PROJECT

OF

SALESFORCE DEVELOPER

GARAGE MANAGEMENT SYSTEM

to optimize customer details, appointment, service records, and billing for automotive garages.

By

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PROJECT OVERVIEW

The Garage Management System (GMS) project on Salesforce is a CRM solution aimed at transforming the way automotive garages manage customer relationships, vehicle service records, and day-to-day operations. With centralized customer profiles, service histories, and appointment scheduling, the system empowers garages to deliver more personalized and efficient customer service. Automated reminders and service notifications help enhance customer engagement, ensuring regular maintenance and timely service updates to boost customer satisfaction.

In addition to customer management, the GMS CRM includes comprehensive vehicle tracking and work order management, allowing technicians and advisors to access detailed service histories, track service progress, and assign tasks seamlessly. An integrated parts inventory module ensures that essential components are in stock, with automated reordering for low-stock items to prevent service delays. Technicians can use mobile access to view work orders and inventory on the go, optimizing workflow and reducing downtime.

Finally, the GMS CRM supports billing and invoicing, providing a streamlined system for generating service estimates, digital invoices, and online payment options. With built-in analytics and reporting, managers gain insights into customer trends, revenue, and operational efficiency, enabling data-driven decisions for business growth. The system is designed to scale with the garage, offering robust data security and compliance, making it a future-proof solution for modern garage management needs.

OBJECTIVES

- **Enhance Customer Retention and Loyalty:** By providing personalized service reminders, streamlined appointment scheduling, and post-service follow-ups, the GMS CRM aims to build long-term customer relationships and increase repeat visits.

- **Optimize Resource Allocation & Technician Efficiency:** Efficient scheduling, real-time work order tracking, and inventory management help maximize technician productivity, reduce wait times, and ensure that resources are allocated effectively for each service job.

- **Increase Revenue through Data-Driven Upselling:** With insights into customer preferences and service history, the CRM enables garages to offer tailored service recommendations and upsell additional maintenance packages, driving revenue growth.

- **Reduce Operational Costs through Automation:** By automating routine tasks like appointment reminders, parts reordering, and invoicing, the GMS CRM minimizes manual workload, reduces errors, and cuts down operational costs.

- **Improve Business Insights and Strategic Planning:** Advanced reporting and analytics provide managers with valuable insights into service trends, technician performance, and financial metrics, supporting informed decision-making and strategic business growth.

KEY FEATURES

- **Customer details:**
  - Store and manage customer details including contact information, service history, and preferences.
  - Access comprehensive service records for customer insights and tailored service.
- **Appointment:**
  - Automated reminders and notifications to reduce no-shows.
  - Integrated calendar to optimize working time.
- **Service records:**
  - Track detailed service information including service type, parts used, and associated costs.
  - Link service records to specific customer appointments for easy tracking and reference.
- **Billing details:**
  - Generate and manage billing details, linking them to service records.
  - Track payment status and send timely payment reminders.
  - Automated invoice generation and email notifications for a streamlined payment process.
- **Feedback:**
  - Collect and manage customer feedback post-service.
  - Track ratings and comments to enhance service quality.
  - Analyze feedback trends for continuous improvement.

DETAILED PROCESS

Activity – 1

Salesforce account Creation & Activation

- Create a Developer Account by providing all the required details and Activate the account.

Activity – 2

Object Creation

- Create all the required objects with the given label name and format.
- **Customer details Object**

- **Appointment Object**

- **Service records Object**

- **Billing details & Feedback Object**

Activity – 3

Custom Tabs Creation

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

- Create these Custom tabs for every Object.
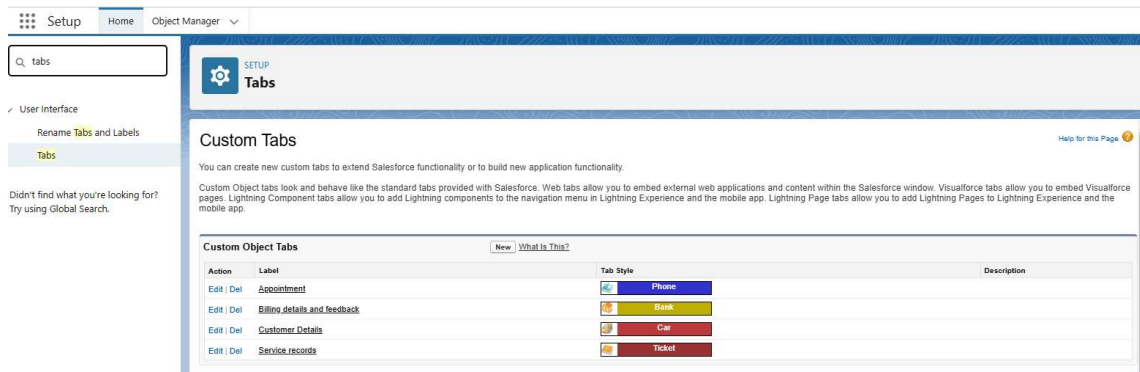
Activity – 4

Create a Lighting App
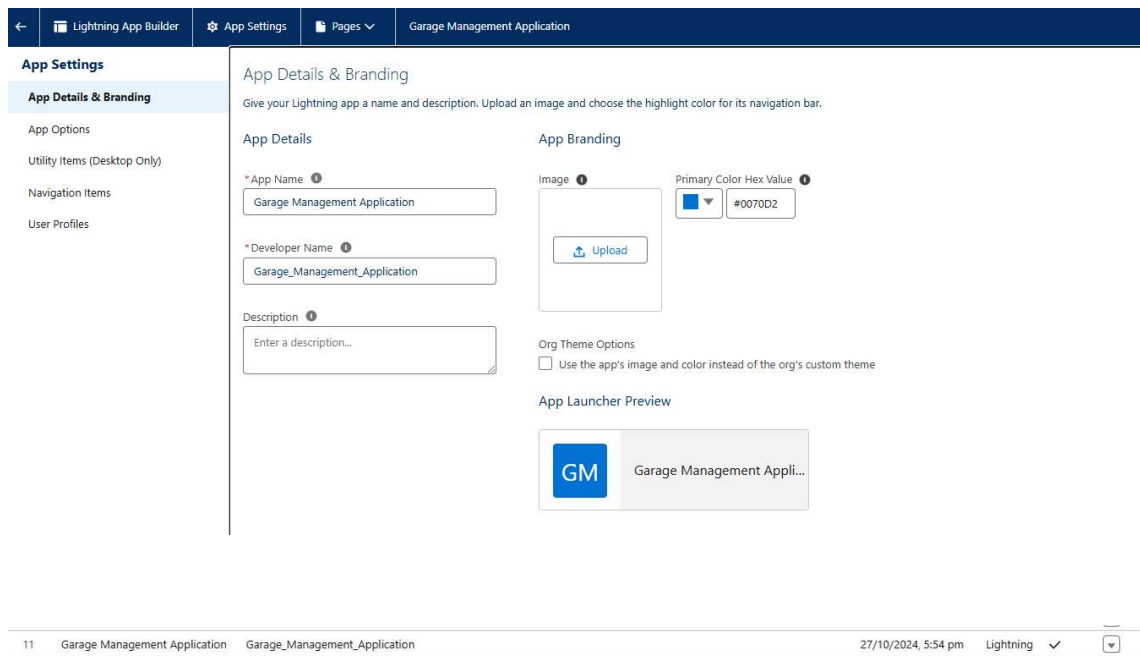
Activity – 5

Field Creation for every object

- **Customer details object**

Details	**Fields & Relationships** 6 Items, Sorted by Field Label			Quick Find	New	Deleted Fields	Field Dependencies	Set History Tracking

Fields & Relationships

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			▾

Left navigation:
Details
Fields & Relationships
Page Layouts
Lightning Record Pages
Buttons, Links, and Actions
Compact Layouts
Field Sets
Object Limits
Record Types
Related Lookup Filters

- Appointment object

Fields & Relationships
13 Items, Sorted by Field Label

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)		✓	▾
Customer Gmail	Customer_Gmail__c	Lookup(Customer)		✓	▾
Customer Name	Customer_Name__c	Lookup(Customer)		✓	▾
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)		✓	▾

Left navigation:
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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
Object Access
Triggers
Flow Triggers
Validation Rules

- Service records object

Fields & Relationships
8 Items, Sorted by Field Label

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			▾

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Search Layouts
List View Button Layout

- **Billing details & Feedback object**

Activity – 6

Validation Rules

- **For Appointment**

- **For Service records**

- **For Billing details & Feedback**

Activity – 7

Duplication Rules

- **Matching Rule:**

    Create a matching rule for the Customer details Object with the given criteria.

- **Duplicate Rule:**

    Create a duplicate rule for the same customer details object which allows the duplication in input fields.

Activity – 8

Creating Profiles

- **Manager Profile**
- **Sales Person Profile**

Activity – 9

Roles & Role Hierarchy

Activity – 10

Users

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.

Activity – 11

Public Groups

- **Creating New Public Groups**
      a valuable tool for Salesforce administrators and developers to streamline user management, data access, and security settings.

Activity – 12

Sharing Settings: control how records are accessed and shared within your organization. These settings are crucial for maintaining data security and privacy.
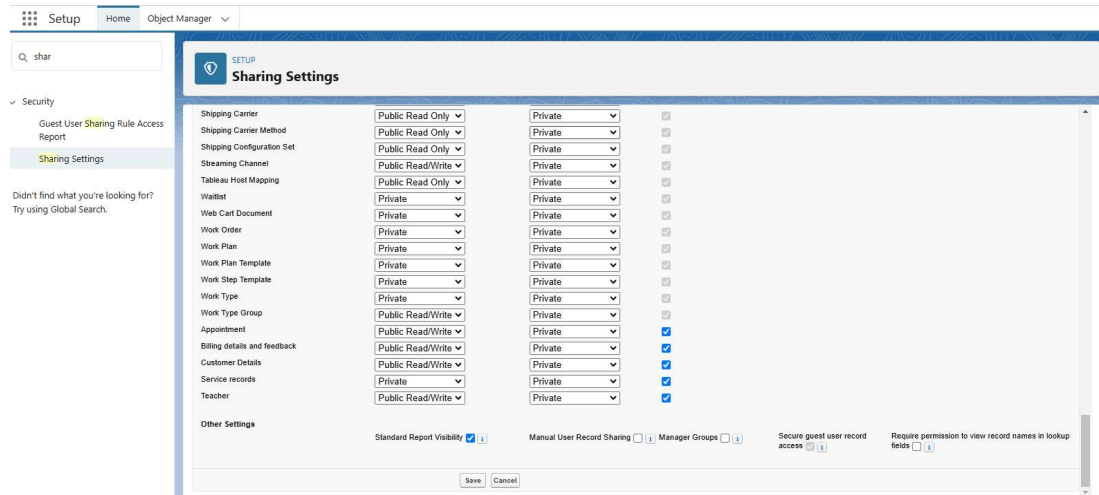
Activity – 13

Flows: a powerful tool that allows you to automate business processes, collect and update data, and guide users through a series of screens or steps.

- **Record-Trigger Flow**
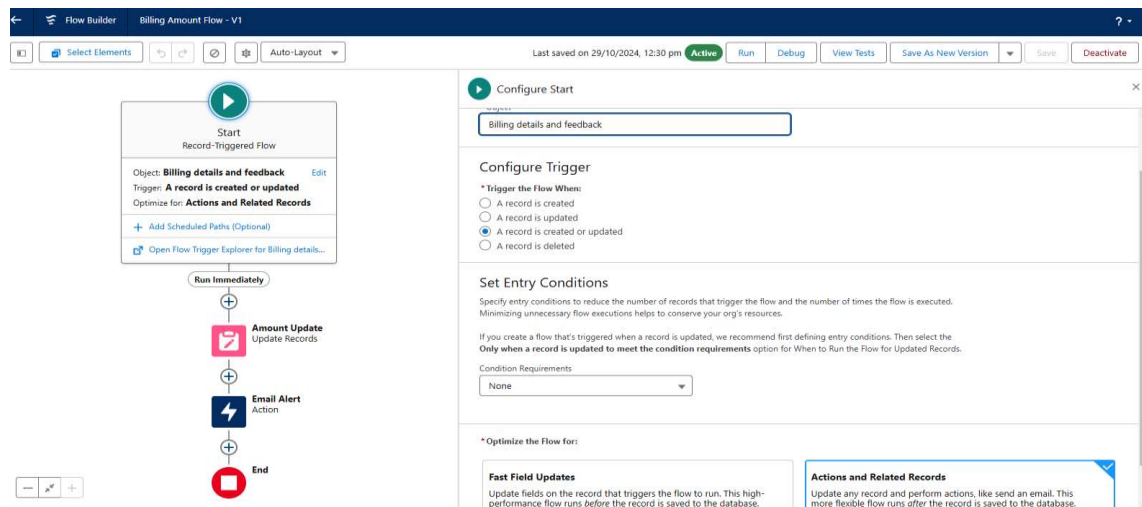
- **Amount Update Flow**
    - Field : Payment_Paid__c
    - Value : {!$Record.Service_records__r.Appointment__r.Service_Amount__c}
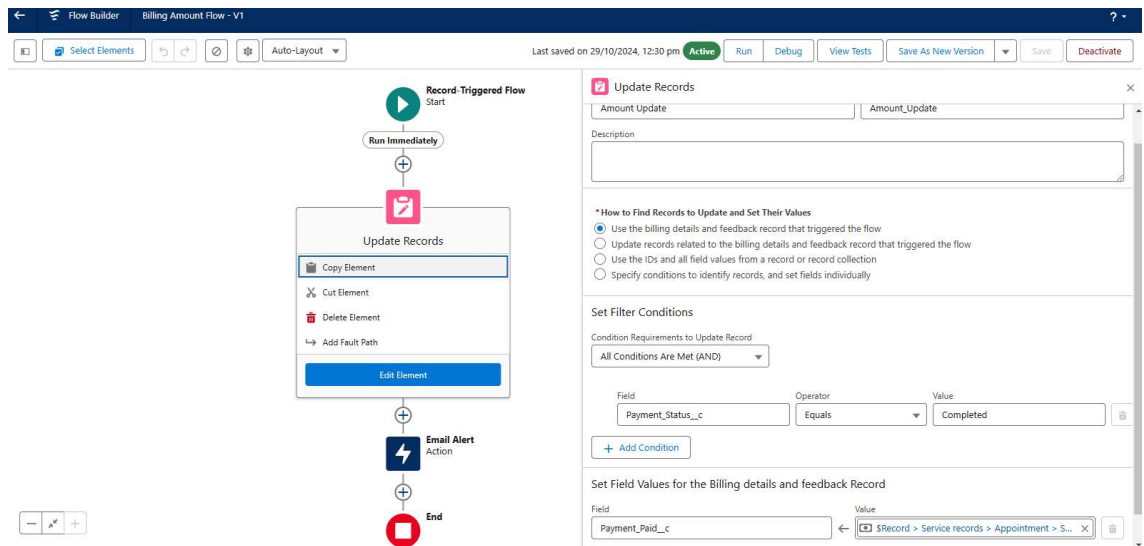
- **Email Alert Flow**
  - RecipientAddressList:
    {!$Record.Service_records__r.Appointment__r.Customer_Name__r.Gmail__c}
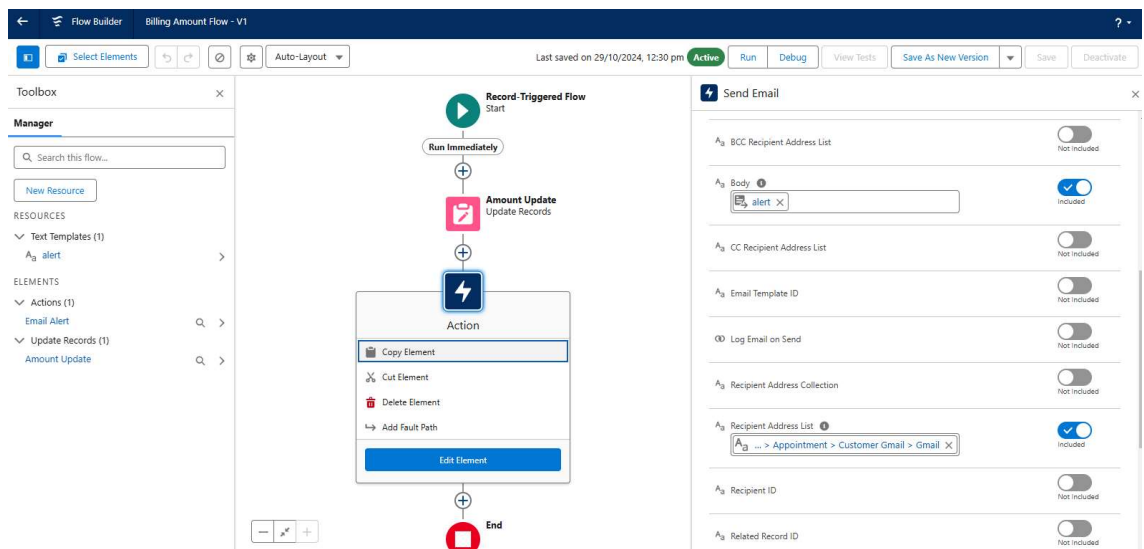
Activity – 14

Triggers

- ## AmountDistributionHandler.apxc (Class)

```apex
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;

            }
        }
    }
}
```

- ## AmountDistribution.apxt (Trigger)

```apex
trigger AmountDistribution on Appointment__c (before insert, before update) {

    if(trigger.isbefore && trigger.isinsert || trigger.isupdate){

        AmountDistributionHandler.amountDist(trigger.new);

    }
}
```

| User	Application	Operation	Time ▾	Status	Read	Size
Manohara Sai Subba Raju Golla	Browser	/aura	10/29/2024, 12:30:35 PM	Success	Unread	279 bytes
Manohara Sai Subba Raju Golla	Browser	/aura	10/29/2024, 12:30:24 PM	Success	Unread	1.3 KB
Manohara Sai Subba Raju Golla	Browser	/flow/Billing_Amount_Flow/301dL00000...	10/29/2024, 12:30:24 PM	Success	Unread	279 bytes
Manohara Sai Subba Raju Golla	Browser	/aura	10/29/2024, 12:29:58 PM	Success	Unread	1.3 KB
Manohara Sai Subba Raju Golla	Browser	/flow/Billing_Amount_Flow/301dL00000...	10/29/2024, 12:29:57 PM	Success	Unread	279 bytes
Manohara Sai Subba Raju Golla	Browser	/aura	10/29/2024, 12:29:47 PM	Success	Unread	1.3 KB

Activity – 15

Reports

Report Folder Creation

Report Type

New Service Information Report

Activity – 16

DashBoard: Dashboards help you visually understand changing business conditions so you can make decisions based on the real-time data you've gathered with reports.
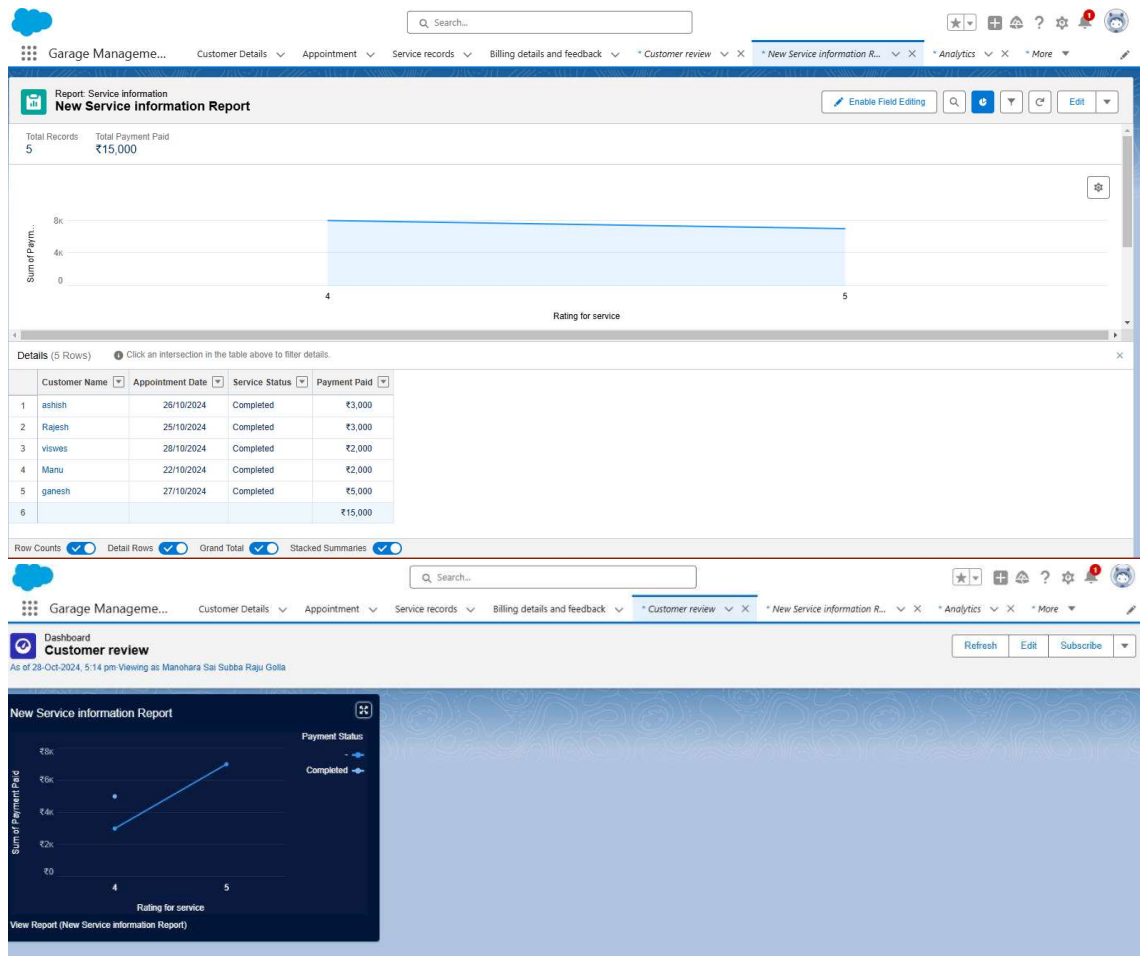
CONCEPTS UTILIZED

(FOR OUR PROJECT IMPLEMENTATION)

- ## What is SALESFORCE?

    Salesforce is like a digital hub that helps businesses stay
connected with their customers. Imagine having a central place

where a company can keep track of every conversation, email, and sale, so no detail slips through the cracks. It's built to bring together sales, customer support, and marketing efforts, so everyone is on the same page.

With Salesforce, businesses can customize tools to fit their needs, automate repetitive tasks, and use built-in AI to get insights on what customers want. It's essentially a smart assistant for companies to build stronger, more personalized customer relationships.

- **Objects**

    Objects are database tables that permit you to store data that is specific to an organization.

    Types:-

    1. Standard Objects
        - Provided by salesforce
    2. Custom Objects
        - Created by users as per their requirements and flexibilities.

- **Tabs**

    Tabs are navigation links that give users quick access to different objects, features, or data, like accounts, contacts, or dashboards, within the platform.

- **Lightning App**

    A Lightning App in Salesforce is a tool that lets users build easy-to-use, interactive apps to streamline work and improve how they interact with data.

- **Fields**

Fields in Salesforce are like labelled blanks in a form where you fill in specific details like a person's name, phone number, or Gmail, so that all relevant information is organized and easy to find.

- **Validation & Duplication Rules**
    - Validation rules in Salesforce are conditions that ensure data entered meets specific criteria before being saved, helping maintain data quality and accuracy.
    - Duplication rules in Salesforce are settings that help prevent or manage duplicate records by identifying and blocking or alerting users about potential duplicates during data entry.
- **Profiles**

  Profiles define what a user can see and do within the platform, acting like "permission sets" for different roles.

- **Role & Role Hierarchy**

  Roles define a user's level of access to data and functions, creating a hierarchy that helps organizations manage who can see and edit information, ensuring everyone has the right permissions while still promoting collaboration across teams.

- **Users**

  Users are people who can log in to the platform to manage customer information, track sales, and work with their teammates, helping them do their jobs better.

- **Public Groups**

  Public groups in Salesforce are like team huddles that bring users together, making it easier to share information and collaborate on projects seamlessly.

- **Sharing Settings**

  Sharing settings determine how and with whom you share data within your organization, ensuring the right people have access to the right information to collaborate effectively.

- **Flows**

  Flows are powerful tools that allow users to automate complex business processes by visually designing step-by-step workflows that guide users or update records without needing to write code.

- **Apex Triggers**

  APEX Triggers are custom pieces of code that automatically execute before or after specific events occur in the database, helping businesses automate tasks and enforce rules without needing manual input.

- **Reports**

  Reports are tools that help businesses visualize and analyse their data, making it easier to understand trends and track performance at a glance.

- **Dashboard**

  Dashboards are visual displays that summarize key metrics and data, helping businesses quickly see their performance and make informed decisions at a glance.

TEST AND VALIDATION

- ## Approach to Testing:

    For the Garage Management System, our testing strategy ensures everything works smoothly and meets user needs. We'll combine both automated and manual testing methods, including:
    1. Functional Testing
    2. Integration Testing
    3. User Acceptance Testing (UAT)
    4. Performance Testing

- ## Unit Testing (Apex Classes & Triggers):

    Unit testing will focus on individual components, like Apex classes and triggers, to ensure they function correctly. Key elements include:

    1. **Positive Tests:** To confirm expected functionality under normal conditions.
    2. **Negative Tests:** To check how the system handles errors or unexpected inputs.
    3. **Bulk Tests:** To ensure the system can handle large amounts of data without issues.

EXAMPLE SCENARIO

Problem Statement:

XYZ Auto's, a local garage, is facing some real challenges. Customers often find it hard to get their cars in for service because of scheduling issues, leading to long wait times and frustrated clients. The mechanics have trouble accessing the latest information on repairs, which can slow things down. Plus, the garage doesn't have a good way to track inventory or understand its performance, making it tough to know how to improve.

Solution:

To turn things around, XYZ Auto's decides to use a Garage Management System built on the Salesforce platform.

- **Centralized Customer Database:**

   Salesforce helps create a single place where all customer details, vehicle information, and repair histories are stored. This means when customers come in, staff can quickly pull up their records, making check-ins a breeze.

- **Appointment Scheduling:**

   The new system includes an easy-to-use online scheduling tool, allowing customers to book their service appointments anytime. This helps the garage manage availability better and reduces those annoying scheduling conflicts.

- **Real-Time Tracking of Repairs:**

   Mechanics can update status of repairs right in Salesforce. This means customers get real-time updates about their vehicles, which makes the whole process more transparent and keeps everyone in the loop.

- **Inventory Management:**

An integrated inventory feature keeps track of parts and supplies, alerting the manager when stocks are running low. This way, XYZ Auto's can always have the parts it needs on hand, helping to speed up repairs.

- **Performance Analytics:**

With Salesforce dashboards, the garage can easily analyze important metrics like average repair times and customer satisfaction. This data helps management make smarter decisions, spot popular services, and develop effective marketing strategies.

Outcome:

The new Garage Management System, XYZ Auto's sees a big boost in customer satisfaction. With shorter wait times and better communication, customers feel more valued. Mechanics are also happier, as they can easily access the latest repair information. Plus, the garage can manage its inventory better and gain valuable insights into its performance. Overall, this solution not only streamlines operations but also sets the stage for future growth, allowing XYZ Auto's to focus on what it does best: getting cars back on the road quickly and efficiently.

CONCLUSION

In conclusion, the Salesforce Garage Management System is a powerful tool that makes running a service centre easier and more

efficient. It combines features like online appointment scheduling, real-time updates on car repairs, and smart inventory management, all in one place. This means customers get faster service and clear communication, which helps keep them happy. For the staff, it reduces confusion and makes their jobs smoother. Plus, the system gives managers valuable insights into performance, allowing them to spot trends and improve the business. Overall, this system helps garages provide excellent service and build strong relationships with their customers.

Thank You