

**Project Design Phase-II**  
**Solution Requirements (Functional & Non-functional)**

Date	25 JUNE 2025
Team ID	LTVIP2025TMID31275
Project Name	Garage Management System
Maximum Marks	4 Marks

**Solution Requirements (Functional & Non-functional)**

**Functional Requirements**

These define what the system *must do*.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Email/Password Form Registration through Gmail Registration through Facebook (or LinkedIn as per your template, though Facebook is more common for consumer apps)
FR-2	User Confirmation	Confirmation via Email Link Confirmation via OTP (One-Time Password)
FR-3	User Login	Login with Email & Password Login with Gmail Login with Facebook Password Reset/Forgot Password Functionality
FR-4	Customer Profile Management	View/Edit Personal Information View/Edit Registered Vehicles Add New Vehicle Details
FR-5	Service Booking	Browse Available Services View Service Details & Estimated Cost Select Service Date & Time Confirm & Book Appointment
FR-6	Service Tracking	Receive Real-time Service Status Updates View Current Service Status on Dashboard
FR-7	Service History	View Past Service Records Download Digital Invoices/Reports

<b>FR No.</b>	<b>Functional Requirement (Epic)</b>	<b>Sub Requirement (Story / Sub-Task)</b>
<b>FR-8</b>	<b>Invoicing &amp; Payments</b>	<b>View Detailed Digital Invoices Make Online Payments Download Invoice PDF</b>
<b>FR-9</b>	<b>Notifications</b>	<b>Receive Appointment Confirmations Receive Service Status Alerts Receive Service Reminders (pre-service) Receive Payment Confirmations</b>
<b>FR-10</b>	<b>Feedback &amp; Rating</b>	<b>Submit Service Feedback Rate Service Experience</b>
<b>FR-11</b>	<b>Mechanic Management (Staff)</b>	<b>View Assigned Service Tasks Update Service Status (Start/Complete) Record Parts Used Add Service Notes/Observations</b>
<b>FR-12</b>	<b>Inventory Management (Admin)</b>	<b>Add/Edit Parts in Inventory Track Stock Levels Generate Low Stock Alerts</b>
<b>FR-13</b>	<b>Staff User Management (Admin)</b>	<b>Add/Edit/Deactivate Staff Accounts (Mechanics, Customer Care) Assign Roles &amp; Permissions</b>
<b>FR-14</b>	<b>Reporting &amp; Analytics (Admin/Owner)</b>	<b>View Revenue Dashboard Track Service Count &amp; Trends Generate Mechanic Productivity Reports</b>
<b>FR-15</b>	<b>Appointment Management (Staff)</b>	<b>View All Appointments Schedule Appointments for Customers Reschedule/Cancel Appointments</b>

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### **Non-functional Requirements**

**These define how well the system performs its functions.**

NFR No.	Non-Functional Requirement	Description
NFR-1	Usability	The system shall be intuitive and easy to navigate for all user types (customers, staff, admin), requiring minimal training. Key functionalities like booking and status checks should be achievable within 3 clicks.
NFR-2	Security	The system shall protect all sensitive customer and business data (e.g., personal information, payment details) from unauthorized access. It must adhere to data protection regulations (e.g., GDPR, local privacy laws). All data transmission shall be encrypted (HTTPS/TLS).
NFR-3	Reliability	The system shall be consistently available and perform its functions correctly under normal operating conditions. Critical features like booking and payment processing must have an error rate of less than 0.1%.
NFR-4	Performance	The system shall respond quickly to user actions. Page load times for dashboards and booking forms should not exceed 3 seconds. Search queries for customers/vehicles should return results within 1-2 seconds.
NFR-5	Availability	The system shall be accessible 24/7 with a target uptime of 99.5%. Scheduled maintenance downtimes should be minimal and communicated in advance.
NFR-6	Scalability	The system shall be able to handle an increasing number of users (e.g., up to 10,000 active customers and 50 garage staff) and data (e.g., 100,000 service records annually) without significant degradation in performance.
NFR-7	Maintainability	The system's codebase should be well-documented, modular, and easy to modify or extend. New features should be implementable with minimal impact on existing functionalities.
NFR-8	Portability	The mobile application components should be compatible with the latest versions of iOS and Android operating systems. The web application should be accessible via major modern browsers (Chrome, Firefox, Edge, Safari).

<b>NFR No.</b>	<b>Non-Functional Requirement</b>	<b>Description</b>
<b>NFR-9</b>	<b>Data Integrity</b>	The system shall ensure the accuracy, consistency, and completeness of data throughout its lifecycle, preventing data corruption or unauthorized modifications.
<b>NFR-10</b>	<b>Interoperability</b>	The system shall support integration with third-party services like SMS gateways (e.g., Twilio) and payment gateways (e.g., Stripe, Razorpay) via well-defined APIs.