

# Garage Dhundo: Roadside and Home Mechanic

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**Abstract**—The Garage Management System (GMS), a web- based application intended to monitor all garage operations, is presented in this study. Users may schedule deliveries, manage inventory, and look up repair estimates using the GMS. It keeps track of the time spent by mechanics and keeps a thorough record of the vehicle's service history. Additionally, it keeps track of the inventory of auto parts and automatically reminds customers to get their cars serviced based on previous dates. Roles (administrator, supervisor, and receptionist) limit access, guaranteeing methodical control. By automating key procedures, the application aims to eliminate manual work and provide a clever online tool that will improve customer service and garage efficiency in general.

**Index Terms**—Garage Management System, Automobile Services, Web Application, Database Management, UI/UX, Appointment Booking, Roadside Assistance.

## I. INTRODUCTION

The Garage Management System is a complete web-based platform that is intended to centralize and oversee all areas of a car servicing garage's operations. Both garage staff and customers should find this technique to be a more efficient and convenient way to maintain their vehicles. Using a multi-user architecture, it provides systematic control over the garage's operations by supporting positions like administrators, supervisors, receptionists, and principals, each of whom has limited access to particular modules.

The system's primary features include keeping track

of all vehicle repair histories, recording the amount of time mechanics spend on particular tasks, and controlling the total stock of auto parts and spare parts. By permitting the scheduling of appointments in advance and sending out automatic service reminders based on previous service dates, it is intended to make customer interaction easier. Additionally, the application efficiently streamlines the mechanic shop's business by managing payment procedures and allocating qualified engineers to assignments.

This initiative's main goal is to reduce the complexity and eliminate human work involved in traditional vehicle service administration. It was developed using HTML for the interface and PHP for the backend, with MySQL serving as the database. The Garage Management System gives garage owners total, instant control over duties like scheduling, inventory checks, and record-keeping,

## II. PROBLEM STATEMENT

Existing vehicle servicing systems are largely manual and inefficient, leading to delays, poor record management, and lack of transparency. Customers face difficulty in finding nearby garages, estimating repair costs, and receiving timely service.

There is a need for a smart, automated, and user-friendly system that can connect users with service providers, manage garage operations efficiently, and provide real-time updates. The challenge is to design a system that ensures reliability, scalability, and ease

of use while minimizing manual intervention.

### III. BACKGROUND

Several research studies have explored the use of modern technologies in automobile service systems.detection.

These studies show that integrating web technologies, IoT, and automation can significantly improve efficiency and reliability in automobile service systems. The proposed system builds upon these concepts to create a practical and user-friendly solution.

M. S. Srikanth [1], the proposed model uses the novel technologies like IoT, cloud computing and machine learning. IoT allows various devices to interact and collect data like distance travelled, lubricant level, tyre conditions, smoke emission, other hardware parts conditions and also global positioning system (GPS) to track vehicle location. This data will be collected from various sensors like IR (infrared), MQ 6 sensor, HC SR 04 ultrasonic sensor, light-dependent resistor (LDR) sensor and stored in the cloud storage system.

IzabelaRojek [2], The main results show that the effective use of preventive maintenance requires large amounts of reliable annotated sensor data and well- trained machine-learning algorithms. Scientific and technical development of the above-mentioned group of solutions should be implemented in such a way that they can be used by companies of equal size and with different production profiles. Even relatively simple solutions as presented in the article can be helpful here, offering high efficiency at low implementation costs.

Akshata.R [3], Automobile industry is one among those spheres where manufacturing process involves a lot of people responsible for quite different production aspects. Thus, the implementation of a proper Customer Relationship System is a necessity. It can obviously help automate working process and make the interaction among dealers, manufacturers and their customers more efficient.

Vijayalakshmi. S. R [4], this paper introduces a clever storage system that integrates IoT technologies to improve safety, performance, and consumer

enjoy. Customers can remotely display and manage their storage doors via a smartphone app, receiving real-time popularity updates and alerts for unauthorized get admission to. The gadget also integrates with domestic automation structures, taking into consideration voice control and scheduled operations.

Claudio Urrea[5], This paper presents the results of the design, simulation, and implementation of a virtual vehicle. Such a process employs the Unity videogame platform and its Machine Learning-Agents library. The virtual vehicle is implemented in Unity considering mechanisms that represent accurately the dynamics of a real automobile, such as motor torque curve, suspension system, differential, and anti-roll bar, among others.

KaziKutubuddinSayyadLiyakat[6], IoT, has completely changed how we communicate with the environment. One of the most promising applications of IoT is in the automotive industry, with the development of IoT based vehicle health monitoring systems. Regular check-ups and servicing were necessary to ensure the smooth functioning of a vehicle, and even then, unexpected breakdowns and malfunctions were inevitable. This not only caused inconvenience to the vehicle owners but also resulted in additional expenses.

### IV. SYSTEM OVERVIEW

The Garage Dhundo system is a web-based application that connects users, garages, and administrators through a centralized platform.

The system allows users to register, log in, and request vehicle services by entering details such as vehicle type, registration number, and issues. Based on location and ratings, the system suggests nearby garages and provides estimated service costs.

Garage owners receive service requests, assign mechanics, and update service status. The admin manages overall system operations, including user management, feedback tracking, and performance monitoring.

The database stores all relevant information such as user details, service history, mechanic assignments, and inventory records, ensuring efficient data management.

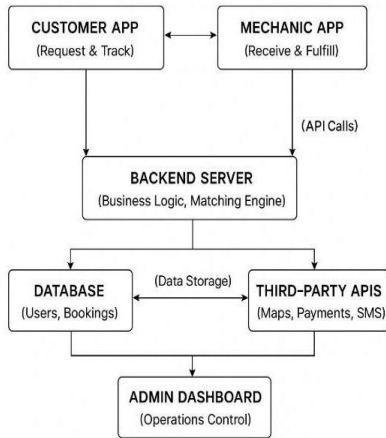


Fig.1: System Architecture Design

V. PROPOSED SYSTEM

By keeping all the drawbacks of the existing system in the mind new proposed system have been designed. This consist of three panel User, Garage and Admin1. Validate the ration smart card of the beneficiaries.

[A] User:

1. User who wants to take service from this platform must have registered them self by providing necessary details. After registration login will be required.
2. They have to enter the vehicle registration number (Plate Number), validate the number for further processing.
3. They have to choose the types of vehicle (i.e. whether 2 wheeler or 4 wheeler) and provide service.
4. User has to define the problem or issues in vehicle by choosing the problems. Whether the user know the problem or don't know (select accordingly).
5. Select the nearest active garage, listing of garage is based on location and the rating. Estimated amount for the selected problem will be calculated and displayed to the user, User may continue for further processing or can change the garage. User may either come to garage or get the service to his location once agreed on price; request will be made to a respective garage.

[B] Garage:

1. Notification for a service is received and depending upon the condition (i.e. user is coming for service, or want service to that' location) action will be

performed. 2. Mechanic will be assigned if service required to requested location and then mechanic details are send to user. 3. Keeping track of the mechanic.

[C] Admin:

1. Notify the user and garage. 2. Keeping track of all feedback as well the time stamp between requested to be made and granted. 3. Feedback helps to rate the garage and evaluate the list.

Working Process:

1. User registers and logs into the system.
  2. Enters vehicle details and selects service requirements.
  3. System suggests nearby garages with estimated cost.
  4. User confirms request.
  5. Garage receives request and assigns mechanic.
  6. Service is completed and status is updated.
  7. Feedback is collected for quality improvement.
- This system ensures efficiency, transparency, and ease of use while reducing manual workload.

PROPOSED SYSTEM BLOCK DIAGRAM

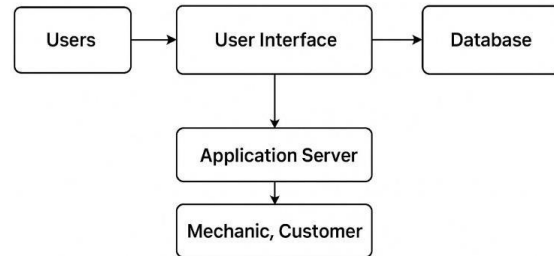


Fig.2 : Proposed System Block Diagram

VI. RESULT ANALYSIS

The developed Garage Dhundo system was tested under multiple real-time scenarios to evaluate its performance, accuracy, and reliability in handling automobile service requests. The system was deployed in a controlled environment where users could register, search for nearby garages, book services, and track service progress. The results demonstrate that the system effectively streamlines garage operations and enhances user experience. During testing, the system successfully handled **user**

registration, login authentication, service booking, and real-time updates without significant delays. The location-based garage suggestion feature worked efficiently by providing accurate and relevant results based on user proximity and ratings. The estimated cost calculation feature also performed reliably, giving users a fair approximation of service charges before confirming the request.

The garage module showed efficient performance in receiving service requests, assigning mechanics, and updating work status. Mechanics could be tracked, and service progress was updated in real time, improving transparency. The admin module effectively monitored system activities, managed users and garages, and maintained feedback records, ensuring smooth system operation.

The system performance was analyzed based on several parameters such as response time, accuracy, usability, and reliability. The results indicate that the application provides fast response time and efficient data handling, even when multiple users access the system simultaneously. The structured database design ensured quick retrieval and storage of data, minimizing delays.

Key Observations:

- The system provides accurate garage recommendations based on technological integration.
- Fast response time enables real-time booking and tracking of services.
- Improved transparency as users can monitor service progress and estimated costs.
- Efficient management of mechanics and service requests by garage owners.
- Reduced manual errors due to automation of booking and record-keeping processes.



Fig.3: Result Analysis

## VII. CONCLUSION

The Garage Dhundo system provides a modern solution to traditional garage management problems by digitizing and automating key processes. It enhances customer convenience, improves service efficiency, and ensures better communication between users and service providers.

By integrating web technologies and database management, the system offers a scalable and user-friendly platform for automobile servicing. It reduces manual effort, minimizes errors, and provides a transparent and efficient service experience.

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