Project Design Phase - II

Problem – Solution Fit Template

Date	05 NOV 2025
Team ID	NM2025TMID01008
Project Name	Garage Management System
Team Members	Arasu M Lokeshwaran M Jayabalan R Jaya Surya J

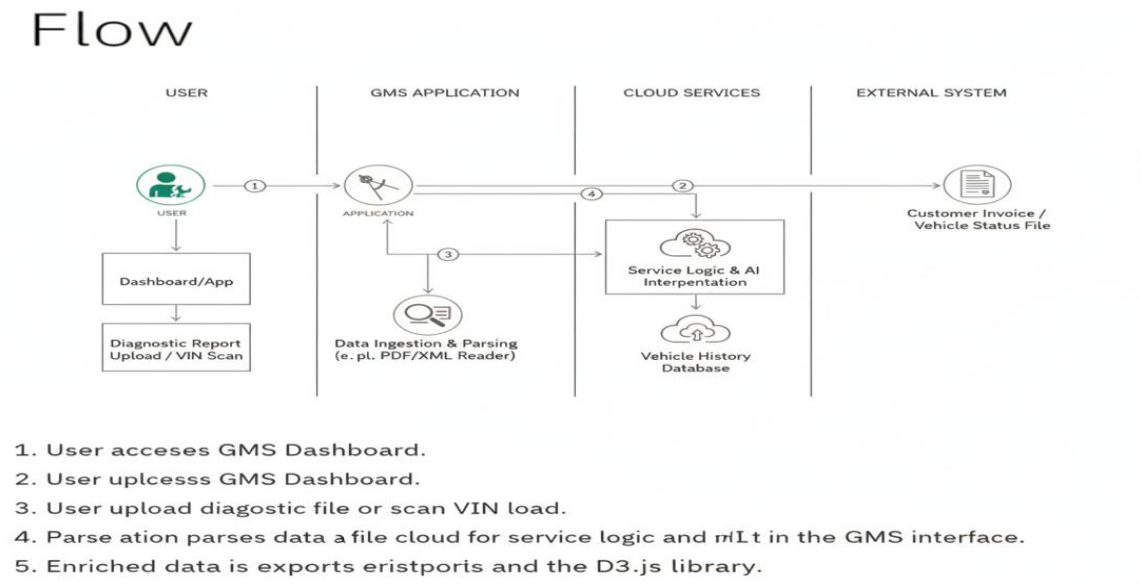
Data Flow Diagram (DFD) :

A Data Flow Diagram (DFD) illustrates how data moves through the Garage Management System using Salesforce. It shows the interaction between the Admin, Customer, Vehicle, and Service Request modules.

When the admin tries to delete a customer or vehicle record, the system checks if it's linked to any active service requests. If a link exists, Salesforce blocks the deletion and shows an error; otherwise, the record is removed.

This process ensures data integrity, prevents accidental data loss, and maintains accurate service records within the system.

Example:



User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance Criteria	Priority	Release
Administrator	Customer Management	USN-1	As an admin, I want to delete a customer record from the system.	The system should allow deletion only if the customer has no active service requests.	High	Sprint-1
System (Automation Check)	Validation before Deletion	USN-2	As a system, I must verify if the customer or vehicle is linked to any active service request before processing a delete action.	Deletion proceeds only if no service request is linked; otherwise, it is blocked with an alert.	High	Sprint-1
Service Manager	Alert Notification	USN-3	As a service manager, I want to receive an alert when a customer or vehicle linked to a service request is requested for deletion.	The system displays a warning or error message before deletion to prevent data loss.	Medium	Sprint-2

Project Design Phase - II

Solution Requirements (Functional & Non-functional)

Date	05 NOV 2025
Team ID	NM2025TMID01008
Project Name	Garage Management System
Team Members	Arasu M Lokeshwaran M Jayabalan R Jaya Surya J

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Customer & Vehicle Registration	Register customers through a Salesforce form. Add vehicle details linked to the customer record.
FR-2	Record Confirmation	System verifies and confirms customer and vehicle details after registration. Optional email or SMS confirmation for customers.
FR-3	Record Deletion Request	Admin can request to delete a customer or vehicle record.
FR-4	Service Assignment Check	System checks if the customer or vehicle is linked to any active service request before deletion.
FR-5	Deletion Restriction	If linked, the system blocks the deletion and displays a validation error message.
FR-6	Safe Record Deletion	If not linked, the system allows safe deletion of the record and updates all related data accordingly.

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The interface should be intuitive and easy for the admin or staff to navigate while managing customers, vehicles, and service records.
NFR-2	**Security**	Only authorized users (e.g., admins or managers) can delete or modify customer and vehicle records.
NFR-3	**Reliability**	The system must consistently verify active service assignments before allowing record deletion to ensure data integrity.
NFR-4	**Performance**	All validation checks (e.g., before deletion) must be executed quickly to maintain smooth workflow and user experience.

Project Design Phase - II

Technology Stack (Technologies & Application)

Date	05 NOV 2025
Team ID	NM2025TMID01008
Project Name	Garage Management System
Team Members	Arasu M Lokeshwaran M Jayabalan R Jaya Surya J

Table-1 : Components & Technologies:

S.No.	Component	Description	Technology
1.	**User Interface**	Admin and staff interact with the system through a responsive web dashboard to manage vehicles, customers, and service records.	Salesforce Lightning Experience (Web UI)
2.	**Application Logic-1**	Validates customer or vehicle deletion requests to ensure no active service or job is linked.	Salesforce Apex Logic / Flow Builder
3.	**Application Logic-2**	Checks for active service assignments or pending work orders before processing deletion.	Apex Triggers / SOQL Queries
4.	**Application Logic-3**	Sends notifications or alerts when a restricted deletion is attempted.	Salesforce Notification Builder / Email Alerts
5.	**Database**	Stores customer, vehicle, and service data in structured objects.	Salesforce Standard & Custom Objects
6.	**Cloud Database**	All data is securely managed and hosted within Salesforce Cloud infrastructure.	Salesforce Cloud Database
7.	**File Storage**	Stores documents, receipts, and maintenance reports related to customers and vehicles.	Salesforce Files / Attachments
8.	**External API-1**	(Optional) Integration with payment or vehicle tracking systems for enhanced functionality.	REST / SOAP APIs
9.	**External API-2**	(Optional) Integration with external CRM or inventory systems.	Salesforce Integration APIs
10.	**Machine Learning Model**	(Future Scope) Can be used for predictive maintenance or customer behavior analysis.	Salesforce Einstein AI
11.	**Infrastructure (Server / Cloud)**	Entire application is hosted and managed on Salesforce's secure SaaS cloud environment.	Salesforce Cloud (SaaS)

Table-2: Application Characteristics:

S.No.	Characteristics	Description	Technology
1.	**Open-Source Frameworks**	Not applicable, as Salesforce is a proprietary cloud-based platform.	–
2.	**Security Implementations**	Role-based access control, data encryption, and field-level security to protect sensitive customer and vehicle data.	Salesforce Security Model, Profiles, Permission Sets
3.	**Scalable Architecture**	Cloud-native SaaS architecture that easily scales with increasing users, vehicles, and service records.	Salesforce Cloud Architecture
4.	**Availability**	High system uptime and reliability ensured through Salesforce's globally distributed cloud infrastructure.	Salesforce Multi-Tenant Cloud Hosting
5.	**Performance**	Optimized workflows using Apex automation, SOQL queries, and Lightning components for fast response times.	Apex Code, Lightning Framework, Indexed Queries