

Ideation Phase

Problem Statement

Date	01/11/2025
Team ID	NM2025TMID06969
Project Name	GARAGE MANAGEMENT SYSTEM

1. Background and Context

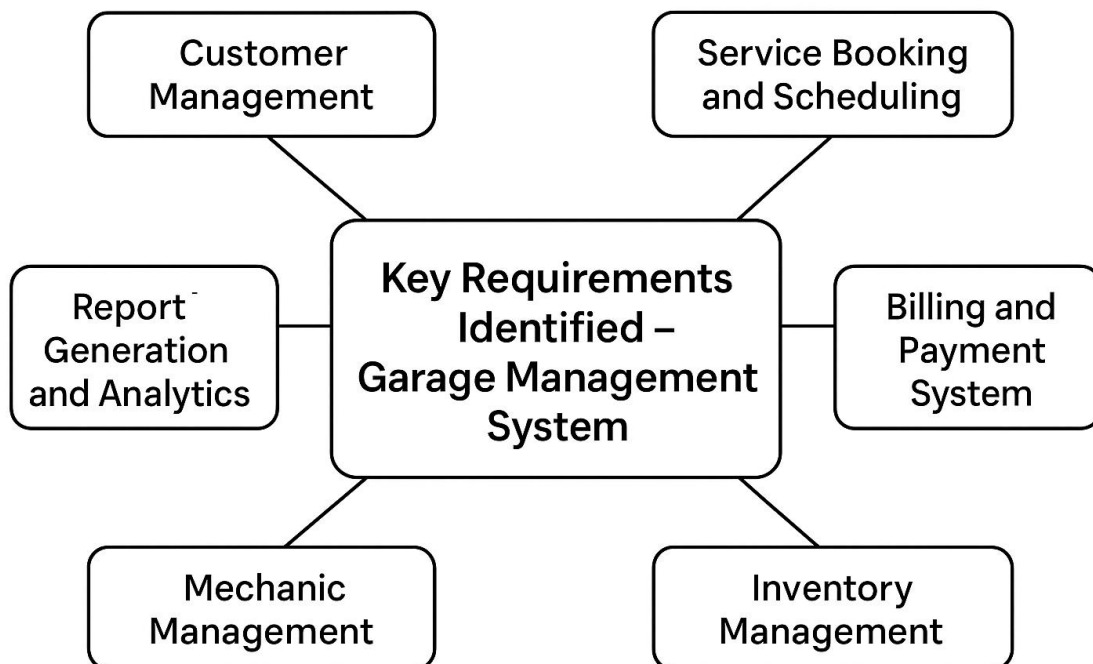
The need for a Garage Management System (GMS) arises from the growing demand for automation, accuracy, and transparency in garage operations. A digital system can centralize all major functions—customer registration, service booking, mechanic allocation, spare-parts inventory tracking, and invoice generation—within a single platform. This not only streamlines workflow and reduces administrative burden but also improves service quality and customer satisfaction.

By implementing a GMS, garages can achieve real-time monitoring of activities, maintain accurate service records, and generate insightful reports for better decision-making. The system ensures smooth coordination between mechanics, administrators, and customers, ultimately enhancing efficiency, reliability, and trust in garage operations.

Case Example:

ABC Auto Care, a mid-sized garage, struggled with manual record-keeping and inefficient service management. Customer details, billing, and job assignments caused frequent delays and errors. After adopting a Garage Management System, all operations became automated and centralized. Service bookings, billing, and inventory tracking improved significantly. The garage achieved faster service delivery, accurate billing, and higher customer satisfaction.

Key Requirements Identified:



2. User Pain Points

- **Manual Record-Keeping:** Difficulty in maintaining and retrieving customer and vehicle data using paper-based systems.
- **Delayed Service Updates:** Customers often remain unaware of their vehicle's service status and expected completion time.
- **Billing Errors:** Manual calculations cause mistakes in invoices and service charges, leading to customer dissatisfaction.
- **Inventory Confusion:** Spare parts are often misplaced or untracked, causing service delays and rework.
- **Poor Communication:** Lack of coordination between mechanics, administrators, and customers results in workflow inefficiency.
- **Data Loss Risk:** Paper records or spreadsheets can be easily misplaced or deleted without backups.

3. Proposed Solution

To overcome the challenges faced in traditional garage operations, the proposed Garage Management System (GMS) provides a comprehensive digital platform that automates all major functions of a garage.

Key Features:

- ❖ **Customer Management:** Store and manage customer and vehicle details with easy search and update options.
- ❖ **Online Service Booking:** Customers can book, reschedule, or cancel services online.
- ❖ **Mechanic Assignment:** Automatically assign mechanics based on service type and availability.
- ❖ **Billing and Invoicing:** Generate accurate digital invoices and track payment status.
- ❖ **Inventory Management:** Monitor spare parts stock, get low-stock alerts, and manage suppliers.
- ❖ **Service Status Tracking:** Real-time updates for customers and staff on ongoing service progress.
- ❖ **Notifications and Reminders:** Automated alerts for upcoming services, payment due dates, or completed work.
- ❖ **Feedback System:** Customers can rate and provide feedback to improve service quality.
- ❖ **Reports and Analytics:** Generate detailed reports on sales, service history, and performance insights.
- ❖ **User Role Management:** Secure access for admins, mechanics, and customers based on roles.

Workflow Example:

- ✓ Customer Registration
- ✓ The system stores these details for future reference.
- ✓ Service Booking
- ✓ The customer books a service slot (online or at the reception).
- ✓ The system checks mechanic availability and confirms the booking.
- ✓ Vehicle Check-In
- ✓ When the vehicle arrives, it is inspected and assigned to a mechanic.
- ✓ Job card is generated with service details and estimated cost.
- ✓ Service and Repair Process

Benefits:

