Project documentation on

"Digital traffic case solution BD"

(Online motor vehicle case solution platform)

Course title: Project **Course code: CIS499**

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APPROVAL

This Project titled **"Digital traffic case solution BD"**, Submitted by, S. M. Abeer Bin Bashar Sadi ID No: 191-16-432 to the Department of Computing & Information Systems, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computing & Information Systems and approved as to its style and contents. The presentation has been held on 21-06-2021.

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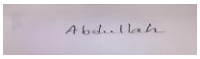

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DECLARATION

I hereby declare that, this project has been done by me under the supervisor **Sarwar Hossain Mollah,** Assistant Professor & Head of the department of CIS of Daffodil International University. It is also declared that neither this project nor any part or other qualifications.

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Acknowledgement:

At first I want to give thanks my **Almighty Allah**. Allah gives me to make prepare this project finally. Then I want to give thanks to all my teachers who are actually trained and helped me from this long journey of by BSc. Hon's course. And for them I was able to develop this project as my best try. Then I want to thanks my course supervisor **Sarwar Hossain Mollah.** Then I want to give thanks my family and friends who always gave support and help me for my study and preparing my project to implementation.

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Dedication:

This is the first final project of my academic purpose. I want to dedicate this thing and all greetings to my respectful father and mother. In my whole life they sacrificed for me, I can't think a single second without them. Absolutely they deserve this respect from me.

Executive Summary

This proposed system is my **academic** project. This application is a website application. It will be **helpful** for the people who uses at least one **private vehicle** as their transportation and this is related on the road that traffic case is a concern against the vehicle. This is a **common issue** or problem. I think my system will help a **vast class of people** among our country.

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Chapter-1- Introduction

A-Initial Description of the total project

B-Document context

A-Initial Description of the total project

People are incredibly depend upon the technology all over the world. Bangladesh has also being with the highest modern technology and they become used to with their smart philosophy. A class of people can use Navigation to find the best path to reduce traffic jam. In my project I tried to solve some problems of our country perspective. That is the online vehicle case management system. I tried to solve some vehicle traffic case related problems and hesitations of general owner of the vehicles. In my system a **user** will able to see his vehicle document as information and also see the **Traffic case information is there is any case against the vehicle which is registered on our digital-traffic-case-solution-BD website.** And also try to withdraw the case generated against a specific vehicle.

It will be helpful for the owner and give a clear information of the vehicle. Our traffic case system will upgrade by this system I think.

B-Document context

Chapter-1: Introduction

Here I given short description about my project.

Chapter-2: Initial study

Here I will describe the main theme about my propose system. Here mainly focus on prospective area of my project.

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Chapter-3: Literature review

Here I gave the solution of problems and solved by my system.

Chapter-4: Methodology

Here I discuss about chosen methodology which I used and why, methodology implementation and sections.

Chapter-5: Planning

Here discussed about project planning phase project management, security, risk and quality management.

Chapter-6: Feasibility study

Here I discussed about all the economical, operational, technical, cost benefit analysis and social feasibility.

Chapter-7: Foundation

Here discussed about the system process and problem area of my system requirements problem solution of this system.

Chapter-8: Exploration

Here discussed about my system boundaries, system requirements, system prototype and some system diagram.

Chapter-9: Engineering

Here given some system diagram of this system like class diagram, use case, sequence diagram and engineering describe the new system.

Chapter-10: Deployment

Here describe about my system development with necessary development steps of system.

Chapter-11: Testing

Here described my system testing including black box testing, white box testing, integration testing and also unit testing.

Chapter-12: Implementation

Here I will describe the how I have done implementation.

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Chapter-13: Evaluation

Described about evaluation of this project.

Chapter-14: Lesson learned

Described my learning description from this project.

Chapter-16: Conclusion

Here given summary of the project, goal, and main focus.

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Chapter-2: Initial study

- Project proposal
- Goal of the project
- Research about project
- Problem area
- Possible solution

** Project Proposal:

Discussion about the project: In this project I concerned about the **traffic system** in our country. Most of our **vehicle** get **traffic cases** every day for their faults and occurrence's like Drive without driving license, without insurance, over expiration date of vehicle papers, wrong side driving, without helmets and also so many faults. But the system is too much manual in this digital Bangladesh. Sometimes owners are get confused about the cases and paper based system is boring like taking care of case slip. In can be easy by our system. Online based and cloud data can reduce human efforts and also clarify all of this problems. Paper can be lost anytime. **User** can see all of his vehicle and case data/information throw our **application and track**. They can also show this to the **Traffic sergeants**. And also traffic can see cloud information and also generate a case against a vehicle by this system and user will notify about the case generated unfortunately like parking side of busy road.

I think our system will solve these all of problems and create easy solution of them. They have not need any hardcopy paper with the vehicle.

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** Goals of this project:

- User friendly
- Solving some problems
- Easy to access, this project will be helpful to the literate people of our country.
- Secure all information's.
- Provide Information's.
- People involvement in the web based application.
- Clarification of every vehicle cases and info's.

** Objectives of the project:

In our country there are too many **motor vehicles**. The vehicle have papers also. But there is too much **complexity** with vehicle papers while got a case against the vehicle. I want to reduce the complexity and make easy process to the Traffic case. It will be much easier to handle for a user and clarify the Traffic sergeants to justify the validity and information's of a vehicle. It will save the time and smart way to maintain this system.

** Problem area:

This project is a web based and it's necessary to access internet, because of accessing the cloud data from the specific server. It is a problem that the user and traffic have to buy the internet packages and then they can

Browse our system and get the service by web.

And also guide and instruct the illiterate people to navigate the system.

** Possible Solution:

Our project will be a government related project and government can propose internet **packages in less cost** for help of user and **Traffic both** can access this system.

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Chapter-3: Literature review

** Discussion on problem domain

** Discussion about problem solution

** Recommendation approach

** Discussion of Problem: In our country traffic case is a common system. But it is too much backdated. In this generation should we took our motor vehicles documents with us? Yes we have to do this. Traffic generates cases and seize our documents. Then we have to collect our document from the traffic office or Sundarbans courier office or Sundarbans courier send the document to our home. This process is manual. I think this is a lengthy and old process. This is a problem.

** Discussion about problem solution: We don't think it easily that our traffic system can be online. It can be automatic and also in web control everyone's hand. We don't need any hardcopy vehicle paper carry with us. From cloud we can access BRTA and see our vehicles Information automatically. And also Show to the Traffic sergeants.

** Recommendation approach: I want to recommend about this project should be develop and realistic. It will be time consuming and reduces human efforts. And also the public will easy to use web based programs.

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Chapter-4: Methodology

**What to Use and Why to Use

**Section of Methodology

**User DSDM atern

Following a specific methodology is the standard to develop a project on schedule and budget, by the way clear understanding of the framework. We must follow a software methodology for manufacturing a system. I will discuss the perfect methodology for my planned system in this part.

What Do I Use and Why Should I Use It?

I have used DSDM (Dynamic System Management Method) as part of the agile software technique to develop my planned system.

I prefer this methodology because it has a concern on build a more dynamic structure within a limited budget, limited time, and a constant emphasis on continuous growth.

Main Ideology of DSDM A tern DSDM clarified several suggestions or points of view about how to make a project a success. These are the following:

1) Fix concentration and aim for expected scheme.

2) More concern on early production by continuous grow.

3) To deliver specific task/item of the system use time boxes.

4) During iterative expansion phase of the project, both end user and the tester also consult with stakeholders.

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Suitability of DSDM atern for this Proposed System:

1) Since the proposed system is designed to run an organization and solve some problems. It must be deliver on time and on budget, and its demand must be met. The methodology DSDM focus more on ensuring the actual business requirements which will be come.

2) The demand of this project has outlined by MoSCoW prioritization, and on time delivery for this planned framework is identified by the time boxes.

3) For iterative growth this half is most important. As a result, stakeholders will share their business logic and goals to put them to best use during the execution part of project.

4) Proper handling is essential for such a large project. As the framework between communicate and understanding meets and apply the business logic.

Techniques of DSDM:

There are a lot of techniques are used in DSDM atern. I have provided the description some of them below:

MoSCoW Prioritization:

Must-Have: A projects key objectives are organizes in this section, which must be met in order to achieve and fulfill the proposed target.

Should Have: In this section identify the conditions that's aren't absolutely needed but could improve the proposed framework.

Could Have: Specifications that are not required but may be required in the framework are identifies in this section, and it may help to project's shine.

Won't Have: In this section will be used to describe any frameworks or functions that will not be created for this project or are unrelated to it.

Time Boxing: Deadlines are fixed for each tasks completing and assigning which's identifies time boxes section.

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It also specifies:

For each component it takes the time to implement.

Break down tasks and describe the process's sub-tasks.

Iterative Development:

By using DSDM each stage can be developed iteratively. This perspective of iterative development, we can check the previous stages. The key process and work of iterative production is project task recognition, followed by a manufacturing plan to accomplish these tasks. Consider the work's solution.

Phases of DSDM:

DSDM atern methodology has seven phases those are given below:

DSDM Atern contains 6 phases:

1. Pre-project
2. Feasibility
3. Foundation
4. Evolutionary Development
5. Development
6. Post-Project

Implementation Plan

The main progress will be executed under this area. The entire requirements which had been gathered before from the customers and the business must be remembered during the usage time of the framework. A model can give a minor thought that how the arrangement will be connoted in genuine. This is how the proposed framework can be executed with reasonable documentation.

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Chapter 5- Planning

** Project Plan

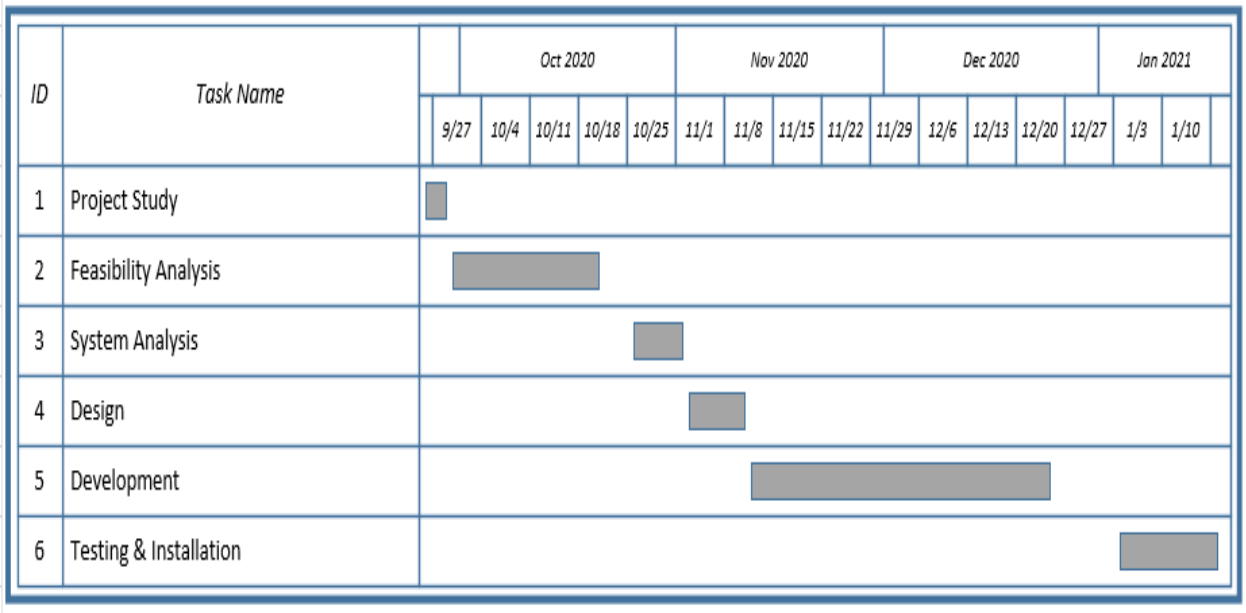
** Test Plan

** Risk Management

Project Plan:

A (WBS) in venture the board and frameworks building, is a deliverable-situated breakdown of an undertaking into little segments. Now I will provide the WBS of this proposed system for my project.

Gantt Chart:



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Work breakdown

Identification of key milestones with dates

Task name	Duration	Start date	End date
Project study	5days	25/09/2020	29/09/2020
Feasibility Analysis			
➢ **Functional feasibility analysis**	2 days	30/09/2020	01/10/2020
➢ **Technical feasibility analysis**	2 days	11/10/2020	12/10/2020
➢ **Market Analysis**	7 days	13/10/2020	19/10/2020
➢ **Economic feasibility analysis**	5 days	20/10/2020	24/10/2020
System Analysis			
➢ **System Requirements Analysis**			
➢ **Functional Requirements Analysis**	3 days	25/10/2020	27/10/2020
➢ **Non-functional Requirements Analysis**	3 days	28/10/2020	30/10/2020
	3 days	31/10/2020	02/11/2020
Design			
➢ **Interface Design**	2 days	03/11/2020	04/11/2020
➢ **System Design**	3 days	05/11/2020	07/11/2020
➢ **Database Design**	2 days	08/11/2020	09/11/2020
➢ **Class diagram**	1 days	10/11/2020	10/11/2020
➢ **Sequence diagram**	1 days	11/11/2020	11/11/2020

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Development			
➢ **Interface Implementation**	7 days	12/11/2020	18/11/2020
➢ **Database Create**	4 days	19/11/2020	22/11/2020
➢ **System Development**	40 days	23/11/2020	02/01/2021
Testing			
➢ **Black box Testing**	03 days	03/01/2021	05/01/2021
➢ **White box Testing**	04 days	06/01/2021	09/01/2021
➢ **Unit Testing**	03 days	10/01/2021	12/01/2021
➢ **Integration Testing**	02 days	13/01/2021	14/01/2021
➢ **Regression Testing**	03 days	15/01/2021	17/01/2021
Installation	02 days	18/01/2021	19/01/2021

Test plan

Testing under timebox testing is the most important part before deliver the client's project.

Required Tests

Unit Testing: Unit testing is a testing where we test's each and every units of our system individually and ensures that these units are working properly. A unit is the tiniest piece of any system product that can be tested. It has one or more information sources and normally a single yield for the first half. A white box test is included.

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Integrate Testing:

In integrate testing the individual components of a unit are checked and works together perfectly or not. The interface of the package between the modules is followed by the most important components.

Module Testing:

In module testing we checked individual subroutines, subprograms, classes, or procedures within a program. This testing can be done in a white box format.

Acceptance Testing:

Acceptance testing is a stage while development process where the system is evaluated to see whether it meets the company requirements and whether it's ready for delivery.

Performance Testing:

Performance testing refers to the critical speed, responsiveness, and soundness of a package program when it is in use.

Security Testing:

Security testing focuses on the system's data or information security.

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Chapter 6

Feasibility study

➢ Economic Feasibility

➢ Operational Feasibility

➢ Technical feasibility

➢ Cost-Benefit analysis

Economic feasibility analysis: The cost-benefit analysis is referred to as economic feasibility analysis. It is the most widely used tool for determining a new system's effectiveness. The technique of economic analysis is to regulate the anticipated gains and savings from a candidate scheme and compare them to costs. If the advantages outweigh the costs, the decision to build and execute the system is taken. Before taking action, an entrepreneur must properly weigh the costs and benefits.

Probable questions raised in economic analysis are:

➢ Is the system financially viable?

➢ Is the cost of maintenance reasonable?

➢ Is it possible to build a regression model that includes the entire owner?

➢ Do the advantages outweigh the disadvantages?

➢ The hardware and construction costs are estimated.

➢ What are the cost advantages that will be realized as a result of the system?

All of the suitable hardware and software I recommended are given below:

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Different tools, such as web-based, mobile apps, and desktop-based applications, may be used to build the proposed framework.

Web-based Application: After deploying a web application to the server every user can access this platform from anywhere. Its data are stored in cloud. Any time it can use and update from anywhere by the account verification.

Mobile Application: The digital traffic case solution will be use in road by the users while they are in their private vehicle. So that a mobile application must be needed to implement.

Desktop Application: For the system we need a desktop application to maintain the server remotely. A remote server is also needed to store data, necessitating the use of a web based solution.

Operational feasibility: Operational feasibility is determined by the amount of people will involve in the system, as well as whether or not the method is used after it has been built and implemented. This feasibility defines the organization's support to the proposed structure. This is the most difficult possibilities to decide about the future. During this part, the system's usability is assessed. I will discuss about some particular advantages in this section, such as user registration, user reviews of the service, and data sharing enabled by the system. While operating a web based framework it saves the time and also train the user how the process actually working with minimal effort. The most critical operations manipulating freely is right of several users, this term ensures by the framework. The consumers of the system can complete their tasks regularly and in efficiently. If the framework correctly provides the information checking validation and done the certain operation, which refers to operational feasibility.

Technical feasibility: Our concern is to implement the system and also with implementation we need to change or add some different technology with existing. We need API calling for accessing different databases. Technical

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feasibility checks that if any new technology is needed for deploying the projected system, the organization and users can maintain these or not. The developed system has concern about the technical data of users for victimization of the system. Our system is technically possible as a result of nowadays victimization sensible phones, tablets even in the laptop is common. Therefore we needn't to train these work, through these devices the system should run easily.

Risk analysis: Risk analysis is too much important for software testing. Defining risks and prioritizing them for review in software testing is the method of system. A danger is risky and it maximize the possibility of an organization's work failure or harm as a result of materialized threats. Aim of risk analysis is to classify all potential threats and then measure their magnitude. Danger is potentially a harmful occurrence. If a danger happens in a computer-based and smartphone-based device it exploits the security flaw. Items with higher risk values tests should be done often and early. Items with lower risk values tests should be done later or not at all. It also could be applied to the flaws. In the **"digital traffic case solution BD"** scheme, the following danger exists:

Risk of	Probability	Impact
Changing laws of Government High-level	50%	
Sales & promotions	50%	Moderate
Moderate Financial Support	55%	Moderate
Moderate Support team level	40%	Low-
Data safety	45%	Moderate

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Chapter 7- Foundation

➢ Overall Requirement List

➢ Technology for implementation

➢ Recommendations

Requirements for Achieving the Goals of the Project There are two kinds of requirements.

1. Functional requirements
2. Non-functional requirements

Functional Requirements:

The Functional Requirements Specification is written in a way that anyone can understand. Readers should be able to understand the method, but no specific technical expertise should be needed.

FR01	Views the Homepage to the user before login.
Description	The system will show the common features of homepage and information's.
Stakeholder	User
Priority	Must Have

FRN-2	Return to the register page and show the register form after clicking on Register.
Description	The system will show the Registration form.
Stakeholder	User
Priority	Must Have
FRN-3	Views the profile page after login and authenticated.

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Description	System will shows all of the information of user into the profile.
Stakeholder	User
Priority	Must Have

FRN-4	Views the vehicle info page by clicking on check vehicle Status.
Description	All of the information of a vehicle will show over the page from BRTA.
Stakeholder	User
Priority	Must Have

FRN-5	Views the vehicle info page by clicking on check vehicle Status.
Description	All of the information of a vehicle will show over the page from BRTA.
Stakeholder	User
Priority	Must Have

FRN-6	Views the case details page by clicking on check case Status.
Description	All of the information of a case slip against the vehicle will show over the page from DMP Traffic.
Stakeholder	User
Priority	Must Have

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FRN-7	Views the Logout button and by click user will logged out from the profile.
Description	Views the Logout button and by click user will logged out from the profile.
Stakeholder	User
Priority	Must Have

Non- functional requirement

Here are a few non-functional specifications that operate in my system:
Performance Requirements:

NFRN-01	Show the home page and will do nothing.
Description	It will just inform user about something.
Stakeholder	User

NFRN-02	Scroll the home page and will do nothing.
Description	It will just inform user about something.
Stakeholder	User

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Technology for implementation

In this section I will describe that what technology is used to develop this system.

What programming language used for build this system?

Choice of programming language:

There are so many programming languages to develop an application.

Such as: • Python • Java • PHP • MYSQL • BOOTSTRAP • JAVASCRIPT • C# etc.

So, here I used the programming language Python for making the

“Digital traffic case solution BD” system.

Python is easy and beautiful powerful tool for building effective system products. In here I have also used a framework of python named Django. Which is actually amazing, it has many features including MVT, DTL and also ORM concept for database. By the language python many complex problems can be solved in a few times. Python is an easy understandable language to me. For building the system, i think this technology helped me a lot.

Recommendation:

After the implementation people will be helpful too much.

When I tried to develop this system it was too much complicated, then it has become easier and I have developed this small system.

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SWOT analysis:

SWOT analysis factors analyze every pros and con of a project. As like-

(S)-Strength: The **digital traffic case solution BD** will focuses on the vast users of motor vehicle. It will reduce harassment and human efforts.

(W)-Weakness: It is a very large project. Its maintenance is too much expensive.

(**O)-Opportunities:** It is the first idea in Bangladesh. Nothing has implemented yet. If it can be implemented Government and people can be beneficial.

(T)- Threats: Valuable information can be stolen by others if the security couldn't be ensured.

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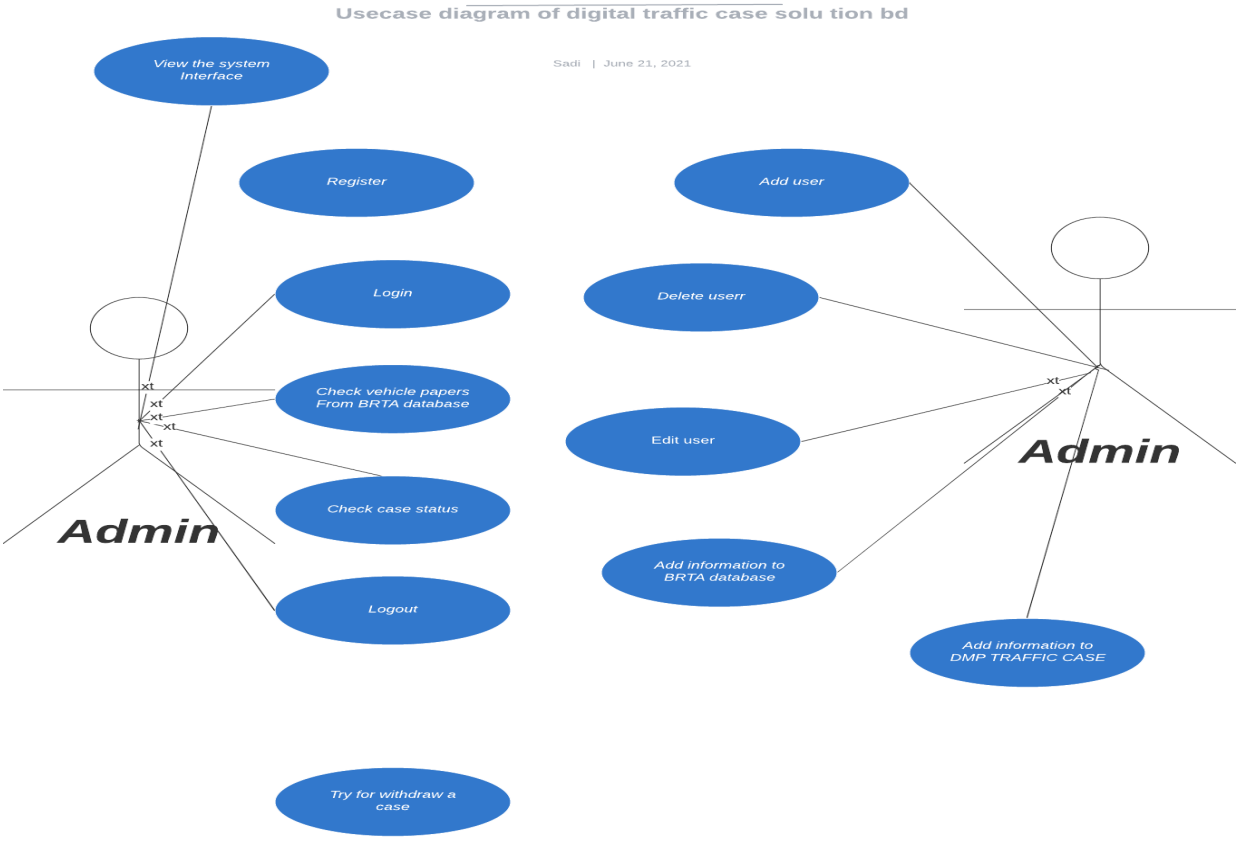
Chapter 8 – Exploration

- ➢ Old Full System Use Case
- ➢ Old Full System Activity Diagram
- ➢ Prioritize Requirement List (PRL)
- ➢ the prototype of the new system

Old Full System Use Case



Picture: Old full system use case diagram

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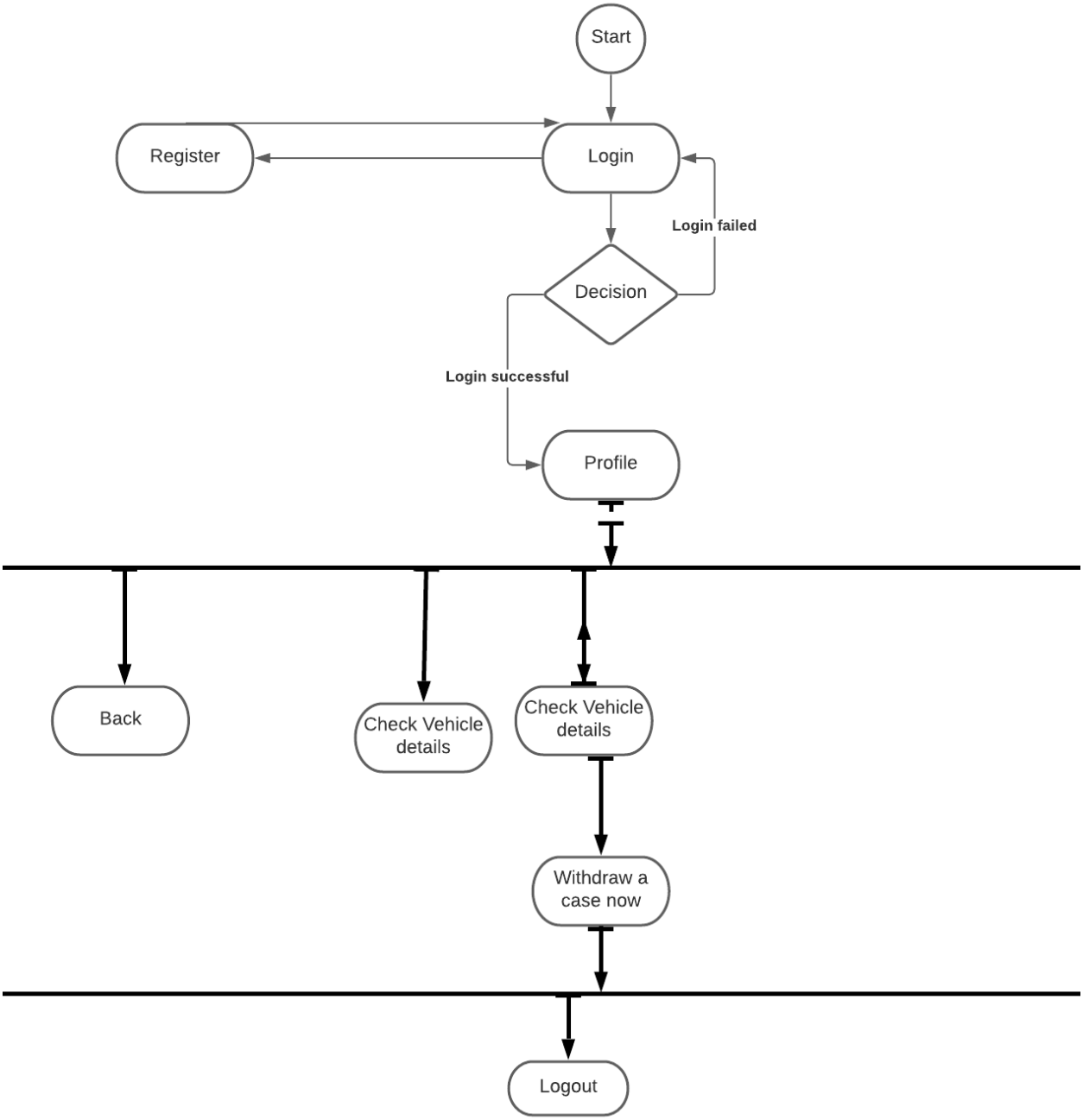
Old Full System Activity Diagram



Picture: Activity diagram of digital traffic case solution BD

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Requirement Prioritization

Requirement ID	Important	Urgent	Priority
FRN-01	Yes	Yes	High
FRN-02	Yes	Yes	High
FRN-03	Yes	Yes	High
FRN-04	Yes	Yes	High
FRN-05	Yes	Yes	High

The prototype of the new system:

The prototype is a process of how a system work step by step by the user or customer. Now, I will show that the prototype design of this system is bellowed:

Our Login form

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Registration

Profile of the new system

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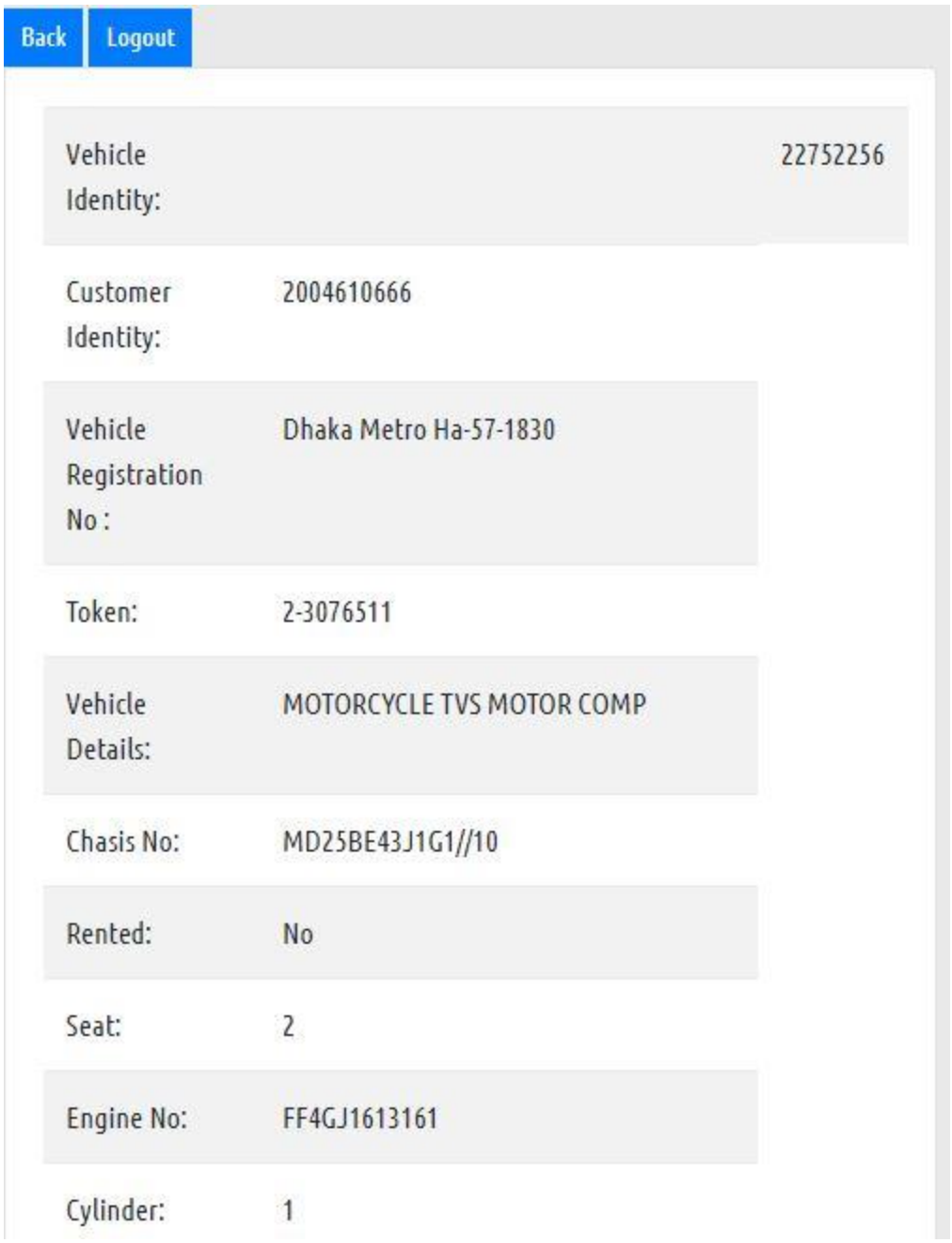

Vehicle Identity

© Daffodil International University

CC:	125
Weight of empty vehicle:	115
Color:	BLACK/BLUE
Weight of filled vehicle:	215
Tyre quantity:	2
Tyre size:	90/90-12
Measurements:	N/A
Overhang:	N/A
Type of ownership:	PRIVATE
Name of owner:	S. M. ABUL BASHAR
Father's or spouse name:	ABUL HASHEM SORDER

Vehicle Info from **BRTA** database

Which is my created database

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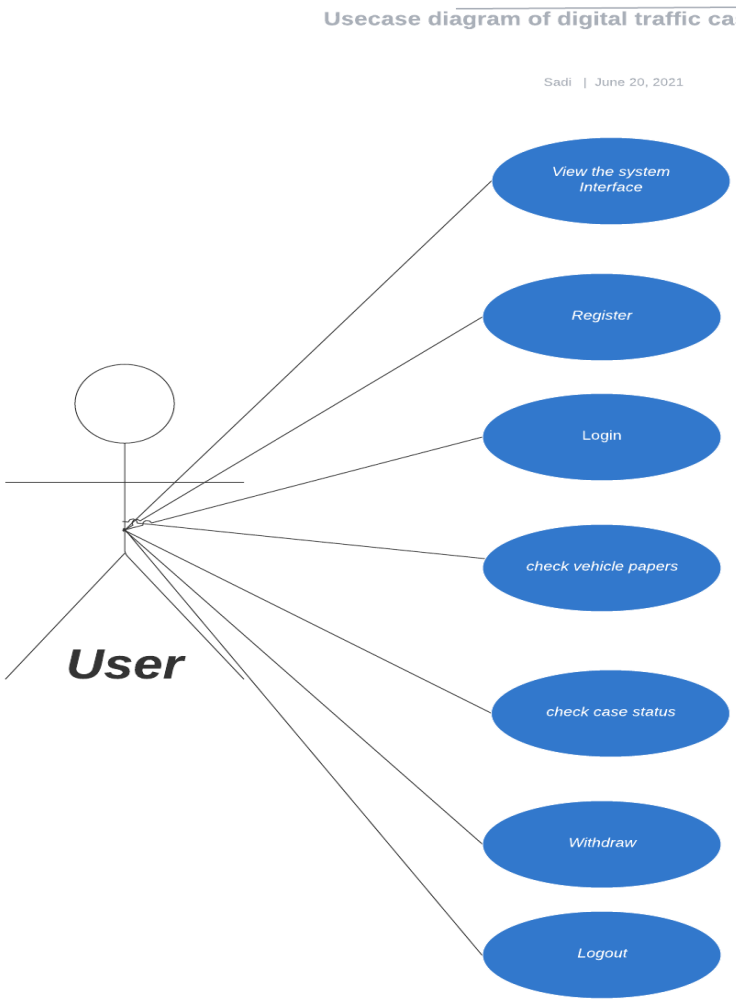
Chapter 9 – Engineering

Use Case diagram (User)



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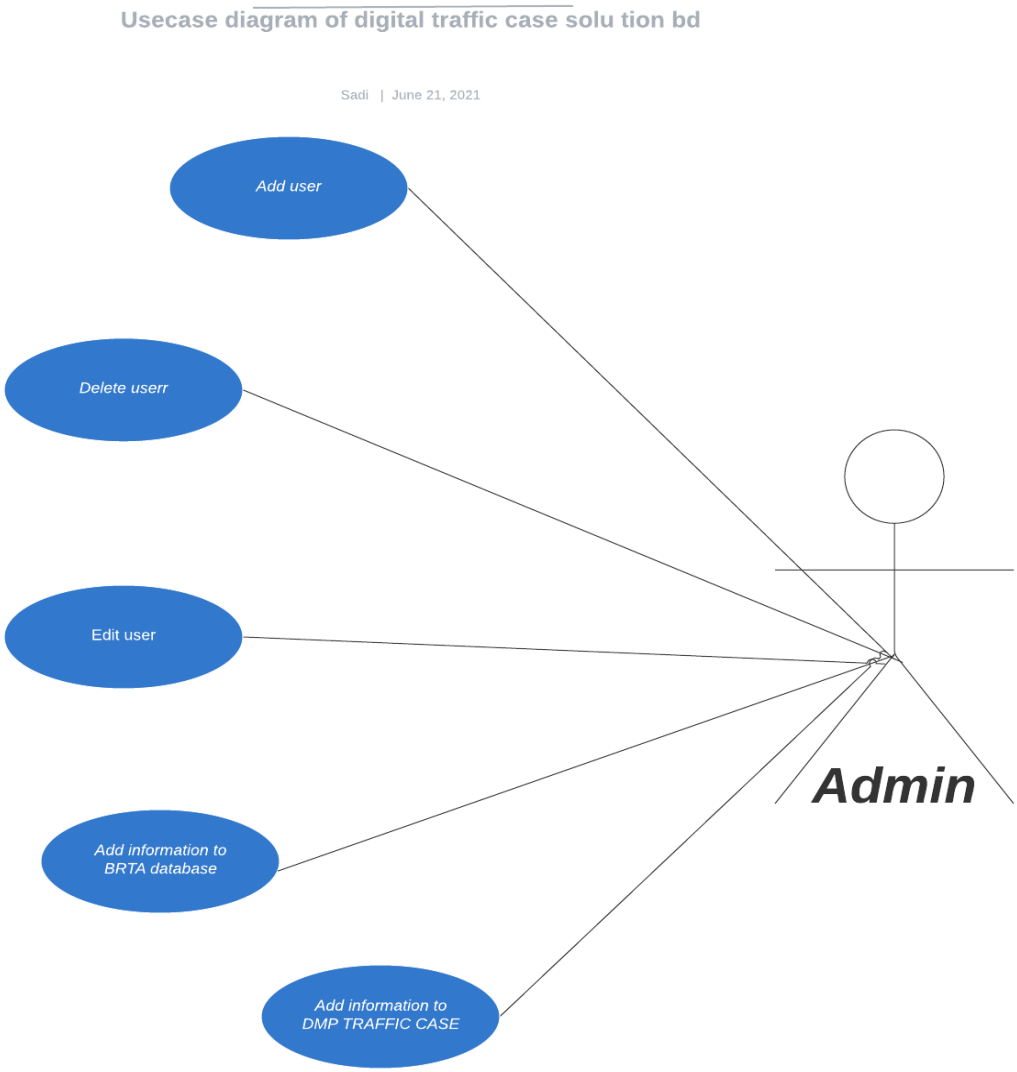
Use case Diagram (Django Admin panel)



Admin panel use case diagram

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Use case description:

UC01	View the interface.
Primary actor:	Admin
Secondary actor:	User
Pre-condition:	User must be go to the website address
Dependency:	address
Basic flow of events:	go to the website
Alternative flow and events:	go to the website
Post condition:	N/A

UC02	View Register page with form.
Primary actor:	Admin
Secondary actor:	User
Pre-condition:	User must be go to the website address
Dependency:	address
Basic flow of events:	go to the website and press on register
Alternative flow and events:	go to the website / register
Post condition:	Go to the website.

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UC03	View the login interface.
Primary actor:	Admin
Secondary actor:	User
Pre-condition:	User must have to register first.
Dependency:	Registration.
Basic flow of events:	go to register and complete registration
Alternative flow and events:	go to the website and complete registration
Post condition:	N/A

UC04	Check vehicle papers from BRTA database.
Primary actor:	Admin
Secondary actor:	User
Pre-condition:	User must have to login first.
Dependency:	Registration & BRTA database.
Basic flow of events:	Input username and password to complete login
Alternative flow and events:	Input username and password to complete login
Post condition:	Press the button named check vehicle papers

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UC05	Check case status from DMP Traffic database.
Primary actor:	Admin
Secondary actor:	User
Pre-condition:	User must have to login first.
Dependency:	Registration & DMP Traffic database.
Basic flow of events:	Input username and password to complete login
Alternative flow and events:	Input username and password to complete login
Post condition:	Press the button named check case status

UC06	Withdraw a case
Primary actor:	Admin
Secondary actor:	User
Pre-condition:	User must have to login first.
Dependency:	N/A
Basic flow of events:	Press Withdraw a case button
Alternative flow and events:	Press Withdraw a case button
Post condition:	Press the button named withdraw

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UC07	logout
Primary actor:	Admin
Secondary actor:	User
Pre-condition:	User must have to login first.
Dependency:	N/A
Basic flow of events:	Press logout button
Alternative flow and events:	Press logout button
Post condition:	Press the button named logout

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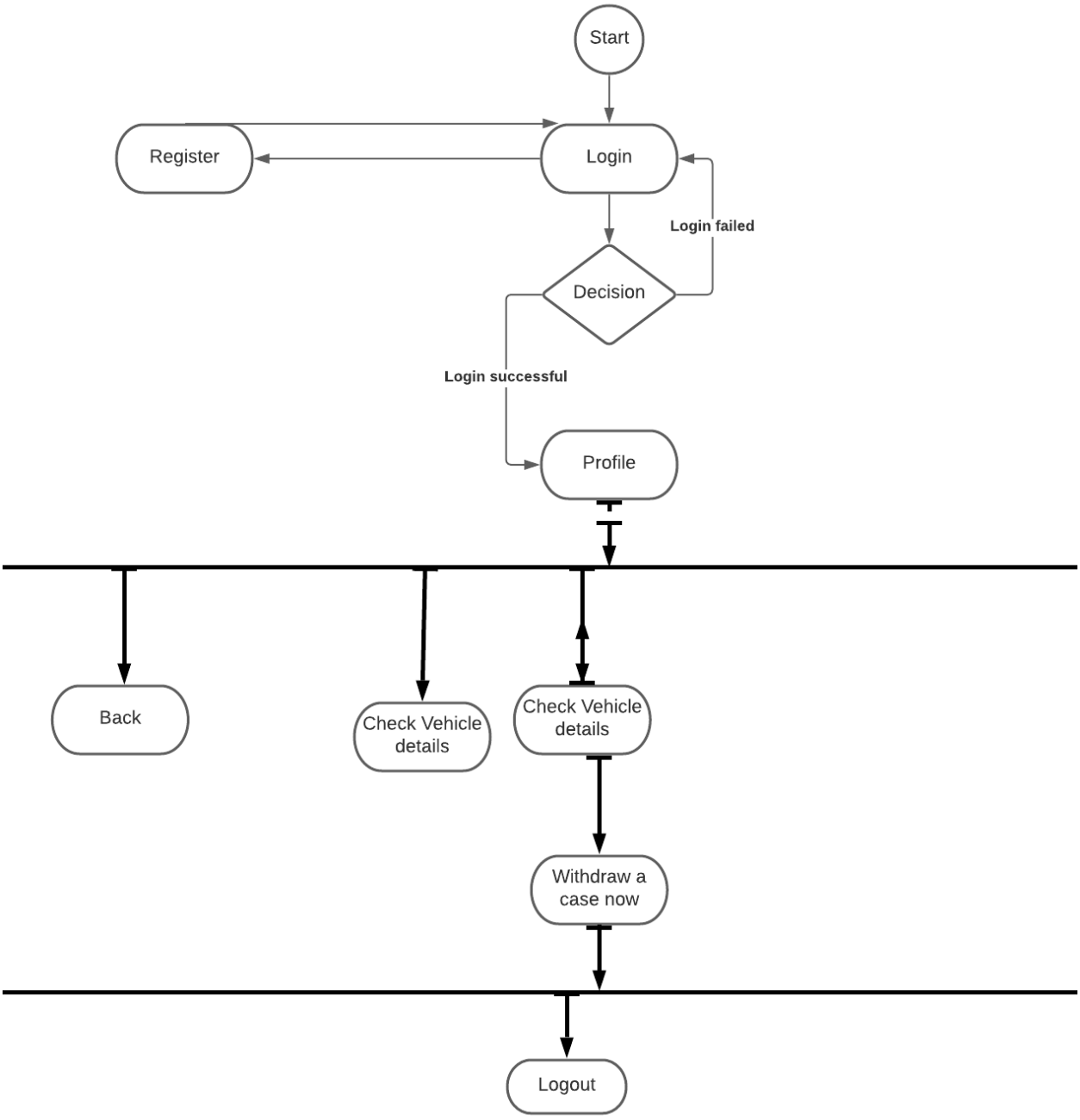
Activity diagram



Activity diagram of digital traffic case solution BD for user.

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Class diagram

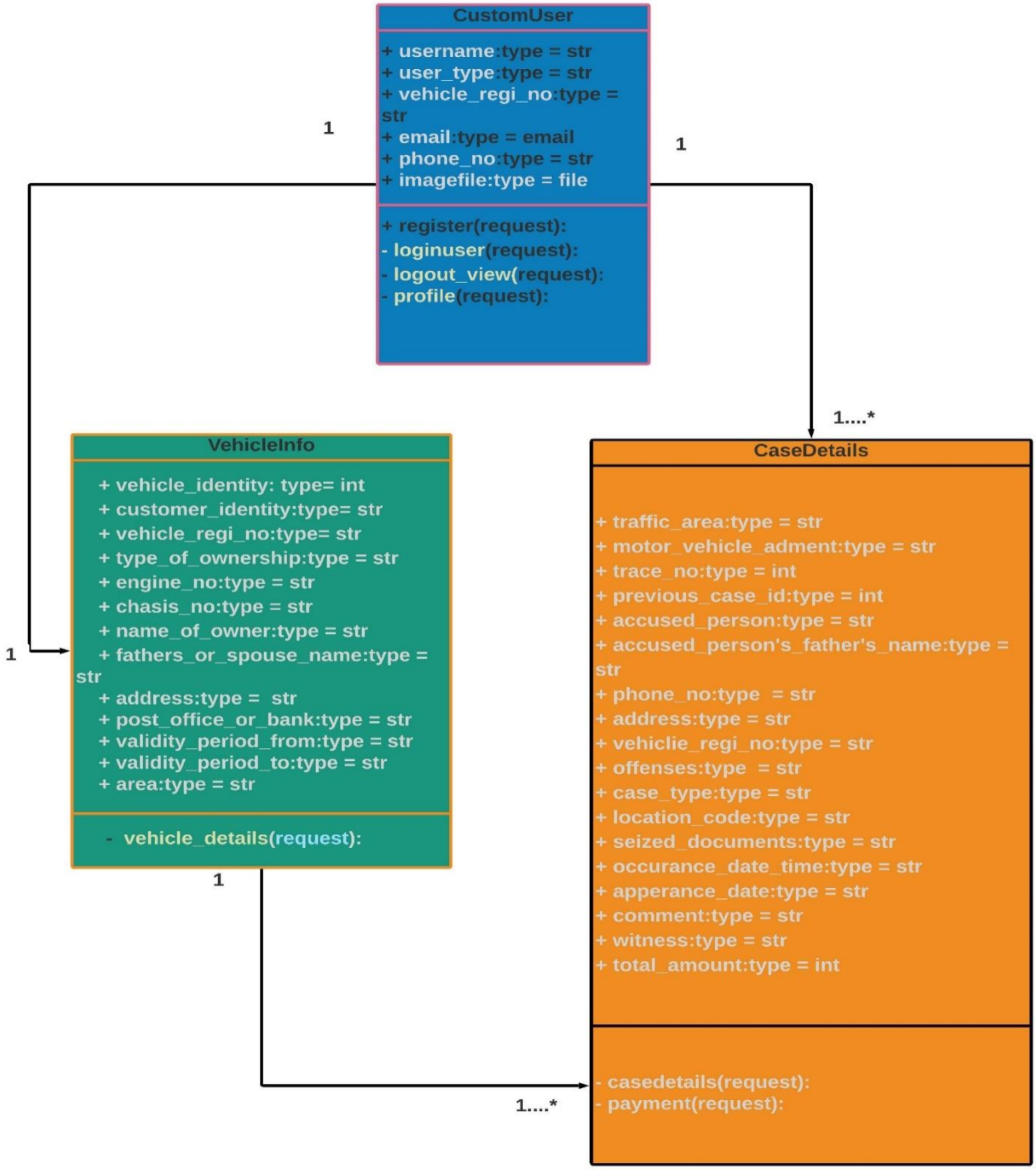

Figure: Class diagram for the system

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Data flow diagram

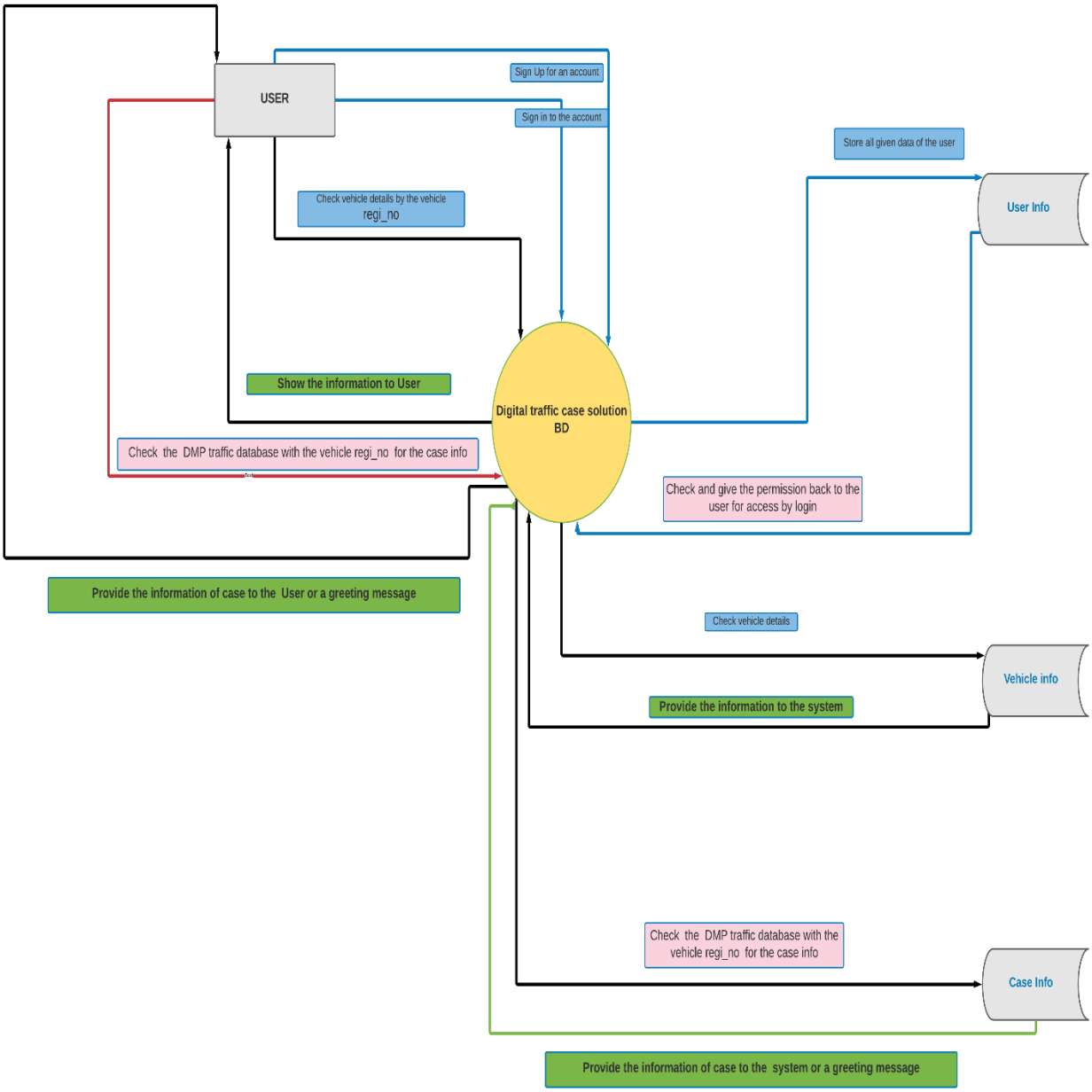

Figure Context Diagram: 0 level DFD

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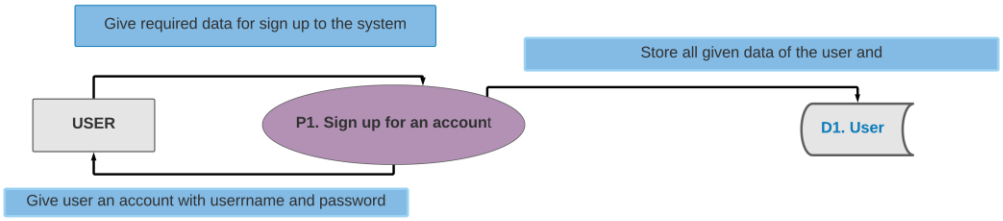

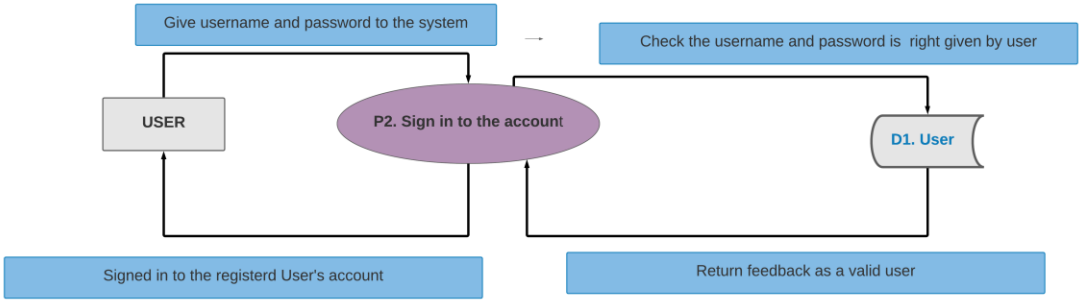

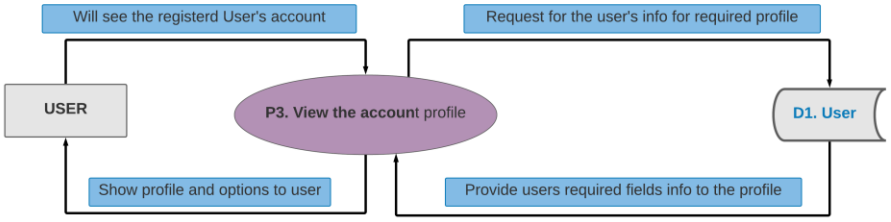

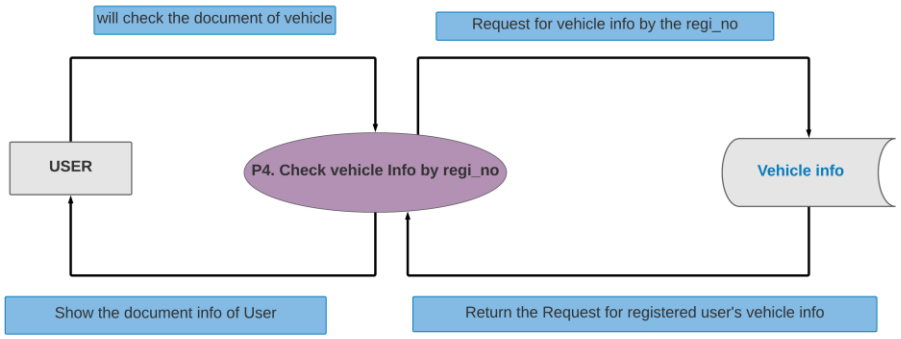

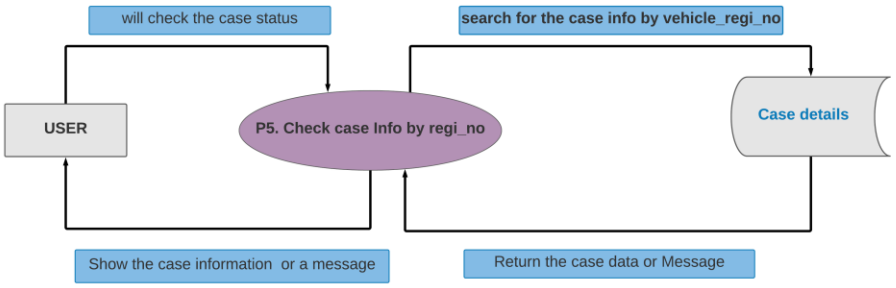

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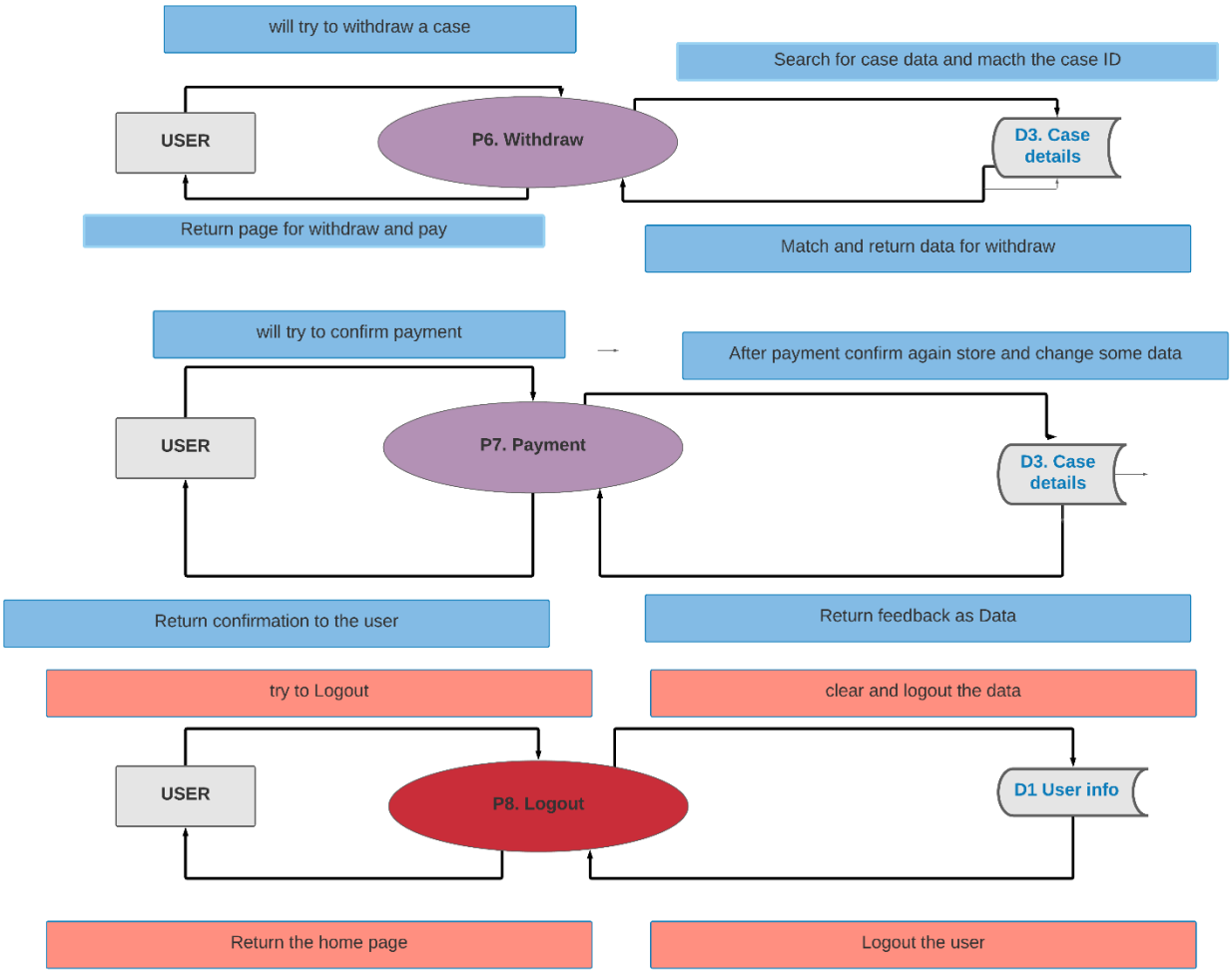

Figure: Level 1 Data flow diagram for the system

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Interface Design

Interface design is a process that how system works step by step. Below I will show the design of interface of this system,

User login

Figure: User login

User register

Figure: User Registration form

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User profile

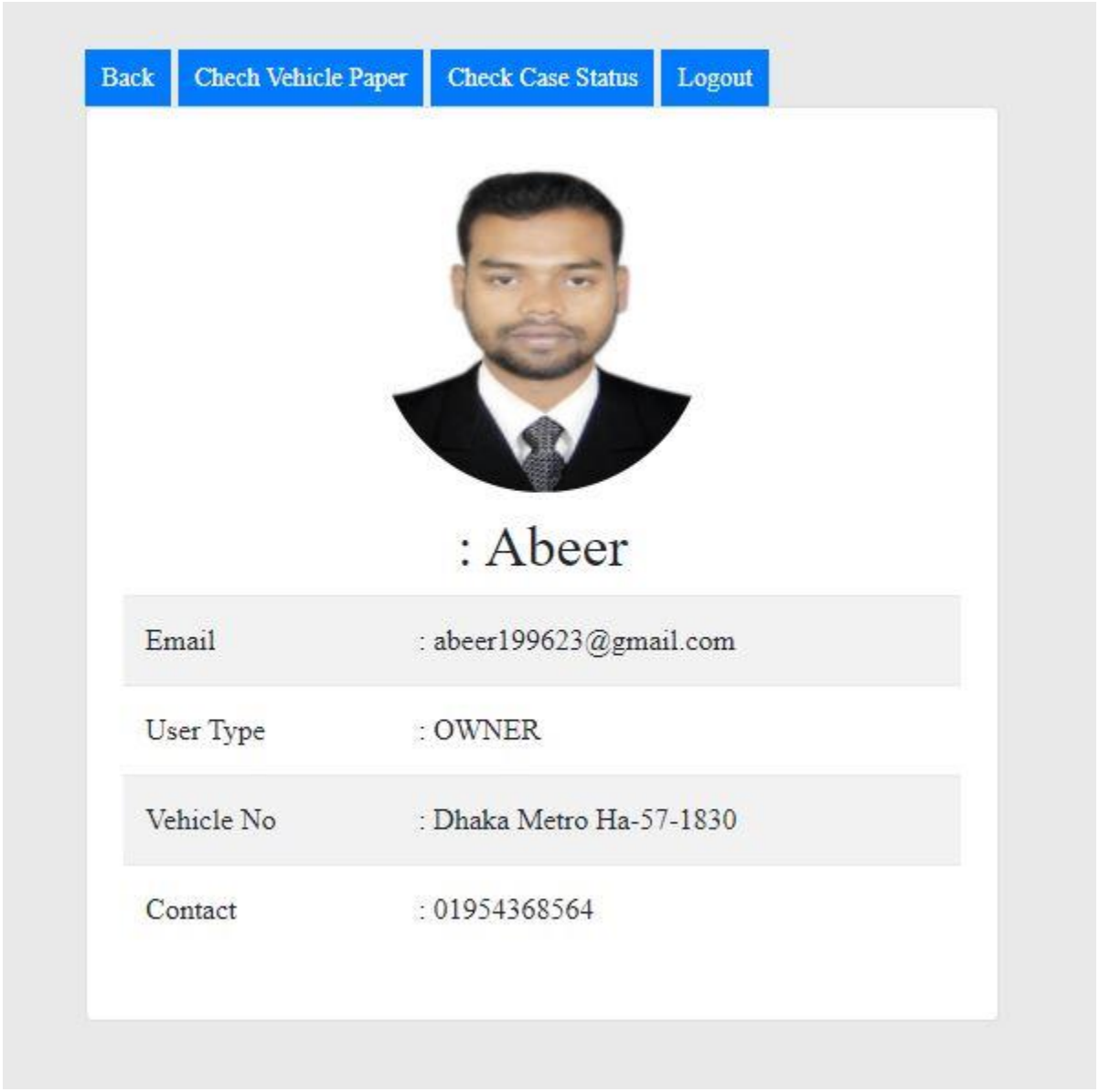

Figure: User profile

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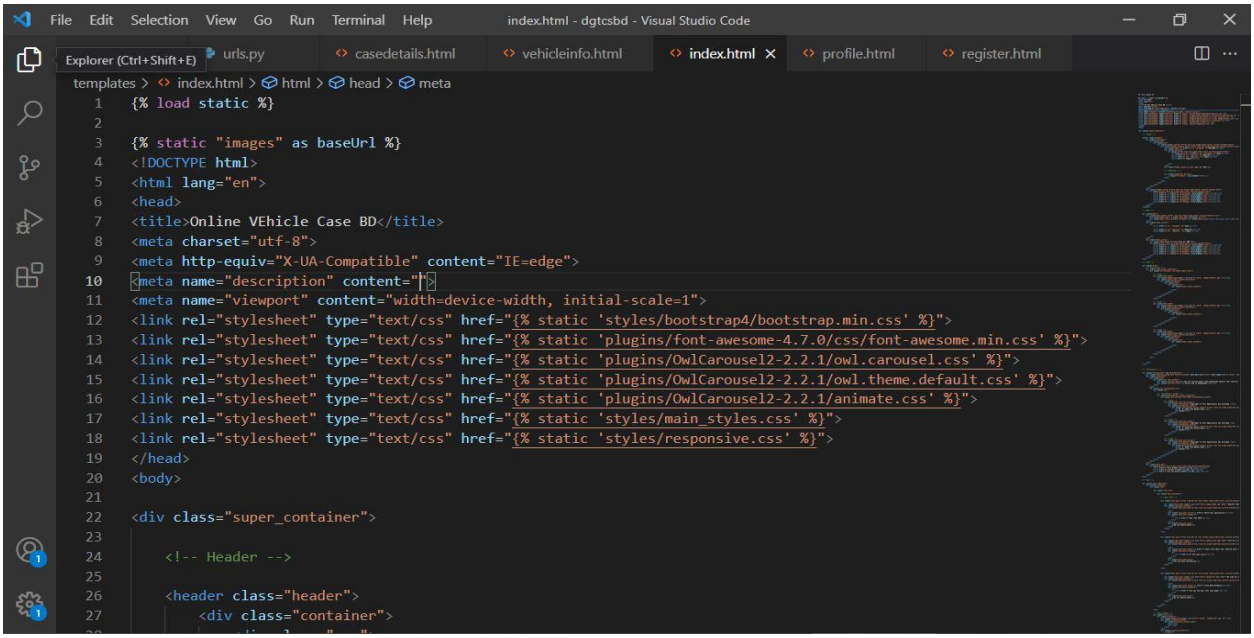
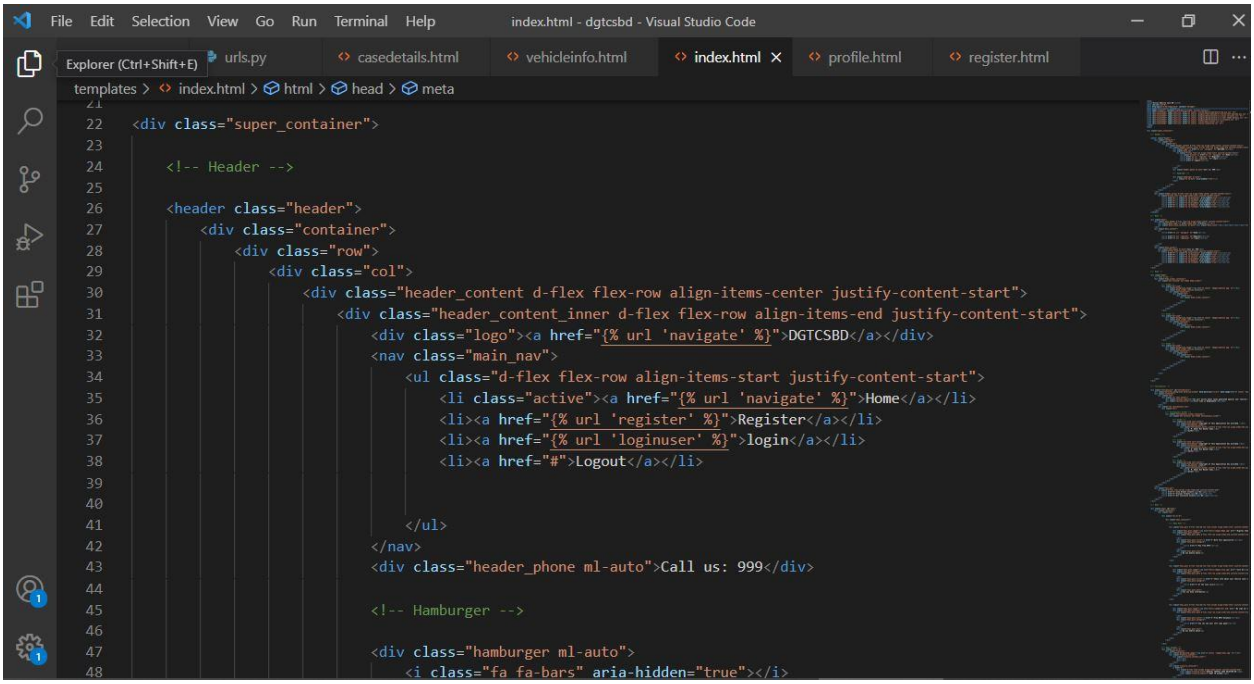
Chapter 10 – Development

Code Module Coding Samples

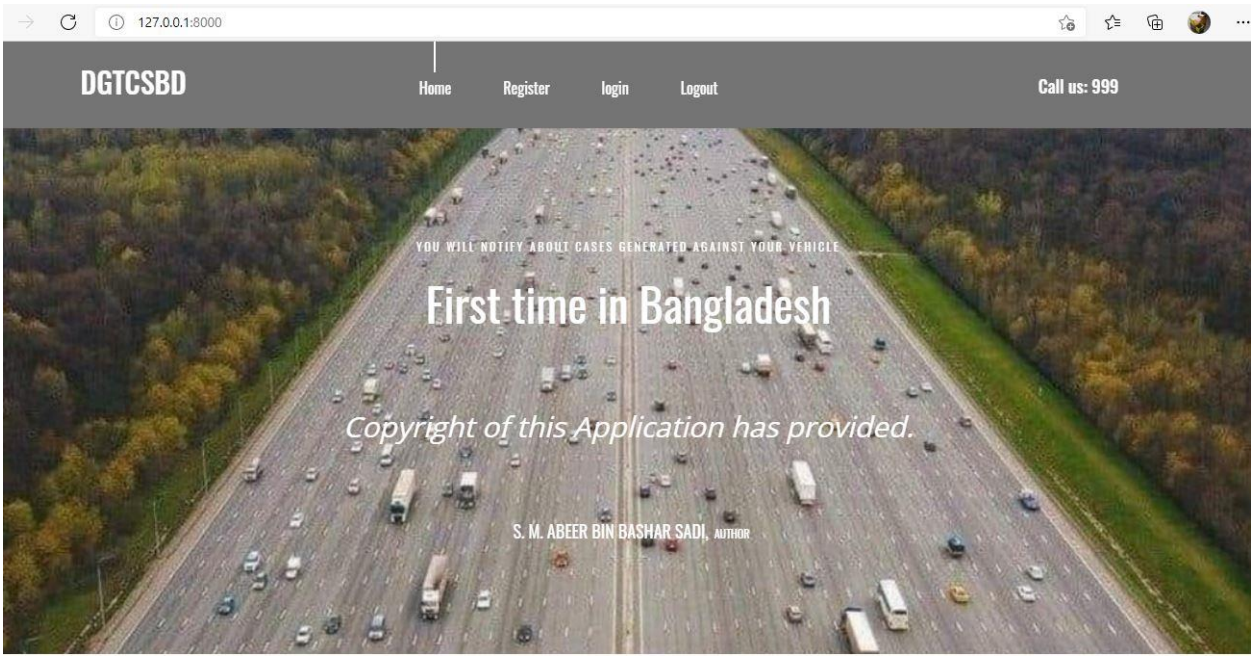
Code for this page:



© Daffodil International University



This is the index.html file of this system



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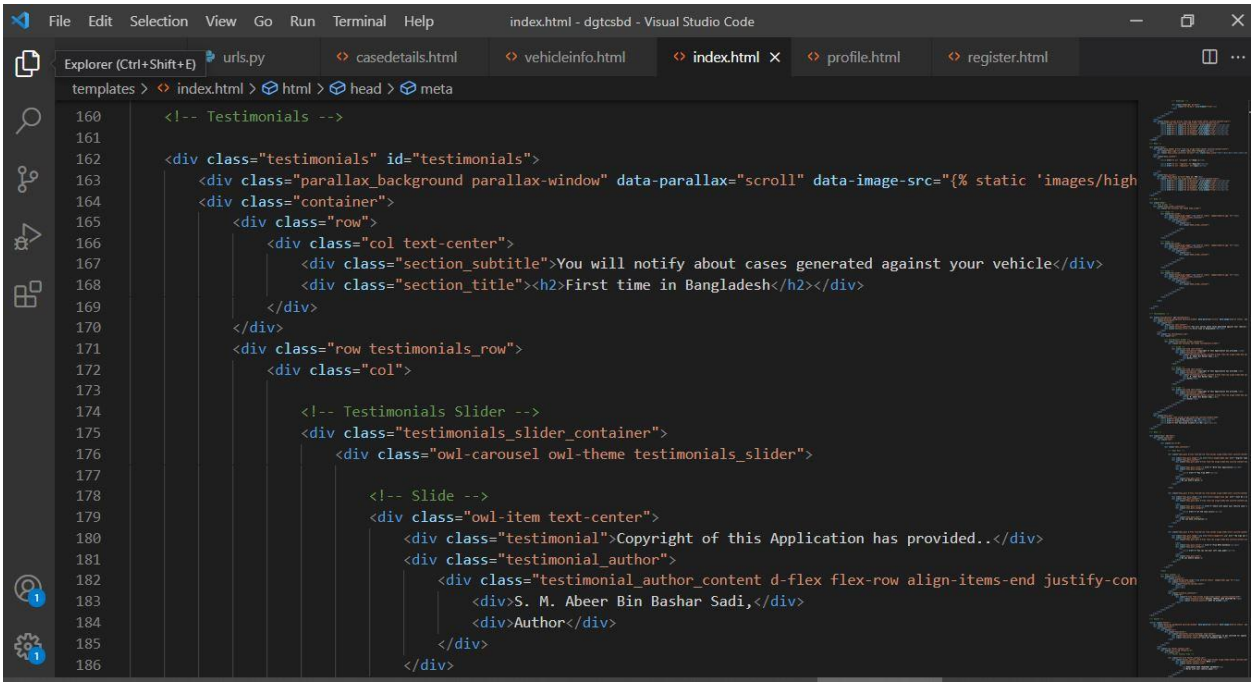
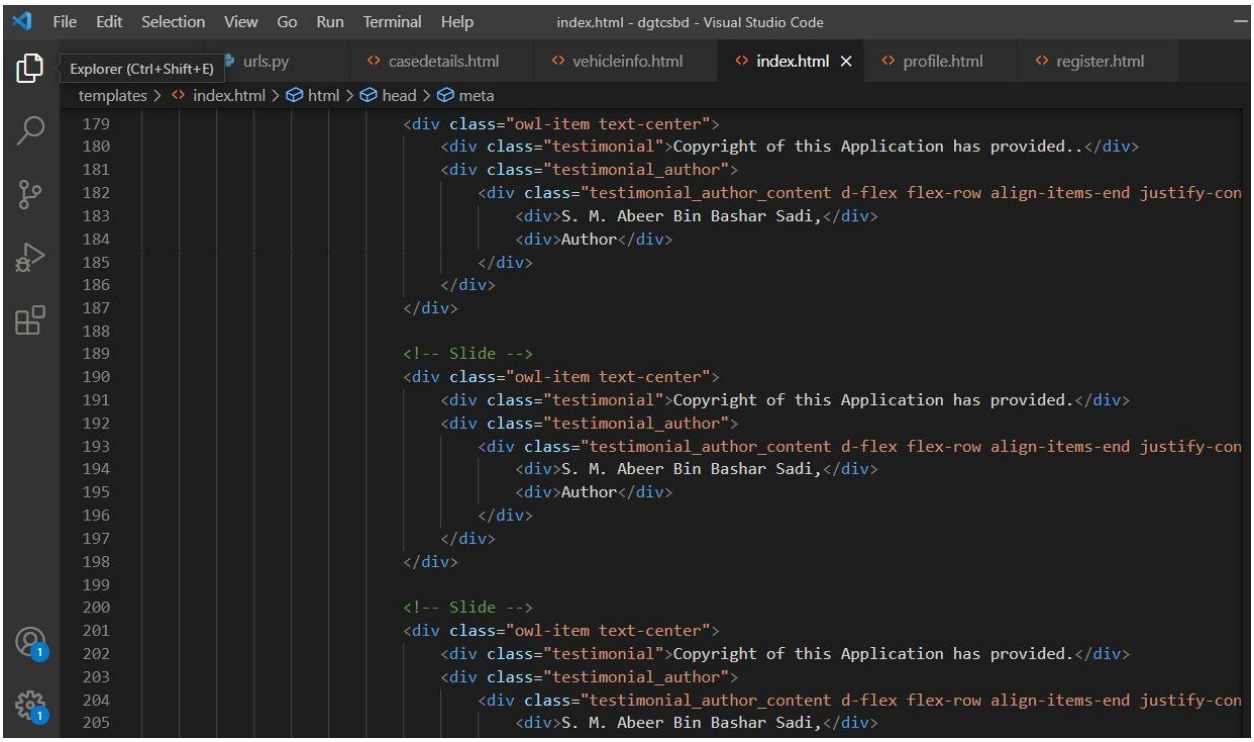
Code for this page:





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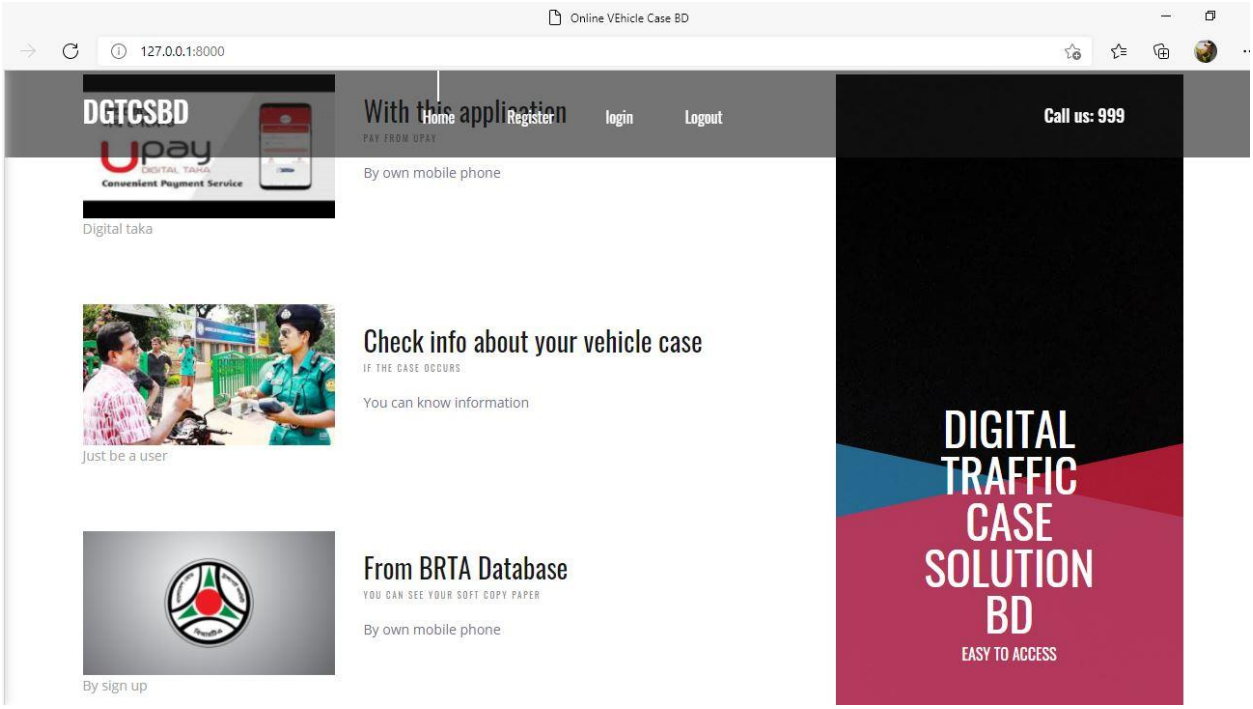
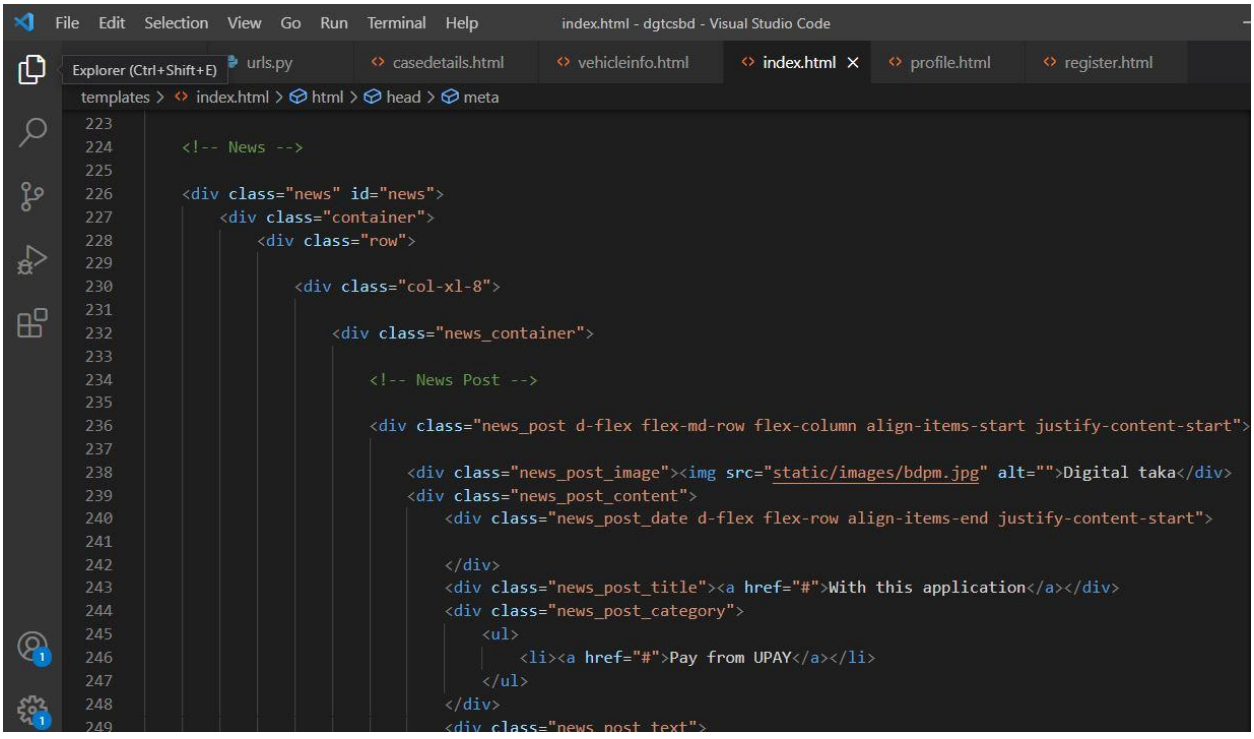
These codes are specific for the testimonials part



Codes for this newspost part



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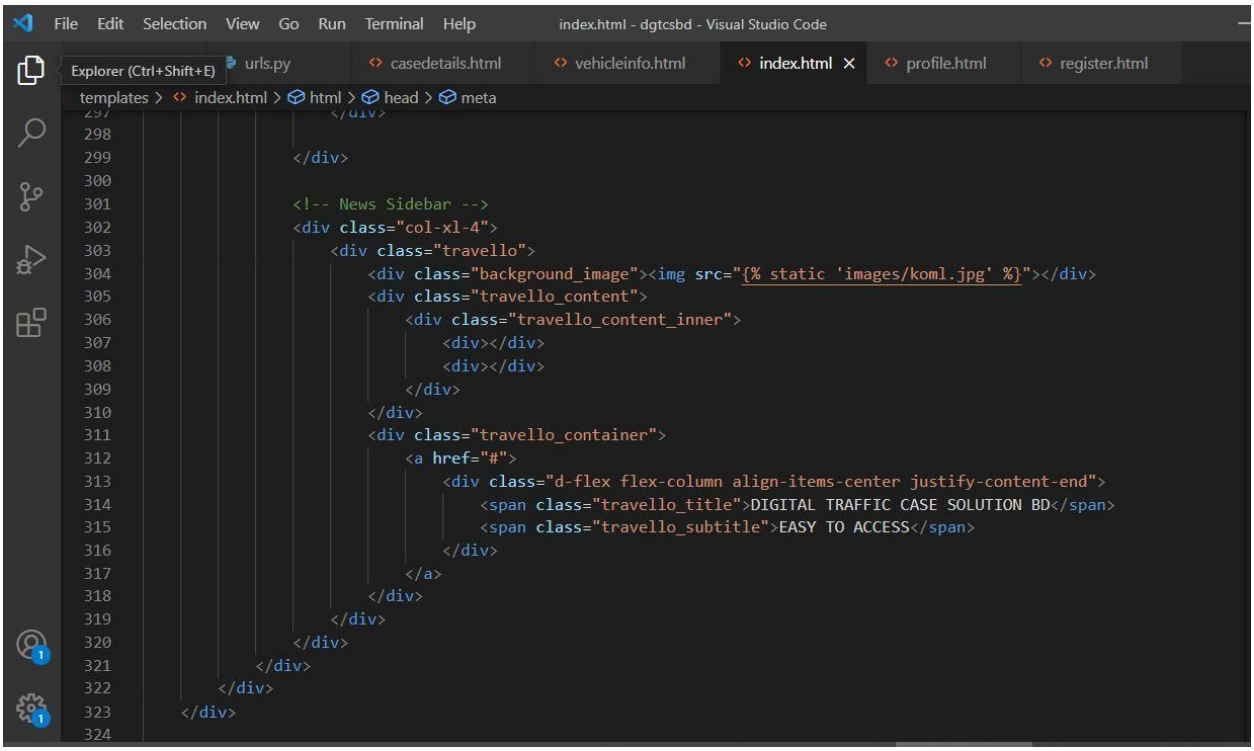
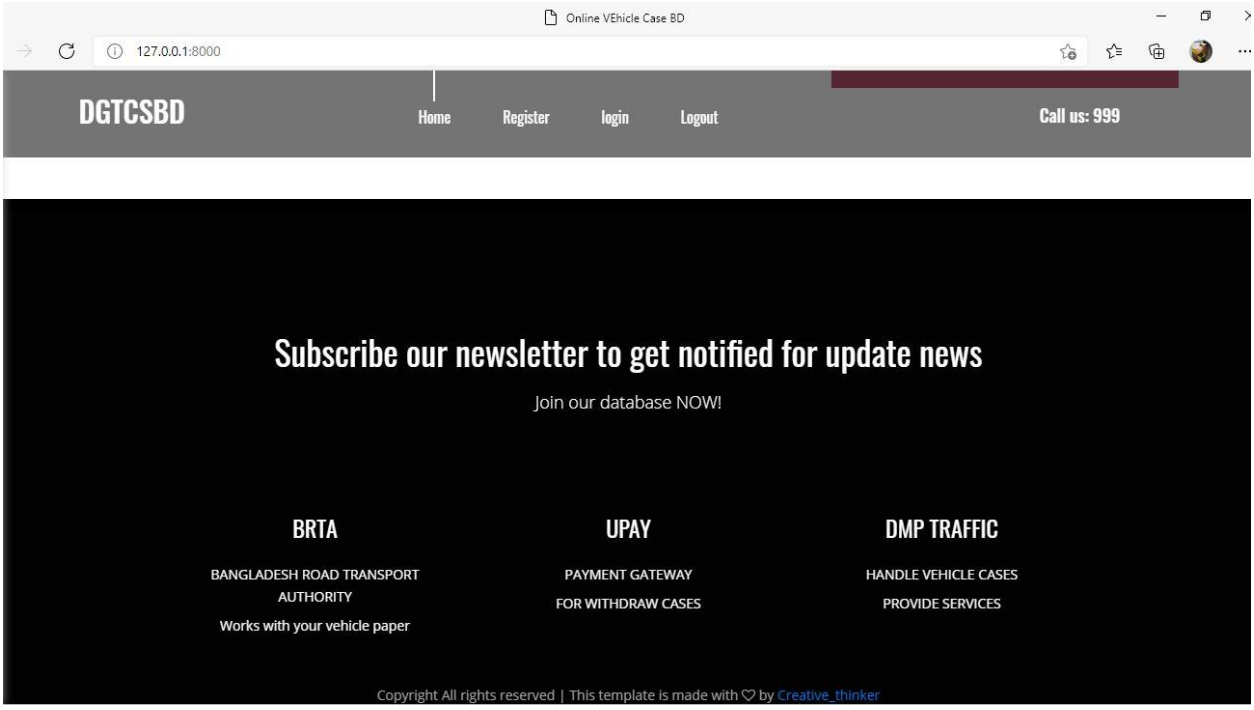


These above codes are specific for the news post part



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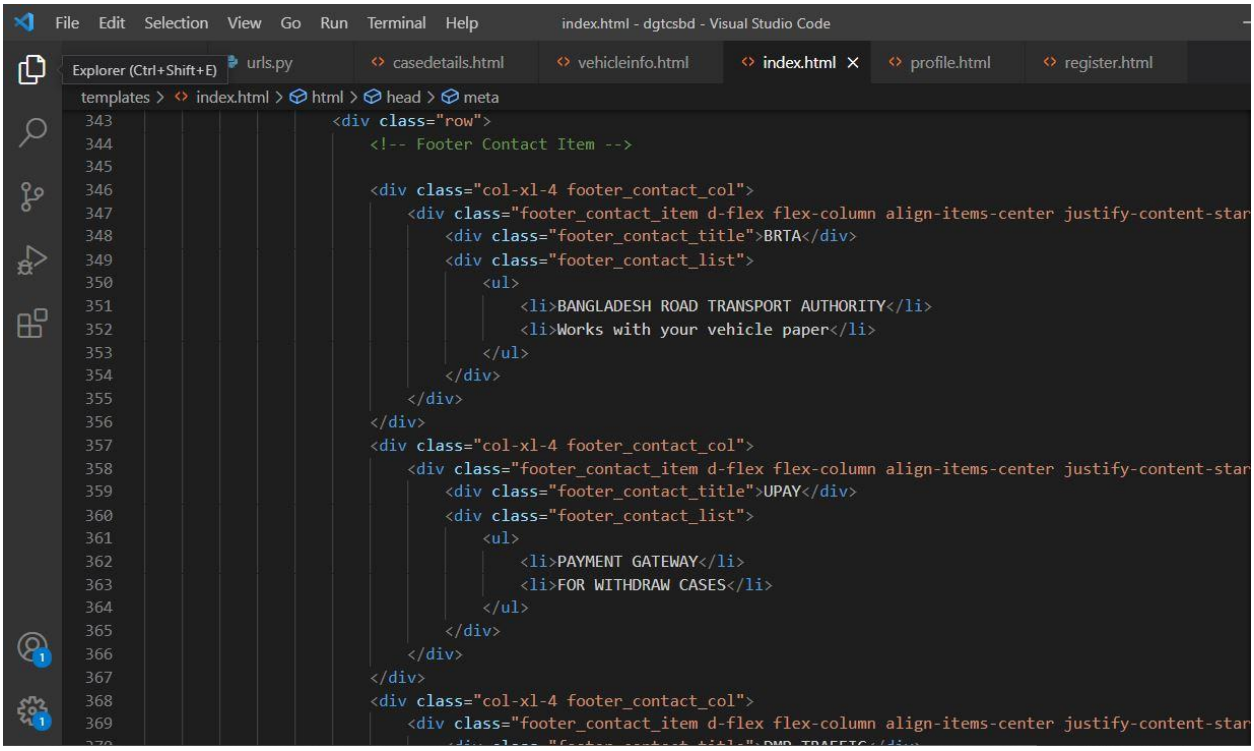

These above codes are specific for the news post part

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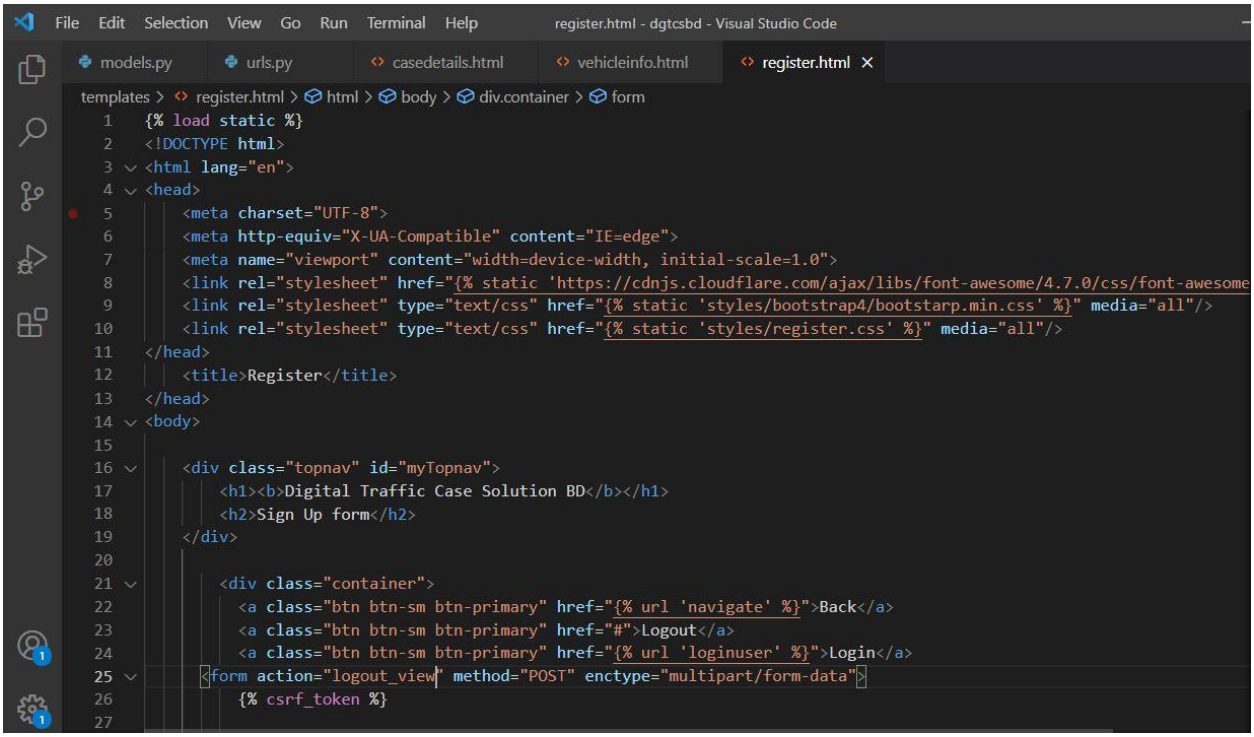
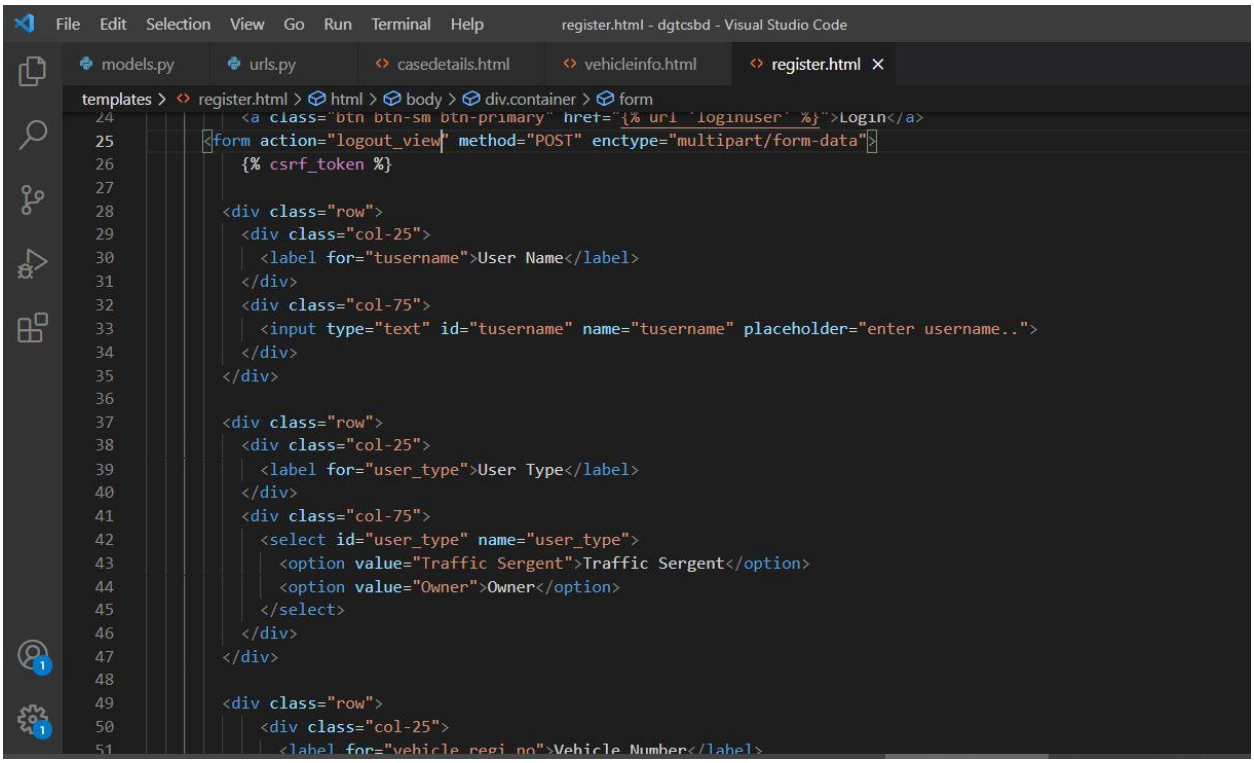
Codes for this register page





These codes are for the register page

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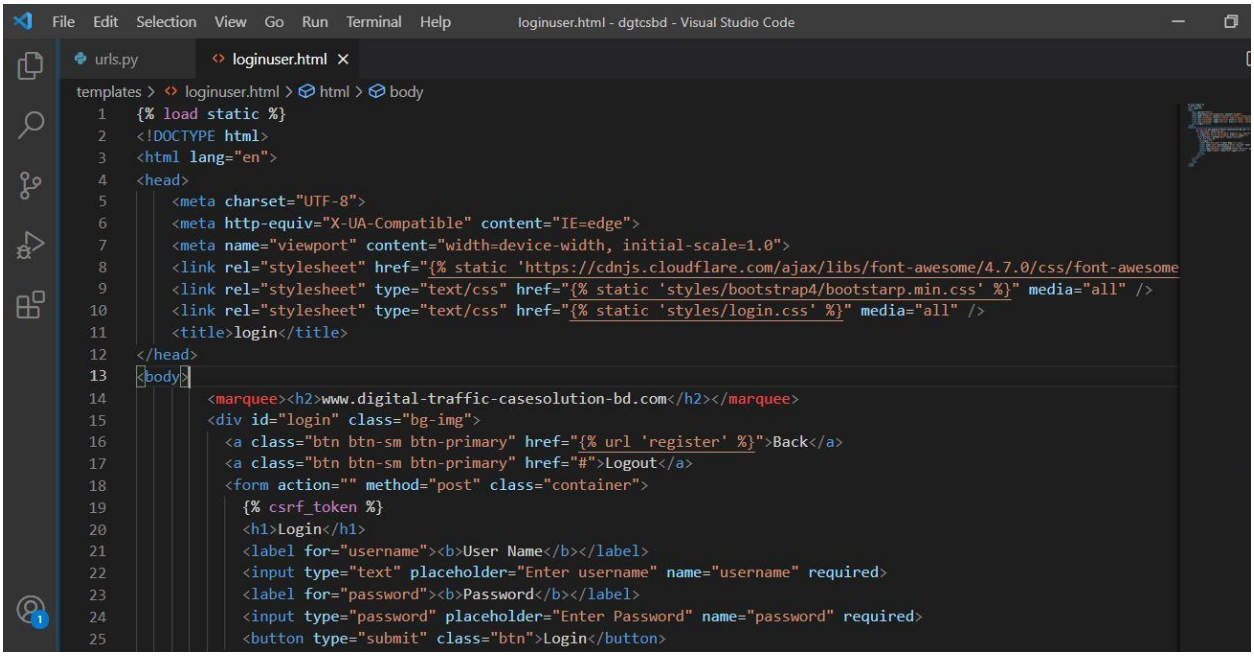
Codes for login page is given below



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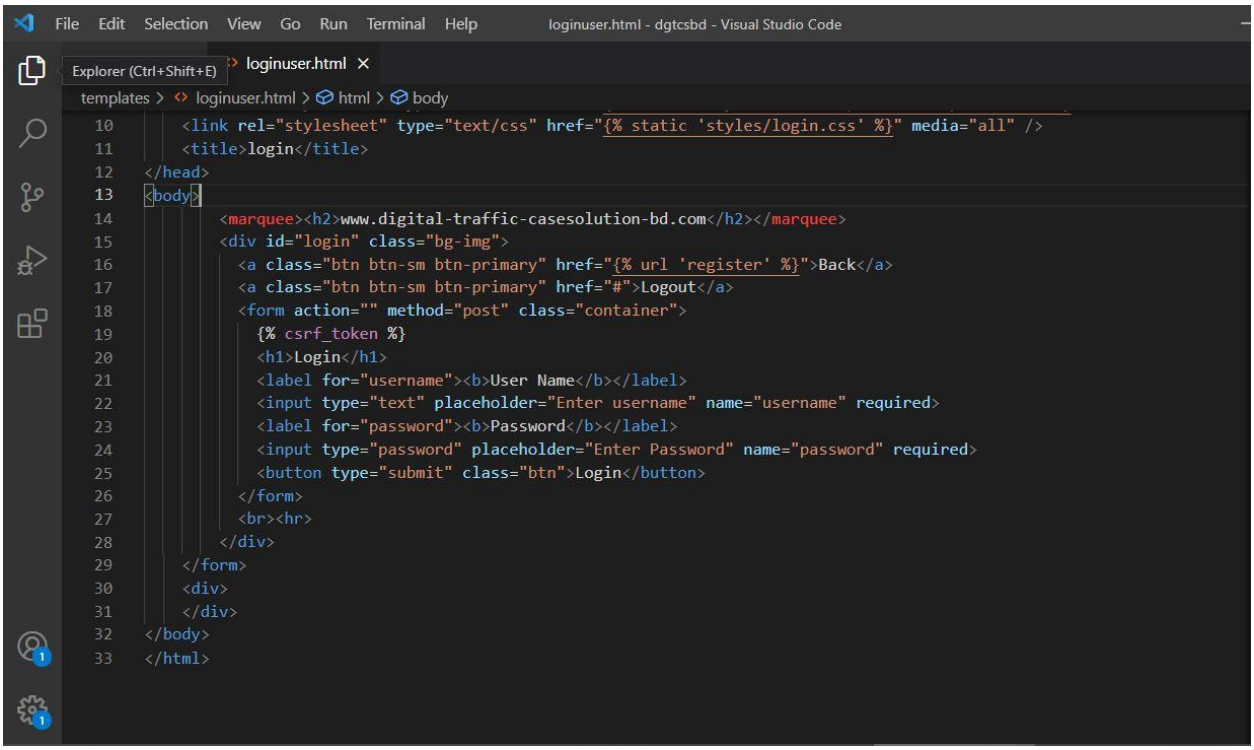

The above codes are for the layout login

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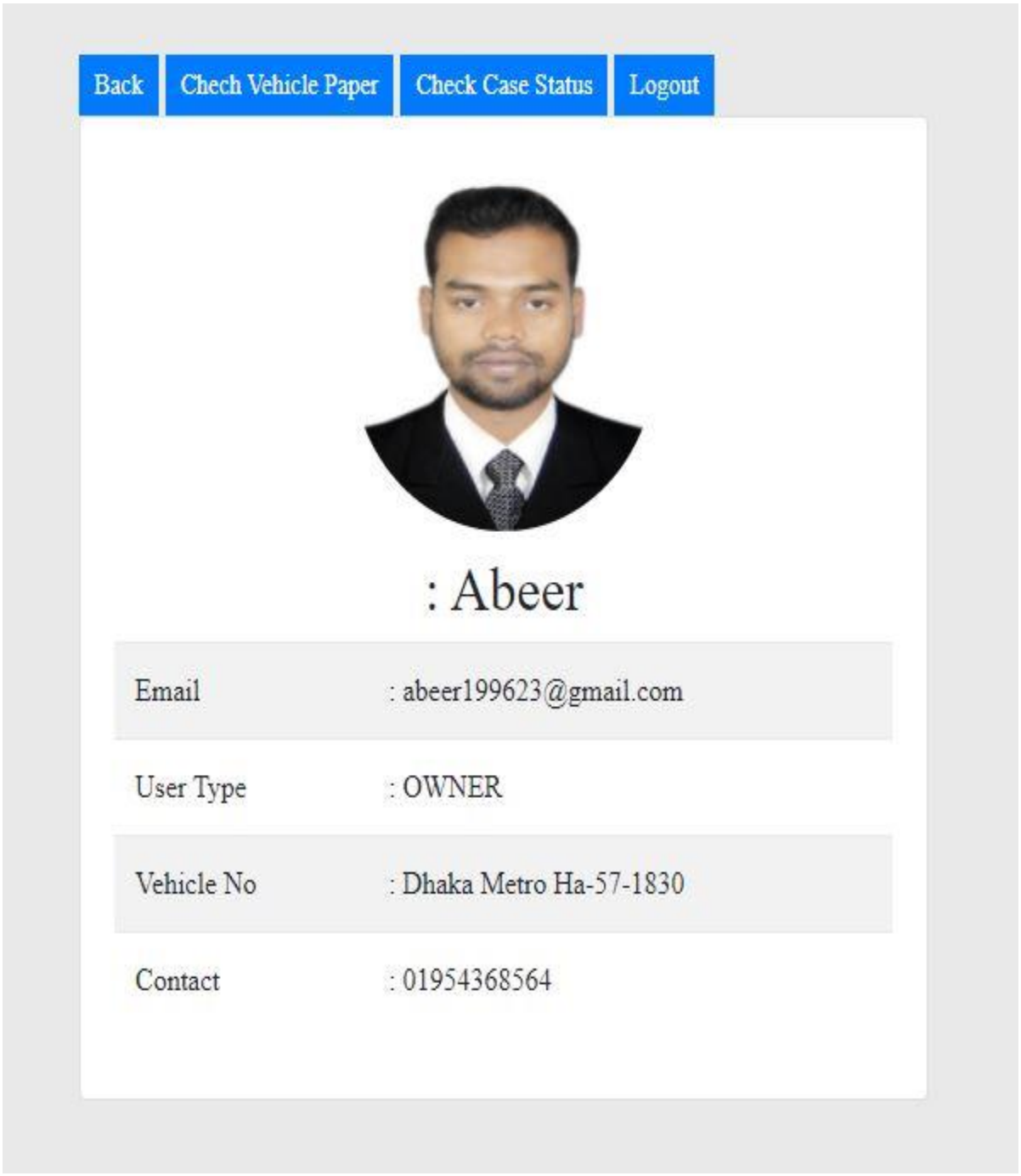

profile.html

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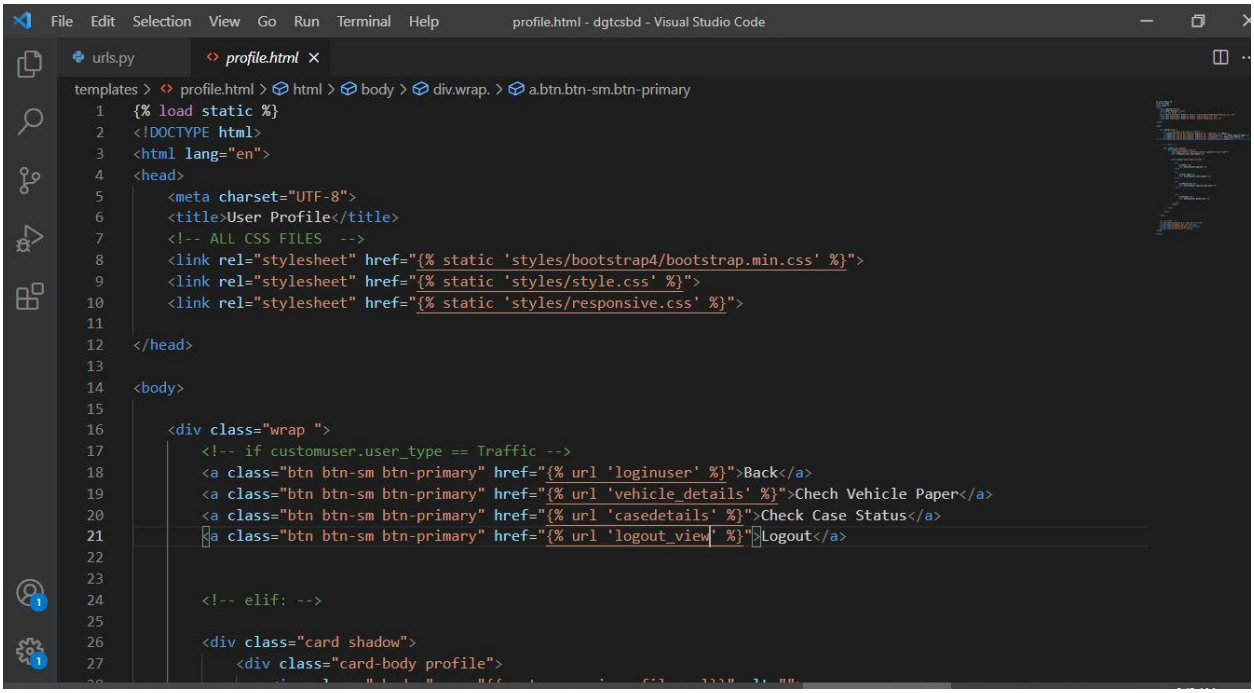
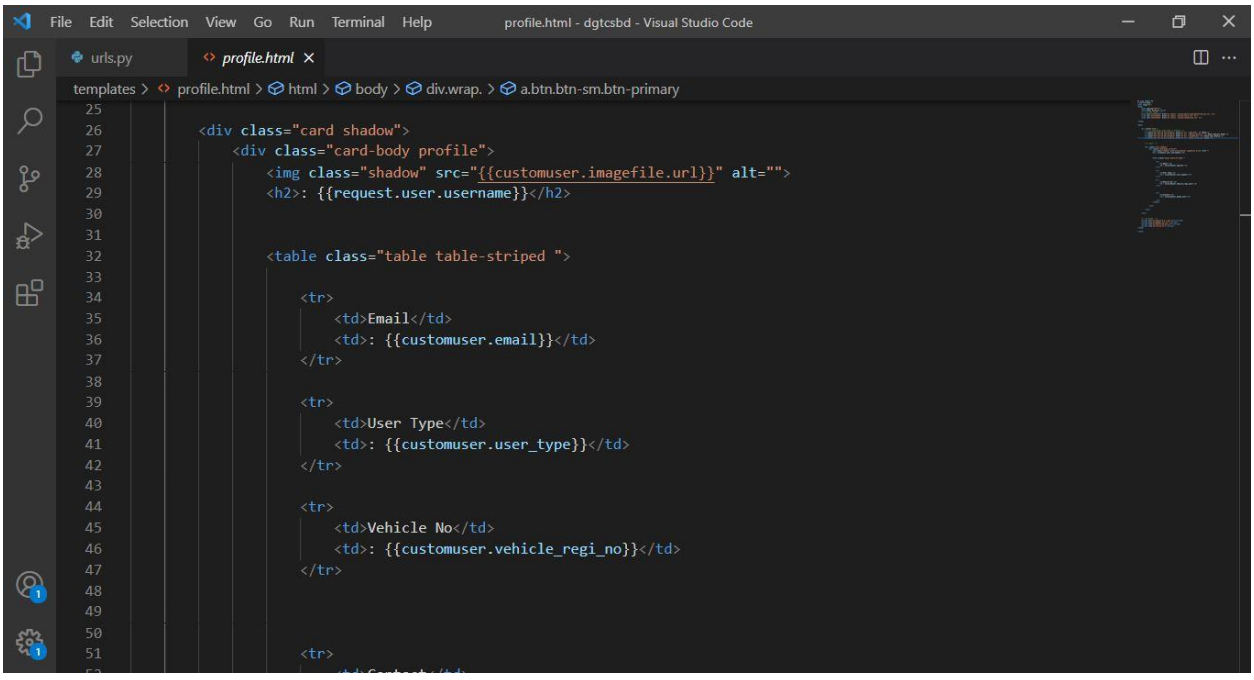
codes for this page





Above of these codes are for profile page

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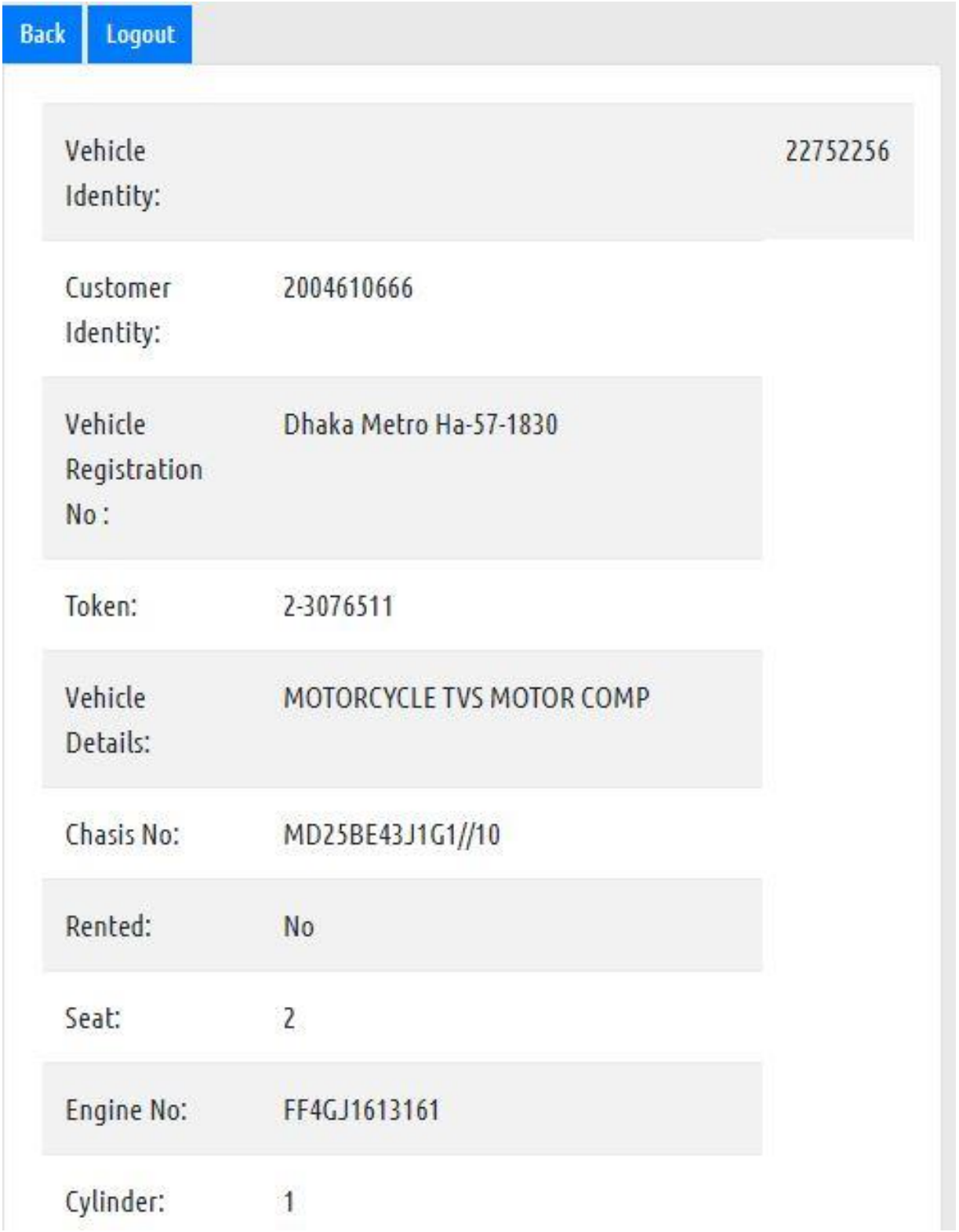
Check vehicle paper



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CC:	125
Weight of empty vehicle:	115
Color:	BLACK/BLUE
Weight of filled vehicle:	215
Tyre quantity:	2
Tyre size:	90/90-12
Measurements:	N/A
Overhang:	N/A
Type of ownership:	PRIVATE
Name of owner:	S. M. ABUL BASHAR
Father's or spouse name:	ABUL HASHEM SORDER

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Post office or bank:	BRAC BANK LTD/N/A
Validity period from:	June 19, 2021, 6:42 p.m.
Validity period to:	June 19, 2021, 6:42 p.m.
Tax Tk:	23
Sign of officer:	MOHAMMAD RAHRUISL
Name of officer:	MOHAMMAD RAHRUISL
Post:	ASSISTANT DIRECTOR
Area:	DHAKA METRO-1
Date of sign:	June 19, 2021, 6:42 p.m.

See Case status

Vehicle Info page

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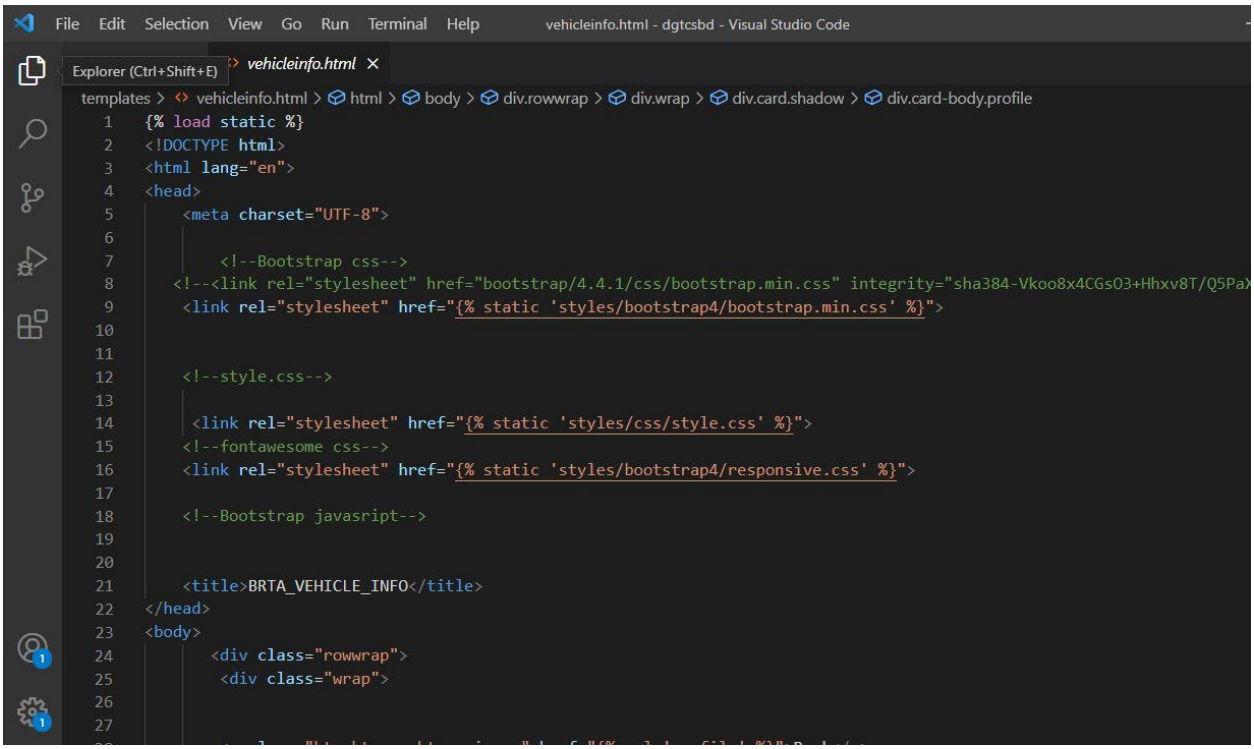

Above of these codes are for the page Vehicle Info

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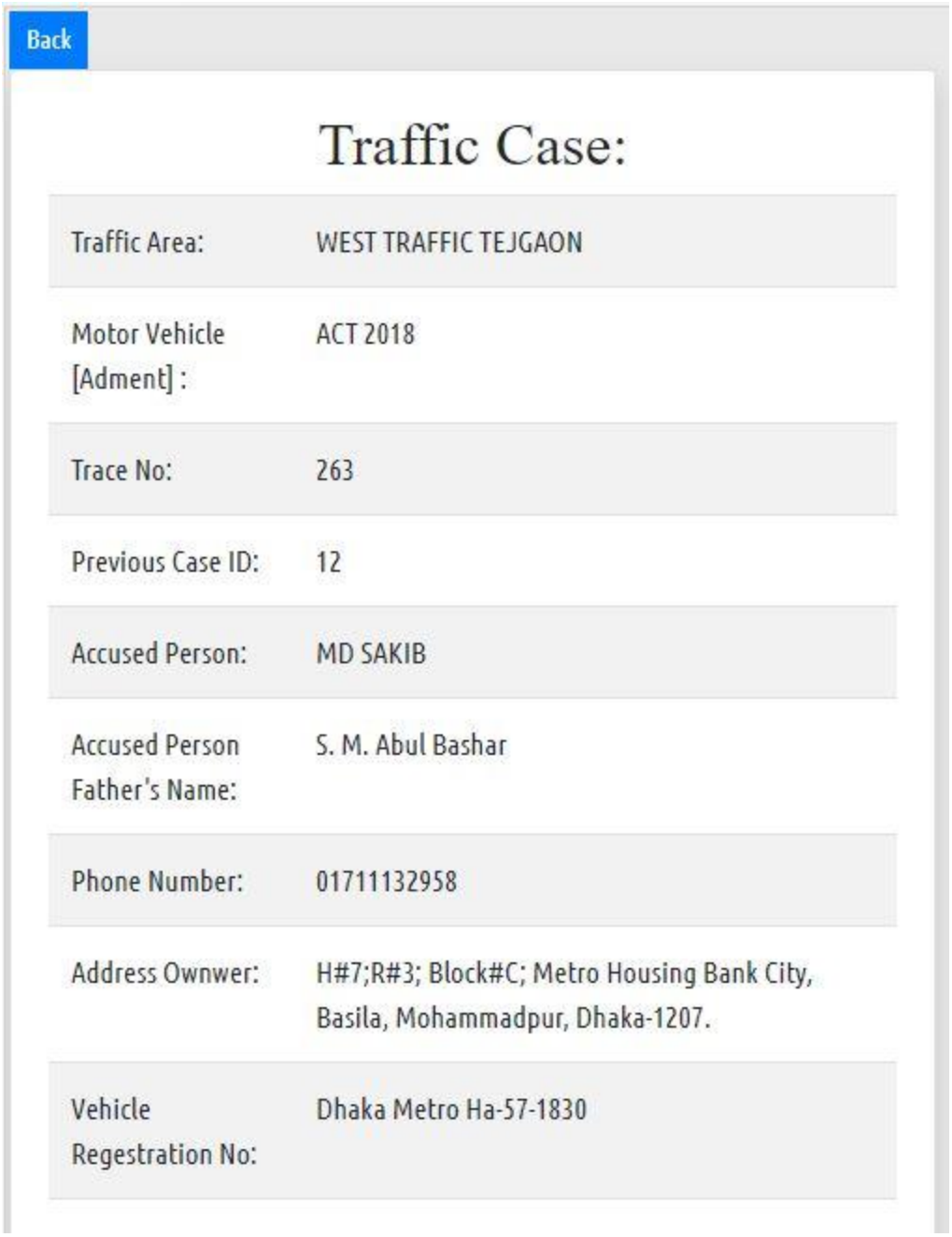

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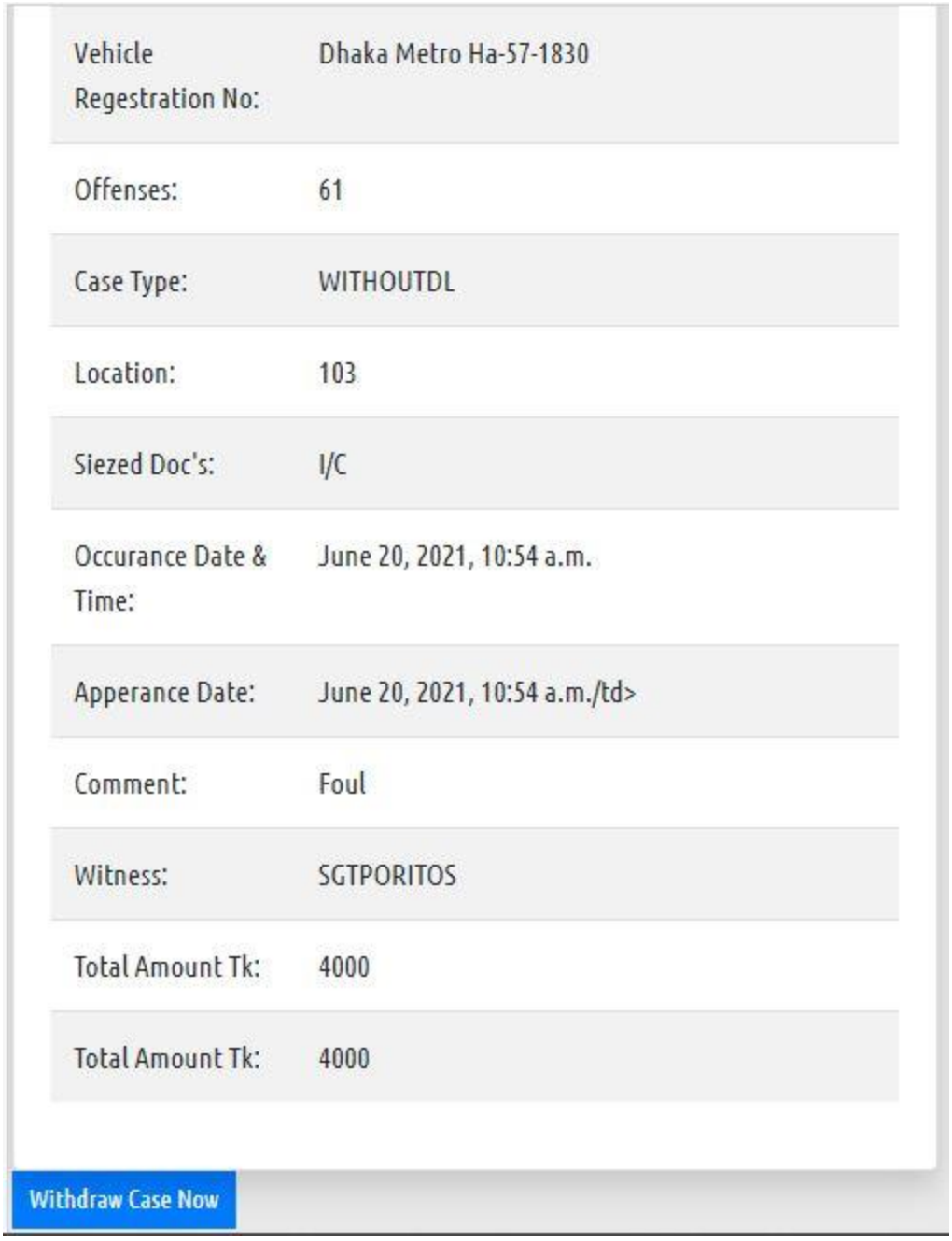

Case status page and codes for this page will provide below:

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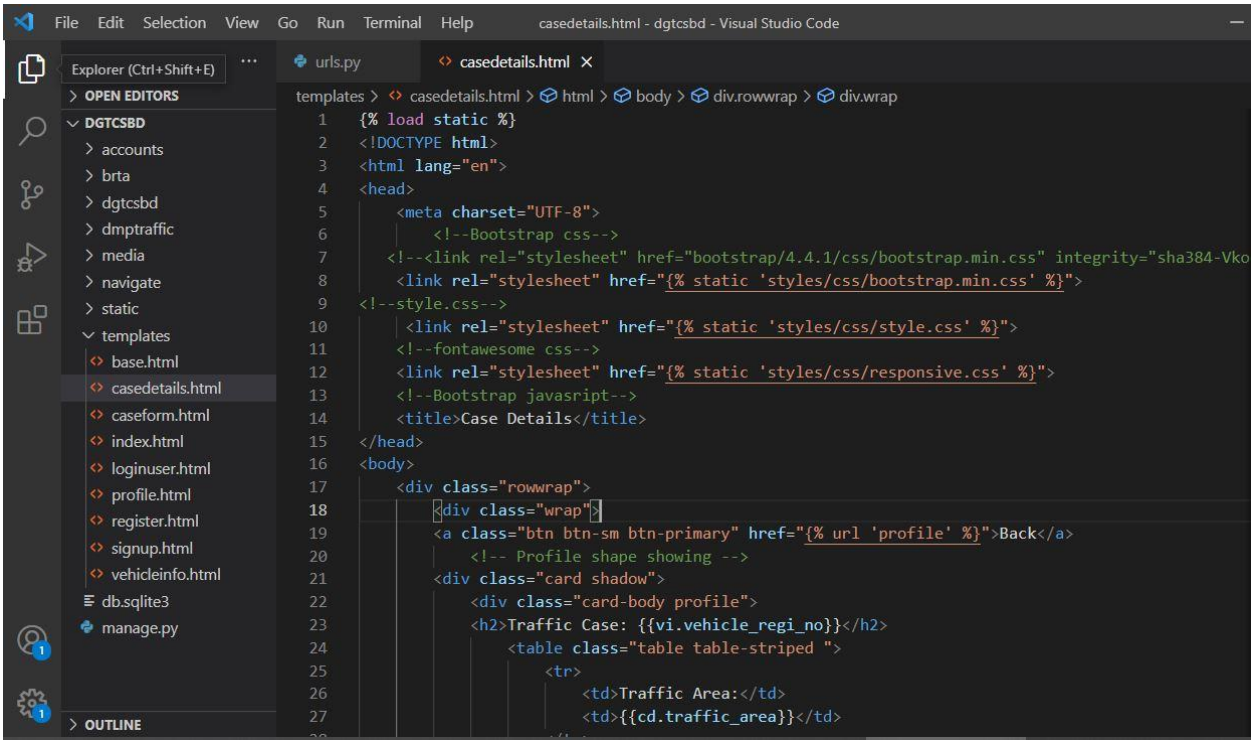

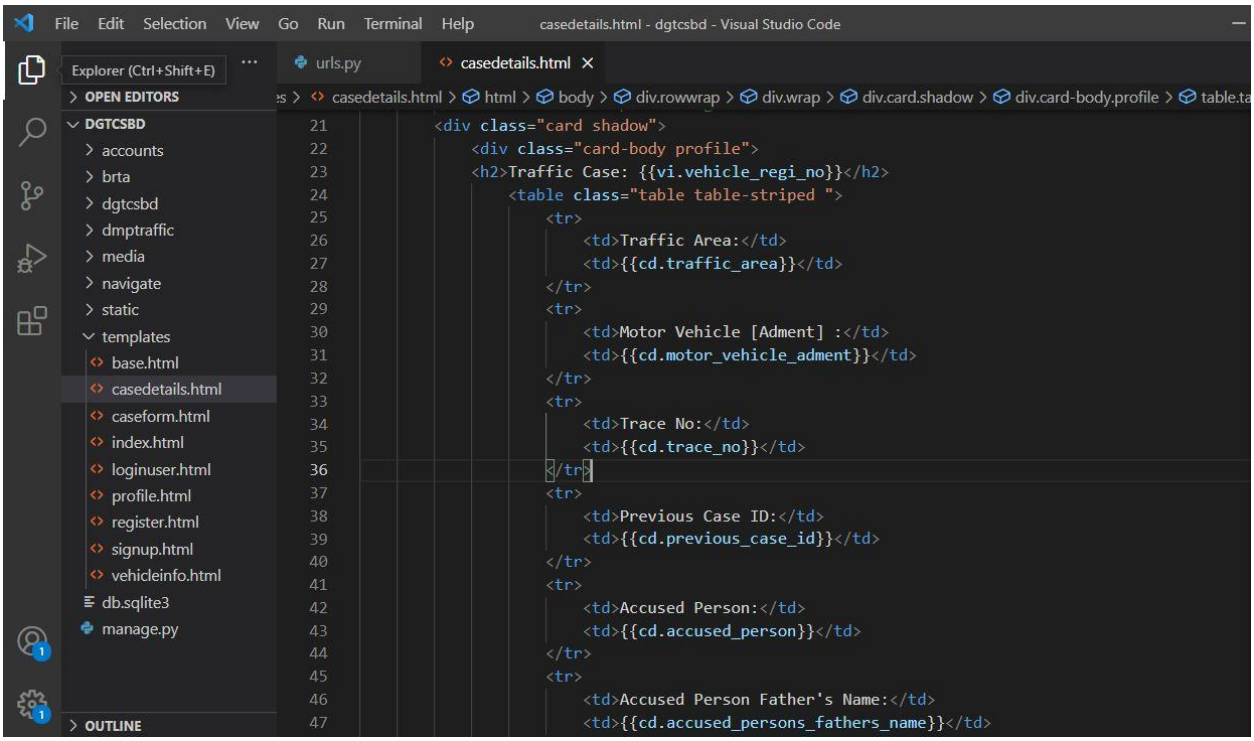

Above codes are specific for the case details page

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Development summary

For develop this system I have used the framework of Python language named Django. Which is faster, scalable, secured and also availability number of components. Here for the framework development here I have used perfect designed layout with Django's own working environment.

In a Django project we have five different files

1. _Init_.py 2. asgi.py 3. settings.py 4. urls.py and **5. wsgi.py**.

Here in these five files **settings.py** and **urls.py** are most important. In the urls.py I have mapped my whole projects components. Here I fix the route of the project and where different apps are placed for.

Example: **urlpatterns = [path = (admin/, include(admin.site.urls),]** In this way we can map our main project mapping.

This is projects main URL for navigate to the Django framework to our system.

Then we have used the specific app's for our project.

Like **register** is an app, **login** is an app etc. For creating an app inside the project we have used a command inside our created virtual environment given below:

"python manage.py startapp navigate" Here the app's name is **navigate**. It will navigate user to the homepage of the system. It is the job of navigate app.

After creating the app I have saw a new folder named upon the app which is our app folder. Inside this app there are 7 individual files. **1._init.py_, 2.admin.py, 3.apps.py, 4.models.py, 5.test.py, 6.urls.py, 7.views.py.**

In the app navigate we should edit our app's url file

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Codes for urls.py of navigate app is given below:

```
from django.urls import path
from . import views
urlpatterns = [
    path('', views.navigate, name='navigate'),
]
```

After setting this url I have made changes to our main project url, which is actually connection or mentioning.

Codes for urls.py of main project after change is given below:

```
from django.contrib import admin
from django.urls import path, include
from django.conf.urls.static import static
from django.conf import settings

urlpatterns = [

    path('admin/', admin.site.urls),

    path('',include('navigate.urls')),
]
```

This is actually Django project's walkthrough by **urlmapping**.

In the app there are some different files like **admin.py** which is actually for control the app from admin panel. Then **models.py** which is for the data layer for our app. It helps us for creating the database. There is also one file called **views.py** where we writes our business logic actually. The main programming codes are goes here. From here we pass the dynamic data to the template.

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I used at first the **DTL (Django template language)** concept and also learned. Where in the project folder there I have created a folder called **"templates",** in this

In this folder I put all of my **HTML** templates or designed layout for the perfect implementation of my system.

Then changes made in the **"settings.py"** file. In settings.py there in an area for Templates. In the templates I have changed some of my code, base directory was fixed for the templates.

By this **DIRS** = **[**os.path.join(**BASE_DIR**, '**templates**')**]** indicates that here in the templates folder all the templates are stored here and Django can use it now.

Breakdown of possible problems

Designing and Developing the Database

• Chose to appropriate attributes

Font end Interface

• Pages Design

• Navigation creation

• Selection keywords

System Log In

• Login Interface design

• Implementation login based on users' roles

• Testing based on users' roles

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Chapter 11 – Testing

In the terms of testing perspective below lists every test is important. I have already tested my application by below testing.

➢ Unit Testing: I have tested every units of my **functionalities. Like Login, Register, Filter etc.**

Test case

Unit testing

Test case no-1	Unit testing -01
Test type	Registration
Test description	Password and confirm password have to match.
Test steps	Expected result: **Register user**
User registration	User registered

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Test case no-2	Unit testing -02
Test type	Login
Test description	Username and password have to match with database.
Test steps	Expected result: **Login User**
User Login	User logged in

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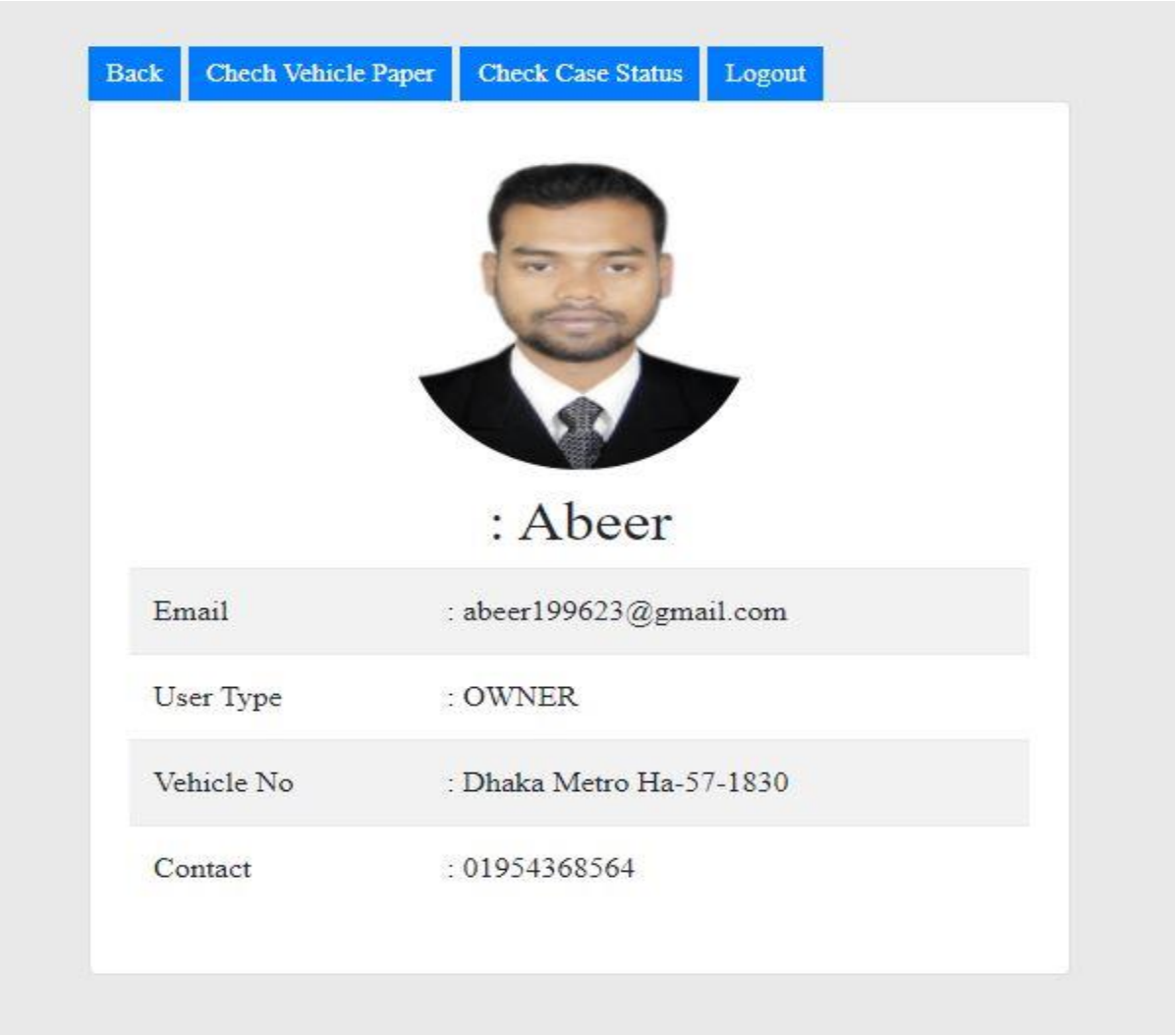
Test case no-3	Unit testing -03
Test type	Profile
Test description	Show the specific data on User's profile.
Test steps	Expected result: **Profile**
Profile	User profile and another buttons showed



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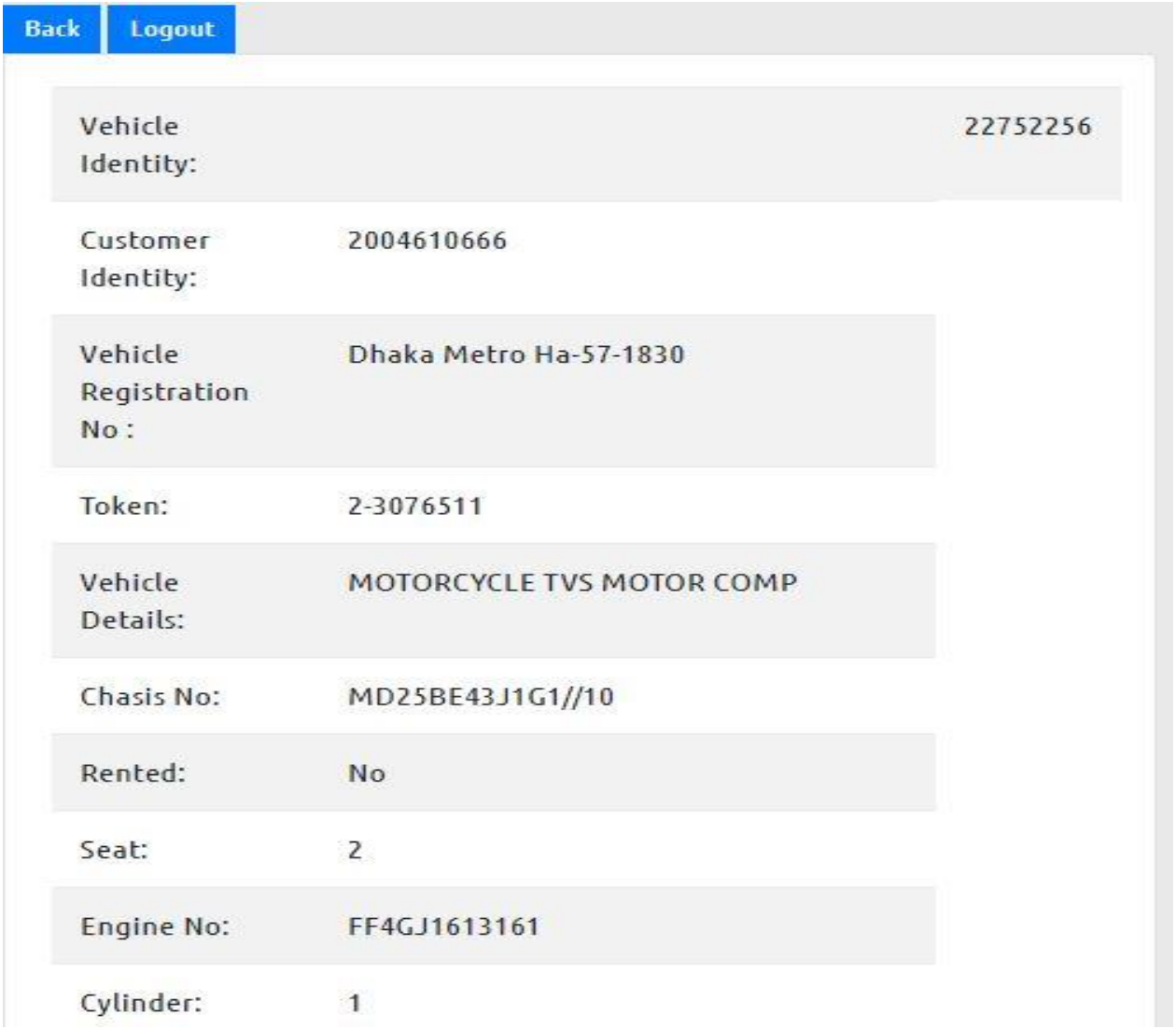
Test case no-4	Unit testing -04
Test type	**Checking Vehicle Info**
Test description	Showed the registered **vehicle info** from vehicle info table of the database.
Test steps	Expected result: Showed the registers **vehicle info**
Vehicle info	Vehicle information page showed



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CC:	125
Weight of empty vehicle:	115
Color:	BLACK/BLUE
Weight of filled vehicle:	215
Tyre quantity:	2
Tyre size:	90/90-12
Measurements:	N/A
Overhang:	N/A
Type of ownership:	PRIVATE
Name of owner:	S. M. ABUL BASHAR

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Father's or spouse name:	ABUL HASHEM SORDER
Address:	GOPIBAG WARI,MOTIJHEEL,DHAKA,BANGLADESH.
Post office or bank:	BRAC BANK LTD/N/A
Validity period from:	June 19, 2021, 6:42 p.m.
Validity period to:	June 19, 2021, 6:42 p.m.
Tax Tk:	23
Sign of officer:	MOHAMMAD RAHRUISL
Name of officer:	MOHAMMAD RAHRUISL
Post:	ASSISTANT DIRECTOR
Area:	DHAKA METRO-1

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Post office or bank:	BRAC BANK LTD/N/A
Validity period from:	June 19, 2021, 6:42 p.m.
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Sign of officer:	MOHAMMAD RAHRUISL
Name of officer:	MOHAMMAD RAHRUISL
Post:	ASSISTANT DIRECTOR
Area:	DHAKA METRO-1
Date of sign:	June 19, 2021, 6:42 p.m.

See Case status

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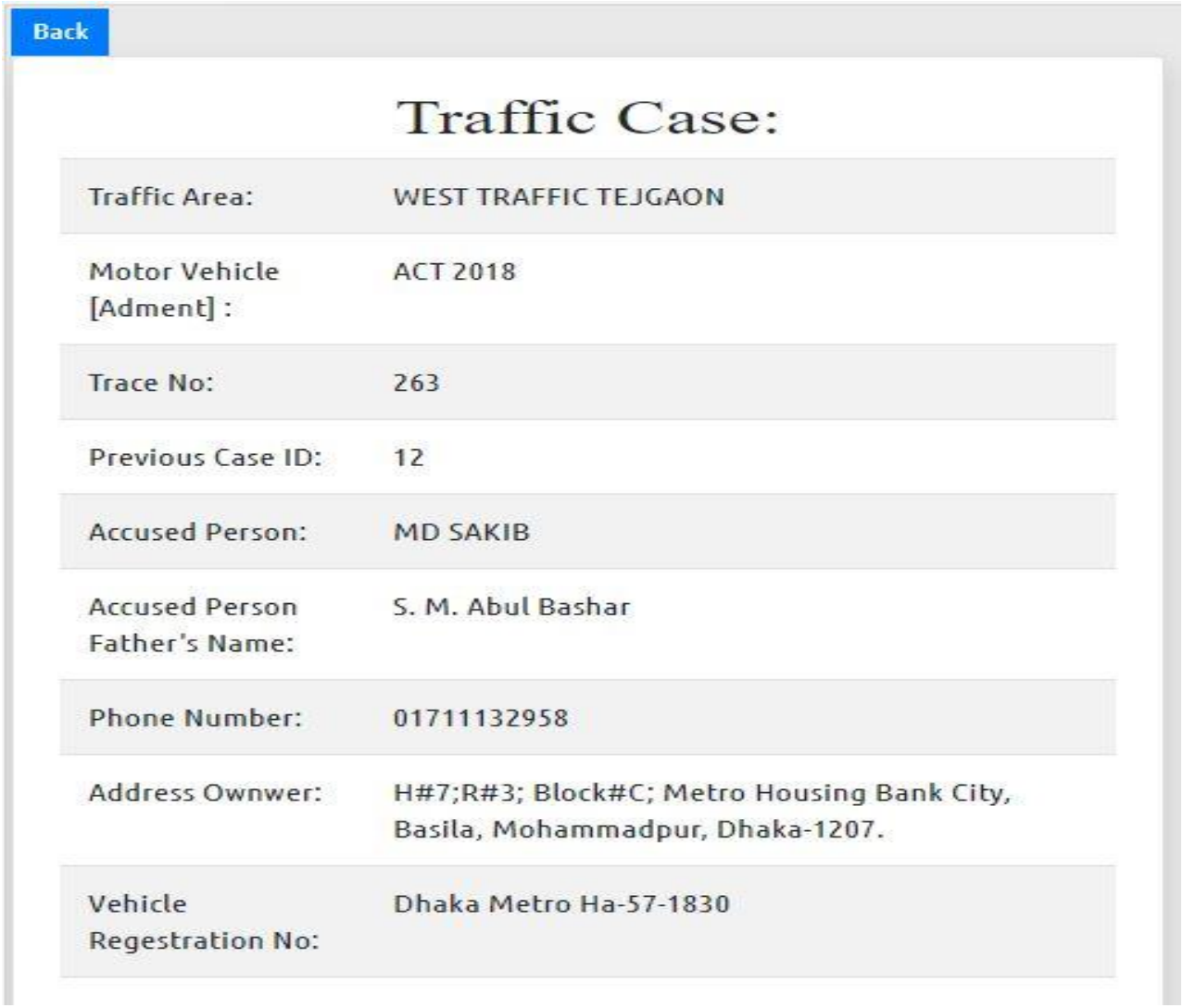
Test case no-5	Unit testing -05
Test type	**Checking Case Status**
Test description	Showed the registers vehicles **Case Details** from case details database.
Test steps	Expected result: Showed the registered vehicles case details page
Case details	Case details page showed



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Vehicle Regestration No:	Dhaka Metro Ha-57-1830
Offenses:	61
Case Type:	WITHOUTDL
Location:	103
Siezed Doc's:	I/C
Occurance Date & Time:	June 20, 2021, 10:54 a.m.
Apperance Date:	June 20, 2021, 10:54 a.m./td>
Comment:	Foul
Witness:	SGTPORITOS
Total Amount Tk:	4000
Total Amount Tk:	4000

Withdraw Case Now

As this project I have tested all Units of the system.

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Chapter-12: Implementation

Register User

Registration is the first condition to be a user. So I tried to implement the registration form first. Then tested and it works.

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Login User

For entering to the user account user must have to permit that he/she have an account on our platform. So login form and backend logic both combine making here dynamic terms and checking the registered user and then permit to enter to the system.

Profile

Profile is the page where a user can see some information accurately on the screen which's he entered while registration. Like Username, email, user type, Vehicle number etc.

I tried to implement a simple profile where only user have the access. And then user can navigate other functionalities in the system like Vehicle details, checking case status, logging out etc.

Vehicle Info

In my system there is an awesome feature exists which is getting vehicle information from BRTA database by matching vehicle registration number.

It also dynamic procedure.

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Check case status

Checking traffic case against registered vehicle is another amazing feature of our system. Here also we matching our vehicle registration number with the DMP Traffic database and the existing registered user's vehicle number.

Logout

Logout is also a function of our system. When a user is logged in, if he press on logout button he will logged out from the own accessible area and he will get returned to the home page of our website.

Chapter-13: Evaluation

I wanted to try my best for build this small system. For building this project I have faced many so many problems like media file, static files and some dynamic steps. But I have overcome these problems with try and try to meet my objectives.

I can meet the core objective which I wanted that from two individual database fetching all information's by one key and that was successfully possible to me.

I can't meet some external objectives like extending the date of papers

Online and some others but the main theme has gathered.

Further development: For implement this system in our real life, we need one important thing. Which is **API (Application programming interface).** We need two different organizations **API**. First is **DMP (Dhaka Metropolitan Police) TRAFFIC** and then **BRTA (Bangladesh Road Transport Authority)**. Here I have not used the **API technology** but the concept can be implemented through it. So I need this two components from Bangladesh Government.

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Chapter-14: Lesson learned

For completing this project I have used the programming language Python and its popular framework Django. By developing this simple project I have learned so many lesson like iterating, defining functions, creating class and models, creating objects, multiple objects, accessing multiple objects data and individual models objects which is mainly used here. And also learned database concept related with the framework. By this lesson I have gathered a good knowledge on Django framework. These technical things are very important which I have gathered from this project. This work was a real-life project to me.

Chapter-16: Conclusion

Summary of the Project

In this project people and government both will turned to a smart way of maintaining a system like developed countries rules. People will be respectful and alert to the Law's.

Goals of the Project

My goal was to change a system manual to digital. Which system is running manually now a day's.

Success of the Project

My success of this project is accessing multiple organizations database and getting necessary information's which will meet the need of users.

Value of the Project

I think it is valuable and too much valuable. If we can implement this system realistic it will be helpful for our country. If the BRTA and DMP will provide their databases API's then our nation will get something new change in our traffic case system.

Thank You

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Appendices

Appendix-1

The requirement catalog outline was covered in the previous chapter of this article. The remaining sections are as follows:

Name of requirement: Sign up(Register)			
Source: **User**	**Sign off** **Users**	**Priority:** **Must have**	**User ID:** **01**
Functional requirements:	**System will allow users to sign up for an account.**		
Non-functional requirements:	**The system has been designed as per the requirement so that it does not harm any human user.**		
Details:	**Target range**	**Acceptable range**	**Overview**
User will own an User account	**As the need of situation**	**As the need of situation**	**By sign up user can get an account.**

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Name of requirement: Login			
Source: **User**	**Sign off** **Users**	**Priority:** **Must have**	**User ID:** **01**
Functional requirements:	**System will allow users to login on registered account.** **User name:** Abeer **Password:** #6171230/ACR?$@/		
Non-functional requirements:	**The system has been designed as per the requirement so that it does not harm any human user.**		
Details:	**Target range**	**Acceptable range**	**Overview**
User will own an User account	**As the need of situation**	**As the need of situation**	**By login user can access his account.**

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Name of requirement: Logout			
Source: **User**	**Sign off** **Users**	**Priority:** **Must have**	**User ID:** **01**
Functional requirements:	**System will logout users from the accesses account.**		
Non-functional requirements:	**Get back to the home page.**		
Details:	**Target range**	**Acceptable range**	**Overview**
User will own an User account	**As the need of situation**	**As the need of situation**	**By logout user will stop the current access of the account.**

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Appendix – 2

I have described the use case described in an earlier chapter of this statement. The remaining parts are described here:

See vehicle information's
Brief description: Registered user can see his vehicles information/documents.
Actor of this use case: Registered user
Pre-conditions: Must be need to register first in the system. Database stores all information.
Basic flow of events: On the profile page user will see the button as see vehicle info. User will press and see the info or a message.
Extension of this: Must be a valid vehicle no which is stored in the database. **(**Dhaka Metro Ha-57-1830**)**
Post Conditions: Successfully see the vehicles information.
Special requirements: This is only available on the local server.

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See Case status
Brief description: Registered user can see his vehicles case if available.
Actor of this use case: Registered user
Pre-conditions: Must be need to register first in the system. Database stores all information.
Basic flow of events: On the profile page user will see the button as see vehicle info. User will press and see the info or a message.
Extension of this: Must be a valid vehicle no which is stored in the database. **(**Dhaka Metro Ha-57-1830**)**
Post Conditions: Successfully see the vehicles case information.
Special requirements: This is only available on the local server.

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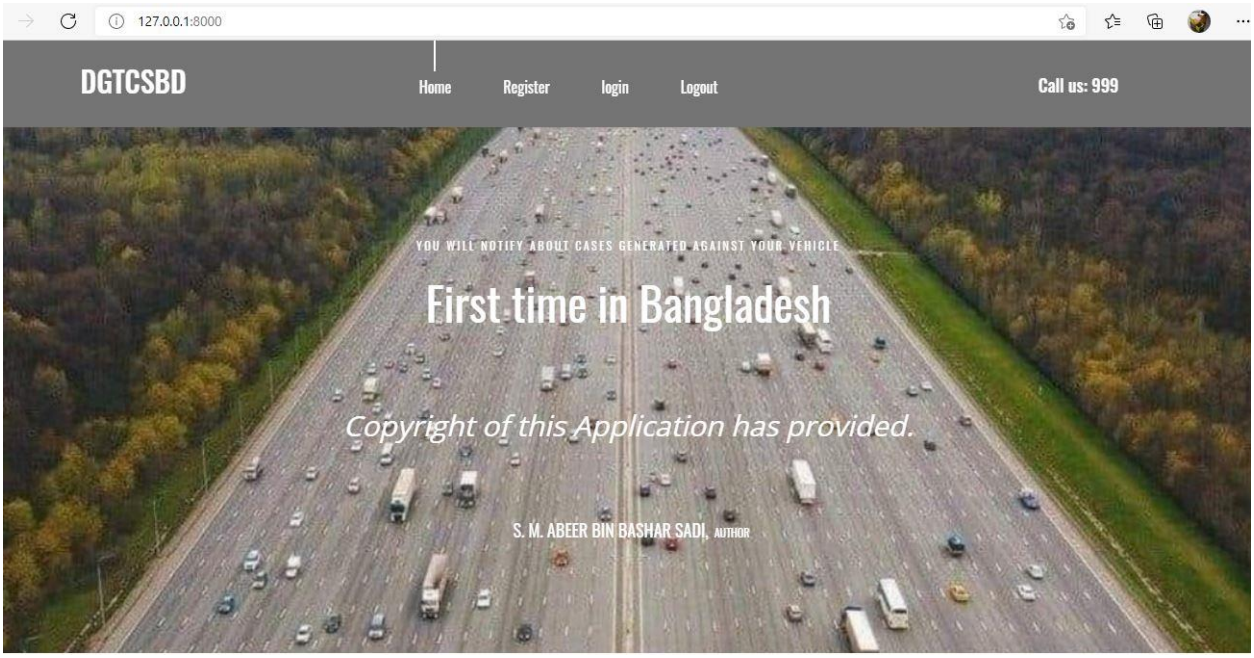
Home page our systems

Below the homepage after scrolling



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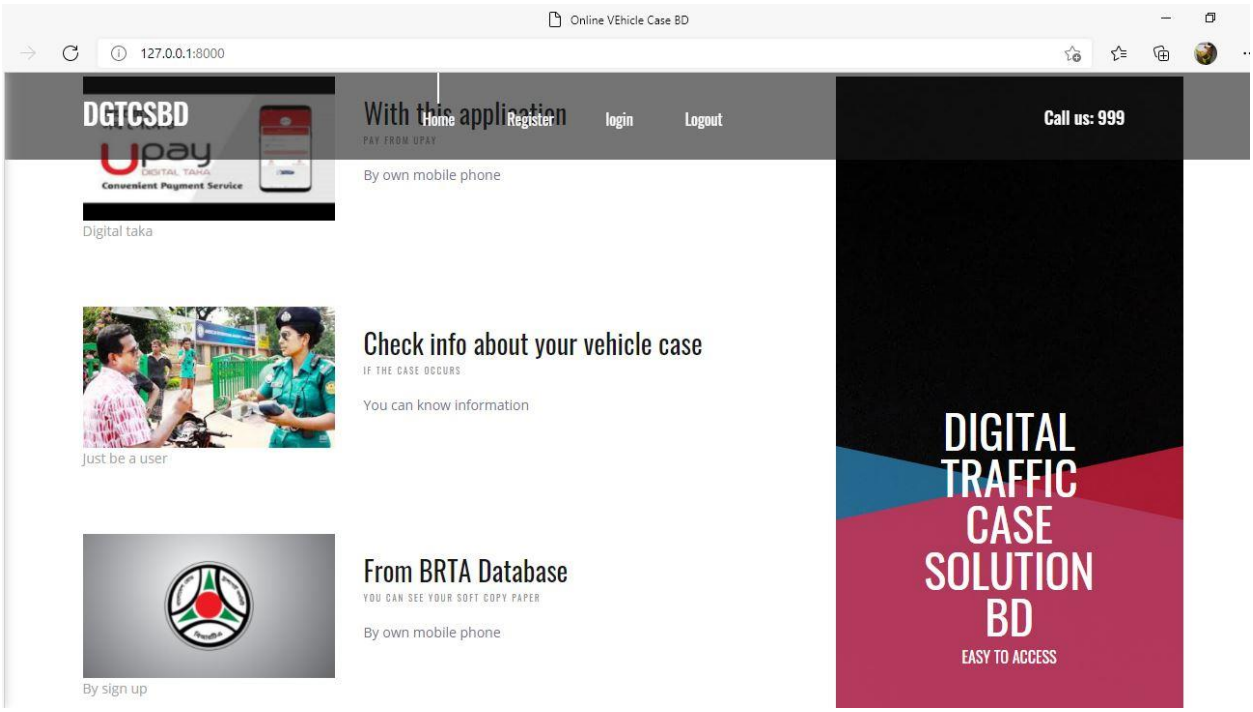

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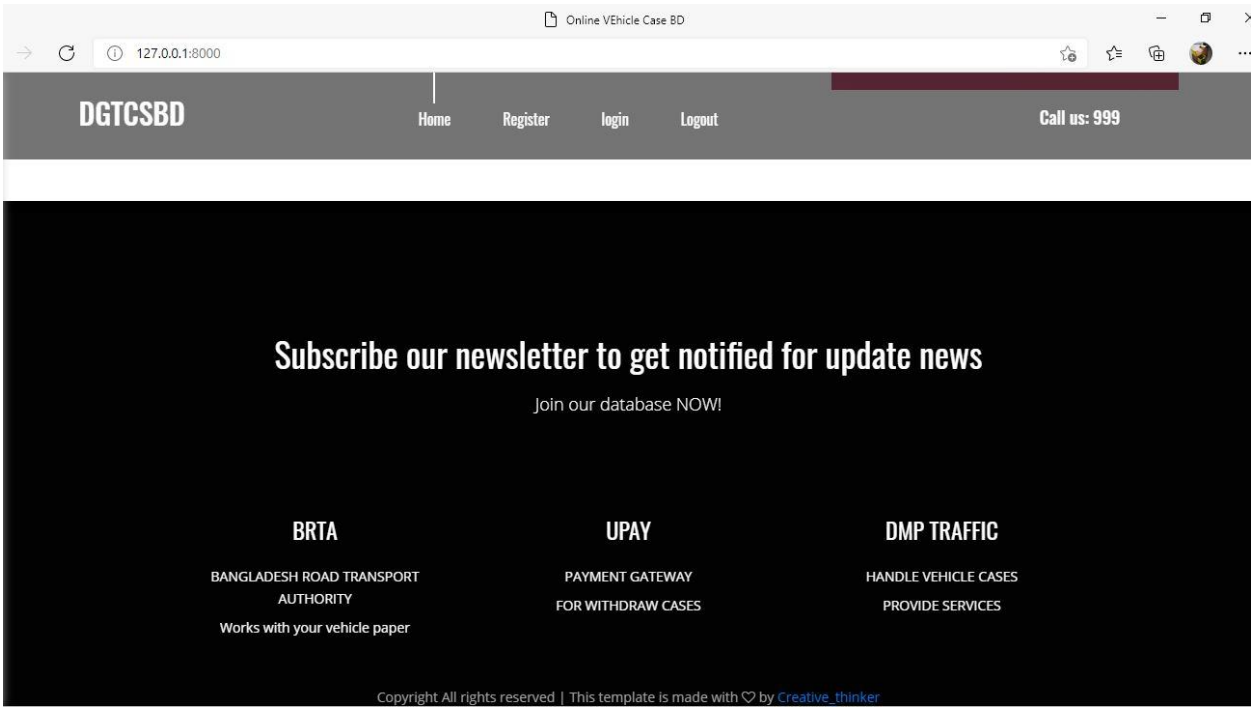

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Register page of our site

Login page of our site

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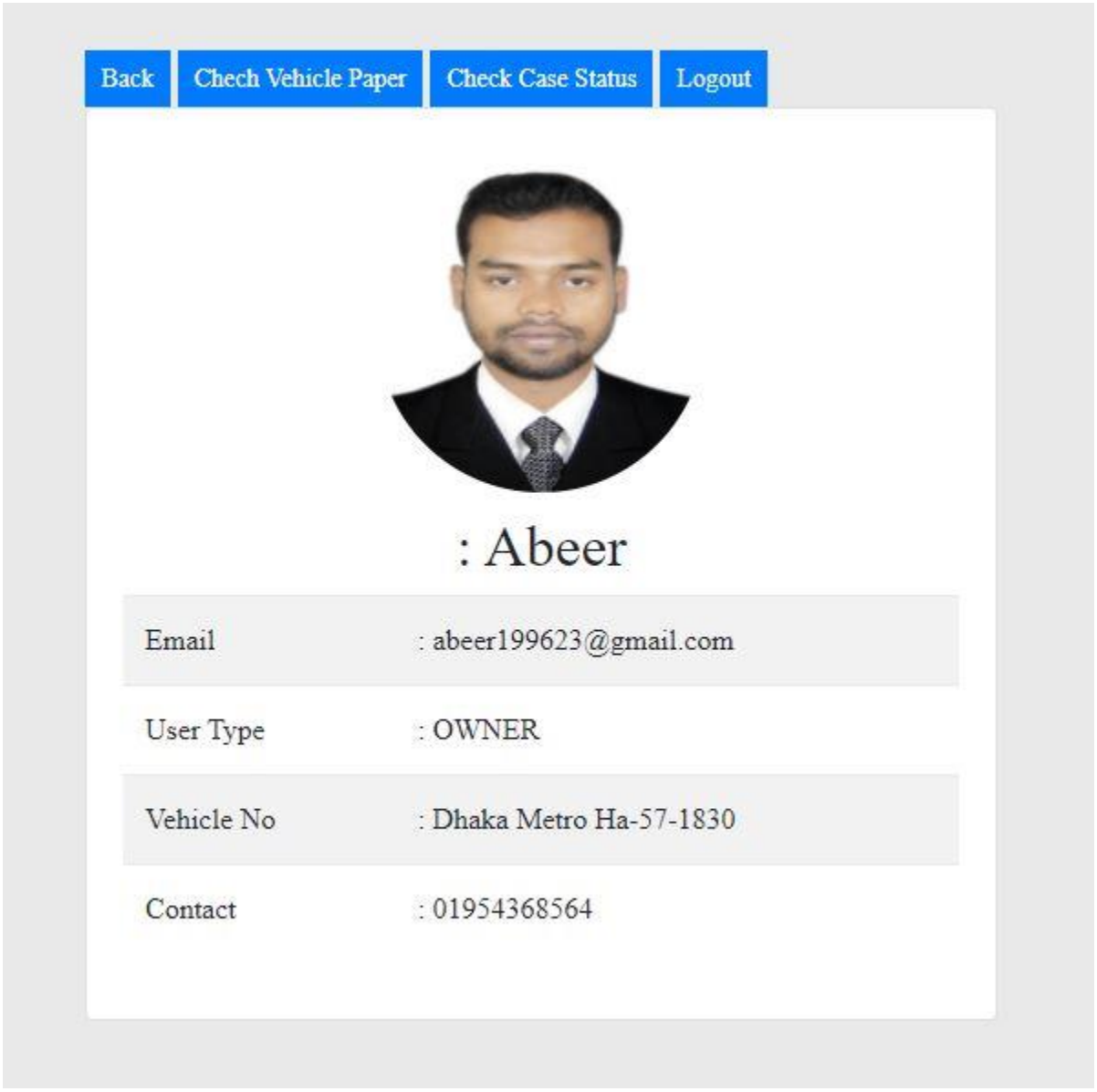
After login profile page of the user



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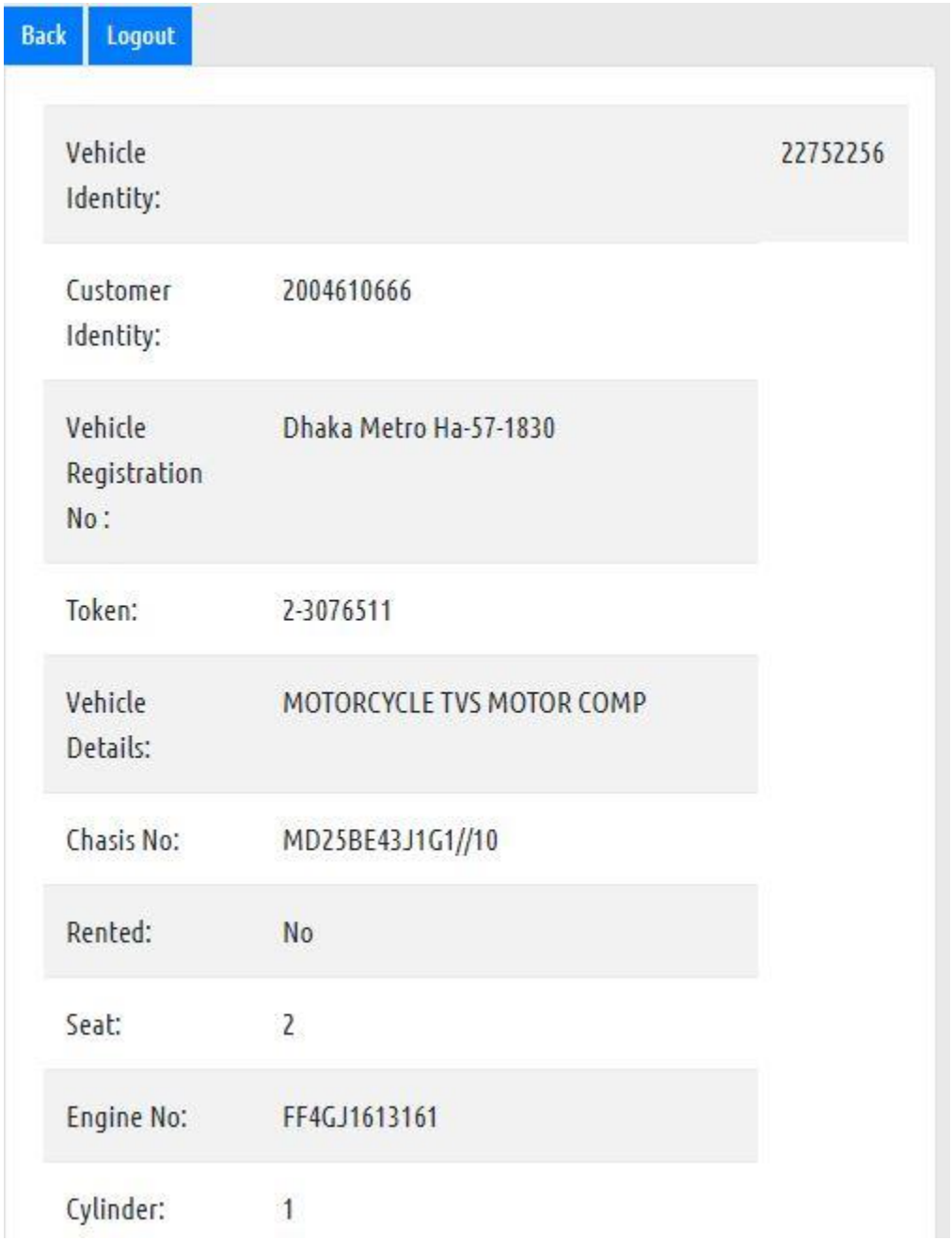
Vehicle info page



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CC:	125
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Color:	BLACK/BLUE
Weight of filled vehicle:	215
Tyre quantity:	2
Tyre size:	90/90-12
Measurements:	N/A
Overhang:	N/A
Type of ownership:	PRIVATE
Name of owner:	S. M. ABUL BASHAR
Father's or spouse name:	ABUL HASHEM SORDER

Vehicle info page

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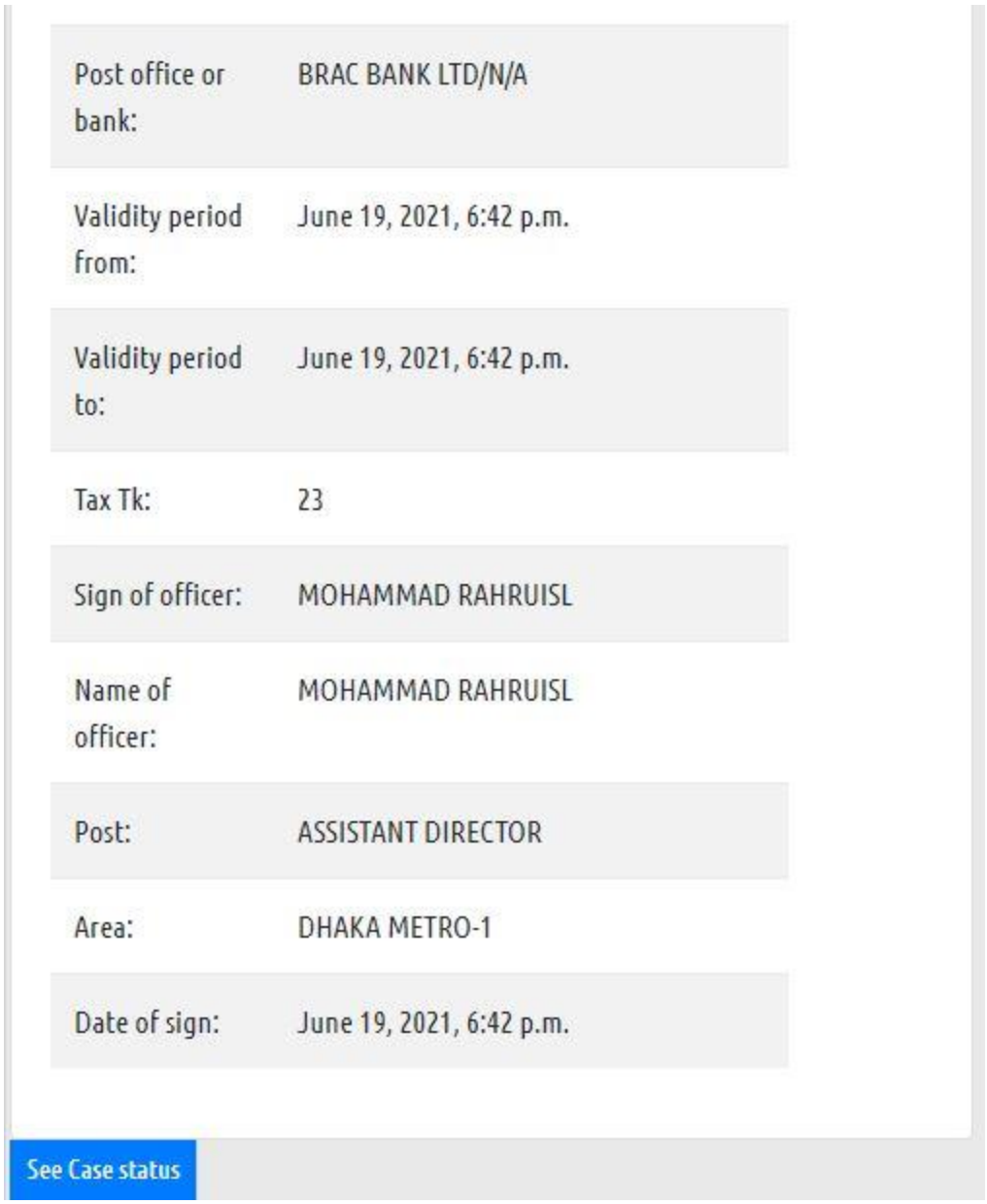

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Validity period to:	June 19, 2021, 6:42 p.m.
Tax Tk:	23
Sign of officer:	MOHAMMAD RAHRUISL
Name of officer:	MOHAMMAD RAHRUISL
Post:	ASSISTANT DIRECTOR
Area:	DHAKA METRO-1
Date of sign:	June 19, 2021, 6:42 p.m.

Vehicle info page

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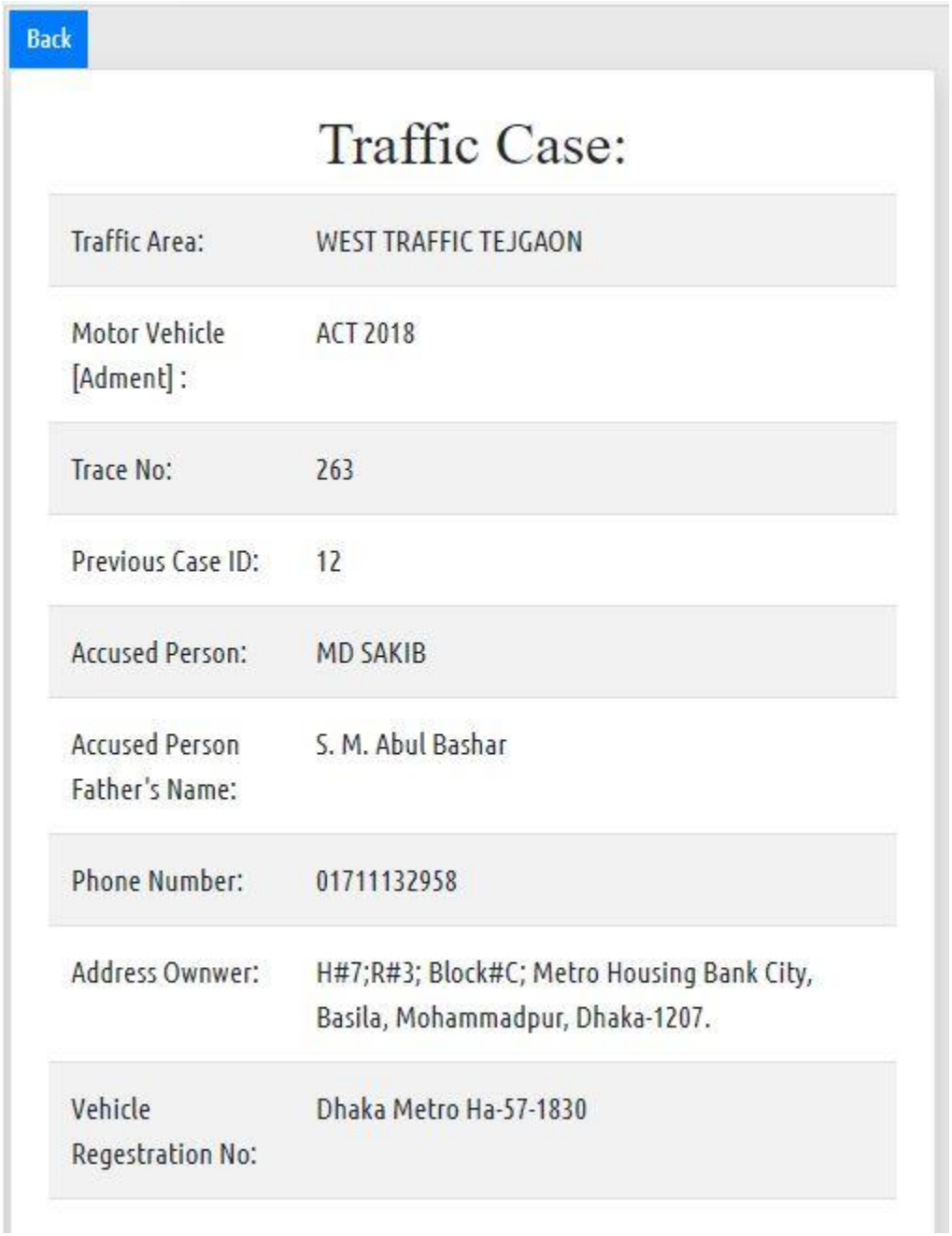
Case status page



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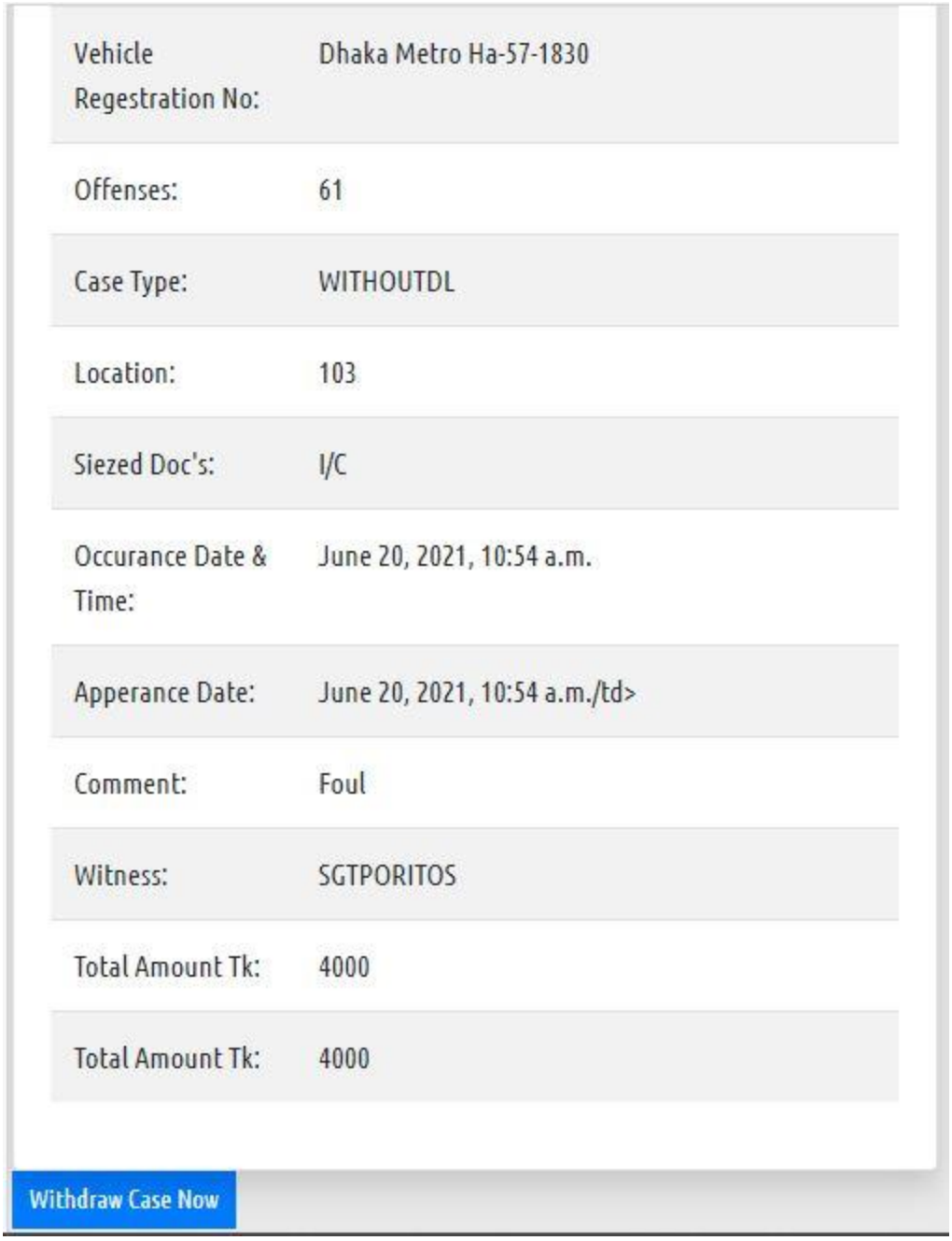

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Case Type:	WITHOUTDL
Location:	103
Siezed Doc's:	I/C
Occurance Date & Time:	June 20, 2021, 10:54 a.m.
Apperance Date:	June 20, 2021, 10:54 a.m./td>
Comment:	Foul
Witness:	SGTPORITOS
Total Amount Tk:	4000
Total Amount Tk:	4000

Case status page

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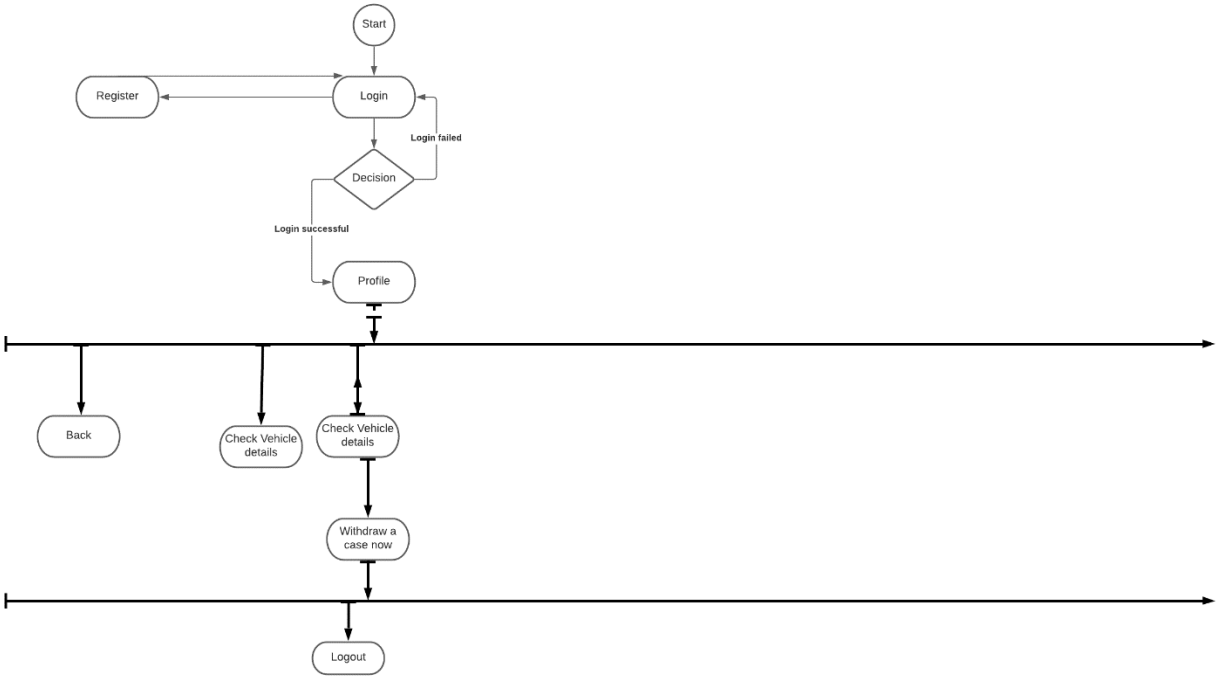
Activity diagram



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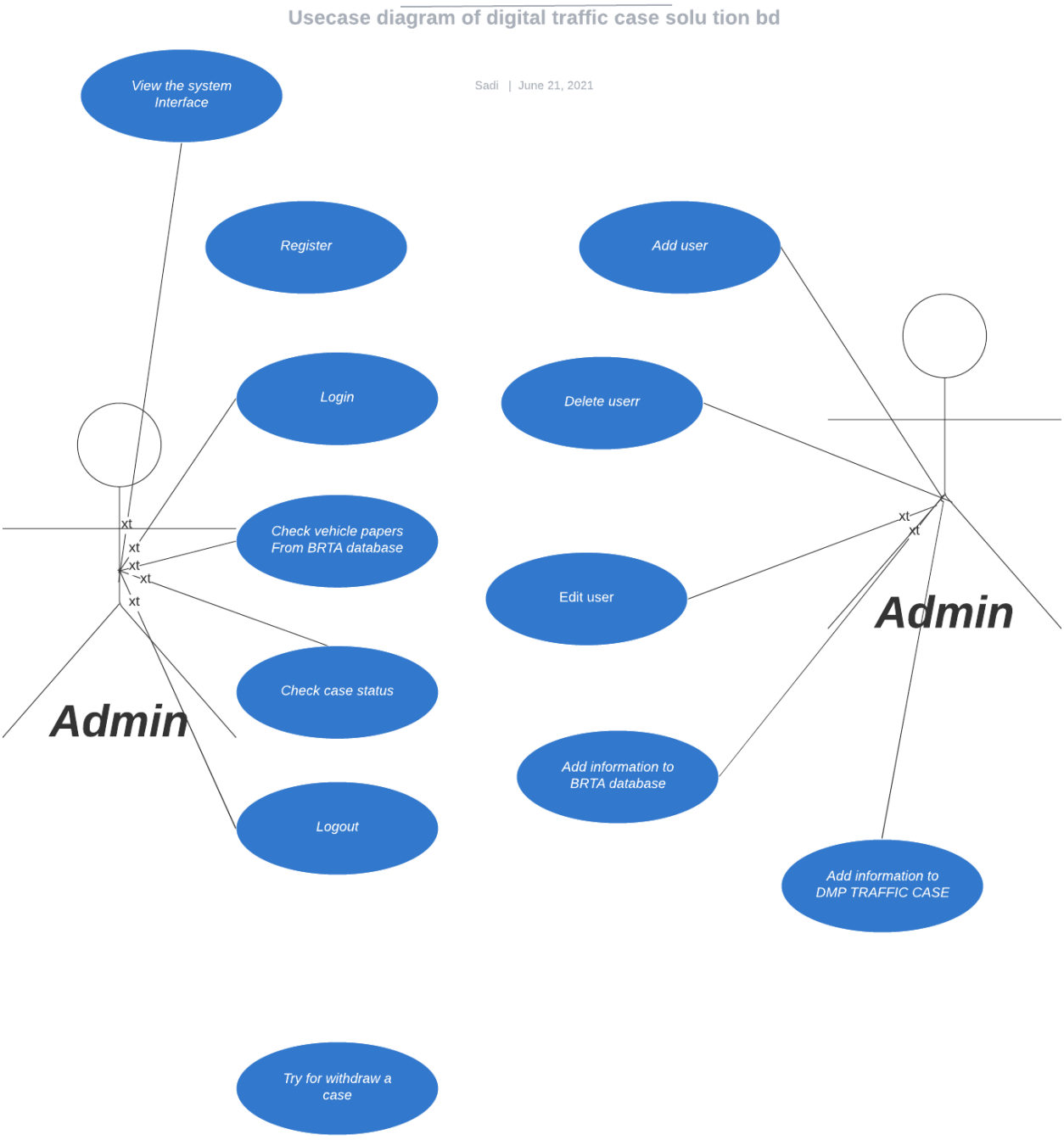
Old Full use case diagram



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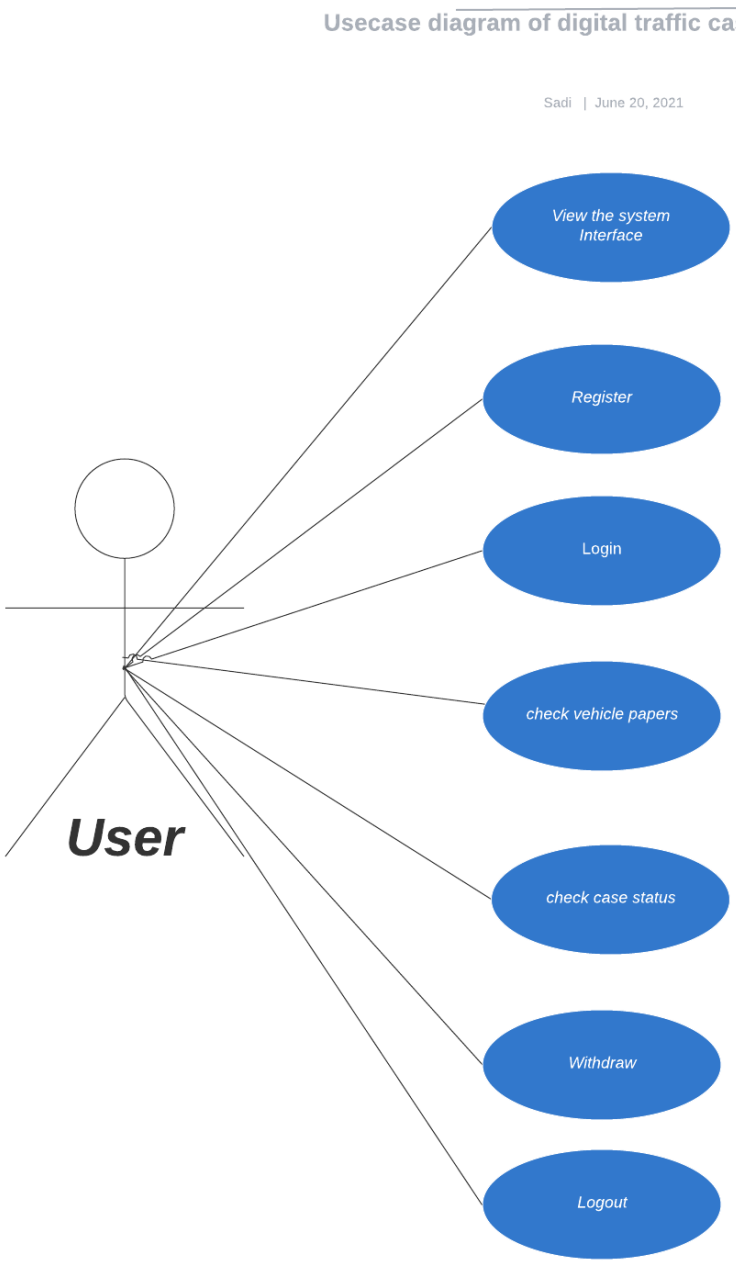
Use case diagram



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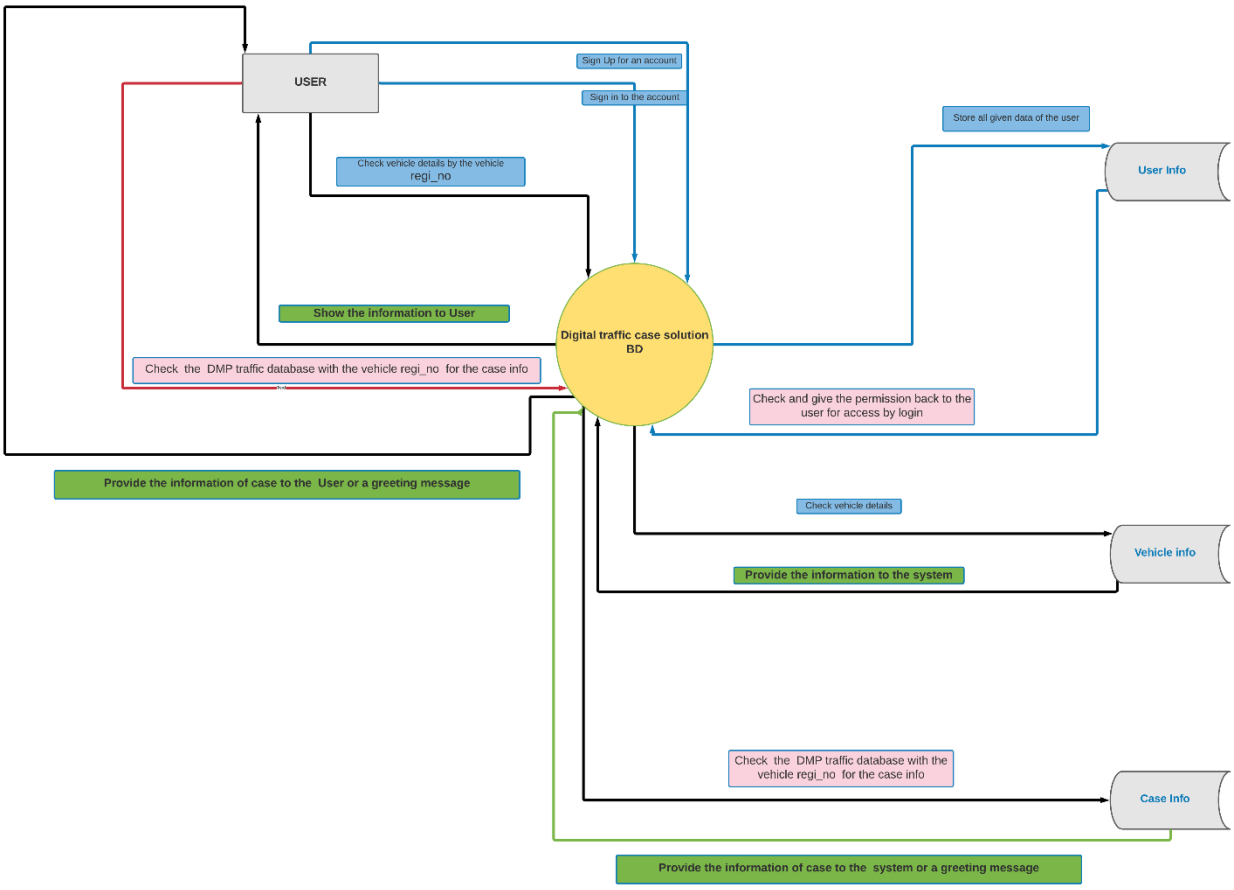
Context diagram



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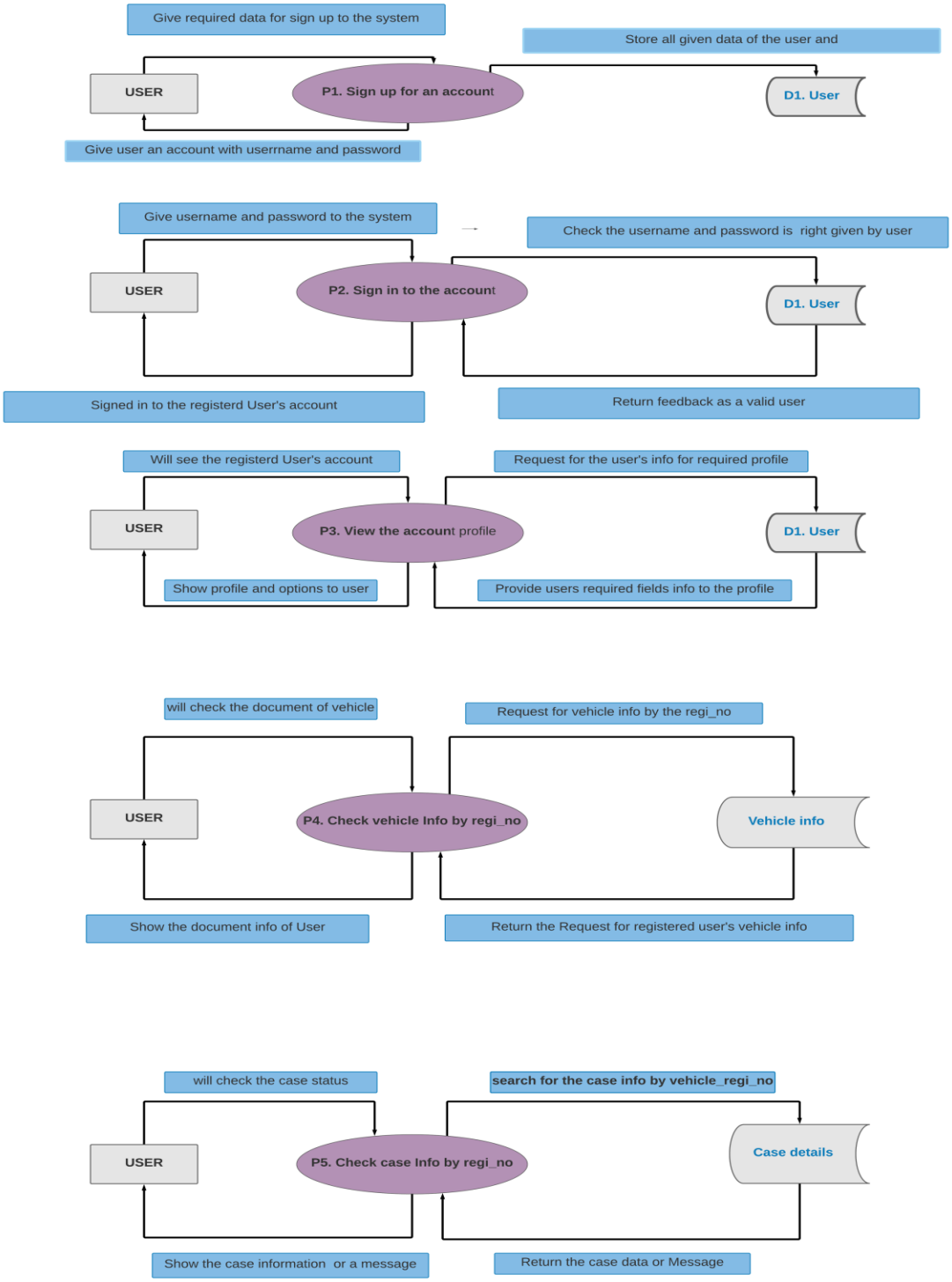
Data flow diagram



Level 1 Data flow diagram for our system

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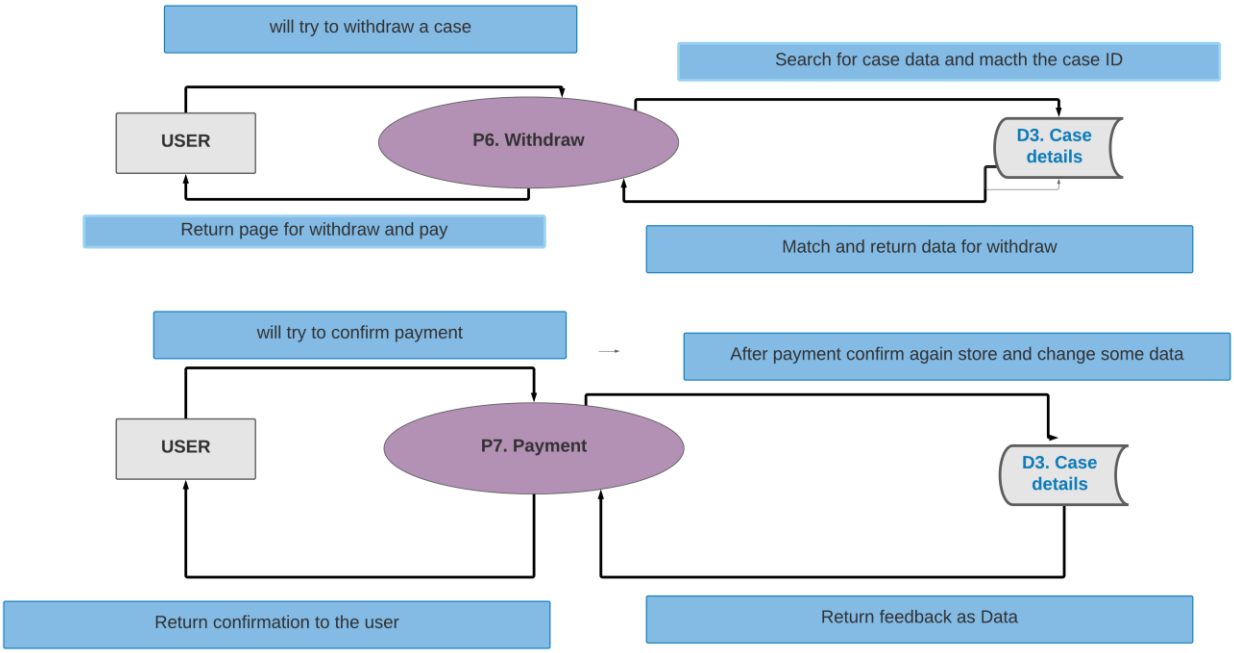

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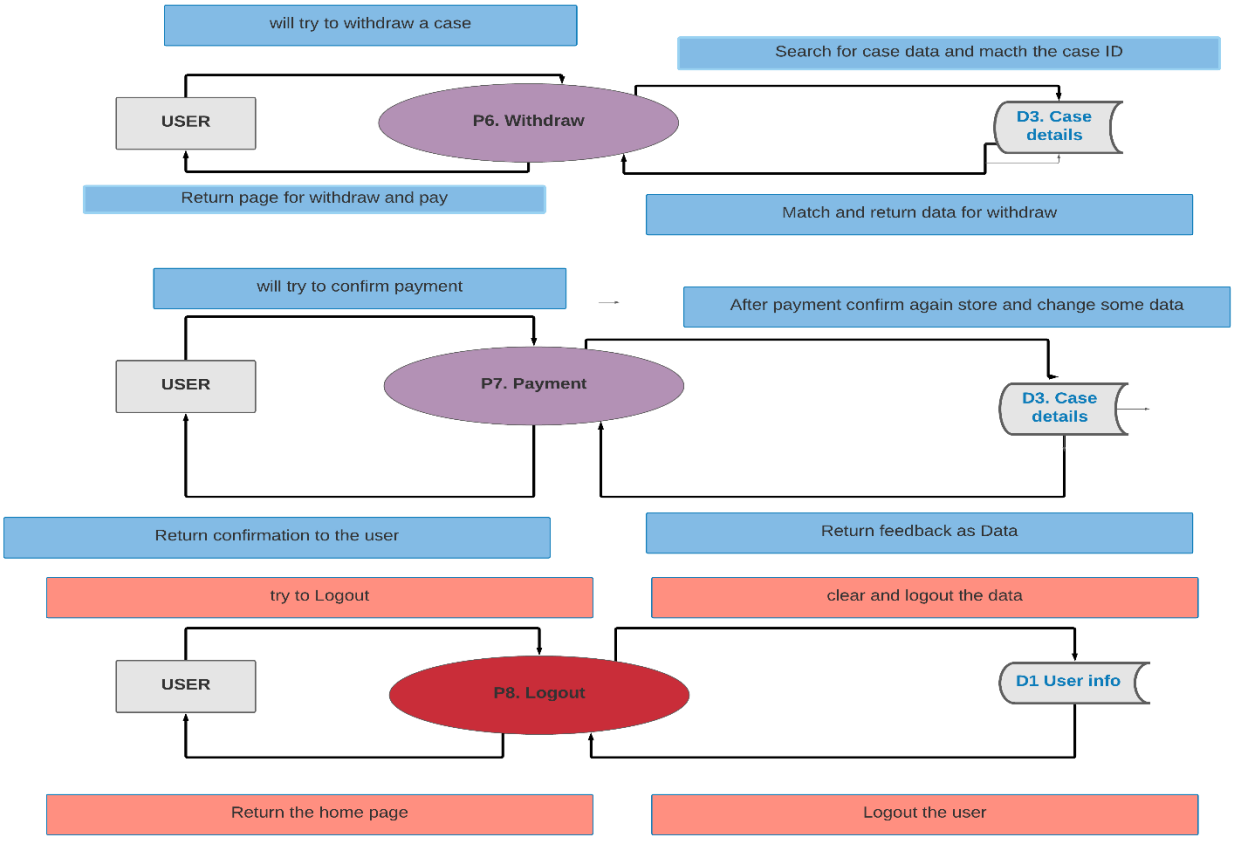

Level 1 Data flow diagram for our system

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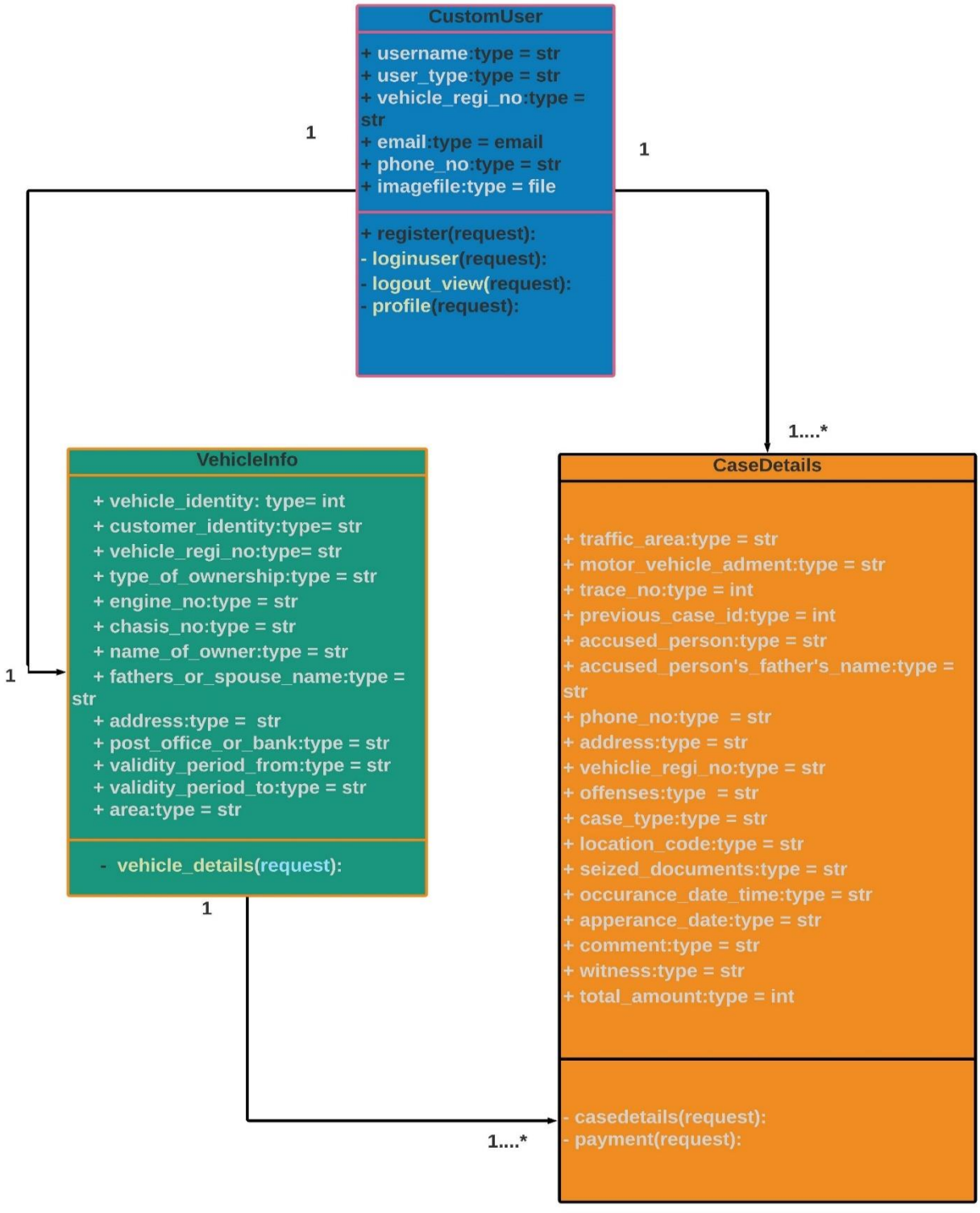
Class diagram



Class diagram For our System

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