**Ideation Phase**

**Brainstorm & Idea Prioritization Template**

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| --- | --- |
| Date | 25 June 2025 |
| Team ID | LTVIP2025TMID31613 |
| Project Name | Garage Management System |
| Maximum Marks |  |

🧠 **Brainstorming Matter for Garage Management System**

1. **Stakeholders** 
   * Garage Owners

* + Mechanics/Technicians

* + Customers

* + Suppliers/Vendors

* + Service Advisors

1. **Problems to Solve** 
   * Manual tracking of service records

* + Missed appointments or inefficient booking

* + Lack of inventory control

* + Poor customer communication

* + Unclear billing/invoicing

* + No reminders for recurring services

1. **Core Features to Consider** 
   * **Customer Management**

* + 1. Add, view, update customer details

○ Vehicle history and preferences

* + **Job/Work Order Management**

* + 1. Create new jobs, assign to mechanics

○ Status tracking (Pending, In Progress, Completed)

* + **Appointment & Booking System**

* + 1. Schedule service

○ Reminders (SMS/Email)

* + **Inventory Management**

* + 1. Track spare parts and tools

○ Auto-replenish alerts

* + **Billing & Invoicing**

* + 1. Generate bills with labor + parts

○ Print/export options

○ Payment tracking

* + **Reports & Analytics**

* + 1. Revenue reports

○ Mechanic performance

○ Most serviced vehicle types

* + **Mobile Compatibility**

* + 1. Customer app for booking & tracking

○ Mechanic app for job updates

1. **Nice-to-Have Features** 
   * Loyalty points or discounts

* + GPS integration for pickup/delivery

* + Digital vehicle health card

* + Chat support or helpdesk

* + Feedback system

1. **Technology Stack Ideas** 
   * Backend: Node.js / Django / Laravel

* + Frontend: React / Angular / Vue

* + Database: PostgreSQL / MongoDB / MySQL

* + Mobile: Flutter / React Native

* + Notifications: Twilio / Firebase

* + Hosting: AWS / Azure

**Ideation Phase**

**Empathize & Discover**

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# 🔍 Empathy Map – Garage Management System

👤 **User Persona:**

* Garage Owner / Manager

* Technicians / Mechanics

* Customers (vehicle owners)

# 🧠 Think & Feel

* **Garage Owner:**

* 1. Wants better tracking of jobs, payments, and customer details.

○ Worried about missed service deadlines and poor customer retention.

○ Seeks automation to reduce paperwork.

* **Technicians:**

* 1. Thinks about efficient job assignment.

○ Feels stressed by unclear job priorities or tool shortages.

* **Customers:**

* 1. Thinks about getting reliable service on time.

○ Feels anxious about being overcharged or delays.

# 👀 See

* **Garage Owner:**

* 1. Sees messy records and lack of visibility into technician workloads.

○ Notices lost revenue due to inefficient systems.

* **Technicians:**

* 1. Sees outdated job tracking methods.

○ Notices delays due to poor part management.

* **Customers:**

* 1. Sees disorganized garages or lack of transparency in repair process.

# 🗣 Say & Do

* **Garage Owner:**

* 1. Talks about improving business and customer satisfaction.

○ Tries different manual systems or spreadsheets.

* **Technicians:**

* 1. Asks for clearer instructions and part availability.

○ Logs work manually or through phone calls.

* **Customers:**

* 1. Ask for service updates and cost estimates.

○ Often follow up repeatedly for vehicle status.

# 👂 Hear

* **Garage Owner:**

* 1. Hears complaints from customers about delays or communication gaps.

○ Gets feedback from staff on workload issues.

* **Technicians:**

* 1. Hears frustration about part delays or unclear work orders.

○ Gets pressure from owners and customers.

* **Customers:**

* 1. Hears reviews or word-of-mouth about reliable vs. unreliable garages.

○ Influenced by service experiences of friends/family.

# 😟 Pains

* Manual record keeping

* Missed service deadlines

* Miscommunication with customers

* Overloaded technicians

* No service history tracking

# 🌟 Gains

* Digital job cards and reminders

* Transparent billing and service history

* Improved technician assignment

* Higher customer satisfaction and return visits

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**Define the Problem Statements**

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# 🔧 Problem Statement: Garage Management System

In today's fast-paced automotive industry, many garages and service centers continue to rely on manual or semi-digital methods to manage their daily operations. These outdated systems often lead to inefficiencies such as:

* Inaccurate or lost customer and vehicle service records

* Poor scheduling and missed service appointments

* Lack of transparency in billing and inventory usage

* Difficulty in tracking mechanic performance and job status

* Limited customer engagement and feedback mechanisms

As garages grow in size or handle more customers, these issues compound and reduce service quality, customer satisfaction, and profitability.

There is a critical need for a centralized, digital **Garage Management System (GMS)** that simplifies and automates key processes like customer and vehicle management, job card handling, inventory tracking, billing, and appointment scheduling. Such a system should enhance operational efficiency, improve customer experience, and provide real-time insights to support informed decision-making.