GARAGE MANAGEMENT SYSTEM

By

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Abstract

The **Garage Management System (GMS)** is designed to streamline operations within auto repair shops, helping businesses manage customer data, appointments, services, billing, and feedback efficiently. By leveraging Salesforce's powerful platform, GMS ensures a seamless workflow and enhances customer satisfaction by providing easy access to essential information, automating processes, and improving communication. The system includes custom objects like Customer Details, Appointments, Service Records, and Billing Feedback, along with automated flows, validation rules, and reports. The integration of Salesforce’s robust features ensures real-time updates, accurate billing, and automated alerts, making GMS a valuable tool for any garage looking to optimize its services and customer interactions. This project highlights the importance of digital transformation in garage management by improving efficiency and customer experience.

INDEX

INTRODUCTION

The Garage Management System (GMS) is a helpful tool for auto repair shops. It makes it easier for them to provide great service, work more efficiently, and keep customers happy. With an easy-to-use interface and strong features, GMS helps garages succeed in a competitive market and ensures a smooth experience for both customers and employees. This project is built using Salesforce.

Task 1: Object Creation

So for this particular project we creates Four Objects named

1. Customer DetailsObject
2. Appointment Object
3. Service records Object
4. Billing details and feedback Object

Steps for creating the Customer Details 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 >> 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.

Steps for Creating the Appointment 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.

Steps for creating Service Record 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.

Steps for Creating Billing details and feedback 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.

Task 2: Tabs

In this project we created 4 tabs for each objects.

Steps for creating Tab:(Customer Details)

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.

Similar for other objects.

Task 3: Lightning App

For this project we created a Lightning App page named- "Garage Management Application".

Steps for Creating Lightning App: -

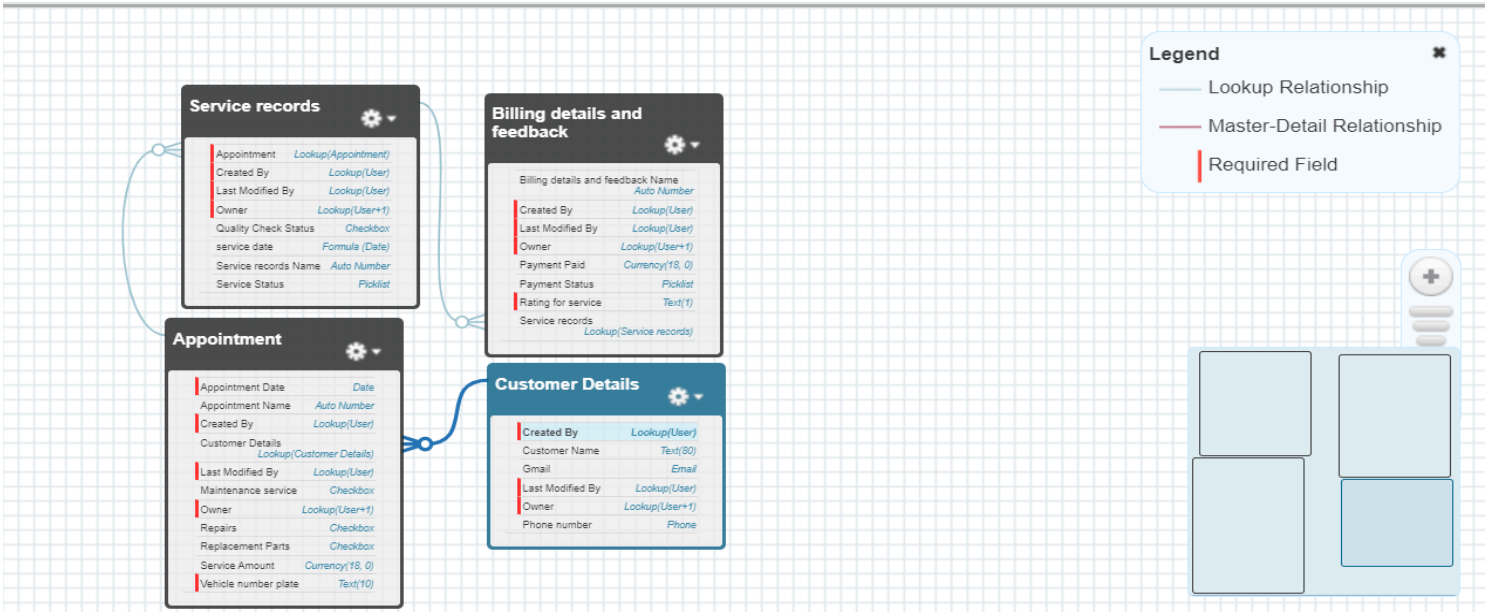
1. Go to setup page >> search “app manager” in quick find >> select “app manager” >> click on New lightning App.
2. Fill the app name in app details as Garage Management Application >> Next >> (App option page) keep it as default >> Next >> (Utility Items) keep it as default >> Next.
3. To Add Navigation 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.

Task 4: Fields

Steps for creating fields: -

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

For this project many types of field here is the image of all fields.



Task 5: Validation Rule

In this project we created 3 Validation Rule.

Steps for creating 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.

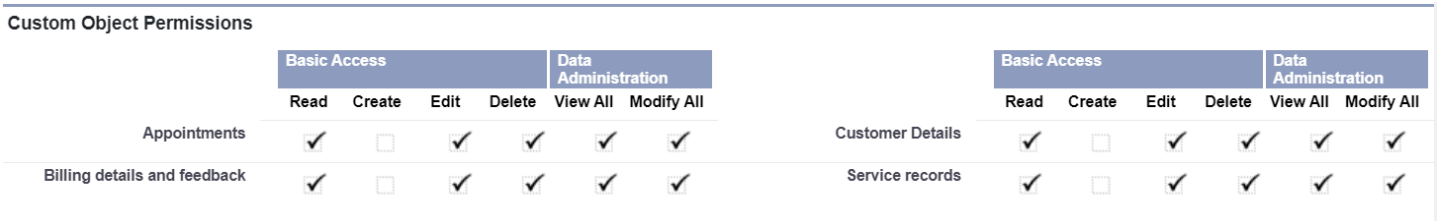
Similarly, we created 2 another validation rule for service record object and Billing details and feedback Object.

Task 6: Profile

For this project we mainly created a two profiles: - • Manager profile • Sales person profile

Steps to create a new profile:

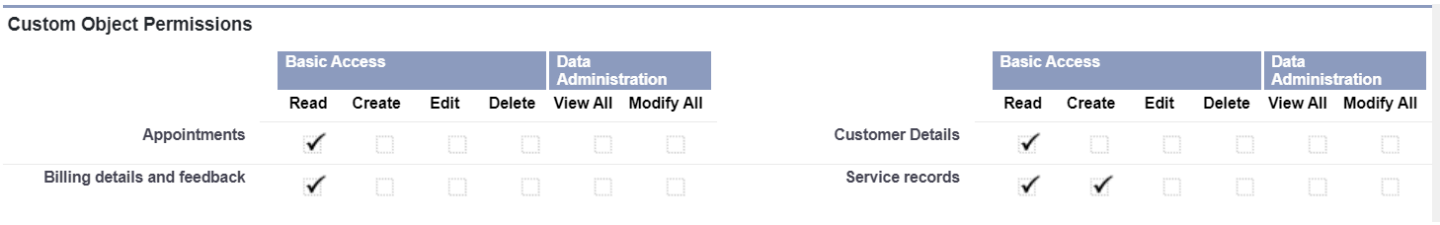
1. Go to setup >> type profiles in quick find box >> click on profiles >> clone the desired profile (Standard User) >> enter profile name (Manager) >> Save.
2. While still on the profile page, then click Edit.
3. Select the Custom App settings as default for the Garage management.
4. Scroll down to Custom 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. Changing the session times out after should be “ 8 hours of inactivity”.
6. Change the password policies as mentioned :
7. User passwords expire in should be “ never expires ”.
8. 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.

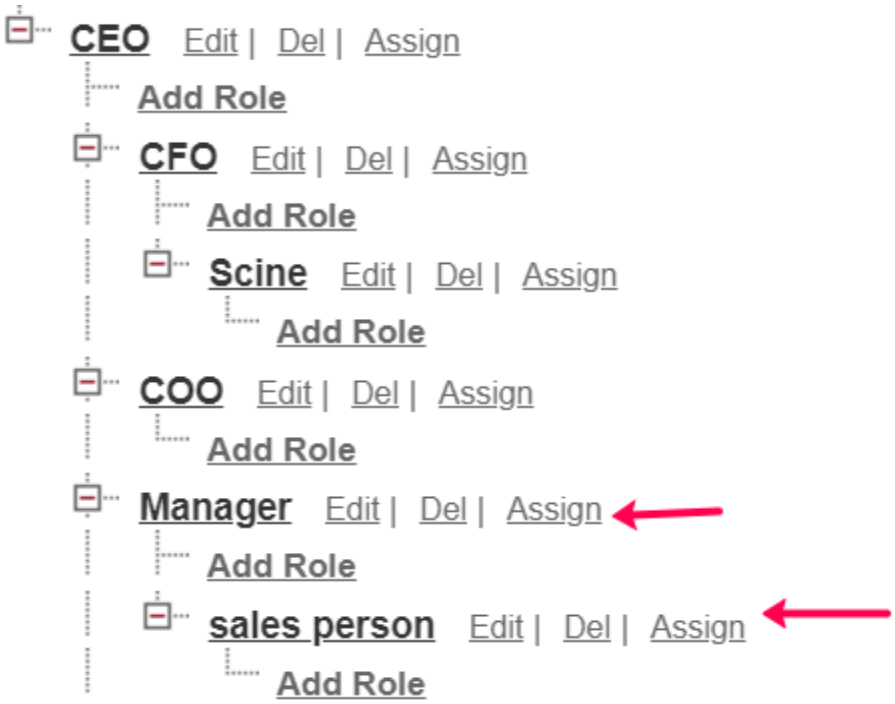


5. And click save

Task 7: Role & Role Hierarchy

For this project we created two Roles: -

1. Manager Role Under CEO
2. Sales Person Role Under Manager

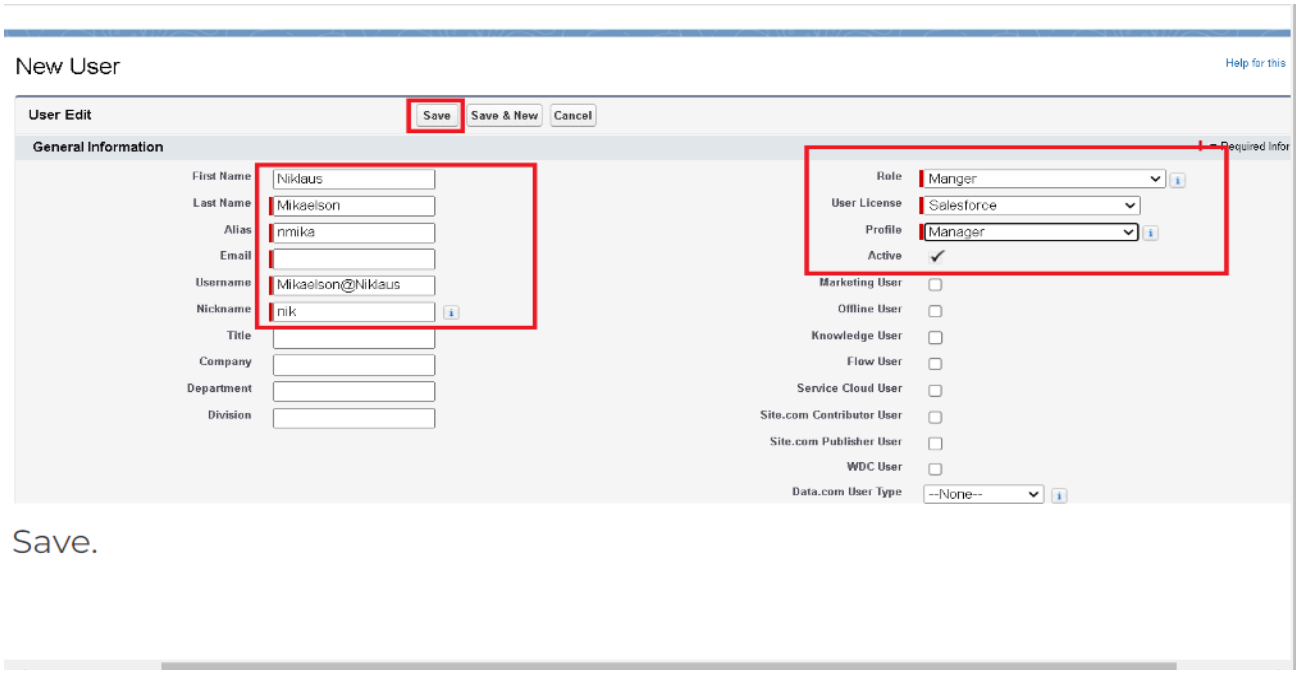


Task 8: User

Steps for creating 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.

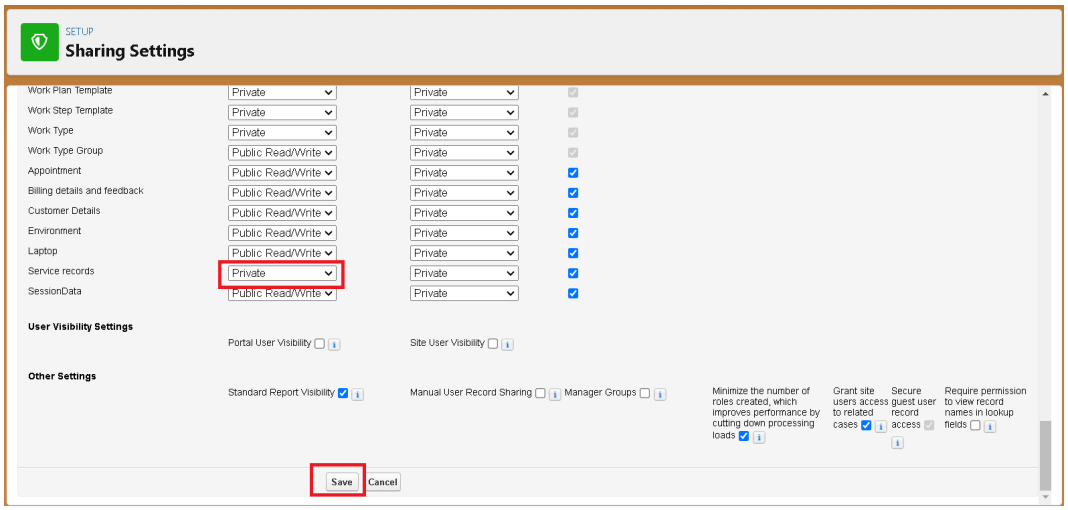
Repeat the steps and create another user using

- Role: sales person
- User licence: Salesforce Platform
- Profile: sales person

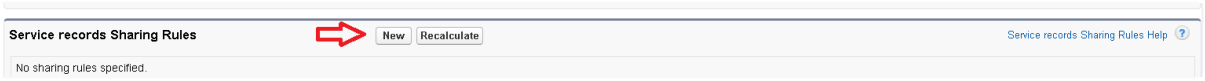
Task 9: Sharing Settings

Steps for creating Sharing setting:

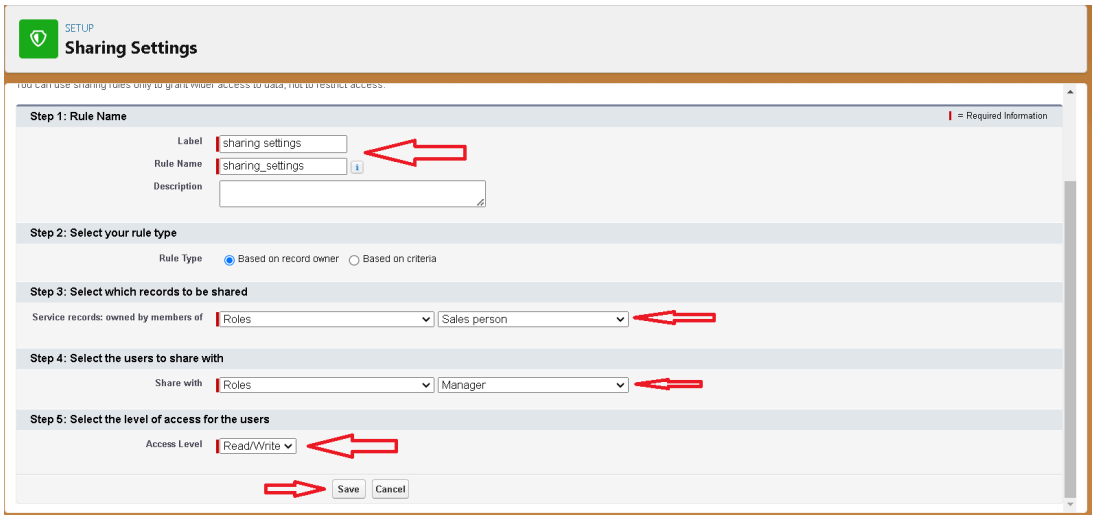
1. Go to setup >> type users in quick find box >> select Sharing Settings >> click Edit.
2. Change the OWD setting of the Service records Object to private as shown in fig.



3. Click on save and refresh.
4. Scroll down a bit, Click new on Service records sharing Rules.



6. Give the Label name as " Sharing setting"
7. Rule name is auto populated.
8. In step 3 : Select which records to be shared, members of " Roles " >> " Sales person"
9. In step 4: share with, select " Roles " >> " Manager "
10. In step 5 : Change the access level to " Read / write ".
11. Click on save.

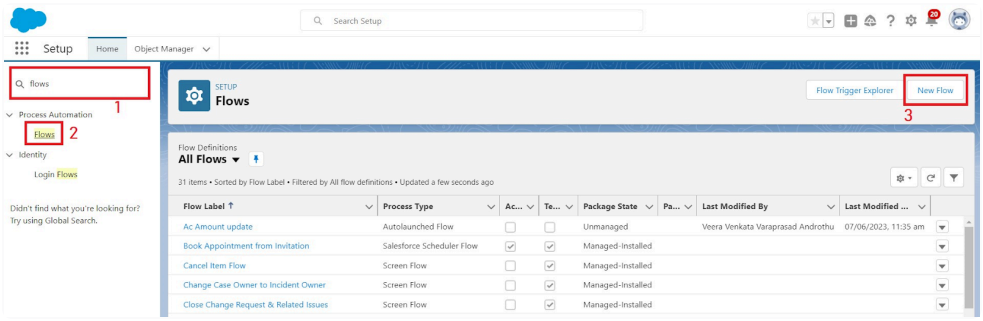


Task 10: Flows

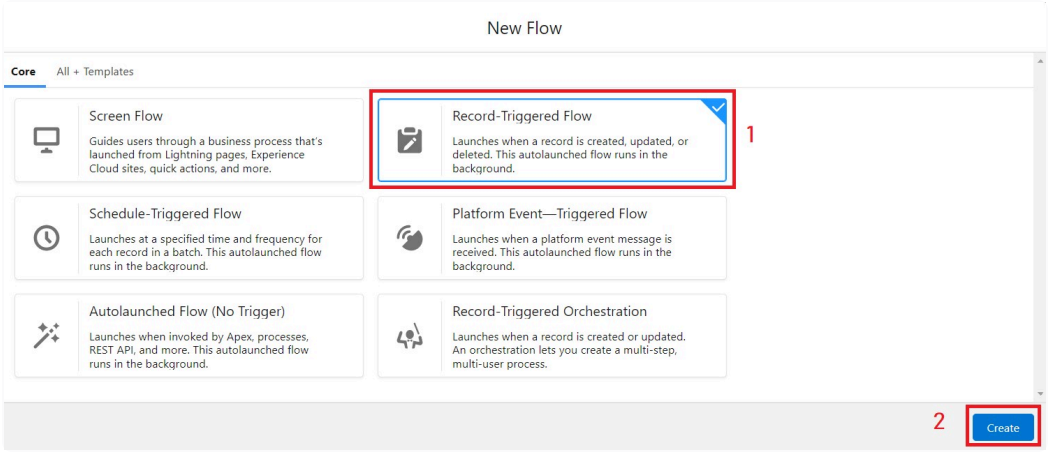
In this Project We use the Record Triggered Flow.

Steps for creating the Flow:-

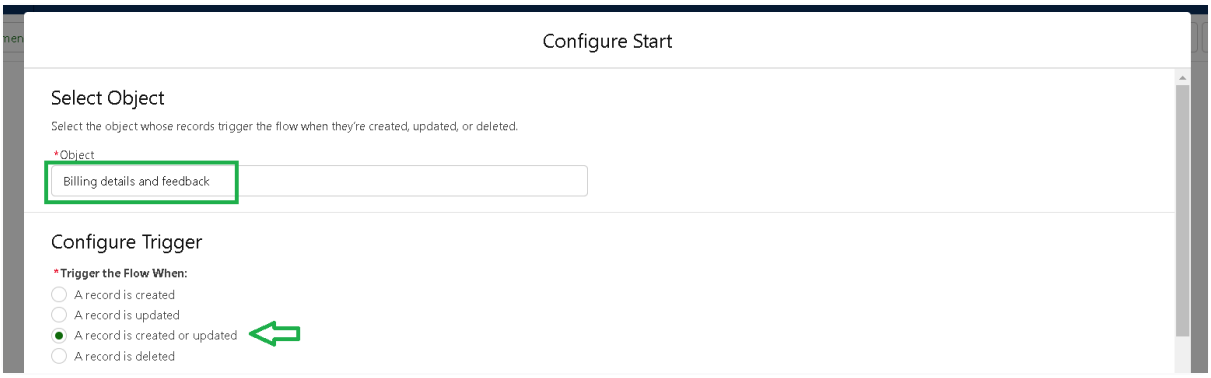
1. Go to setup >> type Flow in quick find box >> Click on the Flow and Select the New Flow.

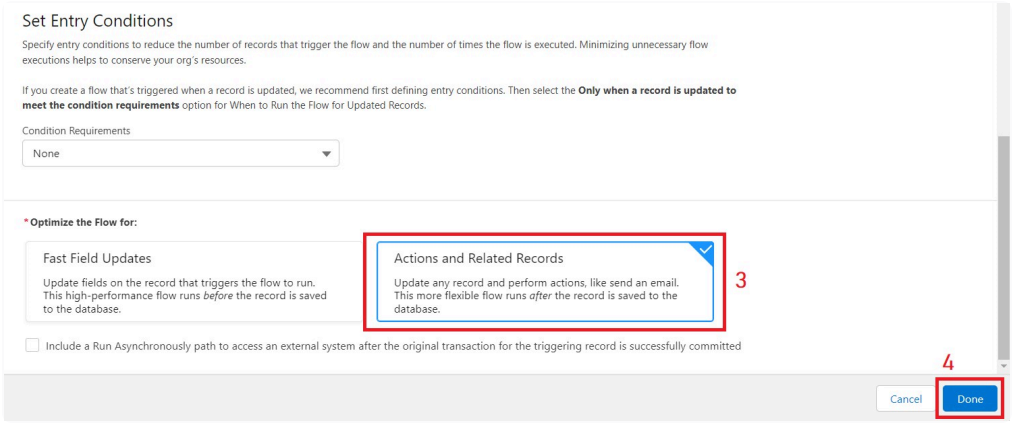


2. Select the Record-triggered flow and Click on Create.

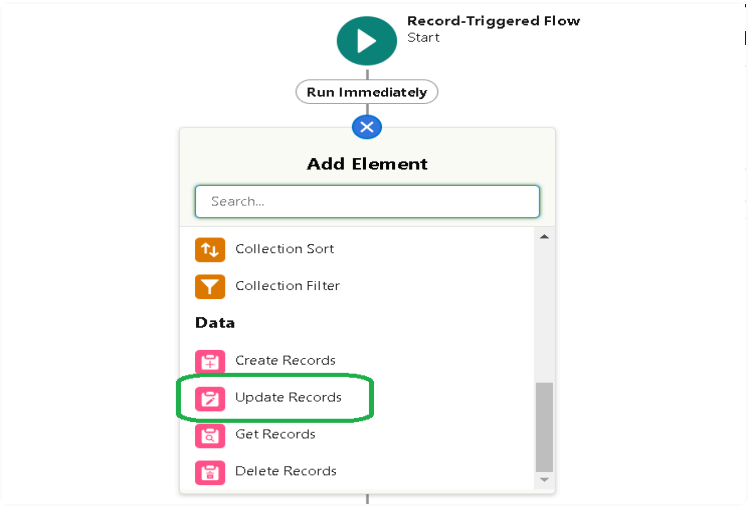


3. Select the Object as “Billing details and feedback”in the Drop down list.
4. Select the Trigger Flow when: “A record is Created or Updated”.
5. Select the Optimize the flow for: “Actions and Related Records” and Click on Done.

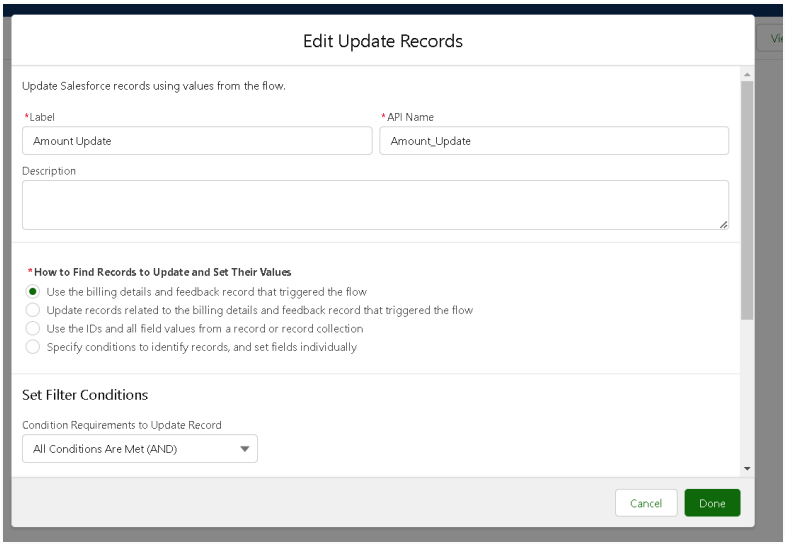


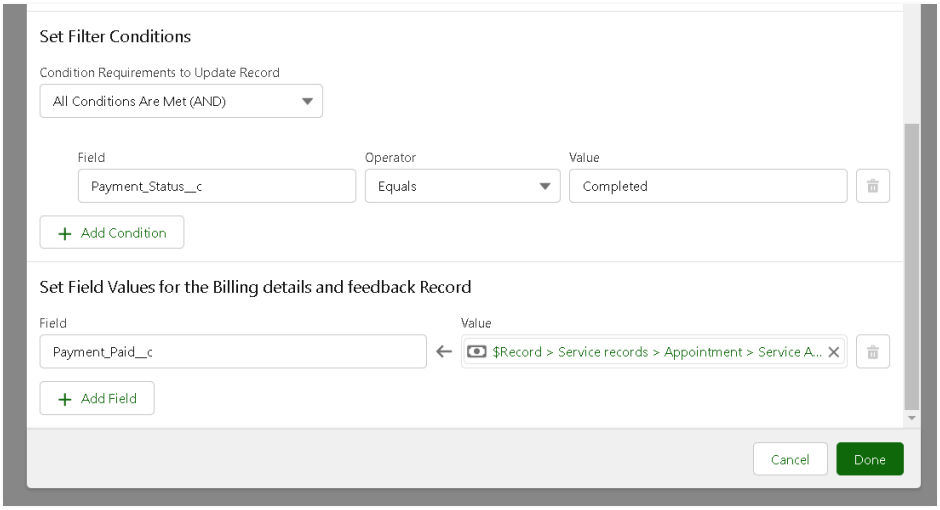


6. Under the Record-triggered Flow Click on "+" Symbol and In the Drop down List select the "Update records Element".

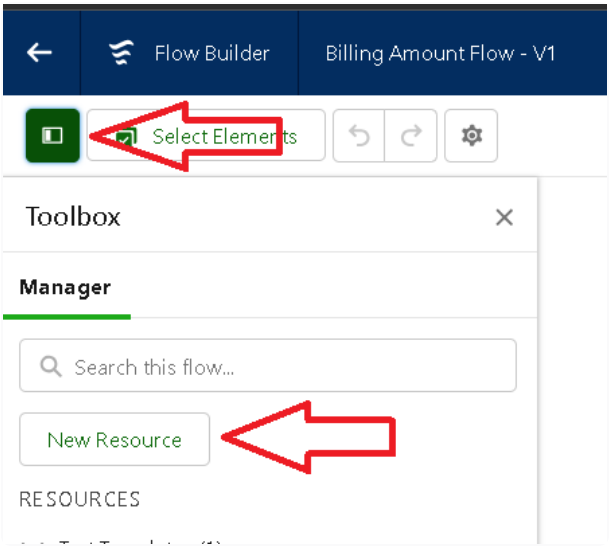


7. Give the Label Name : Amount Update
8. Api name : is auto populated





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.

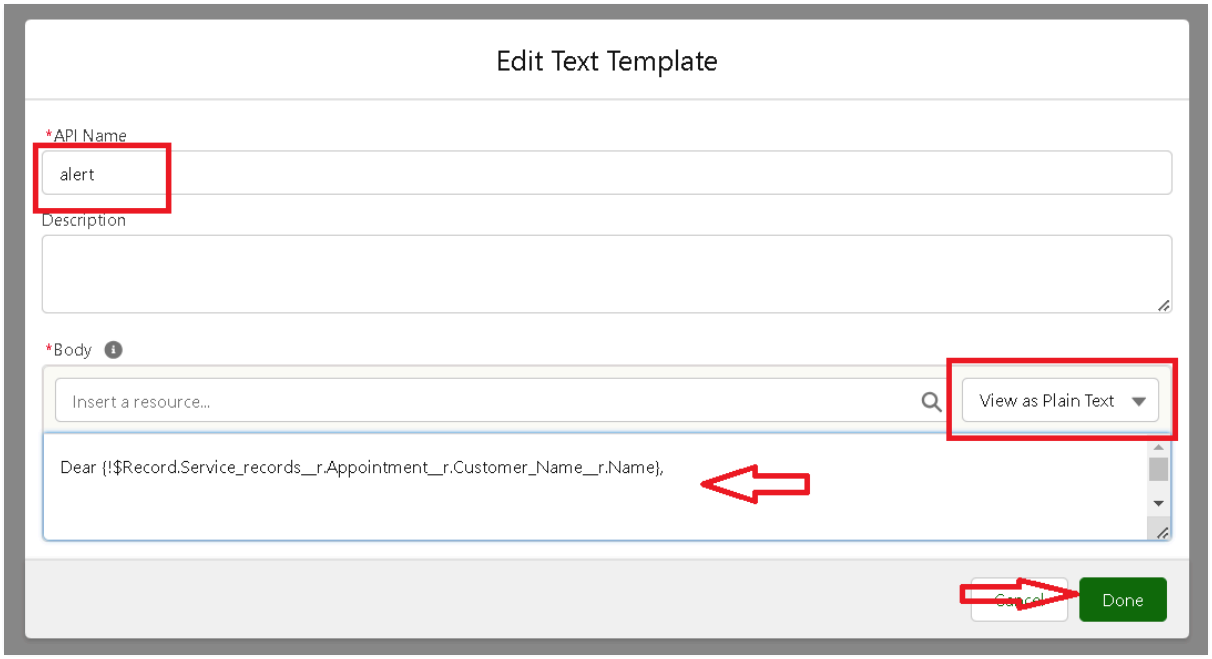
Dear {!$Record.Service_records__r.Appointment__r.Customer_Name__r.Name},

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.

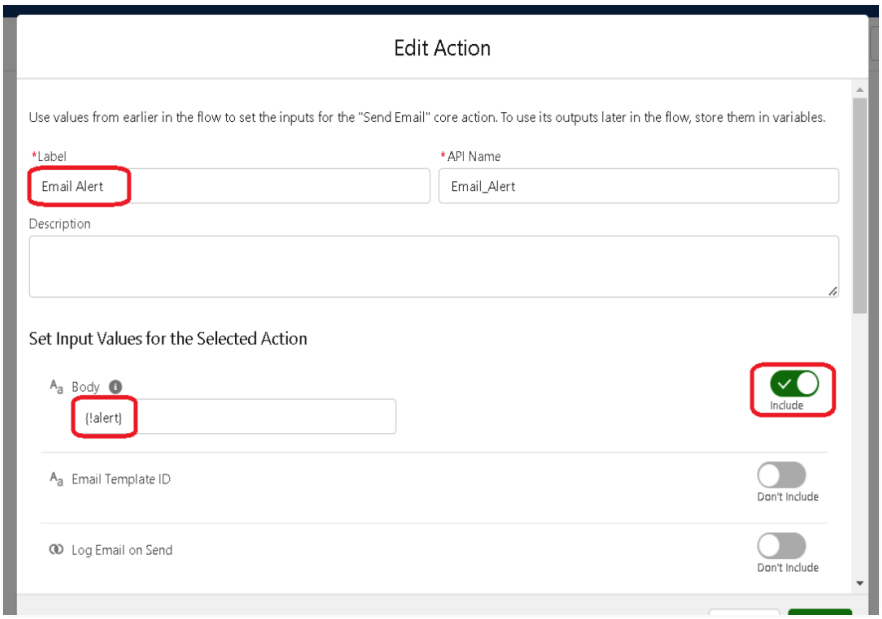
Amount paid : {!$Record.Payment_Paid__c}

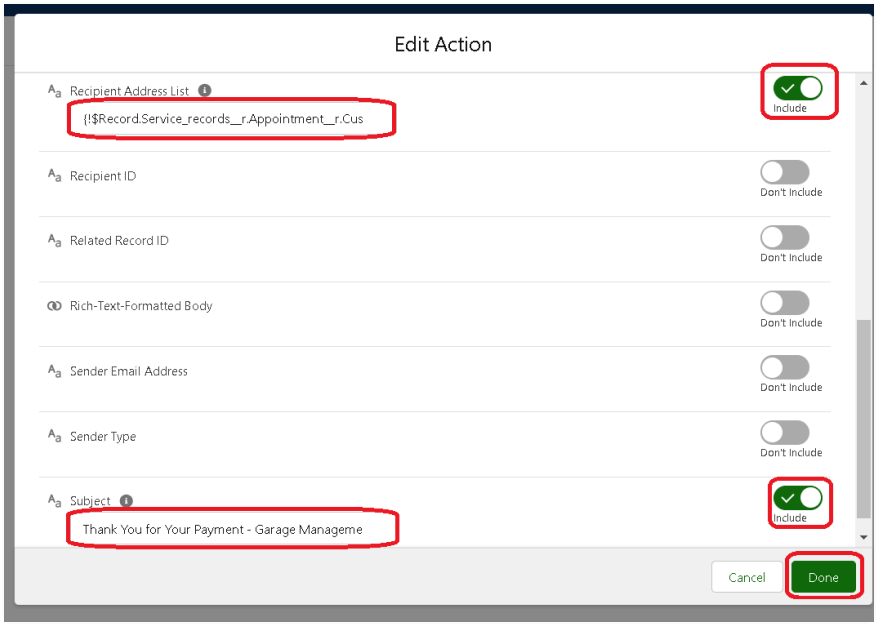
Thank you for Coming .

23. Click done.

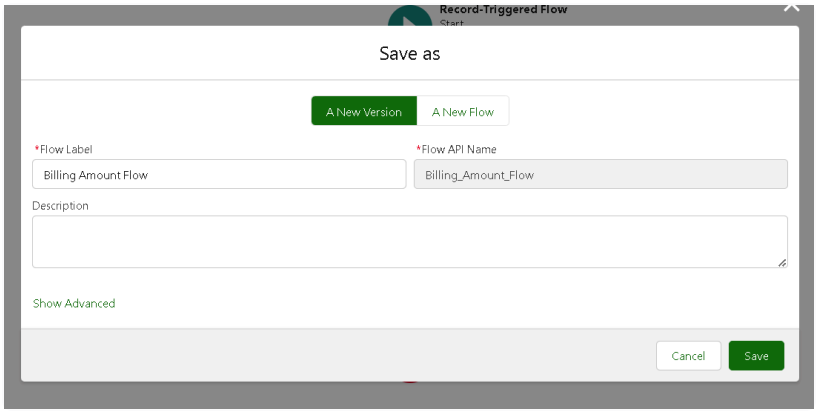


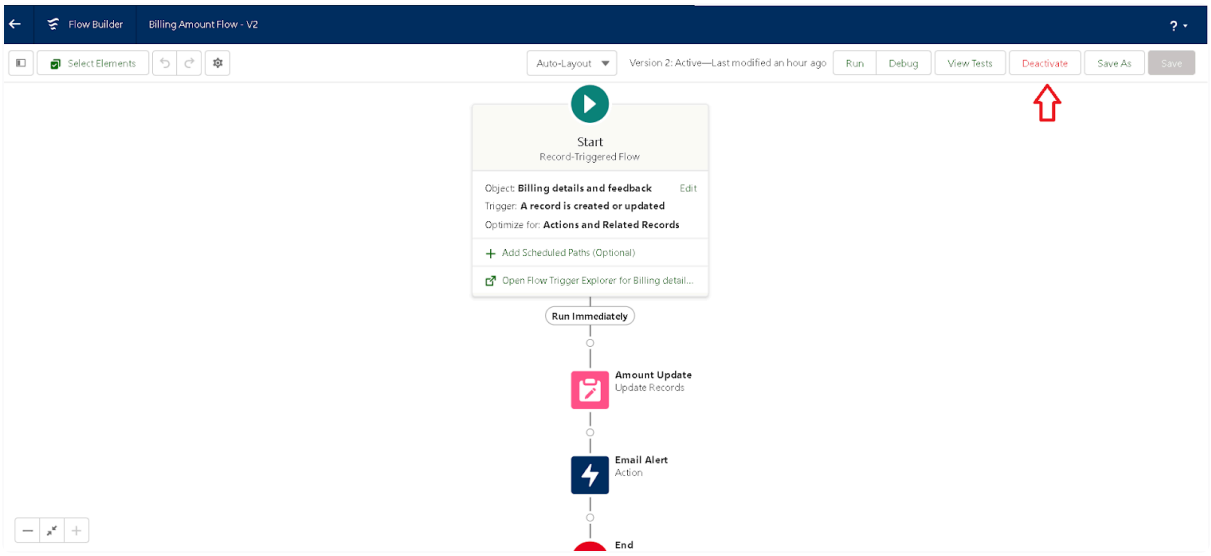
24. Now Click on Add Element , select Action.
25. Their action bar will be opened in that search for “ send email ” and click on it.
26. Give the label name as “ Email Alert”
27. API name will be auto populated.
28. Enable the body in set input values for the selected action.
29. Select the text template 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.



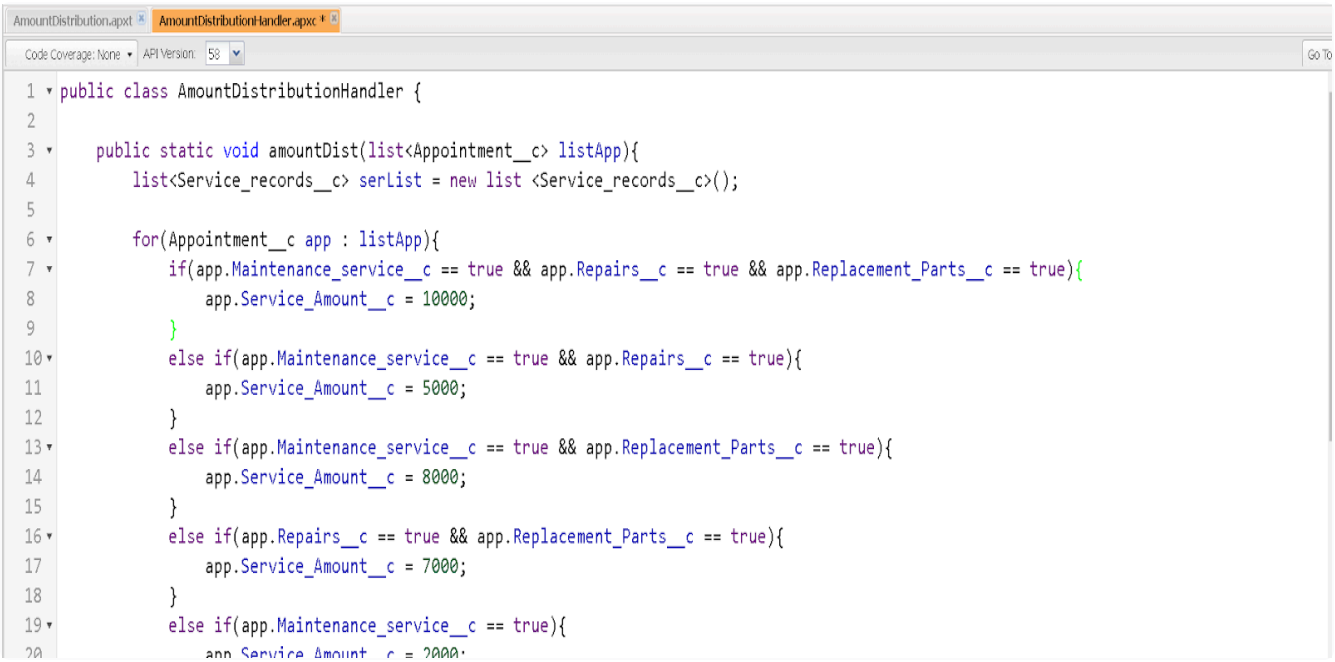


Task 11: Apex Trigger

This use case works for Amount Distribution for each Service the customer selected for there Vehicle.

Steps for creating Apex Trigger are:-

1. Login to the respective trailhead account and navigate to the gear icon in the top right corner.
2. Click on the Developer console. Now you will see a new console window.
3. In the toolbar, you can see FILE. Click on it and navigate to new and create New apex class.
4. Name the class as “AmountDistributionHandler ”.




```
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;
```

AmountDistribution.apxt | AmountDistributionHandler.apxc *

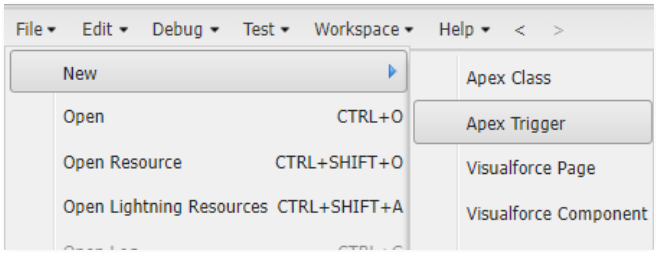
Code Coverage: None | API Version: 58

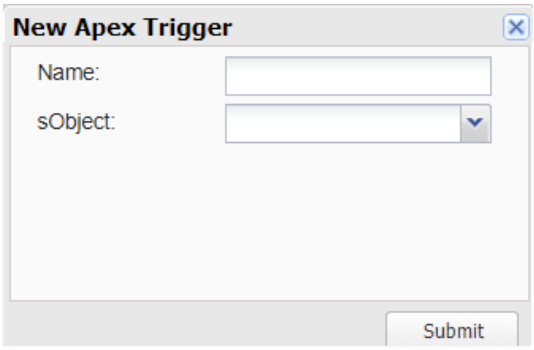
```
            }
            else if(app.Maintenance_service__c == true && app.Replacement_Parts__c == true){
                app.Service_Amount__c = 8000;
            }
            else if(app.Repairs__c == true && app.Replacement_Parts__c == true){
                app.Service_Amount__c = 7000;
            }
            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;
            }

    }
    }
}
```

Steps for creating Trigger Handler:-

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





Syntax For creating trigger :

The syntax for creating trigger is :

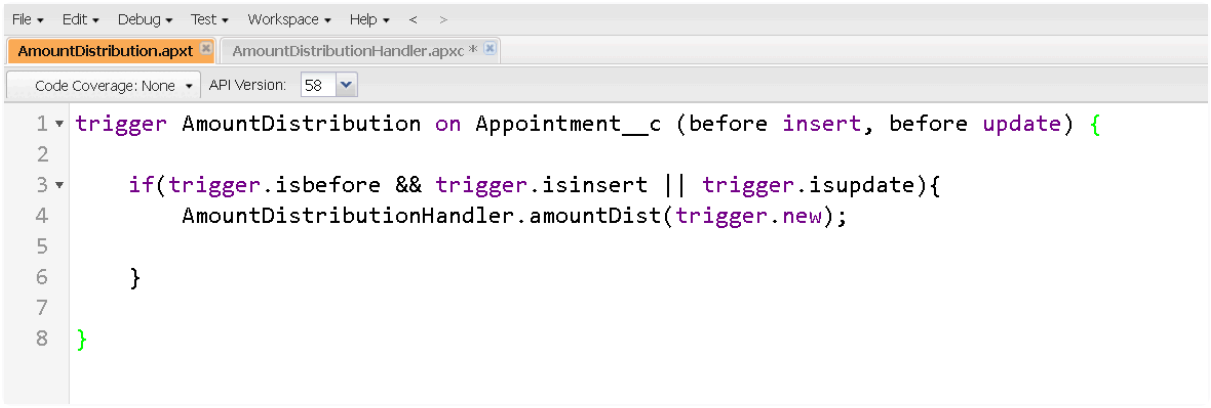
Trigger [trigger name] on [object name](Before/After event)

{

}

In this project , trigger is called whenever the particular records sum exceed the threshold i.e minimum business requirement value. Then the code in the trigger will get executed.

1. Handler for the Appointment Object



Task 11: Report

Steps for creating the Report folder:-

1. Click on the app launcher and search for reports.
2. Click on the report tab, click on new folder.
3. Give the Folder label as “Garage Management Folder”, Folder unique name will be auto populated.
4. Click save.

Steps for Sharing a Report folder:-

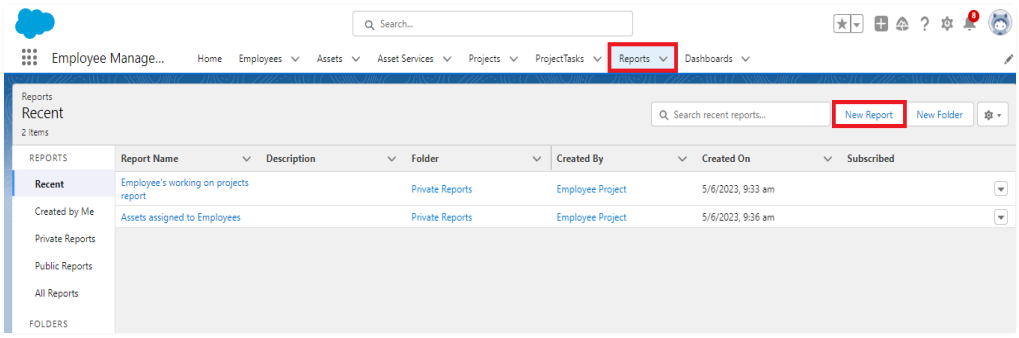
1. Go to the app >> click on the reports tab.
2. Click on the All folder , click on the Drop down arrow for Garage Management folder, and Click on share.
3. Select the share with as “roles”, in name field search for “manager”, give “view” as access for that role.
4. Then click share, and click on Done.

Steps for Creating a Report Type:-

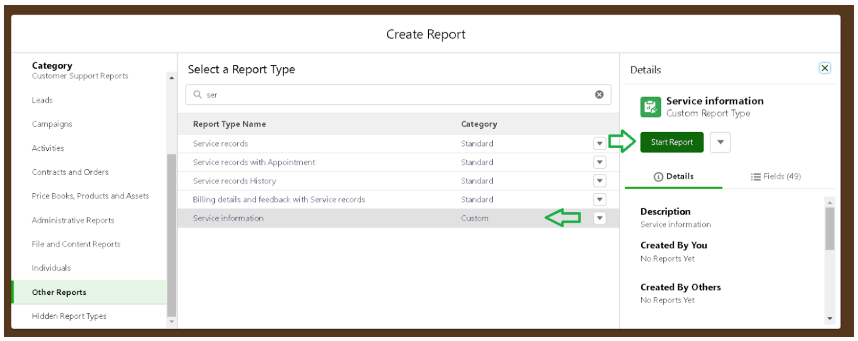
1. Go to setup >> type users in quick find box >> select Report Type >> click on Continue.
2. Click on new custom report type.
3. Select the Primary object as “ Customer details” .
4. Give the Report type Label as “ Service information ”
5. Report type Name is autopopulated.
6. Keep the Description as same.
7. Select Store in Category as “ other Reports ”
8. Select the deployment status as “ Depolyed ”, click on Next.
9. now , Click on Related object box.
10. Click on Select Object, choose Appointment Object as shown in fig.
11. Again Click to relate another object.
12. And select the related object as “ service records”.
13. Repeat the process and select the related object as “ Billing details and feedback”.
14. And click on save.

Steps for Creating A Report:-

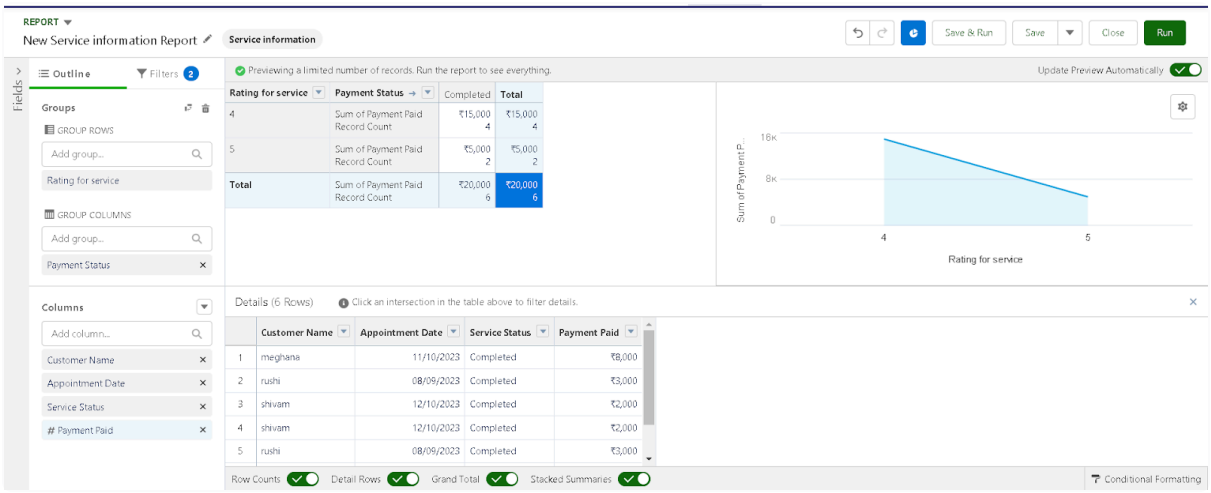
1. Go to the app >> click on the reports tab
2. Click New Report.



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 alredy, 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.

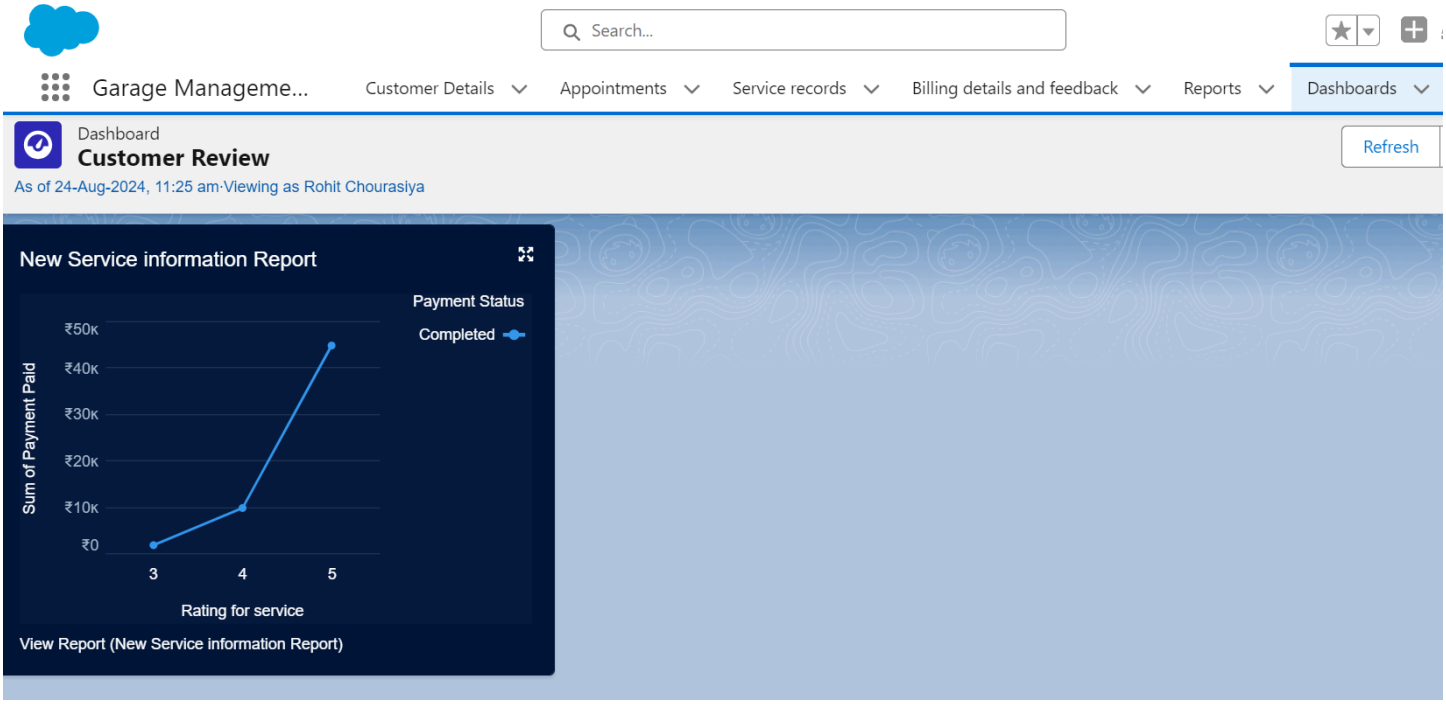


Task 12: Dashboard

Dashboard is simply a visual representation of the Report.

Steps for creating the Dashboard are:-

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.



Thank You