SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY

VAN-D : BREAKDOWN SYSTEM

Third Review

Mentor:
T.DUREEN V.RAYEN
Assistant Professor
Dept. of M.Tech CSE

Presented By:
DHANASEELAN S
NIVAS P
VAISHAK CJ

Table of Contents

I. Abstract

II. Introduction

III. Literature Survey

IV. Existing System

V. Proposed System

VI. Technology Stack

VII. Block Diagram

VIII. Module 1(FrontEnd)

IX. Sourcecode

X. Conclusion

XI. Futurework

XII. Reference

ABSTRACT

On Road Vehicle Breakdown Assistance system Project can search for list of mechanic at any location or the nearby locations which will help them in an unexpected situations raised by the mechanical issues of their vehicles. Only the Trusted mechanics can get listed here while the search. Road assistance for car . And there are available mechanic who can come and repair the mechanical issues in the users vehicle.The Vehicle Breakdown Management System (VBMS) is a comprehensive software solution designed to streamline and enhance the efficiency of handling vehicle breakdown incidents. This system is specifically developed for projects where a fleet of vehicles is deployed, such as logistics, transportation, and construction projects. The primary goal of VBMS is to minimize downtime, improve response times, and facilitate effective communication during unexpected vehicle breakdowns.

INTRODUCTION

The introduction immerses the reader in the intricate landscape of vehicular breakdown challenges, delineating the Complexities that necessitate a state-of-the-art solution. It expounds upon the overarching goals and comprehensive

Scope of the project, emphasizing its potential to revolutionize incident management in the automotive domain.

Inner components:

- **Register** – User has to register their basic details to get access with this application service.
- **Login** – Once they have registered they need to login to avail the service at the needy time.
- **View Details** – Logging in with the application will provide you the lists of mechanics that have the approval of the application.
- **Search records & call** – So that the users can search the mechanic among the list according to their place and time.
- **Post feedback** – After all the process every user has to give their feedback with this application to about their adopted service through this medium.

LITERATURE SURVEY

S.NO	PAPER	ANALYSIS
1	Recent Advances in Connected Vehicle Technologies for Roadside Assistance Systems **IEEE Intelligent Transportation Systems Magazine (2019)**	This paper focuses on how connected vehicle technology (CVT) can improve roadside assistance systems. It explores topics like real-time vehicle diagnostics, automatic breakdown detection, and efficient dispatch of assistance vehicles. The paper discusses various CVT applications for breakdown assistance, including: Vehicle-to-everything (V2X) communication: Sharing data between vehicles and roadside infrastructure to detect breakdowns and provide real-time updates on traffic conditions and available assistance resources.
2	Comparative Analysis of Mobile Applications for Vehicle Breakdown Assistance in Urban Areas **IEEE Access by M. A. Naeem (2018)**	This paper compares different mobile apps designed to help drivers in case of breakdowns in urban areas. It evaluates factors like: Ease of use: User interface design, responsiveness, and clarity of instructions. Service availability: Cost and payment options: Subscription fees, service charges. User reviews: Ratings and feedback from real users.

LITERATURE SURVEY

S.NO	TITLE	ANALYSIS
3	A Critical Review of Onboard Diagnostics (OBD) Systems for Predictive Maintenance and Breakdown Prevention **IEEE Transactions on Intelligent Transportation Systems (2017)**	This paper examines the role of OBD systems in detecting potential vehicle problems before they lead to breakdowns. It discusses: Different types of OBD devices and their data acquisition capabilities. Limitations of OBD systems, such as lack of access to certain sensors or inability to diagnose all types of problems. Predictive maintenance algorithms and their effectiveness in identifying potential failures based on OBD data.
4	Fault Detection and Location in Electric Vehicles Using Data Analytics and Machine Learning **Imaging for Crime Detection and Prevention (ICDP 2013)**	This paper focuses on the unique challenges of diagnosing and predicting breakdowns in electric vehicles (EVs). It explores how data analytics and machine learning algorithms can be used to analyze data from various EV sensors, including battery, motor, and power electronics, to detect potential faults and predict impending breakdowns. T Fault detection algorithms: Identifying anomalous behavior in sensor data that could indicate a developing problem. Predictive maintenance models: Forecasting future failures based on historical data and real-time sensor readings.

LITERATURE SURVEY

S.NO	TITLE	ANALYSIS
5	Multi-Agent Reinforcement Learning for Dynamic Dispatching of Roadside Assistance Vehicles **IEEE Trans. Intell. Transp (2022)**	This paper tackles the challenge of optimizing the dispatch of roadside assistance vehicles in real-time. It proposes a multi-agent reinforcement learning (MARL) algorithm that considers various factors such as: Location of breakdowns. Available resources (tow trucks, mechanics). Traffic conditions. Priority criteria (severity of breakdown, type of vehicle). The MARL agents learn through trial and error, adapting their dispatch decisions based on feedback from the environment. This approach aims to reduce response times, maximize resource utilization, and improve overall efficiency of roadside assistance services.

EXISTING SYSTEM

On Road Vehicle Breakdown Assistance system Project can search for list of mechanic at any location or the nearby locations which will help them in an unexpected situations raised by the mechanical issues of their vehicles. Only the Trusted mechanics can get listed here while the search. Road assistance for car . And there are available mechanic who can come and repair the mechanical issues in the users vehicle.

There are Two Modules , Admin , Users:

User Module:

Register – User has to register their basic details to get access with this application service.

Login – Once they have registered they need to login to avail the service at the needy time.

View Details – Logging in with the application will provide you the lists of mechanics that have the approval of the application.

Search records & call – So that the users can search the mechanic among the list according to their place and time.

Post feedback – After all the process every user has to give their feedback with this application to about their adopted service through this medium.

Admin Module:

Customers : - View All Customers and Delete, Edit .

Mechanics:- View All Mechanics and Delete, Edit .

View All Feedbacks.

PROPOSED SYSTEM

In Existing system there are only two modules User and Admin modules. it makes the flexibility of the data of Machanics the admin need to gather the information of the machanics in the location and save the data in makes the process more complex.To reduce this complexity of the process another module for Mechanic is created.It reduce the complexity of the Data collection.The mechanics themselves can add their data in the application.

Mechanic Module:

Register – At first every mechanic has to register their details with the admin for getting approval.

Login – Registered mechanics can login their accounts if they got their approval from the admin.

Post details – Here mechanics have to post their details like name, location, services available, etc.

View feedback – Using the feedbacks provided by the users/customers of the service mechanics have to maintain or improve their service.

TECHNOLOGY STACK USED

Front End

- Html
- Css
- Java Script

Back End

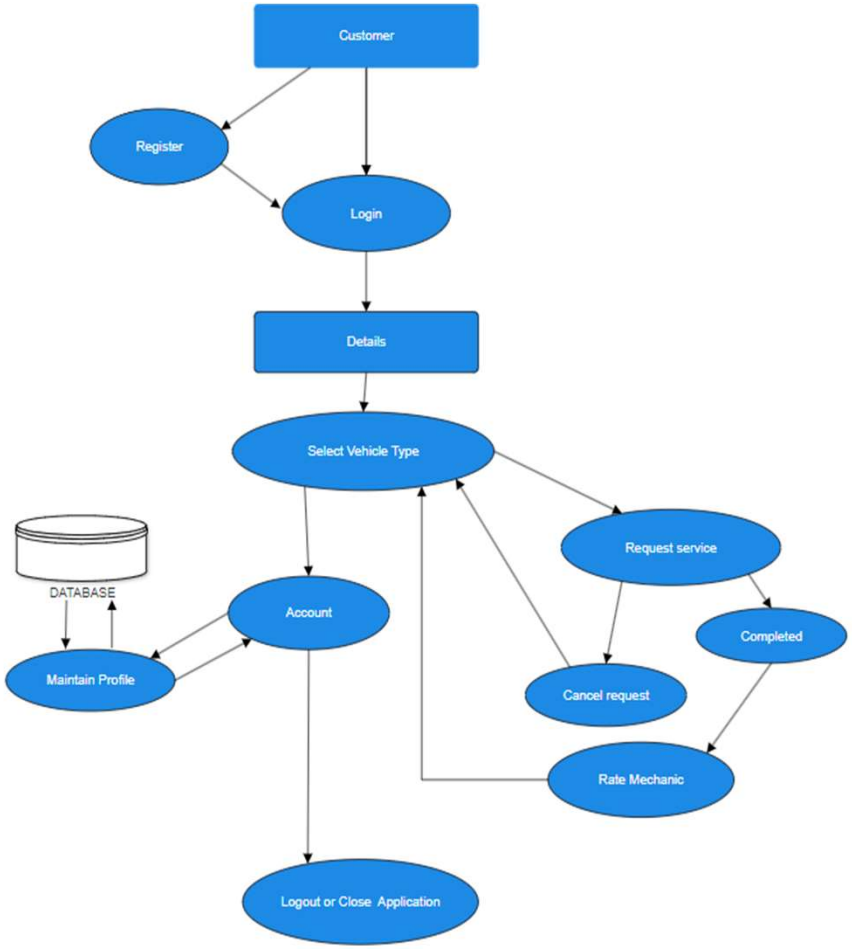
- PHP
- MySQL

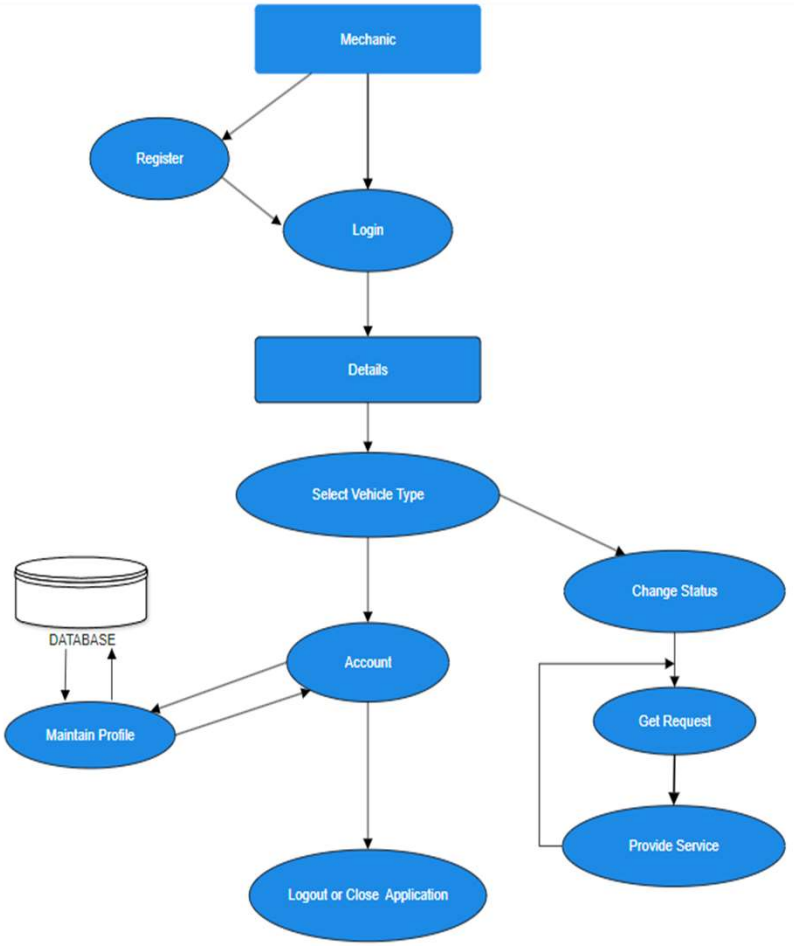
Software Requirement

- WAMP Server
- XAMPP Server
- MAMP Server
- LAMP Server

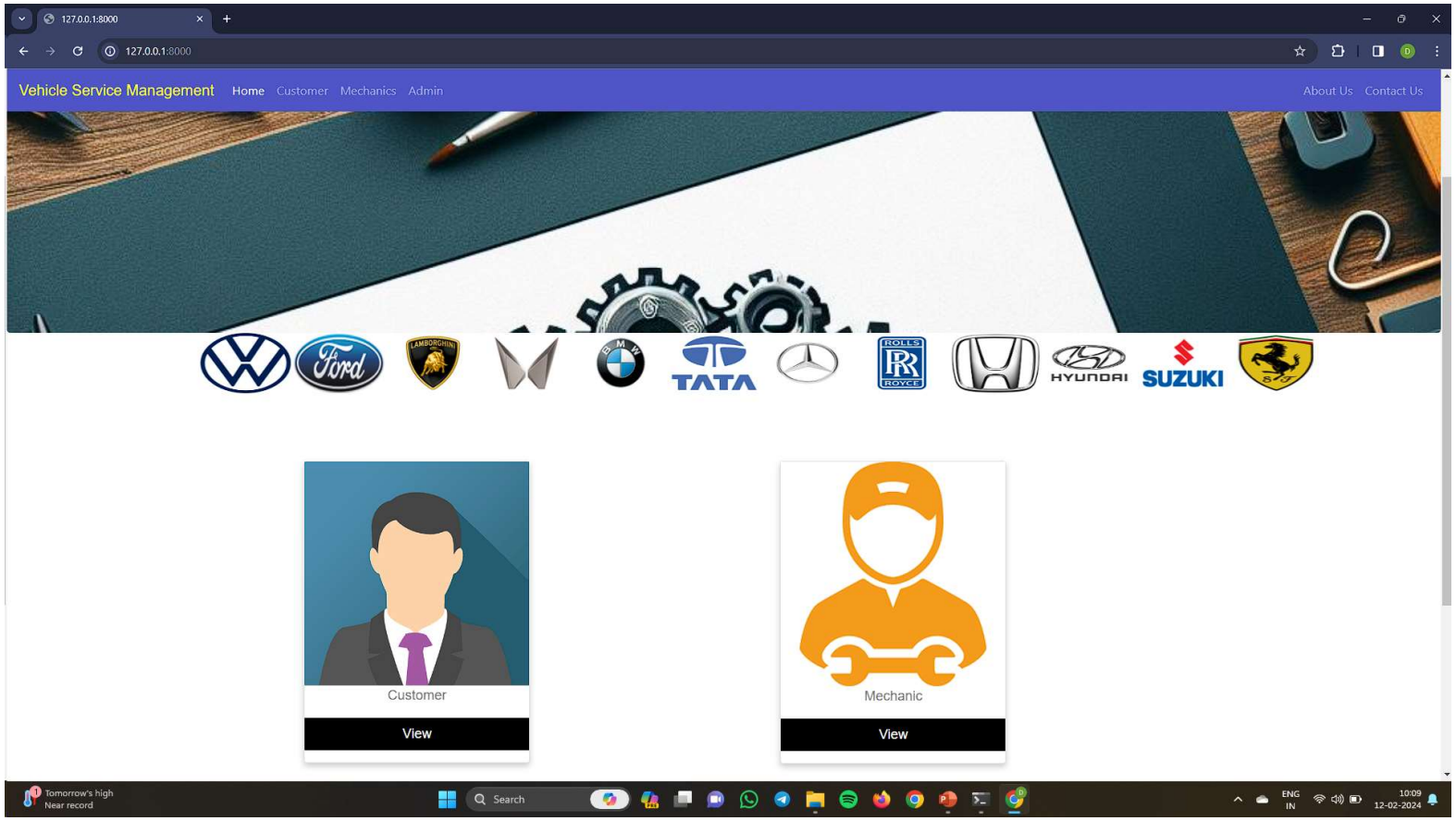
BLOCK DIAGRAM

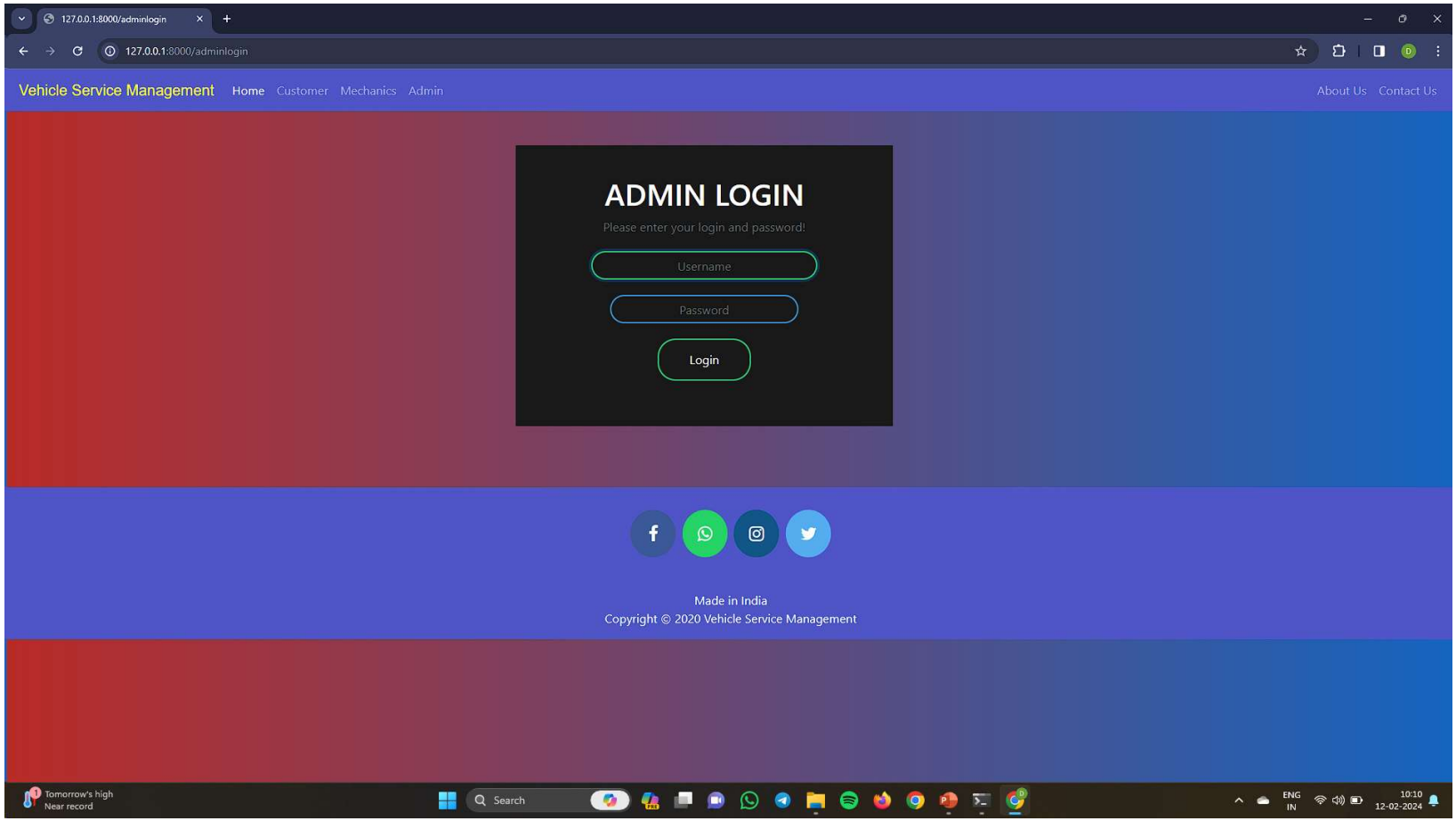
BLOCK DIAGRAM





MODULE-1 (FRONTEND)

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Mechanics
Admin
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Contact Us
ADMIN LOGIN
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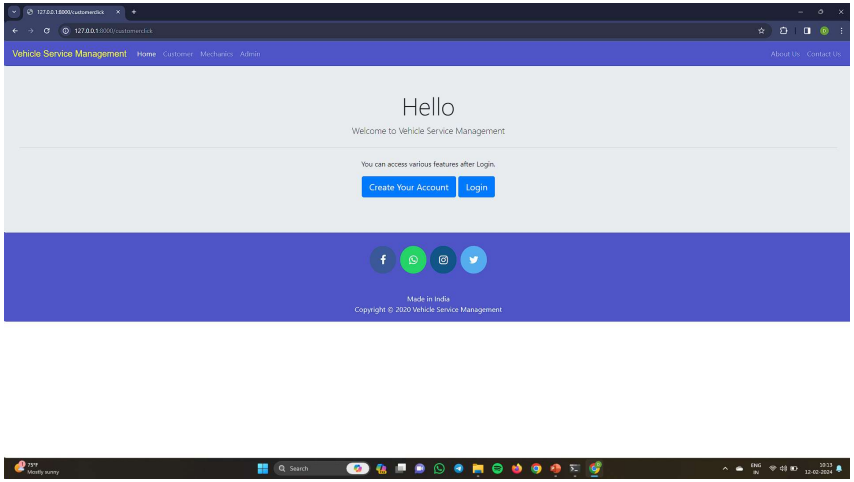
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Login
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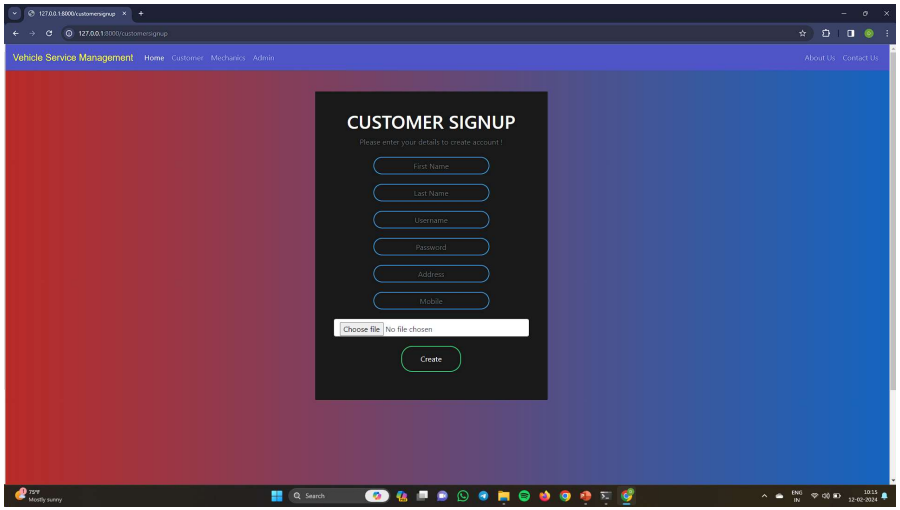
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CUSTOMER SIGNUP
Please enter your details to create account !
First Name
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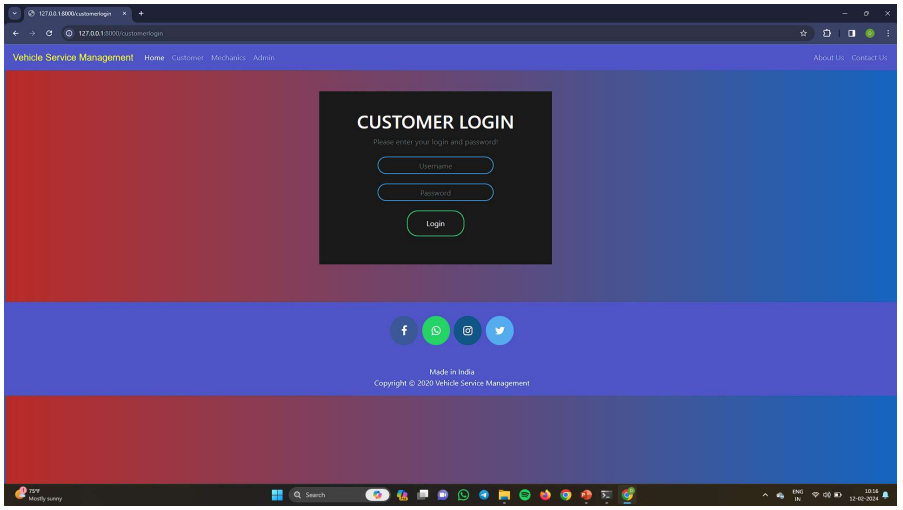
Choose file
No file chosen
Create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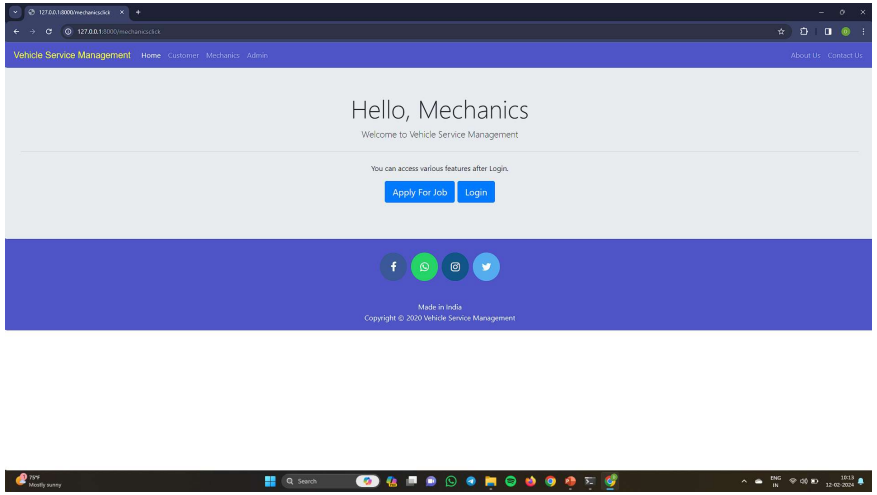
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Hello, Mechanics
Welcome to Vehicle Service Management
You can access various features after Login.
Apply For Job
Login
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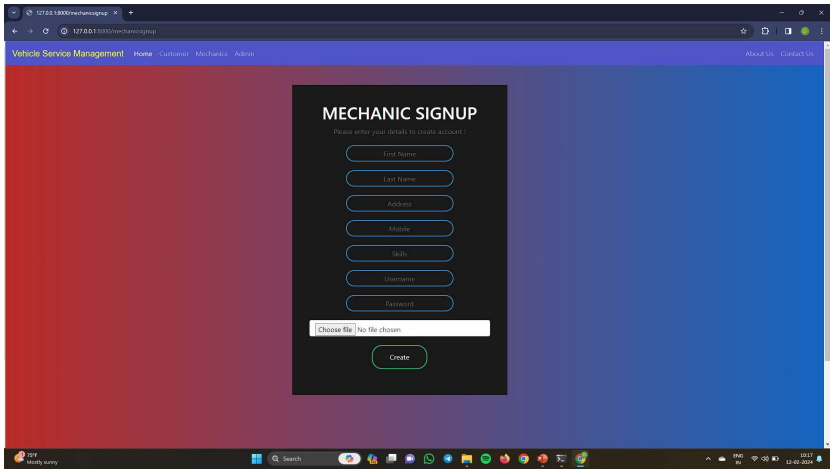
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MECHANIC SIGNUP
First Name
Last Name
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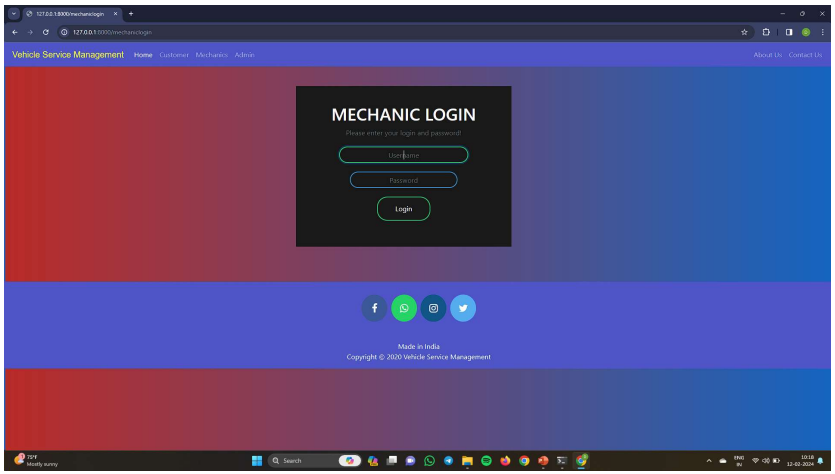
Mobile
Skills
Username
Password
Choose file
No file chosen
Create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SOURCE CODE

Manage.py

```
#!/usr/bin/env python
"""Django's command-line utility for administrative tasks."""
import os
import sys


def main():
    os.environ.setdefault('DJANGO_SETTINGS_MODULE', 'vehicleservicemanagement.settings')
    try:
        from django.core.management import execute_from_command_line
    except ImportError as exc:
        raise ImportError(
            "Couldn't import Django. Are you sure it's installed and "
            "available on your PYTHONPATH environment variable? Did you "
            "forget to activate a virtual environment?"
        ) from exc
    execute_from_command_line(sys.argv)


if __name__ == '__main__':
    main()
```

SOURCE CODE

Models.py

```
from django.db import models
from django.contrib.auth.models import User
# Create your models here.
class Customer(models.Model):
    user=models.OneToOneField(User,on_delete=models.CASCADE)
    profile_pic= models.ImageField(upload_to='profile_pic/CustomerProfilePic/',null=True,blank=True)
    address = models.CharField(max_length=40)
    mobile = models.CharField(max_length=20,null=False)
    @property
    def get_name(self):
        return self.user.first_name+" "+self.user.last_name
    @property
    def get_instance(self):
        return self
    def __str__(self):
        return self.user.first_name

class Mechanic(models.Model):
    user=models.OneToOneField(User,on_delete=models.CASCADE)
    profile_pic= models.ImageField(upload_to='profile_pic/MechanicProfilePic/',null=True,blank=True)
    address = models.CharField(max_length=40)
    mobile = models.CharField(max_length=20,null=False)
    skill = models.CharField(max_length=500,null=True)
    salary=models.PositiveIntegerField(null=True)
    status=models.BooleanField(default=False)
    @property
    def get_name(self):
        return self.user.first_name+" "+self.user.last_name
    @property
    def get_id(self):
        return self.user.id
    def __str__(self):
        return self.user.first_name
```

SOURCE CODE

Models.py

```
class Request(models.Model):
    cat=(('two wheeler with gear','two wheeler with gear'),('two wheeler without gear','two wheeler without gear'),('three wheeler','three wheeler'),
    category=models.CharField(max_length=50,choices=cat)

    vehicle_no=models.PositiveIntegerField(null=False)
    vehicle_name = models.CharField(max_length=40,null=False)
    vehicle_model = models.CharField(max_length=40,null=False)
    vehicle_brand = models.CharField(max_length=40,null=False)

    problem_description = models.CharField(max_length=500,null=False)
    date=models.DateField(auto_now=True)
    cost=models.PositiveIntegerField(null=True)

    customer=models.ForeignKey('Customer', on_delete=models.CASCADE,null=True)
    mechanic=models.ForeignKey('Mechanic',on_delete=models.CASCADE,null=True)

    stat=(('Pending','Pending'),('Approved','Approved'),('Repairing','Repairing'),('Repairing Done','Repairing Done'),('Released','Released'))
    status=models.CharField(max_length=50,choices=stat,default='Pending',null=True)

    def __str__(self):
        return self.problem_description

class Attendance(models.Model):
    mechanic=models.ForeignKey('Mechanic',on_delete=models.CASCADE,null=True)
    date=models.DateField()
    present_status = models.CharField(max_length=10)

class Feedback(models.Model):
    date=models.DateField(auto_now=True)
    by=models.CharField(max_length=40)
    message=models.CharField(max_length=500)
```

CONCLUSION

In conclusion, the On Road Vehicle Breakdown Assistance system and the Vehicle Breakdown Management System (VBMS) are comprehensive solutions designed to streamline and enhance the efficiency of handling vehicle breakdown incidents.

Overall, the On Road Vehicle Breakdown Assistance system and the Vehicle Breakdown Management System represent significant advancements in the field of vehicle breakdown assistance, offering innovative solutions to improve the efficiency and reliability of roadside assistance services.

FUTURE WORK

The future of On Road Vehicle Breakdown Assistance systems and Vehicle Breakdown Management Systems (VBMS) holds exciting possibilities for advancements and improvements. One of the key areas of development is the integration of AI and machine learning. By implementing advanced algorithms, these systems can enhance predictive maintenance capabilities, enabling early detection of potential breakdowns and optimizing resource allocation for faster response times.

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Thank You!