Ideation Phase

Define the Problem Statements

Date	02 November 2025
Team ID	NM2025TMID05213
Project Name	Smart Garage Management System
Maximum Marks	2 Marks

Customer Problem Statement Template:

Garage owners and mechanics often face problems managing vehicle service records, customer details, and spare part inventory manually. This leads to **delays in service**, **loss of customer trust**, and **difficulty in tracking repair history**. Paper-based or unorganized systems make it hard to monitor ongoing work, resulting in **inefficiency and confusion**.

They need a **centralized system** to manage all garage operations like service tracking, billing, inventory management, and customer communication in one place. Automation will improve **workflow efficiency, data accuracy, and customer satisfaction**.

Problem & Solution Table

Problem	Description	Solution
Data Management Issues	Manual record-keeping causes missing or duplicate service entries.	Implement a digital system to record all customer and vehicle details.
Inventory Confusion	Mechanics often run out of parts unexpectedly.	Add automated stock alerts and inventory tracking.
Service Delay	Job assignments and tracking are unclear.	Introduce a task assignment and status tracking dashboard.
Customer Dissatisfaction	Customers don't get service updates or bills on time.	Provide SMS/email notifications and instant billing.
Audit & Compliance	Hard to track past services and payments for audits.	Maintain a secure database with searchable service history and reports.

Example:

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	a Mechanic	Update vehicle service record	I have to write it manually	there's no proper system	tired and frustrated
PS-2	a Garage Owner	Track spare part stock	I can't see real-time availability	stock updates are not automated	confused and delayed
PS-3	a Customer	Know my vehicle status	I don't get updates	the garage doesn't notify me	anxious and dissatisfied

Problem Statement PS 1:

As a **mechanic**, I want to update service details quickly and accurately, but the current manual entry method is slow and error-prone. This causes missing data and confusion during customer delivery. A digital form-based system would make service tracking faster and more reliable, improving both **efficiency and accuracy**.

Problem Statement PS 2:

As a **garage owner**, I want to monitor spare part inventory automatically, but I currently depend on manual counting and paper notes. This causes shortages during urgent repairs and affects service completion time. A **real-time stock alert system** would help prevent this issue and improve **workflow management**.

Problem Statement PS 3:

As a **customer**, I want to get regular updates on my vehicle's service status, but the garage doesn't inform me until it's done. This leaves me unsure about delivery time. An **automatic SMS/email notification** feature would improve **communication and customer satisfaction**.