

ON ROAD VEHICLE BREAKDOWN ASSISTANCE

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(Affiliated to Osmania University)

Hyderabad

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**Mini Project Report submitted in partial fulfilment of the requirement for the
award of the degree of B.E**

By

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CERTIFICATE

This is to certify that the project report entitled **On Road Vehicle Breakdown Assistance** being submitted by MOHAMMED AASIM HUSSAIN (160420737112), MOHAMMED FAIZUDDIN (160420737115), TAUFEEQ HUSSAIN (160420737116) in partial fulfilment for the award of the Degree of Bachelor of Engineering in IT to the Osmania University is a record of bonafied work carried out by him under my guidance and supervision.

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ACKNOWLEDGEMENT

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ABSTRACT

The On-Road Vehicle Breakdown Assistance (ORVBA) website project aims to develop a user-friendly and comprehensive platform to assist individuals experiencing vehicle breakdowns on the road. This project focuses on creating a centralized website that connects distressed motorists with verified breakdown assistance service providers and offers relevant resources and information.

The primary objective of the ORVBA website is to provide a seamless user experience by offering a user-friendly interface, intuitive navigation, and responsive design. Users will be able to quickly access accurate and up-to-date information about breakdown assistance services, including towing companies, repair shops, and roadside assistance professionals

CONTENTS

Chapter Name	Page No.
1. INTRODUCTION	8-10
2. SYSTEM REQUIREMENTS	11
3. LITERATURE SURVEY	12
4. SOFTWARE REQUIREMENT ANALYSIS	13-18
5. SOFTWARE DESIGN	19-22
6. CODING TEMPLATES	23-25
7. OUTPUT	26-31
8. REFERENCES	32

LIST OF FIGURES

Figure No.	Figure Name	Page No.
5.1	UML DIAGRAMS	19
5.1.1	CLASS DIAGRAM	20
5.1.2	SEQUENCE DIAGRAM	21
5.1.3	USE-CASE DIAGRAM	22

LIST OF IMAGES

Image No.	Image Name	Page No.
6.1-6.4	DATABASES	21-24
7.1-7.13	OUTPUTS	26-31

1. INTRODUCTION

The On-Road Vehicle Breakdown Assistance (ORVBA) website project is a comprehensive initiative designed to address the needs of individuals facing vehicle breakdowns while on the road. With the increasing number of vehicles on the roads, breakdowns have become a prevalent issue, causing inconvenience and potential safety risks. The ORVBA website aims to provide a user-friendly and centralized platform that connects distressed motorists with reliable breakdown assistance services and offers valuable resources and information.

In this modern era, where technology plays a significant role in our daily lives, having a dedicated website for on-road vehicle breakdown assistance is crucial. The ORVBA website serves as a convenient and accessible platform, eliminating the need for individuals to engage in time-consuming searches or make numerous phone calls during distressing breakdown situations. By providing a centralized location for verified breakdown assistance service providers, the website streamlines the process of requesting help, ensuring quick and efficient support for those in need.

The primary objective of the ORVBA website project is to enhance the user experience during vehicle breakdowns. The website will be designed with a user-friendly interface, intuitive navigation, and responsive design to ensure ease of use across different devices. Users will be able to access accurate and up-to-date information about breakdown assistance services, including towing companies, repair shops, and roadside assistance professionals. The website will also offer a streamlined service request process, enabling users to provide essential details about their location and vehicle breakdown with minimal effort.

Furthermore, the ORVBA website project aims to promote road safety awareness among its users. By offering informative articles, tips, and guidelines on preventive maintenance and safe driving practices, the website empowers individuals with knowledge to prevent breakdowns and encourages responsible driving habits.

In conclusion, the ORVBA website project is a comprehensive endeavor that aims to create a user-friendly and centralized platform for on-road vehicle breakdown assistance. By connecting distressed motorists with verified service providers, streamlining the service request process, and promoting road safety awareness, the website intends to enhance the overall user experience during vehicle breakdown situations.

1.1 PROJECT PURPOSE

The purpose of the On-Road Vehicle Breakdown Assistance (ORVBA) website project is to create a user-friendly and centralized platform that offers convenient and reliable assistance to individuals experiencing vehicle breakdowns. The project aims to provide a seamless user experience, connect distressed motorists with verified breakdown assistance service providers, promote road safety awareness, and foster collaborations with relevant stakeholders. Ultimately, the project's purpose is to enhance the overall experience for individuals in distress and contribute to safer and more efficient roadways.

1.2 PROJECT FEATURES

The On-Road Vehicle Breakdown Assistance (ORVBA) website is designed to offer a range of features that provide comprehensive assistance to individuals experiencing vehicle breakdowns. Some key features of the ORVBA website include:

- **User-Friendly Interface:** The website will have a user-friendly interface, ensuring ease of navigation and accessibility for users.
- **Verified Service Providers:** The website will maintain a comprehensive database of verified breakdown assistance service providers, including towing companies, repair shops, and roadside assistance professionals. Users can rely on the credibility and reliability of these service providers.
- **Service Request Process:** The website will offer a streamlined service request process. Users will be able to quickly submit essential details about their location and vehicle breakdown, ensuring prompt assistance.
- **Location-Based Assistance:** The website will utilize location-based services to connect users with the nearest available service providers, optimizing response times and ensuring timely support.
- **Road Safety Information:** The ORVBA website will provide informative articles, tips, and guidelines on preventive maintenance and safe driving practices. This feature aims to promote road safety awareness and empower users with knowledge to prevent breakdowns and accidents.

- **Mobile Compatibility:** The website will be designed to be mobile-friendly, allowing users to access it conveniently from their smartphones or other mobile devices.
- **Emergency Contacts:** The website will provide a list of emergency contacts, including local authorities and emergency services, to ensure users can quickly reach out for immediate assistance if needed.
- **User Reviews and Ratings:** Users will have the ability to provide feedback and rate the services they received from breakdown assistance providers. This feature helps maintain service quality and allows users to make informed decisions.
- **Resource Center:** The ORVBA website will feature a resource center with articles, FAQs, and guides to educate users about vehicle maintenance, troubleshooting, and other relevant topics.

2. REQUIREMENTS AND SPECIFICATIONS

Hardware Requirements:

- Device : Laptop / Desktop / Android Mobile
- Operating System : Any Operating System – WINDOWS 10 PRO
 - 64-bit operating system, x64-based processor
- Processor : Intel Core i5 7th Gen 2.50GHz
- RAM : 8GB
- Hard Disk : 1 TB

Software Requirements:

- Front end : HTML5, CSS, Bootstrap
- Back end : php, MySQL
- Control end : angular, JavaScript

Literature Survey

- **Search Methodology:** A systematic search was conducted using reputable academic databases, including Google Scholar, IEEE Xplore, and ScienceDirect. The search terms used included "on-road vehicle breakdown assistance," "roadside assistance," "vehicle breakdown services," and related keywords. Only peer-reviewed journal articles and conference papers published in the last ten years were considered.
- **Summary of Key Findings:** The literature review revealed several important findings related to ORVBA. The studies consistently emphasized the importance of prompt and reliable assistance in mitigating the consequences of vehicle breakdowns. Common themes identified in the literature included the need for efficient communication networks, robust coordination among stakeholders, and the integration of technological advancements in service delivery.
- **Critical Analysis:** While the existing literature provides valuable insights into various aspects of ORVBA, several limitations and gaps were identified. Most studies focused on specific geographical regions or specific breakdown scenarios, limiting the generalizability of the findings. Additionally, there is a lack of research exploring the impact of emerging technologies, such as artificial intelligence and Internet of Things, on ORVBA services.
- **Research Gaps and Opportunities:** Based on the analysis, the literature review highlights the need for further research in several areas. First, there is a need for studies that examine the effectiveness of different communication and coordination strategies in ORVBA. Second, research investigating the integration of emerging technologies to optimize service delivery and enhance the customer experience is warranted. Finally, comparative studies across different geographical regions can provide valuable insights into best practices and regional variations in ORVBA services.

2. SOFTWARE REQUIREMENT ANALYSIS

4.1 PROBLEM STATEMENT

The existing on-road vehicle breakdown assistance services lack efficiency, reliability, and a centralized platform for accessing verified service providers. This leads to prolonged wait times, inadequate service quality, and compromised safety for distressed motorists. Furthermore, the potential of emerging technologies in optimizing ORVBA services remains underexplored. Therefore, there is a need to address the shortcomings of current assistance services and leverage technological advancements to develop a more efficient and reliable system that provides prompt and effective assistance to individuals experiencing vehicle breakdowns on the road. The research aims to explore innovative approaches, best practices, and technological advancements to improve ORVBA, ensuring the safety and convenience of motorists and promoting efficient traffic flow.

4.1.1 EXISTING SYSTEM AND ITS DISADVANTAGES

While the existing system for On-Road Vehicle Breakdown Assistance (ORVBA) provides valuable services, it also has some limitations and disadvantages that can be addressed for further improvement. Here are some of the key disadvantages of the existing system

DISADVANTAGES

- Variability in response times, leading to potential delays and inconvenience for distressed motorists.
- Limited availability of service providers, resulting in longer wait times or inadequate coverage in certain areas.
- Lack of integration of emerging technologies, hindering advancements in service efficiency and communication between service providers and distressed motorists.

4.1.2 PROPOSED SYSTEM AND ITS ADVANTAGES

The proposed system for On-Road Vehicle Breakdown Assistance (ORVBA) is designed to improve the existing system by introducing a centralized online platform. This platform will allow distressed motorists to easily request assistance and access verified service providers. The system will also incorporate advanced dispatching and tracking mechanisms, utilizing GPS technology and real-time data to optimize service provider allocation and provide transparency on their location and arrival time.

To enhance service delivery, the proposed system will leverage emerging technologies such as artificial intelligence and Internet of Things (IoT). These technologies will enable predictive maintenance, proactive recommendations, and real-time diagnostics for faster problem resolution.

Seamless communication and coordination between motorists and service providers will be prioritized, with multiple channels available for efficient information exchange. Additionally, the system will promote road safety awareness by providing educational resources and tips to users.

A feedback and rating system will be implemented to gather user feedback and encourage service providers to maintain high standards. Collaboration with stakeholders such as automotive manufacturers, insurance companies, and emergency services will ensure accurate information and a comprehensive network of support.

ADVANTAGES

- **Faster response times:** The proposed system optimizes dispatching and tracking, allowing for quicker allocation of service providers and reducing the time it takes for assistance to reach distressed motorists.
- **Enhanced technology integration:** By leveraging emerging technologies like artificial intelligence and Internet of Things (IoT), the proposed system improves problem diagnosis, offers proactive recommendations, and enables real-time diagnostics, resulting in more accurate and efficient service delivery.
- **Improved communication and transparency:** The proposed system ensures seamless

communication between motorists and service providers through multiple channels. Real-time updates and location tracking provide greater transparency, keeping motorists informed about the status and location of the assistance vehicle. This enhances trust and satisfaction in the assistance process.

4.2 MODULES

User Module

The User Module in the On-Road Vehicle Breakdown Assistance (ORVBA) system focuses on providing a seamless and user-friendly experience for individuals seeking breakdown assistance. This module enables users to access and utilize the services and features offered by the ORVBA system. Here are some key components of the User Module:

- **User Registration and Authentication:** This component allows users to create an account by providing necessary information such as name, contact details, and vehicle details. User authentication mechanisms, such as usernames and passwords or two-factor authentication, ensure secure access to the system.
- **User Profile Management:** This component enables users to manage their profile information, including updating personal details, adding or modifying vehicle information, and selecting preferences for breakdown assistance services.
- **Service Request Submission:** Users can submit service requests through this component. They can provide details about their breakdown situation, such as location, type of issue, and any specific requirements. This feature allows users to quickly and easily request assistance from verified service providers.
- **Service Provider Selection:** This component presents users with a list of verified breakdown assistance service providers based on their location and availability. Users can review service provider profiles, ratings, and feedback from other users to make an informed choice.
- **Communication Channels:** The User Module facilitates communication between users and service providers. It may include features such as helplines, chat support, or messaging systems to enable real-time communication, updates, and coordination between the user and the selected service provider.

Admin Module

The Admin Module in the On-Road Vehicle Breakdown Assistance (ORVBA) system provides administrative functionalities for managing and overseeing the operations of the ORVBA system. It enables system administrators to maintain the system, monitor its performance, and ensure smooth functioning. Here are some key components of the Admin Module:

- **Admin Dashboard:** The Admin Module includes a dashboard that provides an overview of the system's performance and key metrics. It allows administrators to monitor the number of service requests, response times, service provider performance, and other relevant data.
- **User Management:** This component enables administrators to manage user accounts and profiles. It includes functionalities such as user registration, account approval or verification, user profile modification, and user access control.
- **Service Provider Management:** Admins can manage the database of breakdown assistance service providers. They can verify and onboard new service providers, maintain their profiles and contact information, review service provider ratings and feedback, and handle any issues or complaints related to service providers.

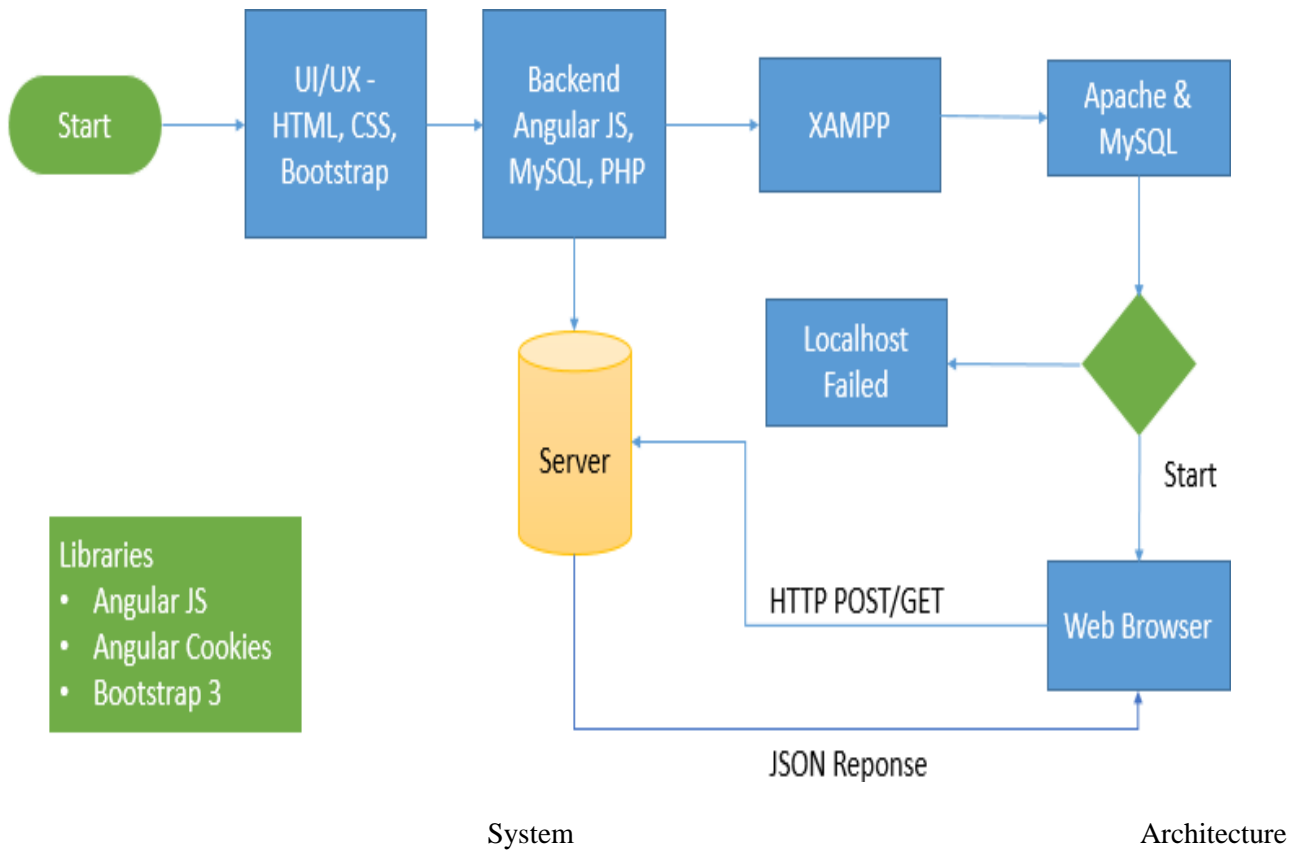
Mechanic Module

The Mechanic Module in the On-Road Vehicle Breakdown Assistance (ORVBA) system is designed to facilitate the interaction and management of breakdown assistance service providers, specifically mechanics, within the system. This module caters to the specific needs and functionalities required by mechanics to efficiently handle breakdown assistance requests. Here are some key components of the Mechanic Module:

- **Mechanic Profile Management:** This component allows mechanics to create and manage their profiles within the ORVBA system. They can provide information about their expertise, experience, certifications, contact details, and availability.
- **Service Request Management:** Mechanics can access and manage incoming service requests through this component. They can view details of breakdown assistance requests assigned to them, including the location, type of issue, and any specific instructions provided by the user.
- **Communication Channels:** The Mechanic Module facilitates seamless communication between mechanics and users. It includes features such as chat support or messaging systems, allowing mechanics to communicate directly with the user to gather additional information or provide updates on the assistance progress.

5. SOFTWARE DESIGN

5.1 UML DIAGRAMS



5.1.1 CLASS DIAGRAM

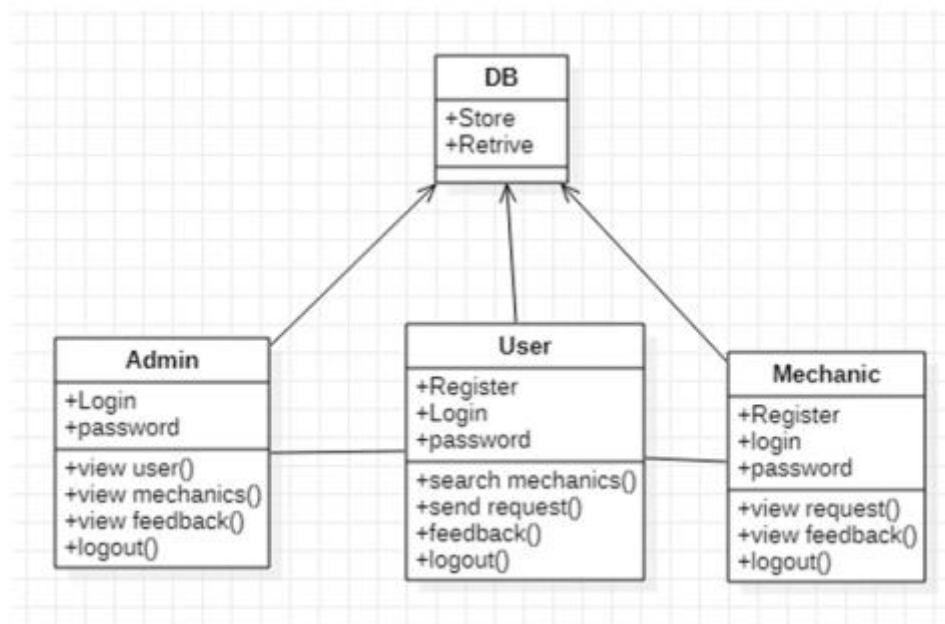


Fig. 5.1.1

5.1.2 SEQUENCE DIAGRAM

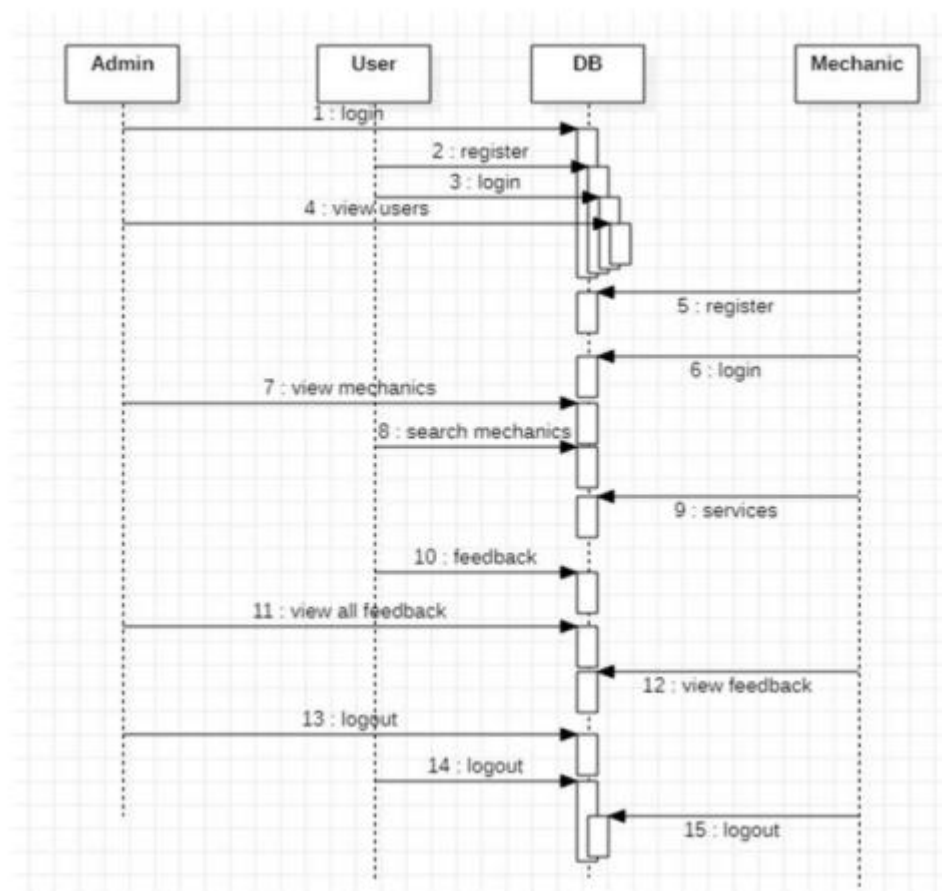


Fig. 5.1.2

5.1.3 USE CASE DIAGRAM

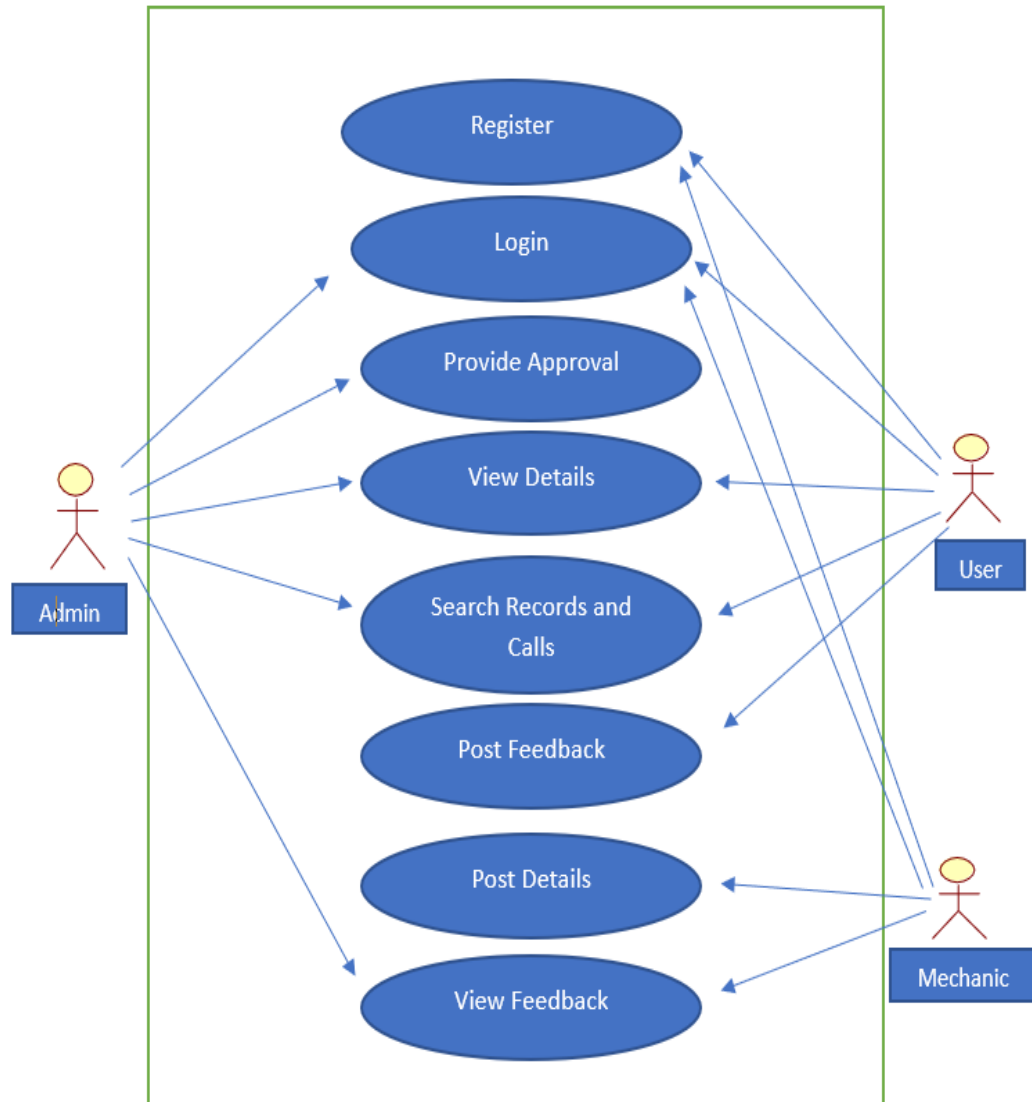


Fig. 5.1.3

6. CODING TEMPLATES

a. Database Configurations

```
<?php
```

```
/*
```

This file contains database configuration assuming you are running mysql using user "root" and password ""

```
*/
```

```
define('DB_SERVER', 'localhost');
```

```
define('DB_USERNAME', 'root');
```

```
define('DB_PASSWORD', '');
```

```
define('DB_NAME', 'login');
```

```
// Try connecting to the Database
```

```
$conn = mysqli_connect(DB_SERVER, DB_USERNAME, DB_PASSWORD, DB_NAME);
```

```
//Check the connection
```

```
if($conn == false){
```

```
    dir('Error: Cannot connect');
```

```
}
```

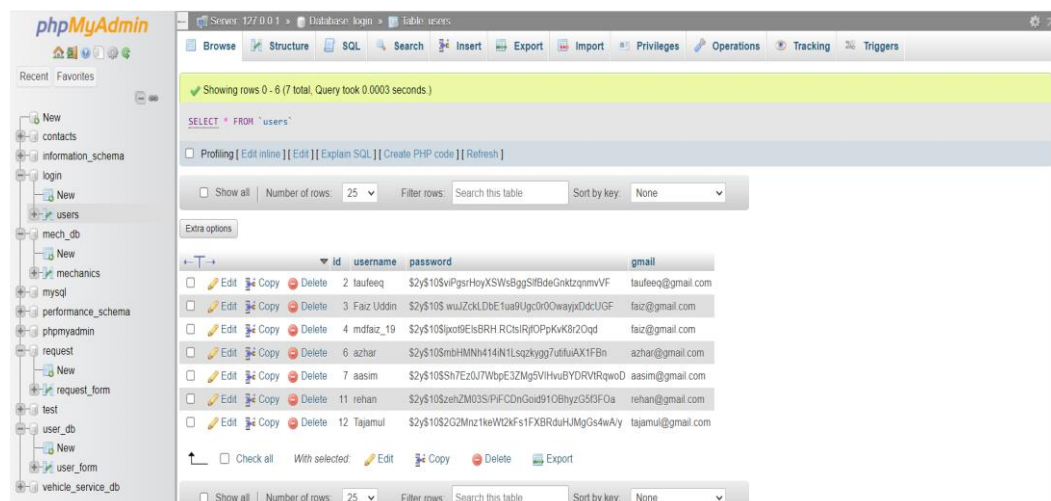


Photo 6.1

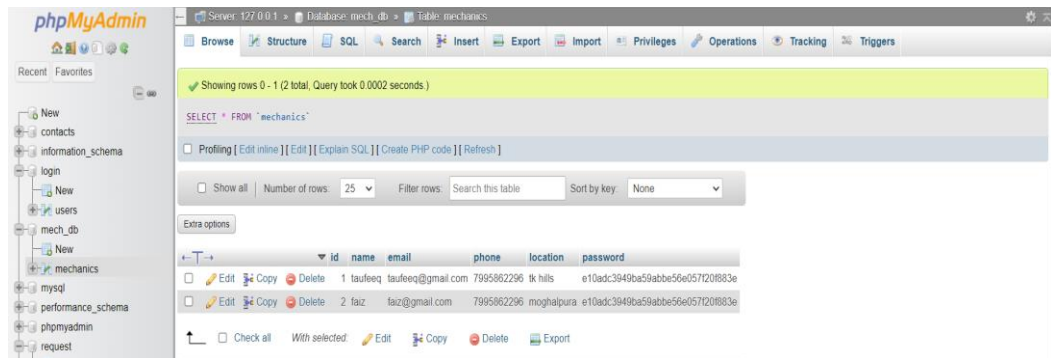


Photo 6.2

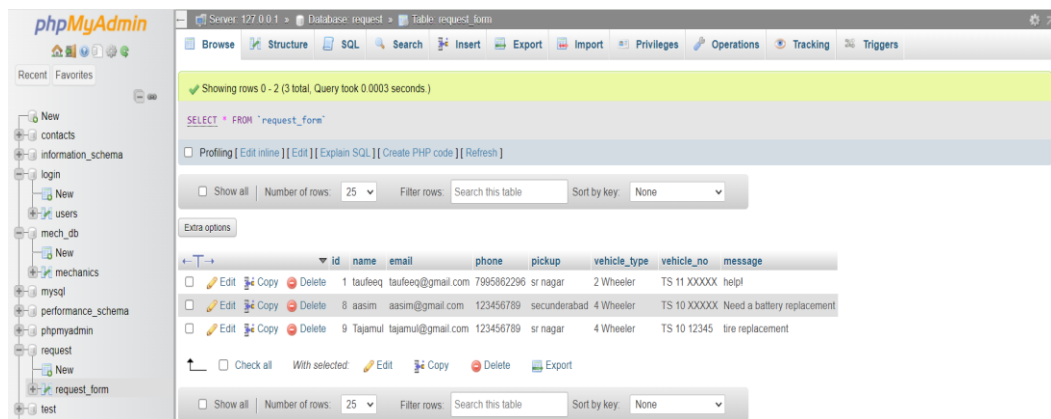
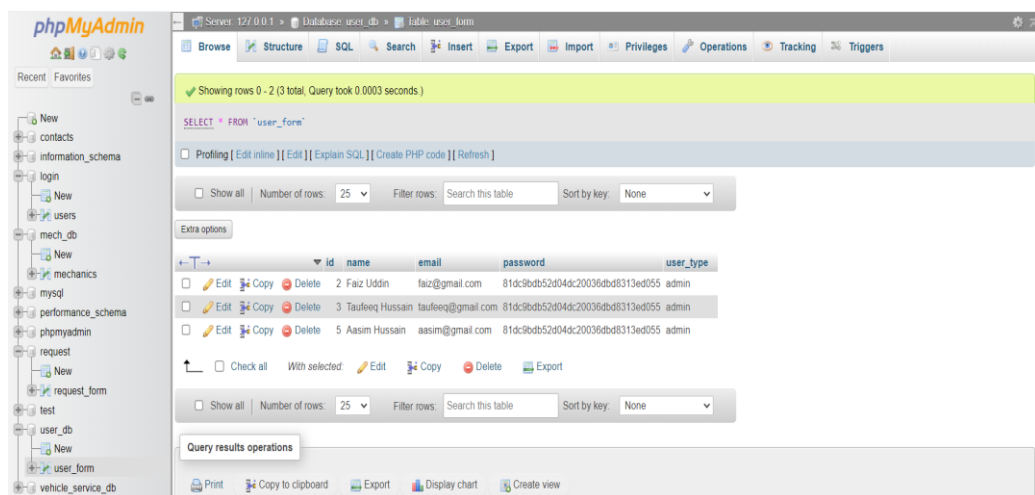


Photo 6.3



Photo

i. METHODS

Running a website using PHP and MySQL involves several steps to ensure a functional and efficient web application. Here is an overview of the process:

- **Server Setup:** Set up a web server environment such as Apache or Nginx on your hosting platform or local machine. Install PHP and configure it to work with the web server. Ensure that MySQL is installed and running.
- **Database Creation:** Use the MySQL command-line interface or a graphical tool like phpMyAdmin to create a new database for your website. Define the necessary tables and relationships to store and manage data.
- **Project Structure:** Organize your PHP files, HTML templates, CSS, JavaScript, and other assets into a structured directory hierarchy. This helps maintain code organization and separation of concerns.
- **Connection to the Database:** Establish a connection to the MySQL database from your PHP code using the appropriate database credentials. This connection allows your PHP scripts to interact with the database, execute queries, and retrieve or update data.
- **User Registration and Authentication:** Implement user registration and login functionality to authenticate and manage user access. Store user information securely in the database, encrypt passwords, and handle user sessions to maintain logged-in states.
- **Data Manipulation:** Develop PHP scripts to handle CRUD operations (Create, Read, Update, Delete) on the database. These scripts allow you to insert, retrieve, modify, and delete data from the database based on user actions or system requirements.
- **Dynamic Content Generation:** Use PHP to dynamically generate HTML content by embedding PHP code within your HTML templates. This enables you to fetch data from the database and display it dynamically on web pages.
- **Form Handling:** Implement PHP scripts to handle form submissions. Validate user input, sanitize data to prevent SQL injection or other security vulnerabilities, and process the submitted form data accordingly.

7. OUTPUT

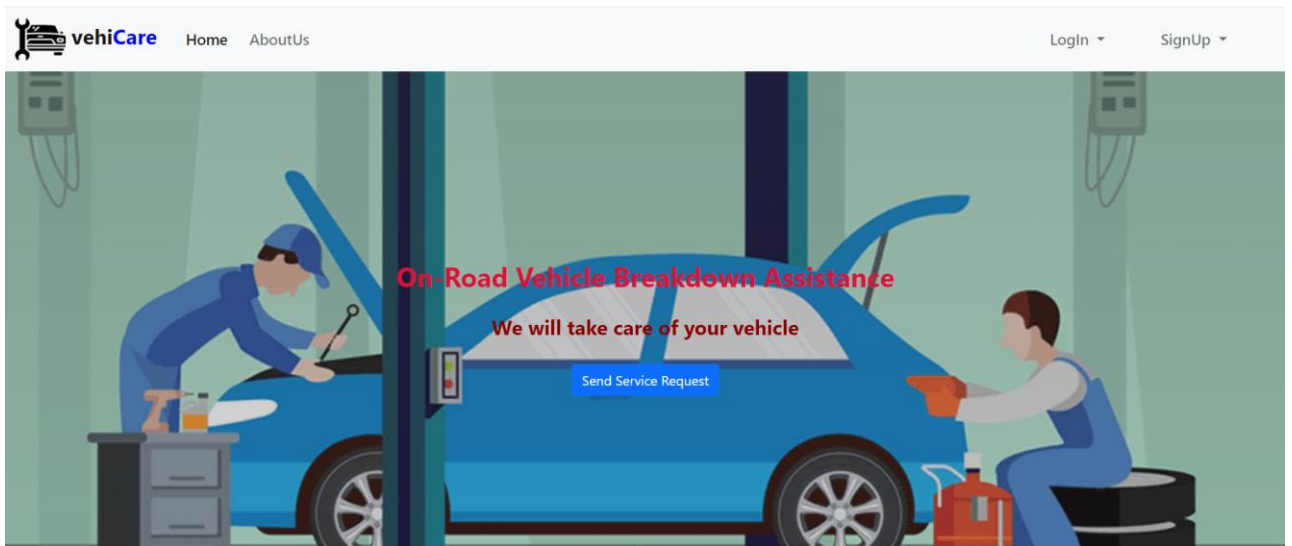


Photo 7.1 [Home Page]

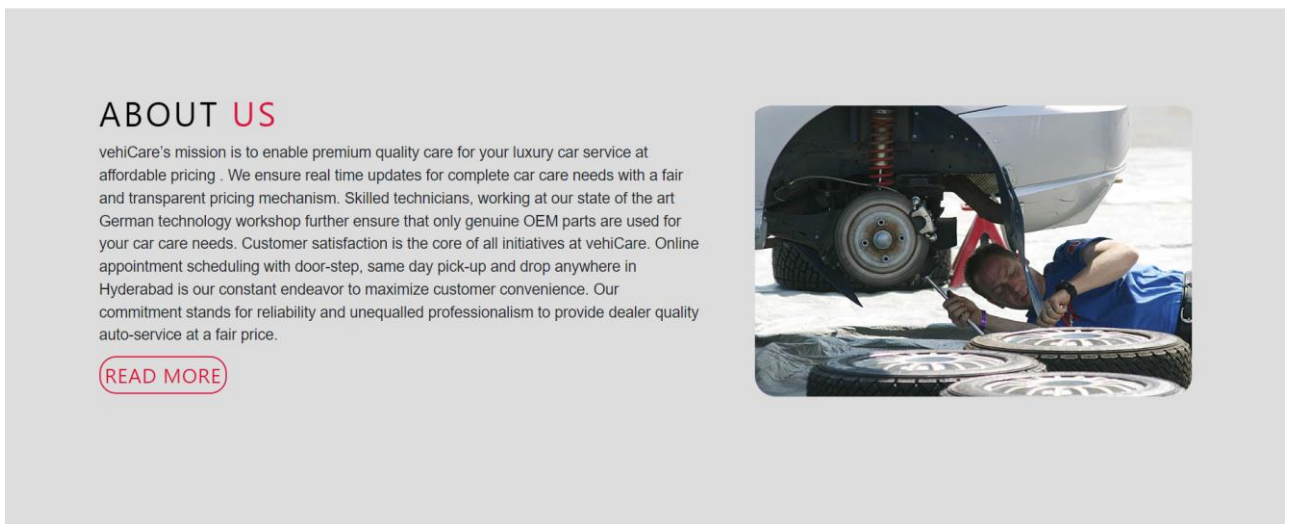
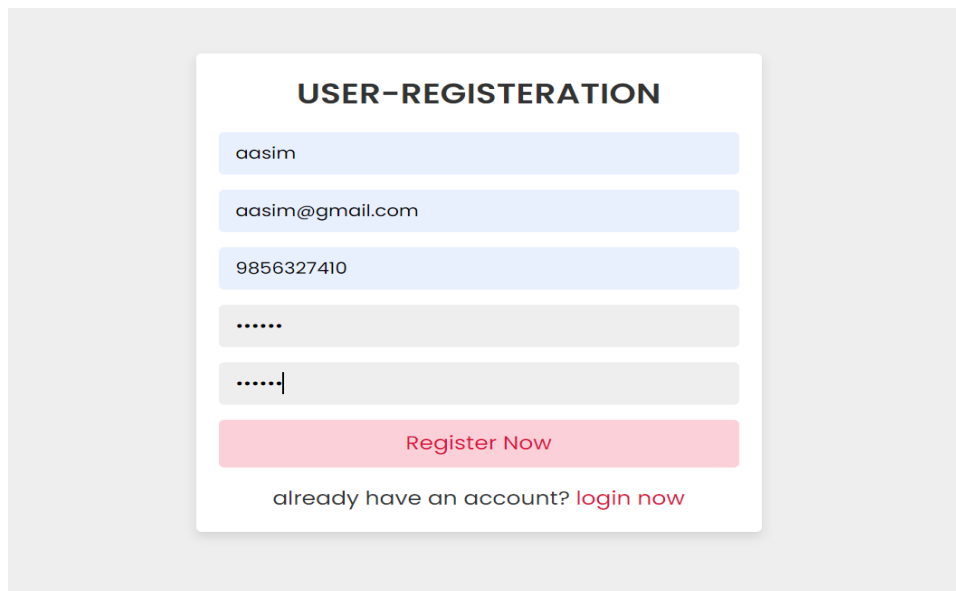
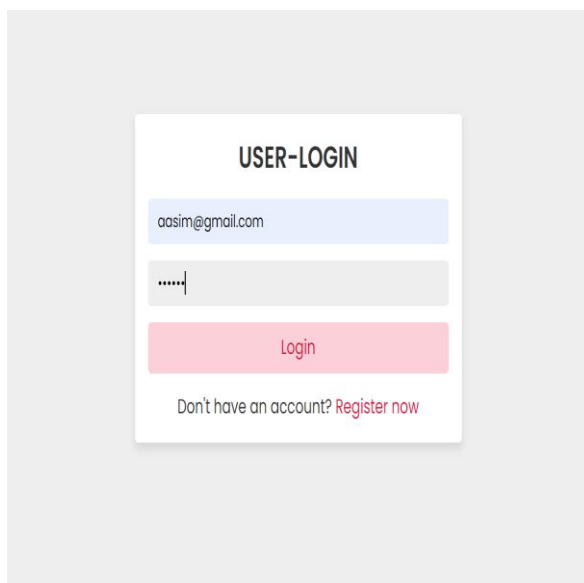


Photo 7.2



A user registration form titled "USER-REGISTRATION" is displayed on a light gray background. The form is a white card with a shadow. It contains five input fields: a text field for the username "aasim", a text field for the email "aasim@gmail.com", a text field for the phone number "9856327410", and two password fields, each containing six dots. Below the input fields is a pink "Register Now" button. At the bottom of the form, there is a link that says "already have an account? login now".

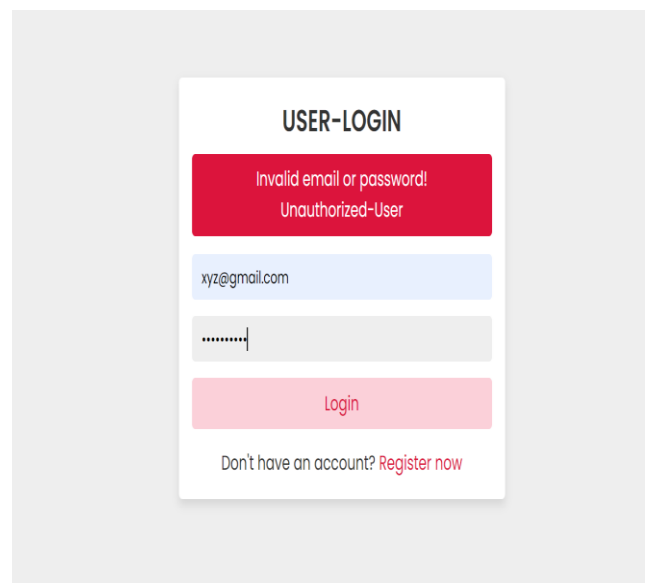
Photo 7.3



A user login form titled "USER-LOGIN" is displayed on a light gray background. The form is a white card with a shadow. It contains two input fields: a text field for the email "aasim@gmail.com" and a password field containing six dots. Below the input fields is a pink "Login" button. At the bottom of the form, there is a link that says "Don't have an account? Register now".

Photo 7.4

[Authorized user login]



A user login form titled "USER-LOGIN" is displayed on a light gray background. The form is a white card with a shadow. At the top, there is a red error message box that says "Invalid email or password! Unauthorized-User". Below this, there are two input fields: a text field for the email "xyz@gmail.com" and a password field containing six dots. Below the input fields is a pink "Login" button. At the bottom of the form, there is a link that says "Don't have an account? Register now".

Photo 7.5

[Unauthorized user login]

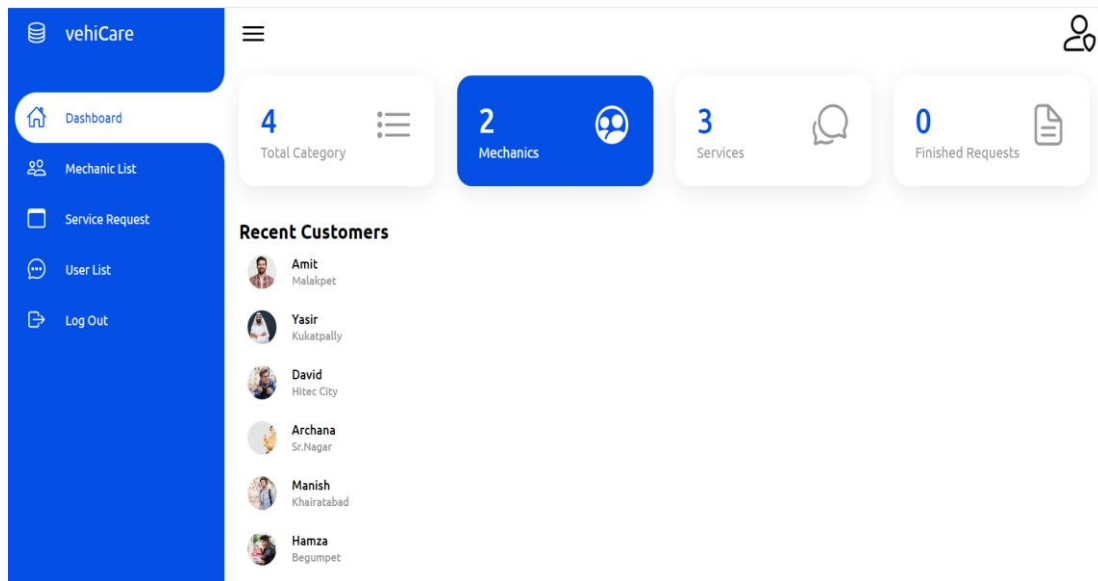


Photo 7.6 [Admin Dashboard]

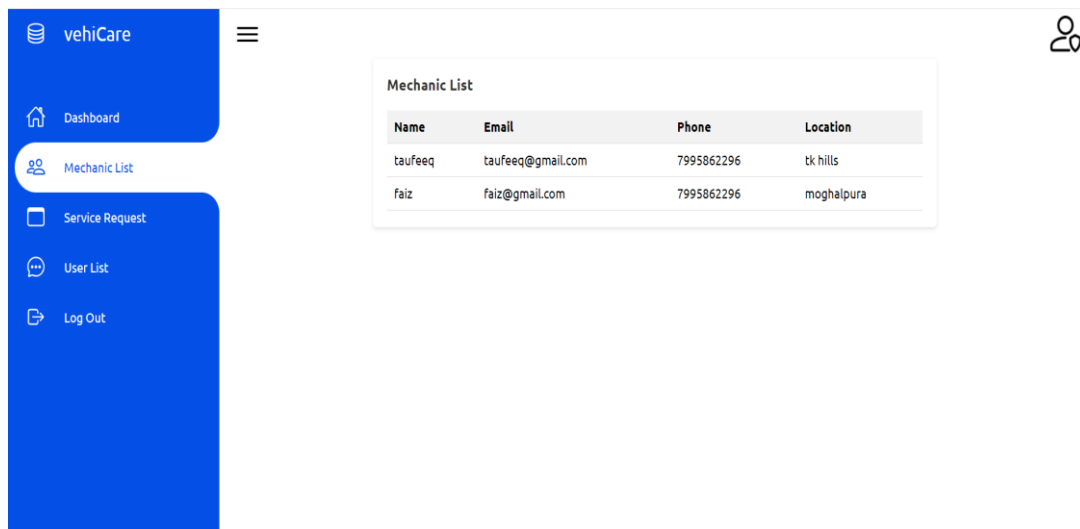


Photo 7.7

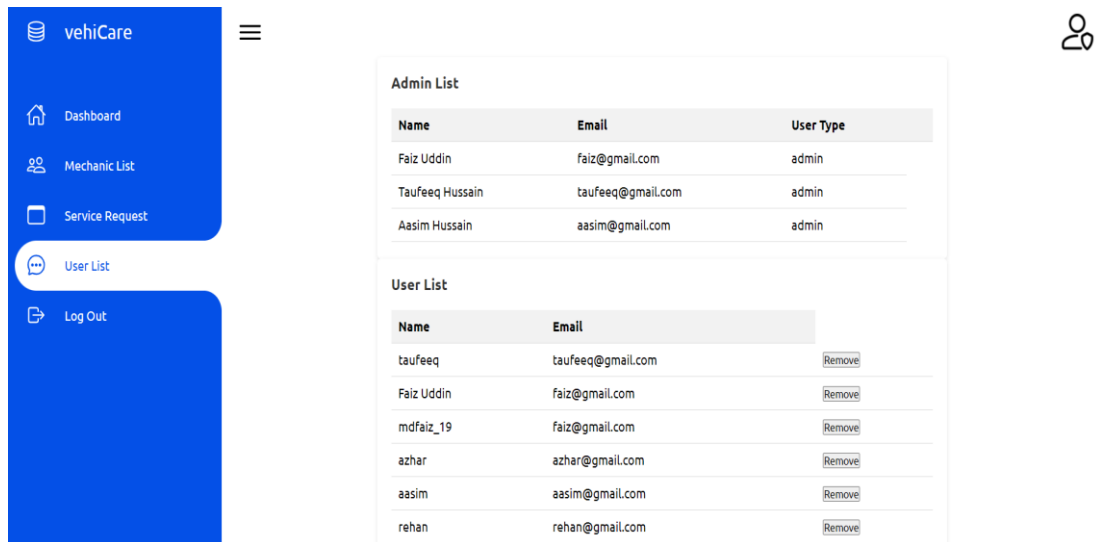
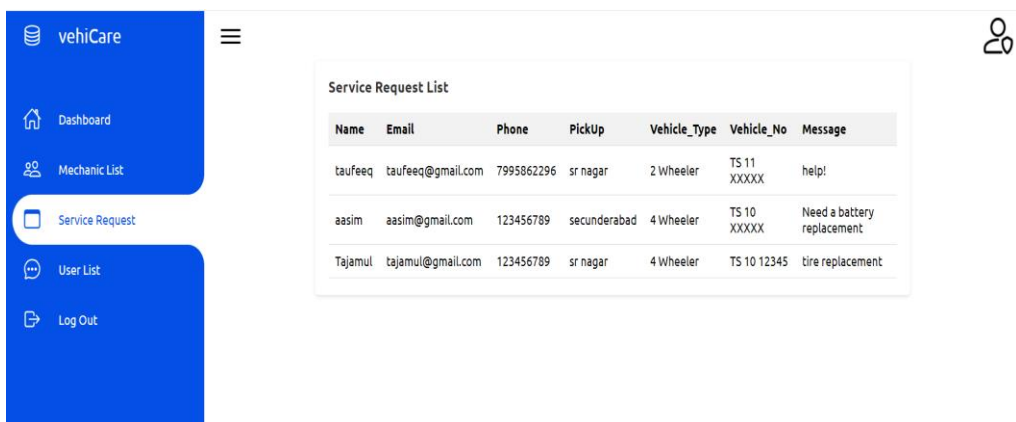


Photo 7.8



Photo

vehiCare Home AboutUs Aasim

Service Request Form

Your Full-Name
Aasim

Email address
aasim@gmail.com

Phone number
9856327410

Location Of Breakdown
secunderabad

Vehicle Type
4 Wheeler

Vehicle Number
TS 10 12345

Message
Engine Repair

Close Submit

On-Road Vehicle Breakdown Assistance

Photo 7.10 [Service Request]

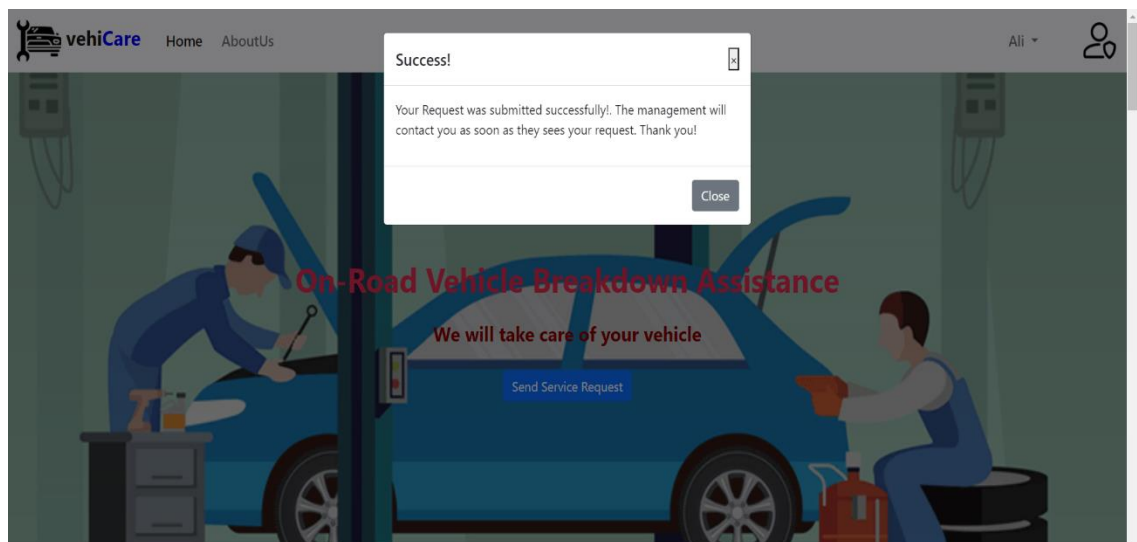


Photo 7.11

Name	Email	Phone	PickUp	Vehicle_Type	Vehicle_No	Message	Assigned Mechanic
aasim	aasim@gmail.com	123456789	secunderabad	4 Wheeler	TS 10 XXXXX	Need a battery replacement	Not Assigned

Photo 7.12 [Mechanic is not assigned by Admin]

Name	Email	Phone	PickUp	Vehicle_Type	Vehicle_No	Message	Assigned Mechanic
aasim	aasim@gmail.com	123456789	secunderabad	4 Wheeler	TS 10 XXXXX	Need a battery replacement	sahil

Photo 7.13 [Mechanic is assigned by Admin]

8. REFERENCES

1. https://www.google.com/search?rlz=1C1VDKB_enIN988IN988&q=code+with+harry+php&tbm=vid&sa=X&ved=2ahUKEwiWptaUooyAAxV6yzgGHRgHA2IQ0pQJegQIDBAB&biw=1242&bih=568&dpr=1.1#fpstate=ive&vld=cid:a4329b58,vid:1SnPKhCdlsU
2. <https://www.studocu.com/in/document/university-of-madras/computer-science/vehicle-breakdown-assistance-management-system-praveen-s-and-team/54067110>
3. <https://www.geeksforgeeks.org/videos/how-to-create-apis-for-crud-operations-using-php-and-mysql-database/>