Functional and Performance Testing
Performance Testing

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Team ID	LTVIP2025TMID29772
Project Name	GARAGE MANAGEMENT SYSTEM

Performance Testing:

Performance Testing is a type of software testing that evaluates how a system performs under specific workloads. It checks the system's speed, responsiveness, stability, and scalability to ensure optimal user experience and operational efficiency.

Purpose:

To ensure the application can **handle expected user load**

To identify and eliminate **performance bottlenecks**

To validate **system behavior under stress** (high data/traffic)

To confirm that **response times** meet business requirements

Types of Performance Testing:

Type	Description
Load Testing	Checks how the system handles expected number of users and operations.
Stress Testing	Determines the system's breaking point by applying extreme load.
Spike Testing	Observes behavior when load suddenly increases or decreases.
Scalability Testing	Checks system's ability to scale up or down as users increase
Endurance Testing	Evaluates system performance over a long duration (e.g., 12–24 hours).

Tools Commonly Used for Performance Testing:

Tool	Usage Area
Salesforce Dev Console	For logs and timing apex/flows
Apache JMeter	Web app load testing
BlazeMeter	Cloud-based performance testing
LoadRunner	Enterprise-grade performance tool
Google Lighthouse	Front-end performance

Here are the Parameters to evaluate the performance of the project:

1.Apex Triggers:

In the **Garage Management System (GMS)** project, **Apex Triggers** are used to automate business logic in Salesforce before or after specific data operations occur on records.

Purpose:

- Automatically **calculate the service amount** based on selected services (Maintenance, Repairs, Replacement).
- Ensure **real-time updates** without manual intervention.

2. Flows :

In the **Garage Management System (GMS)** project, **Flows** in Salesforce are used to automate repetitive tasks and improve process efficiency **without writing code**.

What Are Flows?

Flows are visual workflows in Salesforce that automate data updates, send notifications, and handle complex logic based on user-defined conditions.

### Flows Used in This Project:

1. Payment Confirmation Flow

- **Type**: Record-Triggered Flow
- **Object**: Billing_details_and_feedback__c
- **Trigger**: When a record is **created or updated**

- **Logic**:

  - If **Payment Status = Completed** →
    → Auto-update **Payment Paid** field from linked service amount
    → Send a **thank-you email** to the customer
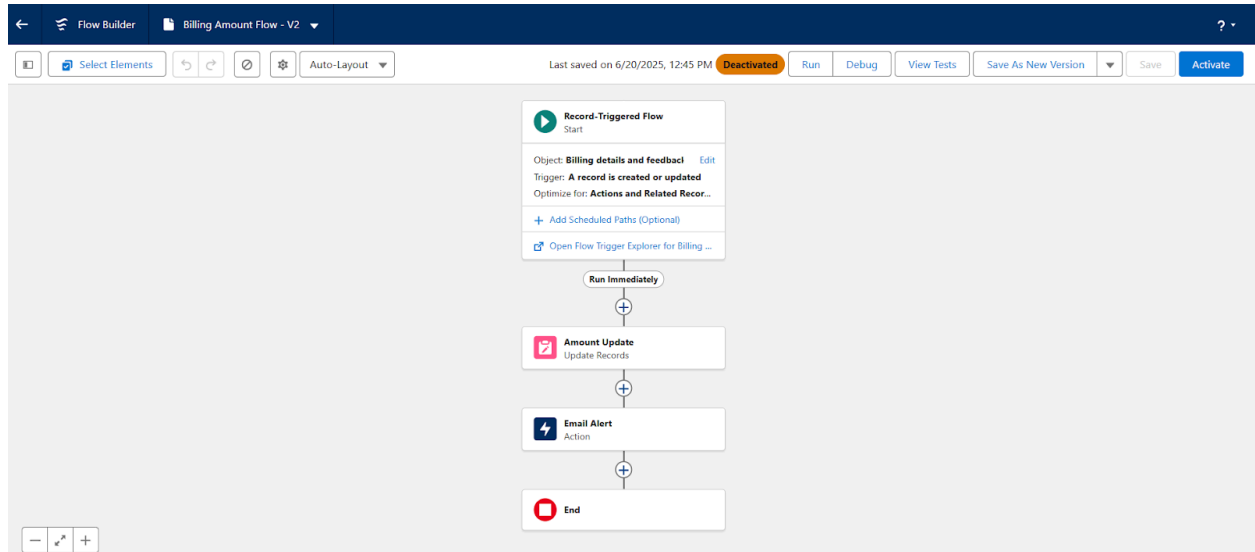
2. Service Status Update Flow

- **Type**: Record-Triggered Flow
- **Object**: Service_records__c
- **Trigger**: When **Quality Check Status = True**
- **Logic**:

  - Automatically sets **Service Status = Completed**
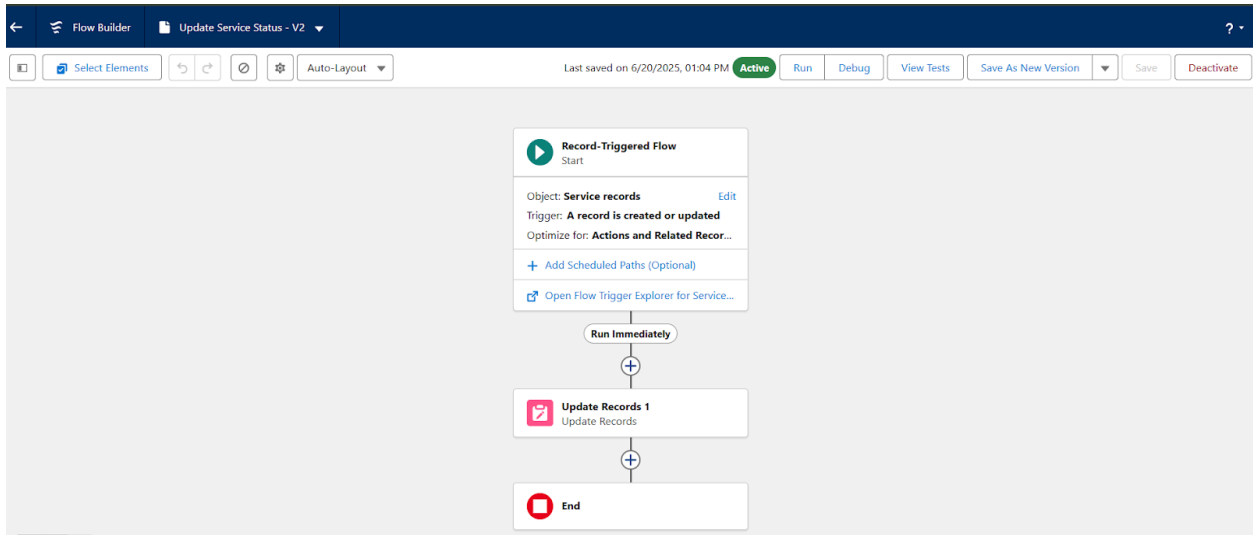
3.Reports & Dashboards :

In the **Garage Management System (GMS)** project, **Reports and Dashboards** are used to monitor service performance, customer feedback, and billing information in a **visual and analytical** format.

Reports:

Custom Report Created

- **Report Type**: Custom Report Type based on:
  - Customer Details
  - Appointments
  - Service Records
  - Billing & Feedback

- **Report Name**: New Service Information Report

- **Displayed Fields**:
  - Customer Name
  - Appointment Date
  - Service Status
  - Payment Paid
  - Rating for Service
  - Payment Status
- **Groupings**:
  - Grouped by Rating for Service
  - Grouped by Payment Status
- **Chart Used**: **Line Chart**

Dashboards:

Dashboard Created

- **Name**: Service Rating Dashboard
- **Folder**: Service Rating Dashboard
- **Component Used**: Line Chart from above report
- **Insights Visualized**:

  - Ratings Distribution
  - Completed Payments vs Pending
  - Overall service performance

- **Automation**: Dashboard is **subscribed weekly**, delivering insights to the **Manager** role.

Record Insert/Update :

In the **Garage Management System (GMS)** project, **Record Insert/Update** refers to the process of adding new data or modifying existing records across various custom Salesforce objects like **Customer Details**, **Appointments**, **Service Records**, and **Billing & Feedback**.

Insert Process (Creating Records):
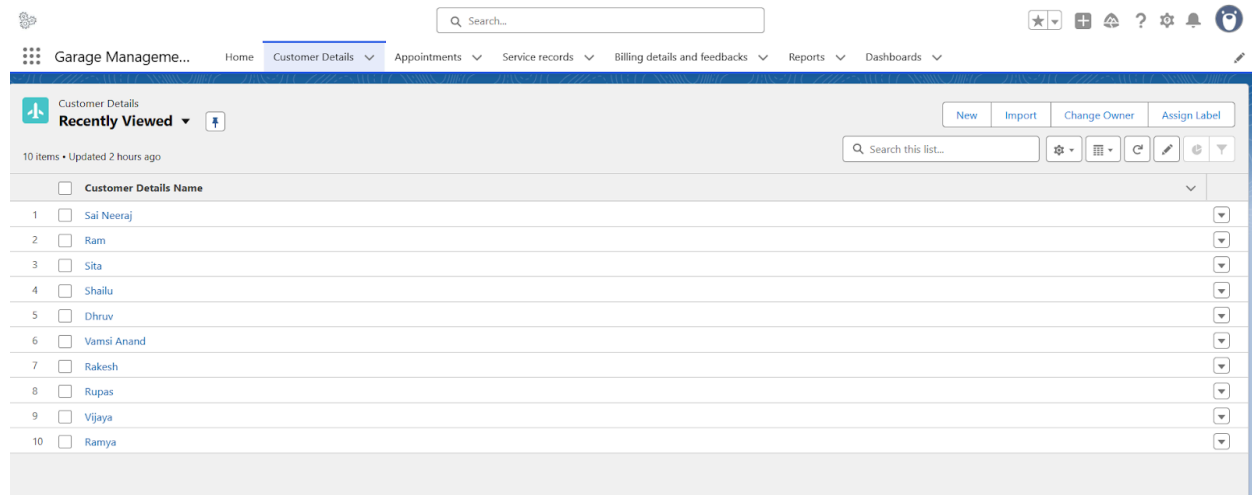
- **Objects Involved**:
  - Customer Details
  - Appointment
  - Service Records
  - Billing & Feedback

- **Steps**:
  - Navigate to the tab (e.g., Customer Details).
  - Click on **New**, fill in required fields (e.g., name, phone, Gmail).
  - Save the record – it gets stored in Salesforce.

- **Automation Triggered**:
  - Apex triggers calculate **service amount** during appointment insertion.
  - Flows auto-update fields like **Service Status** or **Payment Paid** after insert/update.

Update Process (Modifying Records):

- Records can be edited directly from their respective object tabs.
- Example:

- ○ Marking Quality Check as ✅ will **automatically update** Service Status to **Completed** (via Flow).
- ○ Updating Payment Status to **Completed** triggers **emailalert** and updates **Payment Paid**.

Validations During Insert/Update:

- **Vehicle Number** format validation (e.g., MH12AB1234)
- **Rating** must be between 1 and 5
- Duplicate records blocked (e.g., same email & phone)
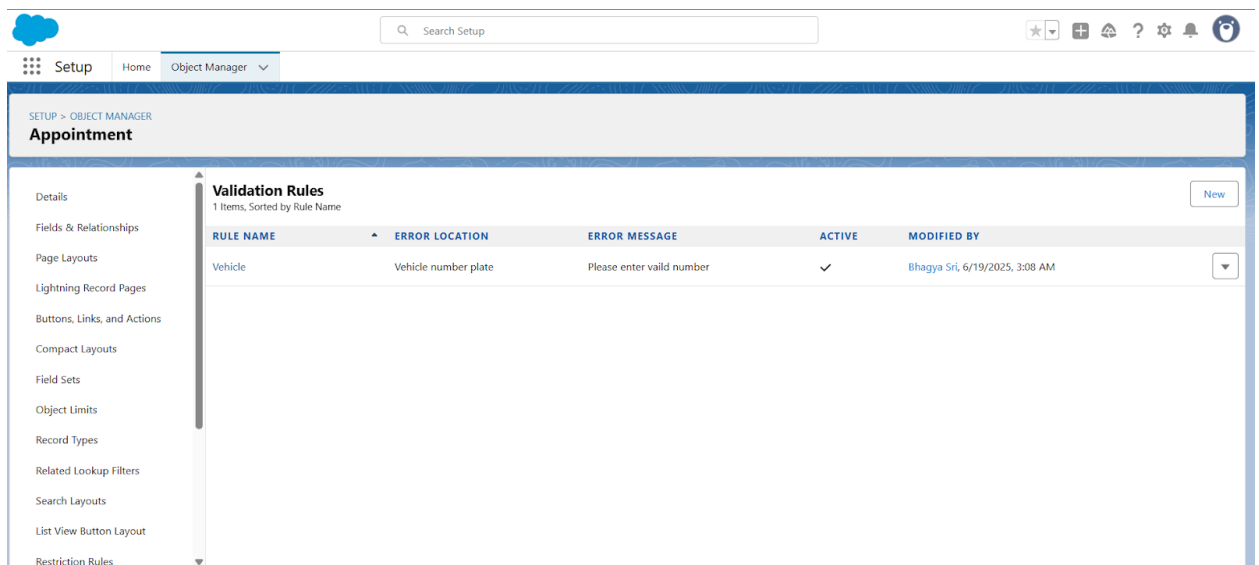
Purpose:

- Keeps the system up-to-date with real-time service activity.
- Enables automation like triggers, flows, and reporting.
- Ensures **data consistency** and **customer satisfaction**.

Mail Alerts:

In the **Garage Management System (GMS)** project, **Mail Alerts** are used to automatically send emails to customers after certain actions are completed, enhancing communication and customer satisfaction.

Purpose of Mail Alerts:

- To **thank customers** after payment.
- To **confirm service completion**.

- To provide a **personalized communication experience** using automated flows.
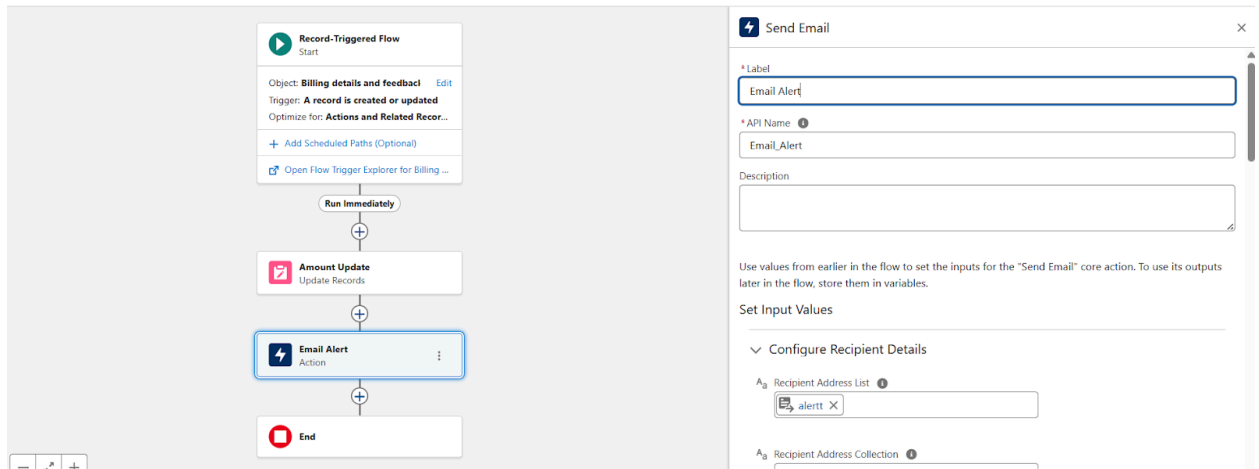
How Mail Alerts Work:

- **Tool Used**: Salesforce **Flow Builder**
- **Trigger**: When a Billing & Feedback record is created or updated.
- **Condition**: Payment Status is set to **Completed**.
- **Action**:
  - Flow fetches the customer's **name**, **email**, and **payment amount**.
  - Sends an **email alert** with a thank-you message and payment details.