

REQUIREMENT ANALYSIS PHASE

1. Introduction

The **Requirement Analysis Phase** is a critical part of the software development lifecycle that focuses on defining and documenting the user expectations and system behavior. For the *Garage Management System (GMS)*, this phase ensures that all requirements are aligned with the core purpose — automating garage operations such as appointment scheduling, billing, service tracking, and customer feedback using the Salesforce platform.

Understanding user needs and documenting them precisely allows the design and development teams to create a reliable, scalable, and efficient solution that enhances both customer experience and administrative productivity.

2. Objectives of Requirement Analysis

The primary goals of this phase include:

- Identifying and defining user and system requirements.
 - Distinguishing between **functional** and **non-functional** requirements.
 - Ensuring that all requirements are feasible within Salesforce's ecosystem.
 - Establishing clear documentation that serves as a foundation for design and implementation.
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3. Requirement Gathering Techniques

The following techniques were used to gather and validate project requirements:

- **Discussions with Garage Staff:** To understand how services, billing, and appointments are currently managed.
- **Customer Feedback Surveys:** To capture expectations from a digital garage service portal.

- **Observation:** To study existing manual workflows like invoice preparation and service recording.
 - **Team Brainstorming Sessions:** To finalize the required Salesforce objects and relationships for system automation.
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4. Functional Requirements

The *Garage Management System (GMS)* is designed around five key Salesforce objects that represent the major operational modules of a real-world garage. These modules and their detailed requirements are given below:

4.1 Customer Details Management

This module manages all essential information about customers and their vehicles.

Requirements:

- The system should allow new customer registration with details such as Name, Contact Number, Email, and Address.
- Each customer record should be linked with their vehicles and past service history.
- Admins should be able to view, update, or delete customer records easily.
- Customers should have access to their service and billing history upon login.
- The system must ensure data validation to avoid duplicate entries.

Purpose:

To maintain a centralized and accurate database of all garage customers, enabling quick retrieval of service-related information.

4.2 Appointment Management

This module handles all bookings and appointments for vehicle servicing.

Requirements:

- Customers should be able to book service appointments online by selecting date, time, and service type.
- Admins must be able to approve, reschedule, or cancel appointments.
- The system should automatically assign available mechanics based on workload.
- Appointment details should include Customer ID, Vehicle ID, Date, Time, and Service Type.
- Notifications or confirmations should be sent to customers once the appointment is confirmed.

Purpose:

To streamline scheduling and reduce manual errors, ensuring efficient resource utilization within the garage.

4.3 Service Records Management

This module maintains complete information about every service provided to a customer.

Requirements:

- The system should record service details like Service ID, Vehicle ID, Mechanic Assigned, Service Date, and Service Status.
- Each service record should be linked to the respective customer and billing record.
- Mechanics should be able to update service progress (In Progress, Completed).
- Admins should have access to reports on completed and pending services.
- The system should allow searching service records by customer name, vehicle number, or service ID.

Purpose:

To maintain accurate and easily retrievable information on all vehicle services performed, ensuring transparency and accountability.

4.4 Billing Details Management

This module deals with financial transactions and invoice generation.

Requirements:

- The system should automatically generate a bill once a service is marked as “Completed.”
- Each bill should include details like Bill Number, Date, Service ID, Customer ID, Amount, and Payment Status.
- Admins should be able to edit or update payment information (Paid / Pending).
- The system must support generating printable invoices for customers.
- Billing details should be securely stored and linked with the related service and customer records.

Purpose:

To automate the billing process, reduce human error, and ensure all payments are accurately tracked.

4.5 Feedback Management

This module allows customers to provide feedback on the services they receive.

Requirements:

- After a service is completed, the system should prompt the customer to submit feedback.
- Feedback entries should include fields such as Customer ID, Service ID, Rating, and Comments.
- Admins should be able to view and analyze feedback for performance improvement.

- The system should generate summary reports of average ratings for each mechanic or service type.
- Feedback data should be used to identify customer satisfaction trends.

Purpose:

To improve service quality and strengthen customer relationships through continuous evaluation and improvement.

5. Non-Functional Requirements

Category	Description
Performance	All major operations should execute within 3 seconds.
Scalability	The system should support future expansion (new services, branches, etc.).
Usability	Simple navigation, clean layout, and responsive UI on all devices.
Security	Use of Salesforce profiles, permission sets, and field-level security.
Reliability	Data must remain consistent even during system downtime.
Availability	System should be accessible 24/7 for customers.
Maintainability	Easy to update workflows and records without code-level changes.

7. Requirement Validation

After documentation, all requirements were validated with stakeholders and the project mentor.

- Each object and field was verified for necessity and feasibility.

- Relationships between **Customer, Service Records, Billing, and Feedback** were tested to ensure data flow.
- Requirements were reviewed for alignment with SmartInternz Salesforce project guidelines.

This ensures accuracy, traceability, and completeness of all functional expectations.

8. Conclusion

The **Requirement Analysis Phase** provided a clear and detailed understanding of the *Garage Management System's* objectives and user expectations. By defining both functional and non-functional requirements based on actual Salesforce objects — *Customer Details, Appointments, Service Records, Billing Details, and Feedback* — this phase establishes a strong foundation for the next stage of the project: design and implementation.

A well-structured requirement analysis ensures that the resulting system will enhance productivity, streamline operations, and improve customer experience in the garage environment.