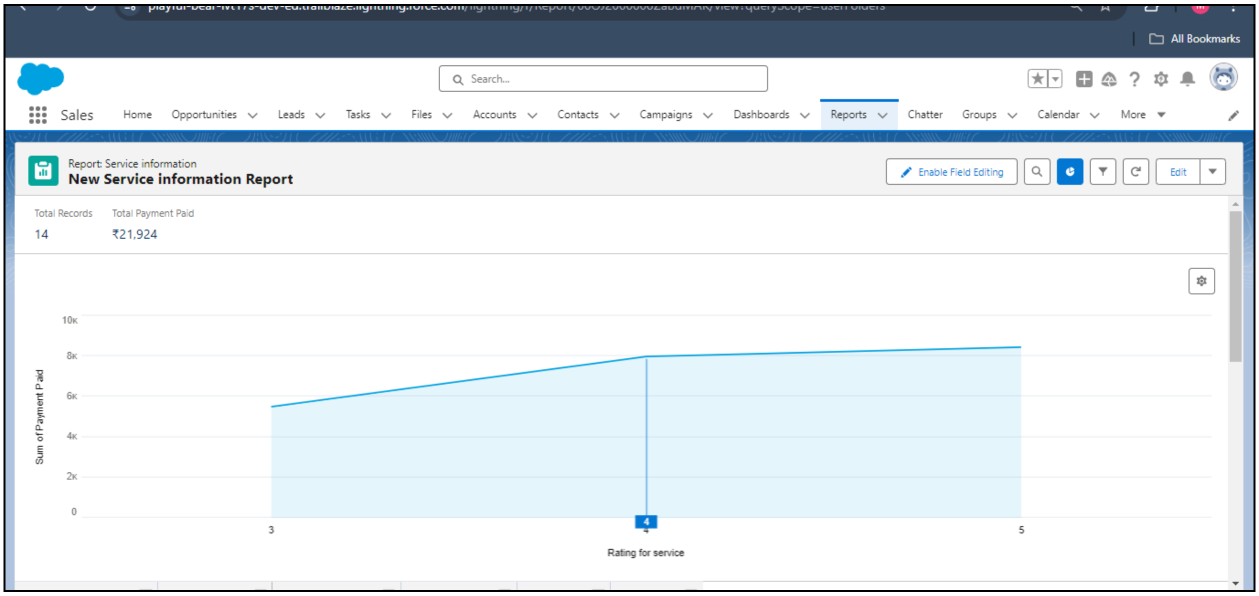
Trigger Handler :

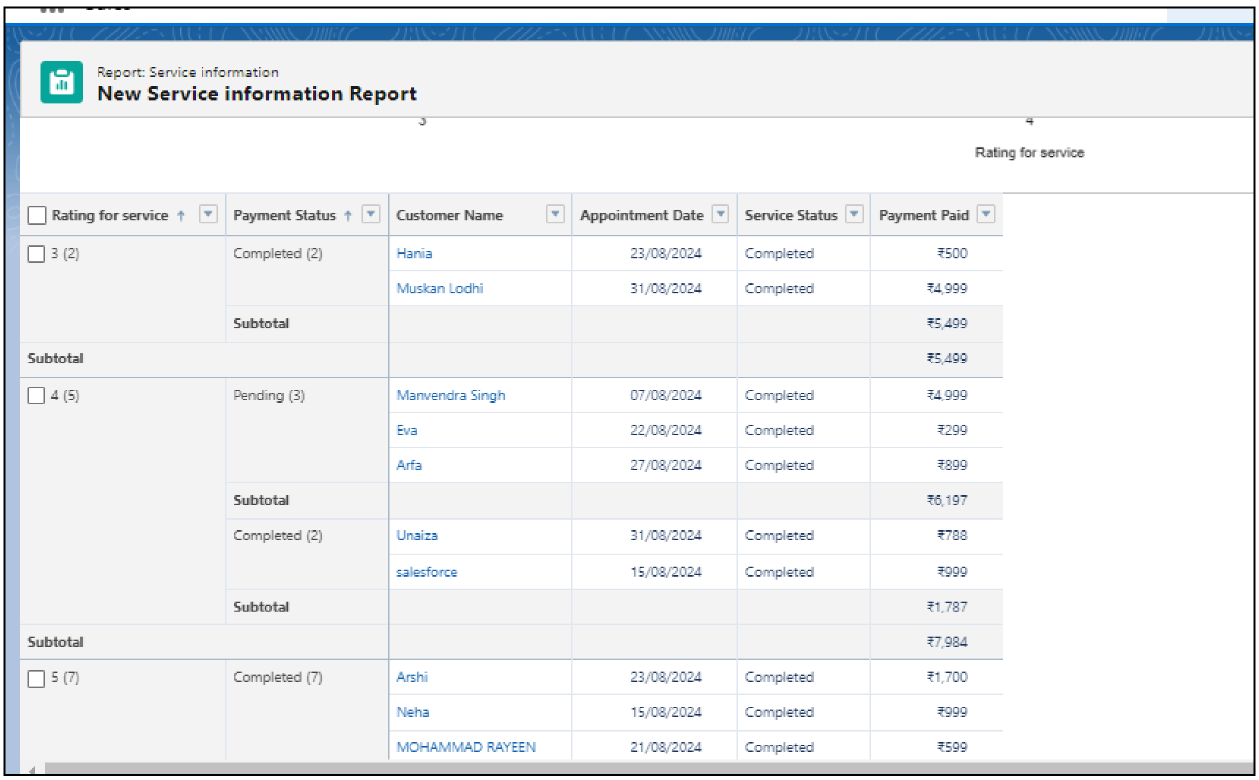
How to create a new trigger :

1. While still in the trailhead account, navigate to the gear icon in the top right corner.
2. Click on developer console and you will be navigated to a new console window.
3. Click on File menu in the tool bar, and click on new? Trigger.
4. Enter the trigger name and the object to be triggered.
5. Name : AmountDistribution
6. sObject : Appointment__c



Reports





Report: Service information

New Service information Report

Rating for service

Rating for service	Payment Status	Customer Name	Appointment Date	Service Status	Payment Paid
3 (2)	Completed (2)	Hania	23/08/2024	Completed	₹500
		Muskan Lodhi	31/08/2024	Completed	₹4,999
	Subtotal				₹5,499
Subtotal					₹5,499
4 (5)	Pending (3)	Manvendra Singh	07/08/2024	Completed	₹4,999
		Eva	22/08/2024	Completed	₹299
		Arfa	27/08/2024	Completed	₹899
	Subtotal				₹6,197
	Completed (2)	Unaiza	31/08/2024	Completed	₹788
		salesforce	15/08/2024	Completed	₹999
	Subtotal				₹1,787
Subtotal					₹7,984
5 (7)	Completed (7)	Arshi	23/08/2024	Completed	₹1,700
		Neha	15/08/2024	Completed	₹999
		MOHAMMAD RAYEEN	21/08/2024	Completed	₹599

Dashboard

1. Go to the app >> click on the Dashboards tabs.
2. Give a Name and select the folder that created, and click on create.
3. Select add component.
4. Select a Report and click on select.
5. Select the Line Chart. Change the theme.
6. Click Add then click on Save and then click on Done.
7. Preview is shown below.
8. After that Click on Subcribe on top right.
9. Set the Frequency as “ weekly ”.
10. Set a day as monday.
11. And Click on save.