CAR CARE

VEHICLE SERVICE MANAGEMENT SYSTEM

A PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT OF REQUIREMENT FOR THE AWARD OF THE DEGREE

MASTER OF COMPUTER APPLICATIONS (MCA)

OF

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

BY

AKSHAY ANISH

Reg No: 22PMC104

MARIAN COLLEGE KUTTIKKANAM (AUTONOMOUS)

MAKING COMPLETE

Marian College Kuttikanam Autonomous

Peermade, Kerala – 685 531

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Under the guidance of

Mr. SATHEESH KUMAR
Assistant Professor
PG Department of Computer Applications
Marian College Kuttikkanam Autonomous

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PG DEPARTMENT OF COMPUTER APPLICATIONS

Marian College Kuttikkanam Autonomous

MAHATMA GANDHI UNIVERSITY, KOTTAYAM
KUTTIKKANAM – 685 531, KERALA.

CERTIFICATE

This is to certify that the project work entitled

CAR CARE

is a bonafide record of work done by

AKSHAY ANISH
Reg No: 22PMC104

In partial fulfilment of the requirements for the award of Degree of
MASTER OF COMPUTER APPLICATIONS [MCA]
During the academic year 2022-2023

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AKSHAY ANISH

ABSTRACT OF CAR CARE

The Car Care Vehicle Service Management System is a Python Django web application designed to efficiently manage vehicle service requests and facilitate communication between customers, administrators, and mechanics. The system utilizes the SQLite database for data storage and retrieval.

Key features of the system include user registration and login functionality for customers, enabling them to access the platform securely. Customers can submit service requests, track the status of their requests, view cost estimates, and provide feedback on the services received. Administrators have administrative privileges and can add mechanics to the system. They can approve service requests, assign jobs to mechanics, update service statuses, and access information about customers, mechanics, and feedback. Mechanics have their own interface where they can view assigned work, update work statuses, and provide feedback based on their repairs and maintenance tasks.

The Car Care system create a user-friendly and efficient platform for managing vehicle services. By centralizing the process and promoting effective communication, the system aims to enhance customer satisfaction and streamline the vehicle service management process.

OBJECTIVE AND SCOPE

The objective of the Car Care Vehicle Service Management System is to provide a user-friendly and efficient platform for managing vehicle service requests, improving customer experience, and enhancing coordination and interaction among customers, administrators, and mechanics for seamless management of vehicle service requests.. The system aims to achieve the following objectives:

- Available 24/7
- Simplify Service Request Process
- View status
- Accurate Cost Estimation
- Seamless Feedback Submission
- Efficient Administrative Control

PROBLEM STATEMENT

In the current scenario of vehicle service management, there is a lack of efficient communication and streamlined processes between customers, administrators, and mechanics. This leads to various challenges such as delays in service request handling, inadequate status tracking, unreliable cost estimation, and limited customer feedback. The absence of a centralized system further exacerbates these issues, resulting in a suboptimal customer experience and hindered productivity for administrators and mechanics.

Therefore, there is a pressing need for a comprehensive vehicle service management system that addresses these challenges by providing a user-friendly platform to streamline the communication and coordination between customers, administrators, and mechanics. This system should facilitate seamless service request submission, real-time status tracking, accurate cost estimation, efficient administrative control, and effective feedback collection. By addressing these pain points, the proposed solution aims to improve customer satisfaction, optimize workflow management, and enhance the overall efficiency of the vehicle service managementprocess

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1. INTRODUCTION

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1.2 PROPOSED SYSTEM

The proposed Car Care System is a comprehensive web application that aims to revolutionize the vehicle service management process by providing an efficient and user-friendly platform for customers, administrators, and mechanics. The system will address the existing challenges and introduce the following key features:

- User Registration and Login: Customers will have the ability to create accounts and securely log in to the system, ensuring personalized access to the platform.

- Service Request Submission: Customers will be able to submit service requests through an intuitive interface, providing details about the type of service required and any specific issues.

- Real-time Status Tracking: Customers will have access to a dashboard where they can track the status of their service requests in real time, allowing them to stay informed about the progress.

- Cost Estimation: The system will provide customers with estimated costs for the requested services based on predefined parameters, ensuring transparency and accurate financial planning.

- Seamless Feedback Submission: Customers will have the option to provide feedback and suggestions regarding the services they received, enabling administrators to continuously improve the quality of service.

- Administrative Control: Administrators will have comprehensive control over the system, including the ability to add mechanics, review and approve service requests, assign jobs to mechanics, update service statuses, and access information about customers, mechanics, and feedback.

- Mechanics Interface: Mechanics will have a dedicated interface where they can view their assigned work, update the status of ongoing jobs, and provide feedback based on the repairs and maintenance they have performed.

- Database Management: The system will utilize the SQLite database to efficiently store and retrieve data related to customers, service requests, mechanics, and feedback, ensuring data integrity and reliability.

By implementing the proposed Car Care system, the vehicle service management process will be streamlined, enabling seamless communication and coordination among customers, administrators, and mechanics. The system will enhance customer satisfaction, optimize workflow management, and promote continuous improvement within the service provider's operations.

1.3 PROJECT REQUIREMENTS

- User registration for Customers And login functionality for all users
- Customer can request for Service
- Customer can view Status
- Customer can view the cost
- Customer can Send feedback
- Admin can add mechanics
- Admin can approve service request and Job Assign to Mechanic
- Admin can update service status
- Admin can view customer’s, mechanics and feedback
- Mechanic can view work assigned
- Mechanic can update the status
- Mechanic can send feedback according to the work what all are repaired

2. FEATURES AND HIGHLIGHTS OF THE PROJECT

1. User Registration and Login:

Customers can register and create accounts securely.

Login functionality for customers, administrators, and mechanics.

2. Service Request Submission:

Customers can submit detailed service requests, specifying the required services and vehicle information.

3. View Status:

Customers can view the status of their service requests, receiving updates on the progress.

4. Cost Estimation:

Customers can view estimated costs for the requested services, assisting in budget planning.

5. Feedback Submission:

Customers can provide feedback and suggestions on the services they received.

Mechanics can offer feedback based on the repairs and maintenance performed.

6. Administrative Control:

Administrators can manage service requests, approving and assigning jobs to mechanics.

Update service statuses to keep customers informed.

Access comprehensive data on customers, mechanics, and feedback.

7. Mechanics Work Management:

Mechanics have a dedicated interface to view assigned work and relevant details.

Update work statuses and provide feedback on repairs and maintenance performed.

9. User-friendly Interface:

Intuitive and easy-to-use interface for customers, administrators, and mechanics.

Smooth navigation and accessibility for all users.

10. Data Storage and Retrieval:

Utilizes the SQLite database for efficient storage and retrieval of data.

11. Scalability and Robustness:

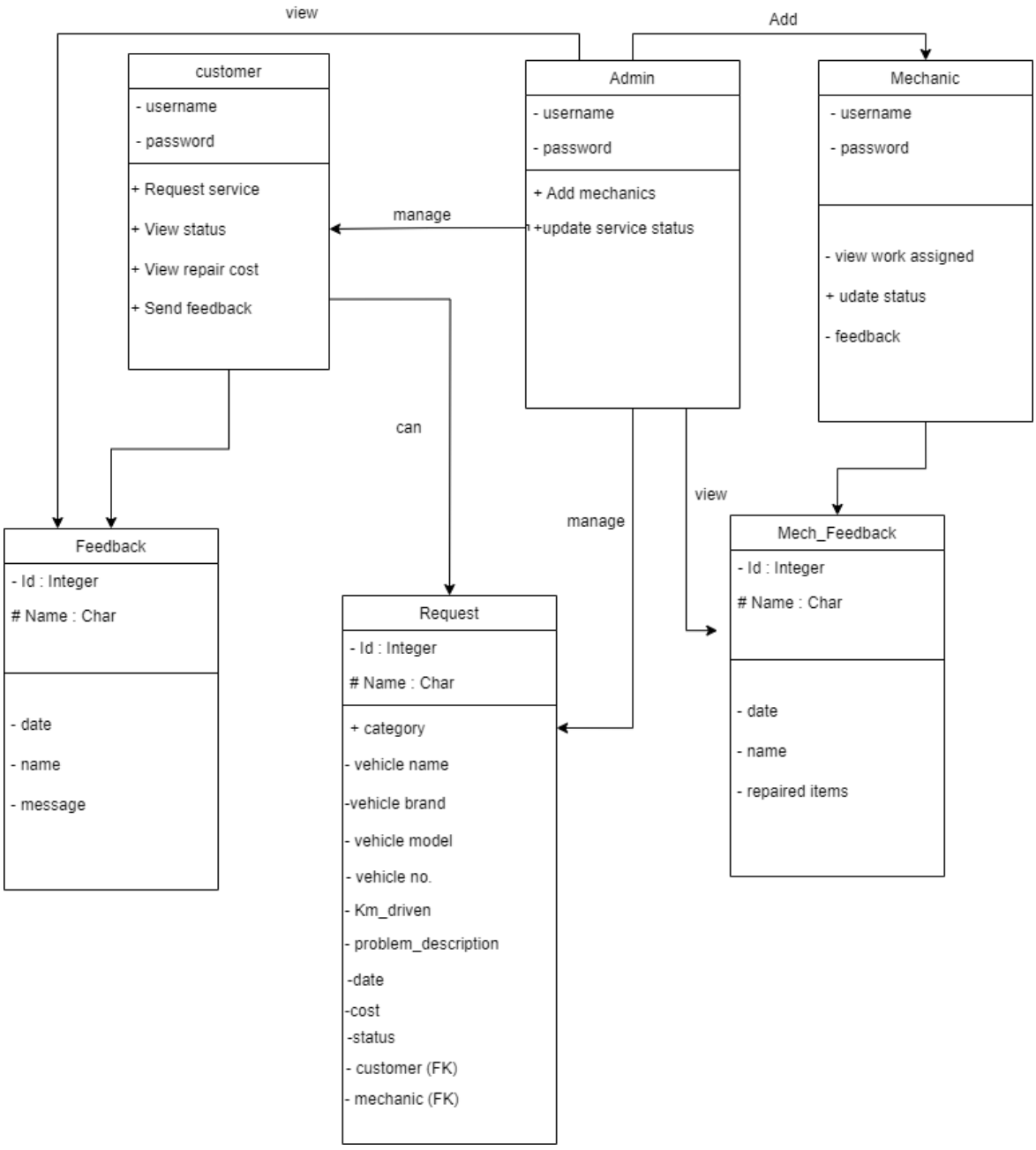
Built using the Python Django framework, ensuring scalability and robustness of the system.

Car Care encompasses a wide range of features and highlights that enhance the overall service management experience, streamlined processes, and customer satisfaction.

3.TECHNICAL ASPECTS

- **Presentation Layer:**
    - User Interface (UI): This layer includes the components that interact with users,such as web pages or mobile app screens.
    - Django Templates: Django's built-in template engine allows you to define HTMLtemplates that render dynamic content and interact with the back-end.
    - Jazzmin package: Jazzmin provides a very interactive Django admin panel GUI
    - Chartjs: Javascript library that provides interactive charts for analytics
- **Application Layer:**
    - Django: Django serves as the back-end framework, handling HTTP requests, routing, and managing the application's business logic.
    - Django Views: Views receive requests from the user interface, process data, andgenerate appropriate responses. They interact with models, services, and externalAPIs as needed.

4.CLASS DIAGRAM


view
Add
customer
- username
- password
+ Request service
+ View status
+ View repair cost
+ Send feedback
manage
Admin
- username
- password
+ Add mechanics
+update service status
Mechanic
- username
- password
- view work assigned
+ udate status
- feedback
can
manage
view
Feedback
- Id : Integer
Name : Char
- date
- name
- message
Request
- Id : Integer
Name : Char
+ category
- vehicle name
-vehicle brand
- vehicle model
- vehicle no.
- Km_driven
- problem_description
-date
-cost
-status
- customer (FK)
- mechanic (FK)
Mech_Feedback
- Id : Integer
Name : Char
- date
- name
- repaired items

5.CHALLENEGES FACED DURING DEVELOPMENT

1. System Complexity:

Developing a comprehensive system that caters to the needs of customers, administrators, and mechanics can be challenging due to the inherent complexity of managing multiple user roles and their interactions.

2. User Interface Design:

Designing a user-friendly interface that accommodates various functionalities and ensures a seamless user experience for customers, administrators, and mechanics requires careful planning and consideration of usability principles.

3. Coding the logic

Coding the logic behind Car care were really difficult. It was completed after

days of coding and getting help from friends

3. Data Management:

Efficiently storing and retrieving data, such as service requests, user information, feedback, and service statuses, while ensuring data integrity and system performance can pose challenges.

4. Security and Authentication:

Implementing security measures to protect user data, prevent unauthorized access, and ensure secure authentication for customers, administrators, and mechanics is crucial but can be challenging due to the need for secure encryption, authentication protocols, and access controls.

6. FUTURE ENHANCEMENTS

1. Mobile Application:

Develop a mobile application version of the system to enhance accessibility and convenience for customers, administrators, and mechanics, allowing them to manage service requests, track statuses, and provide feedback on the go.

2. Integration with Payment Gateways:

Integrate secure payment gateways within the system to enable customers to make online payments for the services rendered, providing a seamless end-to-end experience.

3. AI-Powered Recommendation Engine:

Implement an AI-powered recommendation engine that suggests relevant services or maintenance options based on the customer's vehicle history, preferences, and usage patterns. This can enhance customer satisfaction and promote proactive vehicle maintenance.

4. Service Reminder Notifications:

Develop a feature that sends automated service reminder notifications to customers based on their vehicle maintenance schedule, helping them stay proactive in servicing their vehicles and ensuring timely maintenance.

5. Integration with Parts and Inventory Management:

- Integrate the system with a parts and inventory management module to enable administrators and mechanics to efficiently manage and track available parts, order new supplies, and maintain accurate inventory records.

9. Advanced Mechanic Rating System:

Enhance the feedback system to include a detailed mechanic rating system, enabling customers to provide ratings for individual mechanics based on their performance, expertise, and customer satisfaction.

These future enhancements will further improve the Car Care, providing additional features, enhanced user experiences, and advanced functionalities to meet the evolving needs of customers, administrators, and mechanics.

7. CONCLUSION

In conclusion, the Car Care Vehicle Service Management System is a user-friendly web application that streamlines the management of vehicle service requests. With features like view status, cost estimation, and feedback submission, the system improves communication and coordination among customers, administrators, and mechanics. Built on Python Django and SQLite, it ensures scalability and data integrity. In summary, the Car Care Vehicle Service Management System offers a robust platform for customers, administrators, and mechanics to effectively manage vehicle service requests. Overall, the Car Care system is poised to enhance customer satisfaction, optimize workflow management, and drive efficiency in the vehicle service management sector.

8. REFERENCES

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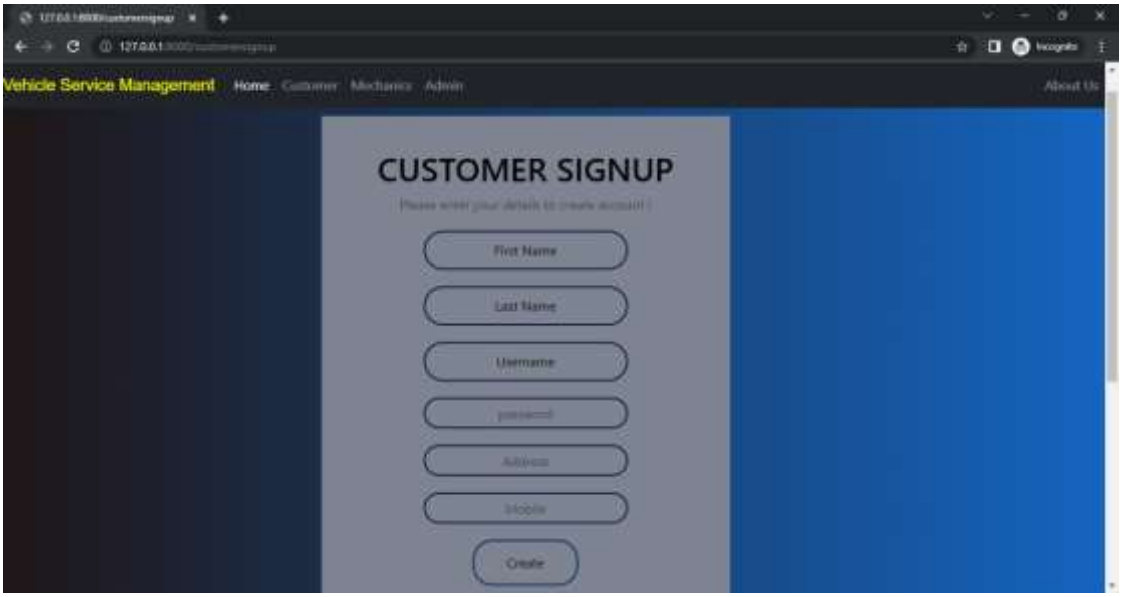
- https://django-jazzmin.readthedocs.io/

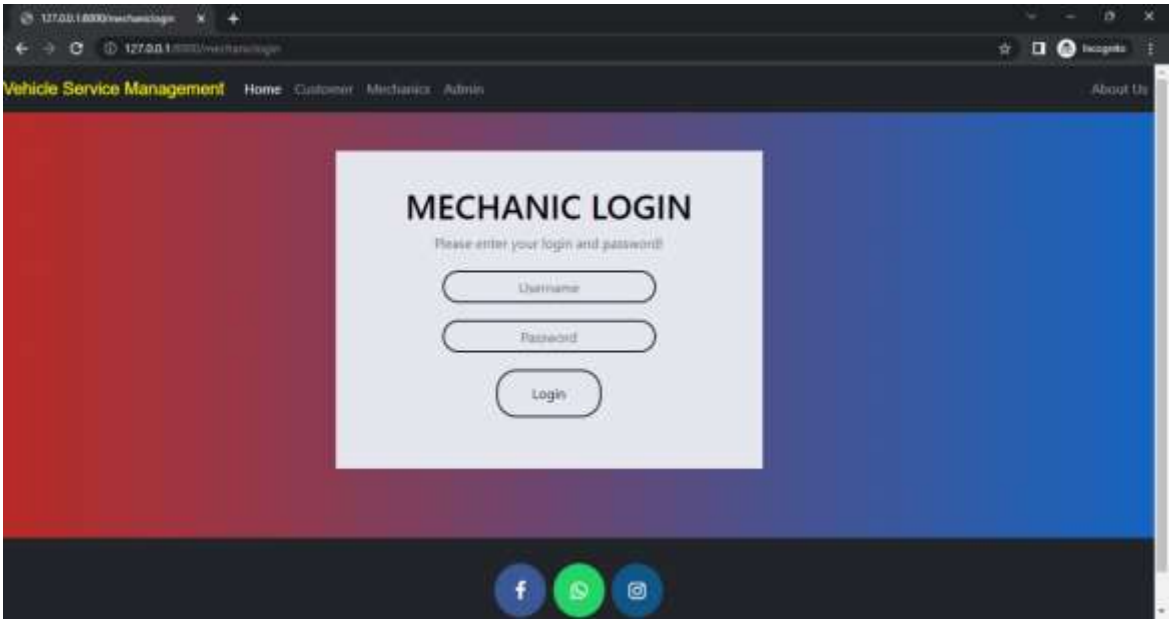
9. ANNEXURE

Screen Shots

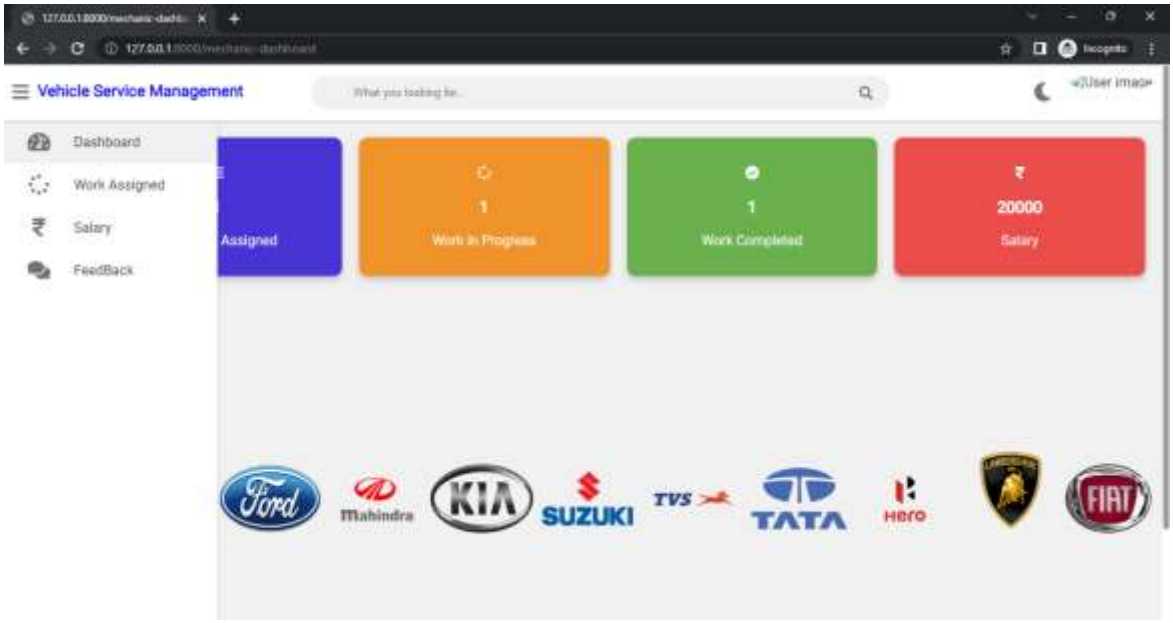
CUSTOMER SIGN UP



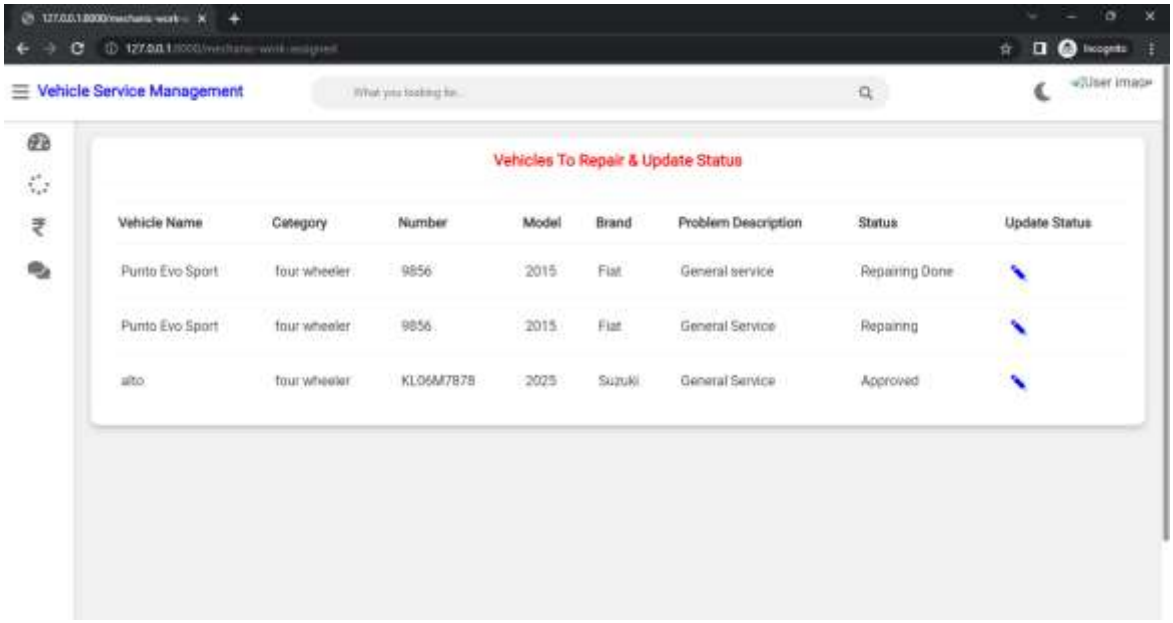
MECHANIC LOGIN



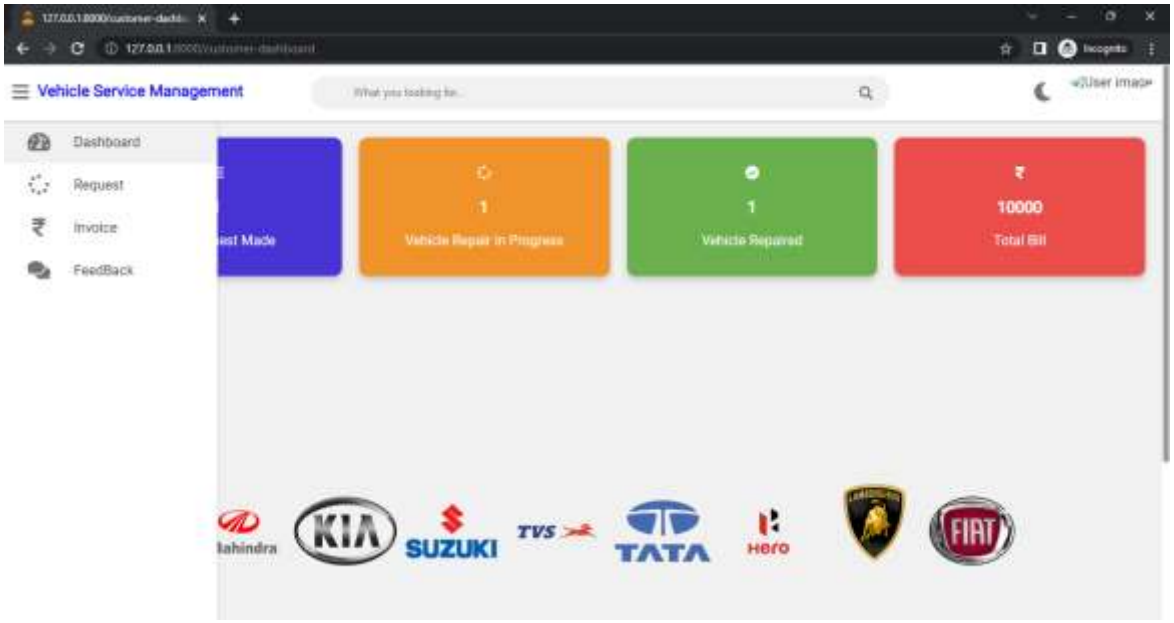
MECHANIC DASHBOARD



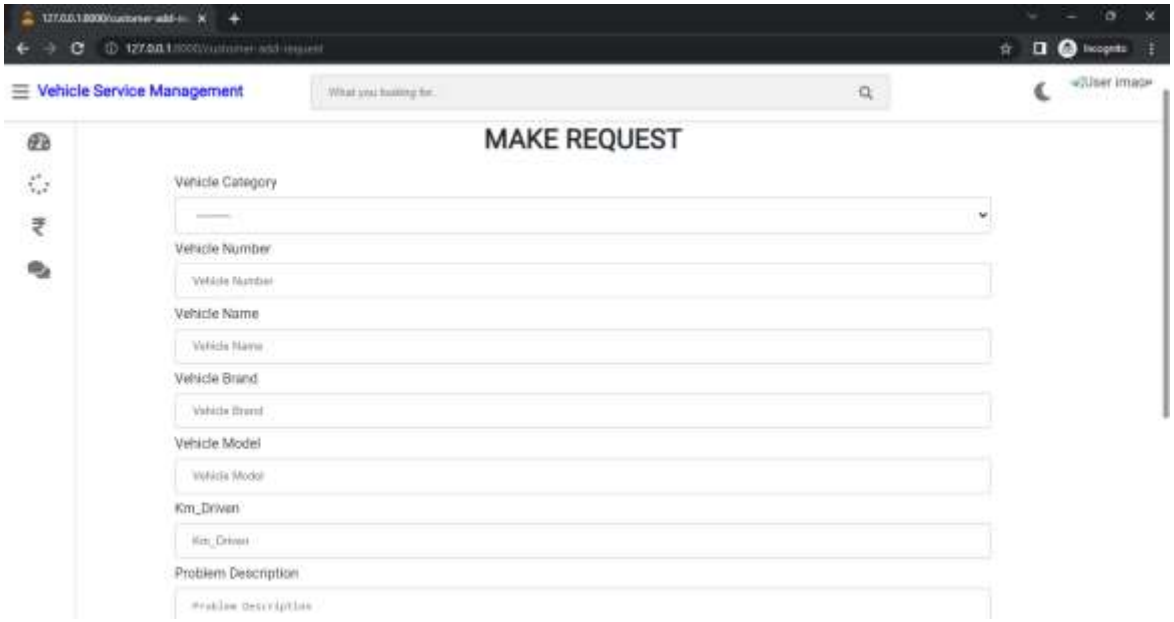
ASSIGNED WORKS FOR MECHANIC



CUSTOMER DASHBOARD



CUSTOMER REQUEST



ADMIN DASHBOARD