

Ideation Phase

Brainstorm & Idea Prioritization Template

Date	01NOV2025
TeamID	NM2025TMID03923
ProjectName	Garage Management System
MaximumMarks	4Marks

GarageManagementSystemTemplate:

This guided project demonstrates how to design and implement a Garage Management System (GMS) that helps automate and organize daily garage operations. The system focuses on managing customer details, vehicle information, service records, billing, and inventory in a single integrated platform.

The GMS ensures efficient workflow between mechanics, service advisors, and customers by maintaining real-time updates on vehicle service status and inventory availability. It reduces manual paperwork, prevents scheduling conflicts, and improves overall service quality.

The workflow also includes test scenarios such as adding new customer records, assigning vehicles for servicing, and generating invoices. This ensures that every module of the system—customer management, vehicle tracking, and service scheduling—works smoothly together. The system ultimately helps garage owners improve productivity, maintain accurate records, and deliver better customer satisfaction.

The screenshot shows the SH GARAGE MANAGEMENT SYSTEM dashboard. On the left, there's a sidebar with navigation links for Dashboard, Repair Orders, Counter Sale, Inventory, Accounts, Reports, Employee, Vendor, Item Master, Users, and others like Reset Password and Manage Profile. The main area has a header with 'GARAGE MENU' and a search bar. Below it, there's a summary section with cards for Created (17), In Progress (3), Completed (94), Payment Due (49147.48), Total Expense (0.00), and Total Income (0.00). Under 'ONGOING REPAIRS ORDERS', there's a table with columns: STATUS, INVOICE NUMBER, INVOICE DATE, VEHICLE NUMBER, BRAND - MODEL, CUSTOMER NAME, TOTAL AMOUNT, PAID AMOUNT, DUE AMOUNT, and ACTION. The table lists several entries, including ones for Shabbir, Mohammad Ali, Shabbir Hasan, Google User, Abbas Ali, and Dhrava. At the bottom, there's a note about activating Windows and a footer with page navigation.

STATUS	INVOICE NUMBER	INVOICE DATE	VEHICLE NUMBER	BRAND - MODEL	CUSTOMER NAME	TOTAL AMOUNT	PAID AMOUNT	DUE AMOUNT	ACTION
Created	INV103	20 Nov 2019	MH858585	Alfa Romeo-147 3 Doors	Shabbir	0	0	0	View
Created	INV104	20 Nov 2019	JFJFGJF	Audi-A4	Ali	0	0	0	View
Created	INV105	21 Nov 2019	MH25652652	Audi-A4	Mohammad Ali	0	0	0	View
Created	INV106	22 Nov 2019	JFJFGJF	Acura-Mdx	Shabbir	0	0	0	View
Created	INV107	22 Nov 2019	GJ1556955	Honda-City ZX	Shabbir Hasan	0	0	0	View
In Progress	INV108	23 Nov 2019	MH4545652	Audi-A4	Shabbir Hasan	1789.75	0	1789.75	View
Created	INV110	23 Nov 2019	MH56AF6565	Audi-A6	Google User	0	0	0	View
Created	INV112	23 Nov 2019	MH656562	Honda-City	Abbas Ali	0	0	0	View
Created	INV114	23 Nov 2019	MH85855	Acura-Mdx	Shabbir	0	0	0	View
In Progress	INV134	21 Oct 2020	MH01AE1010	Hyundai -HD 68	Dhrava	3381.53	0	3381.53	View

Step-1: Team Gathering, Collaboration, and Selecting the Problem Statement:

The team collaborated to identify common issues faced in garage operations such as inefficient record management, loss of service data, and poor customer follow-up. After group discussions and idea comparison, the team selected the Garage Management System as the primary problem statement to address these inefficiencies using a structured digital solution.

Reference: <https://www.mural.co/templates/brainstorm-and-idea-prioritization>



Step-2: Brainstorm, Idea Listing, and Grouping:

Brainstorm: Team members freely contributed ideas on improving garage operations—from online booking systems and service tracking to automated billing and reminders.

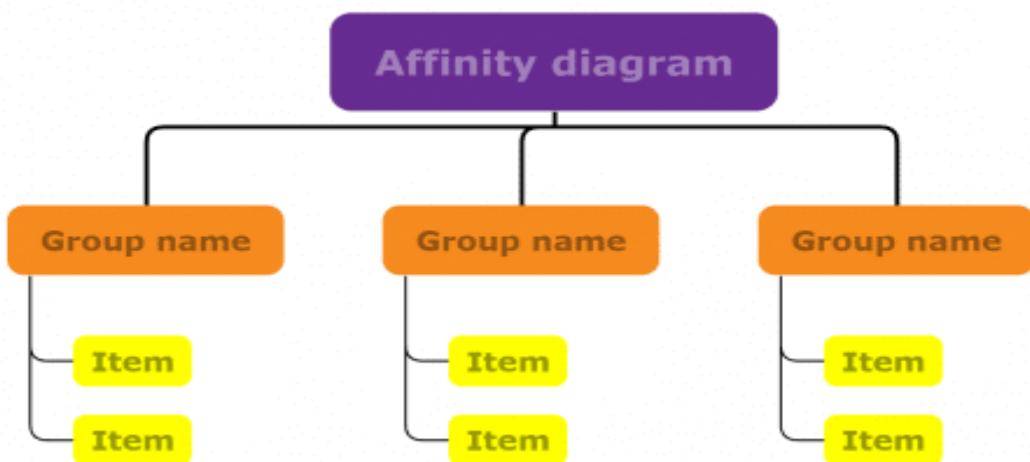
Idea Listing: All proposed ideas were documented, including:

- Vehicle service history tracking
- Digital invoicing system
- Mechanic performance monitoring
- Real-time service status updates
- Customer feedback integration

Grouping: Ideas were grouped under key modules:

- Customer Management
- Service Scheduling
- Inventory Control
- Billing & Payment
- Reports & Analytics

Action Planning: Each module was assigned to team members with clear goals and deadlines for implementation and testing.



Step-3:IdeaPrioritization:

Idea prioritization helps break down the Garage Management System into focused, manageable modules. The main goal is to ensure all vehicle and customer records are centralized, making garage operations transparent and efficient. Prioritizing features such as services scheduling and digital billing ensures that critical functionalities are developed first.

The screenshot shows the "Garage Management System Menu" window. The title bar reads "Garage Management System". Below the title bar are five buttons: "Add Vehicle" (car icon), "Update Vehicle Status" (document icon), "Make Action" (key icon), "Print By Vehicle Status" (print icon), and "View Full Vehicle Details" (document icon). The main area contains a form with the following fields:

Plate Number:	Type here
Type:	Select
Model:	Type here
License Type:	Select
Engine Type:	Select
Engine Capacity:	Type here
Number of wheels:	Select
Wheels' Manufacturer:	Type here
Wheels' Air Pressure:	Type here
Number Of Doors:	Select
Submit	

By prioritizing ideas effectively, the team can:

- Streamline workflow between mechanics and customers
- Improve data integrity and tracking accuracy
- Enhance user experience through automation

Visual flowcharts and process diagrams will be created to show how each module interacts. This clarity in planning strengthens project execution and ensures smooth collaboration among team members.

Define the Problem Statements

Customer Problem Statement Template:

Garage owners and service managers often face issues managing customer records, vehicle information, and service tracking manually. This leads to confusion, misplaced service data, and delays in repair or delivery. It creates frustration among both mechanics and customers who expect timely updates and accurate billing.

They need a digital Garage Management System that centralizes all operations – from customer registration and service scheduling to billing and inventory tracking. Such a system ensures smooth workflow, improves customer satisfaction, and minimizes operational delays.

By introducing automation and real-time record management, garages can enhance efficiency, reduce paperwork, and maintain accurate service histories. This solution will improve productivity, transparency, and service reliability for both staff and customers.

Reference:<https://miro.com/templates/customer-problem-statement/>

Problem Statement PS1:

As a garage owner, I am trying to manage customer information and vehicle service histories efficiently. However, I struggle because all data – including customer details, invoices, and service records – is stored manually in paper files.

This leads to errors, missing information, and delays in communicating service updates to customers. It also affects customer trust and the overall professionalism of the garage. I need an automated system to store and retrieve data easily, ensuring faster and more accurate service management.

Problem Statement PS2:

As a service manager, I want to schedule and track ongoing repairs and assign tasks to mechanics efficiently. But since there is no digital system, it's hard to monitor service progress, spare part usage, or time spent on each task. This causes confusion, delays, and customer dissatisfaction.

A centralized Garage Management System would allow real-time tracking of jobs, automatic notifications, and better workload management – improving coordination and service quality.

Empathize & Discover

Empathy Map Canvas:

In the Empathize & Discover phase, the team studies how garage owners, mechanics, and customers interact during daily

operations. They discover that garage staff often feel frustrated due to manual record-keeping, unclear service status updates, and communication delays between mechanics.

By interviewing stakeholders such as service managers, mechanics, and vehicle owners, the team uncovers pain points like misplaced service records, confusion in workscheduling, and lack of real-time updates on vehicle repairs. Customers, on the other hand, express frustration over not knowing when their vehicles will be ready or how much a repair will cost.

Gathering these insights helps the team understand the real challenges in garage management workflows. Understanding these day-to-day struggles shows the need for a centralized digital system that provides service tracking, automatic notifications, and transparent billing. These findings guide the design of a Garage Management System that simplifies operations, reduces delays, and improves customer trust.

Reference:<https://www.mural.co/templates/empathy-map-canvas>

The empathy map helped us visualize user challenges in managing garage operations. It revealed their pain points, goals, and needs for a more transparent and automated workflow. This process guided us to design an intelligent Garage Management System that supports all stakeholders – owners, mechanics, and customers – with real-time communication and task visibility.

Example: Vehicle Service & Maintenance Management

By deeply understanding users through empathy mapping, we identified key frustrations in daily garage activities – such as unclear service tracking, manual billing errors, and poor communication between staff and customers. These insights highlighted the need for automation and a digital service workflow.

As a result, we designed a Garage Management System that integrates:

- Digital service scheduling and assignment tracking
- Automatic reminders and service status alerts
- Centralized billing and inventory management

This ensures smooth coordination between mechanics and managers, minimizes service delays, and enhances customer satisfaction. The system ultimately improves accountability, transparency, and efficiency in garage operations.