Project Design Phase

Solution Architecture

Date	01 November 2025
Team ID	NM2025TMID02844
Project Name	Garage Management system
Maximum Marks	4 Marks

Goals of the Architecture

The Garage Management System (GMS) architecture is designed to automate garage operations and maintain consistency, accuracy, and transparency across all processes. It integrates Salesforce's core components — custom objects, validation rules, Apex triggers, and flows — to deliver a unified cloud-based solution.

Goals:

☑ Automate and streamline customer, appointment, and billing management processes.

☑ Maintain data integrity through validation rules and lookup relationships.

☑ Eliminate manual workflows and reduce human errors using automation tools.

☑ Provide role-based access to ensure data security and accountability.

☑ Deliver analytical insights through reports and dashboards for better decision-making.

Component	Description
Customer Details Object	Stores customer information such as name, phone, and email with duplicate prevention and validation rules.
Appointment Object	Manages service bookings with fields for vehicle number, date, and service type.
Service Records Object	Tracks service progress and quality checks linked to appointments.
Billing Details and Feedback Object	Handles payments, status updates, and feedback submission from customers.
Flows (Automation Layer)	Automates updates for payment, service status, and email alerts.
Apex Trigger	Calculates service costs based on selected services before record creation.
Reports & Dashboards	Visualize performance metrics such as completed services, revenue, and ratings.
Profiles & Roles	Define access levels for managers and service staff to maintain system security.

Solution Architecture Description

The Garage Management System's architecture is based on Salesforce's multi-layered cloud structure, combining data management, automation, and analytics in a single environment. The system ensures end-to-end automation — from customer registration to service billing — while maintaining transparency and control.

When a user creates or updates records, the data flows through multiple layers:

The User Interface Layer (Lightning App) handles interactions.

The Application Logic Layer (Flows and Apex) manages validation and automation.

The Data Layer (Salesforce objects) stores and relates all customer, appointment, and billing information.

The Analytics Layer (Reports & Dashboards) provides real-time performance insights.

This architecture ensures that all operations are interconnected, secure, and efficient. It minimizes manual intervention, reduces operational errors, and delivers high scalability for expanding business needs.

Example – Solution Architecture Diagram

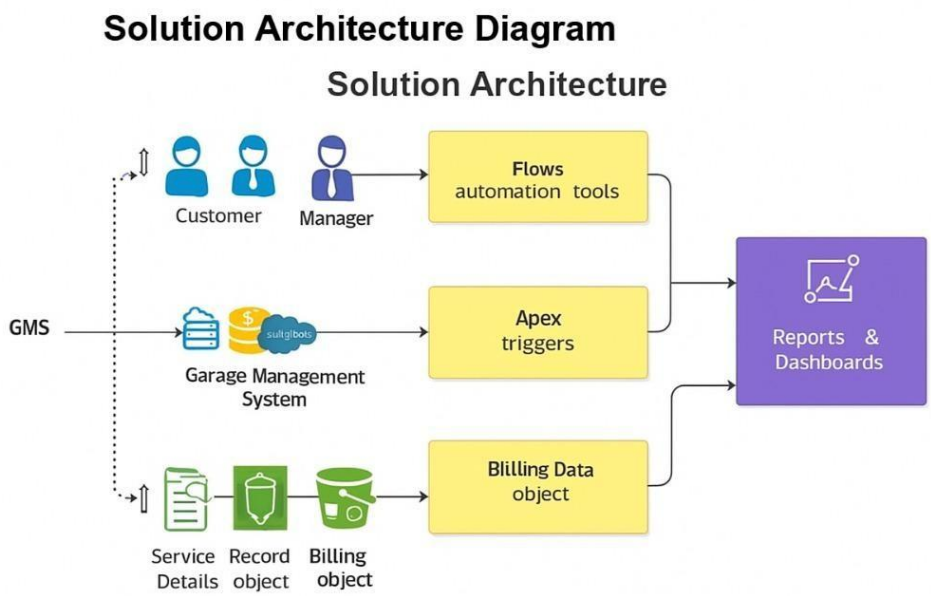

Figure : Architecture and Data Flow of the Garage Management System