

**A WEB-BASED BANGLADESH NEAREST ON SPOT CAR SERVICES**

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This Report Presented in Partial Fulfillment of the Requirements for the  
Degree of Bachelor of Science in Computer Science and Engineering

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**DAFFODIL INTERNATIONAL UNIVERSITY**

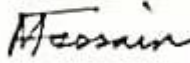
**DHAKA, BANGLADESH**

**JANUARY 2024**

## APPROVAL

This Project titled “A Web Based Bangladesh Nearest On Spot Car Services”, submitted by Sabekunnahar Munmun, ID No: 192-15-13354 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 25-01-2024.

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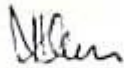
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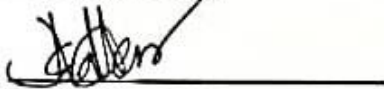
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## DECLARATION

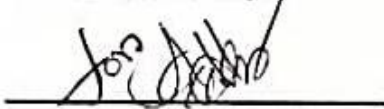
I hereby declare that, this project has been done by us under the supervision of **Mr. Abdus Sattar, Assistant Professor & Coordinator M.Sc, Department of CSE, Daffodil International University**. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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## **ABSTRACT**

Generally, we go out in pursuit of life and livelihood. We have a goal and a destination. And we use a vehicle to reach our destination on time. Many time it is seen that the vehicle breaks down on the way. It is not only me but also the cause of extreme suffering for the passengers of the vehicles behind during the traffic jam. It is very time consuming to immediately find a mechanic or tow the car. To get rid of the situation I proposed a model where everything is arranged and all problems will be solved in one click. It offers roadside assistance, ensuring that help is available whenever and wherever a vehicle owner may need it. We will be able to see this project, it's eliminates the need for vehicle owners to visit traditional service centers, saving valuable time and effort. Because through user login and technician scheduling, they may easily find the closest vehicle repair shop using Google Maps. They can find the nearest oil pumps in the same way. Frequently, we find that a specific component is malfunctioning. With the help of this website, we can quickly pinpoint the exact issue and obtain access to an online parts catalogue that offers comprehensive details on specs, compatibility, and costs. By utilizing our website's shipping feature, we may expedite and save time during the hauling process. Another is that each vehicle's digital history of previous maintenance and repairs can be viewed by the user. By logging as service provider, sellers can market their goods and mechanics may list themselves as service providers along with all of their contact information. All of this is handled by the admin. Last but not least, the feedback section which I designed is one of the main elements of the website. It helps people make decisions by utilizing the experiences of others.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

A proposed endeavor to provide a centralized online platform for giving vehicle owner and service provider the information and support instant is called the Bangladesh Web-Based nearest on-spot car services project. Provide a range of services, such as: The web-based solution that brings the convenience of on-spot car servicing to your fingertips. We understand the challenges of traditional car maintenance, and we're here to transform the way you take care of your vehicle. With this, say goodbye to lengthy service center visits and embrace a hassle-free, on-the-go car care experience. According to expectations some of the main advantages of the web-based Bangladesh on-spot car services include the following: **Emergency Support:** On-spot servicing is particularly advantageous in emergency situations where immediate attention is needed. Whether it's a roadside breakdown or a sudden malfunction, on-spot services responds quickly to address difficulties, assuring the safety and well-being of the vehicle's occupants. Transporting a car to a service center might be difficult in densely populated areas or cities with heavy traffic congestion. On-spot services removes the need for car owners to travel through traffic, lowering the related inconveniences and risks. **Cost-Efficiency:** By reducing the need for transportation and expediting the repair procedure, on-spot car services can help vehicle owners save money. On-spot servicing provides for a more personalized and customer-centric approach. Car owners can communicate with technicians directly, addressing individual concerns and offering appropriate solutions. Customers feel more trusting and satisfied when they receive personalized service. We will be able to see this project, vehicle owner from different places of Bangladesh, easily know the information of the technician specializing in that particular problem, make a booking through the website, and will be able to make payment, collect technician's numbers from anywhere in Bangladesh. And I have created a database to keep information, where I will collect all the

data. I can also buy component from this website. Through this website we can easily get diagnosis for the breakdown, and easily contact the technician.

## **1.2 Background of the project**

The population of Bangladesh more than 160 million, Currently, looking at the roads of Bangladesh, it seems that there are more cars than people. In this situation, there are not enough service center or technicians to service the vehicle everywhere often associated with physical service centers, can come with several hassles for both service providers and vehicle owners. Traditional servicing is limited to the physical locations of service centers. Vehicle owners may need to travel considerable distances to access specialized services, leading to additional time and effort. Navigating through traffic to reach a service center can be a significant hassle, especially in densely populated areas. Finding parking at that situation and reach to the service centers can also be challenging. Possible advantages of the project: The Web-Based Bangladesh on spot car servicing may offer a variety of advantages, such as, Urbanization and Traffic Issues: Traditional car service is inconvenient in densely populated urban areas due to traffic congestion and limited parking spots. On-site servicing addresses these issues by delivering maintenance services to the customer's location, eliminating the need for them to travel congested streets. Changing Consumer Expectations: Modern consumers value convenience and time efficiency. On-spot car servicing aligns with these expectations, providing a hassle-free alternative to traditional service center visits. The model caters to the lifestyles of busy individuals who may find it challenging to allocate time for routine vehicle maintenance. Preventive Maintenance Recommendations: Technicians may offer recommendations for preventive maintenance based on their on-site assessments, helping prevent potential issues and extend the lifespan of the vehicle.

### **1.3 Objective**

We will demonstrate specialized technicians in this project for any malfunction from anywhere in Bangladesh. Through this website, we can see which specialized technicians are offering good services for any issues in their local area, from anywhere in Bangladesh. Furthermore, by using this website to make the payment, we will be able to reserve a specific specialist from the nearest service shop in that particular situation, saving us the trouble of searching for one and going to the traditional manner. It saves us time and eases our suffering. More garages, oil pumps, and readily available technical numbers will be included in this project. Furthermore, this website will provide on-spot car washing service. One additional feature, along with separate dashboards for the user, service provider, and admin, will be included.

### **1.4 Aim of the project**

The aims of an automobile project will depend on the vision, mission, and goals set by the project stakeholders, whether they are driven by technological advancement, market competitiveness, sustainability, or other strategic considerations. The convenience, personalized service, and time-saving aspects contribute to an overall positive experience for vehicle owners. With increasing environmental concerns, there's a growing focus on developing vehicles with lower emissions, improved fuel efficiency, or alternative energy sources. Want to develop eco-friendly and sustainable solutions that reduce the environmental impact of vehicles. The aim is often driven by a desire to enhance vehicle performance, safety, efficiency, or introduce new features that cater to evolving consumer needs. Improving vehicle safety is a critical aim, with the goal of minimizing injuries and fatalities on the road. To design and implement features that enhance the safety of vehicles and reduce the risk of accidents. To introduce innovative technologies and solutions with automotive industry.

## **1.5 Motivation**

I Sometimes we see a car breaking down on the roads and the car owner has to go through a lot of trouble to get the car fixed. Car owners often don't even get proper service when their car breaks down. Sometimes car owners have to go to different garages at different times in search of a specialized technician to fix their car problem properly. And the car owner has to carry the car to the garage and I think it's a hassle for the car owner and a lot of time consuming. it is a very difficult task for a vehicle owner. I plan or thought to make this website to relieve them from this condition, that people can book a technician standing on that spot or anywhere they want according to their nearest garage, I have tried to create a website to alleviate their suffering. Through which they can easily take care of various reason for breakdown, stay in touch with technician, and consumer can easily take proper diagnosis of their dream car from different places of Bangladesh or at home. My main purpose is to reduce those problem of people and having all the features and facilities in one website which will also increase the focus of car owners on car maintenance and I think it will reduce the number of car accidents. That is why I have tried to create this website.

## **1.6 Problem Statement**

In the modern automotive landscape, car owners often face challenges in obtaining immediate and reliable servicing for their vehicles, especially in situations where conventional service centers are inaccessible or impractical. Breakdowns, flat tires, or other unexpected issues require immediate attention, and there is a lack of a standardized platform for users to request on-the-spot assistance. Traditional maintenance schedules may not align with the dynamic needs of individuals, and breakdowns or emergencies require swift and convenient solutions. There is a growing demand for a seamless on-spot car servicing platform that connects car owners with certified mechanics, providing prompt and efficient services at the location of the vehicle. The accessibility of on-spot car servicing is constrained by geographic limitations. Remote or less-populated areas may experience difficulties in accessing timely and reliable on-the-go servicing, leaving vehicle owners stranded without immediate support.

## **1.7 Research Methodology**

Data Collection:

More detailed information regarding people's experiences with the helpline can be gathered through interviews. A video conference, phone call, or in-person interview are all options. Focus groups: You can utilize focus groups to gather information from a group of people about their experiences using the helpline. Focus groups can be a useful tool for gathering various viewpoints on a subject. Studies based on observation: Studies based on observation can be used to get information on how individuals engage with the hotline. For instance, researchers could listen in on calls to the hotline or watch users of the helpline's website.

## **1.8 Conclusion**

For people in Bangladesh, the on-spot car servicing project represents a transformative approach to meeting the evolving needs of modern consumers in the automotive service industry. It is offering convenient and efficient maintenance and repair services directly at the customer's location. This project addresses key pain points related to time constraints and inconvenience associated with traditional service models. Through data-driven decision-making, technological innovation, and a customer-centric approach. I am confident that this project will not only contribute to the efficiency of car maintenance but also set a new standard for convenience and excellence in the industry.

## **1.9 Chapter Layout**

The project introduction, objective, goals, and proposals were all in portrayed in chapter 1 of the book. The “Background” section of the Chapter 2 will include an introduction, related works, a problem, a study summary, and challenges. Tools and technology will be covered in Chapter 3. System analysis and design will be covered in Chapter 4. Design, Development, Testing and implementation will all be covered in Chapter 5. Impact on Society, Environment, Sustainability will be covered in Chapter 6. The Summary and Conclusion are covered in detail in Chapter 7, along with examples of potential future initiatives.

## CHAPTER 2

### BACKGROUND STUDY

#### 2.1 Introduction

A nation with a population of more than 160 million people is Bangladesh. On average, around 15,000 private cars are registered in Dhaka annually, averaging to 41 cars each day for ten years. Interestingly, in 2021, a total of 16,049 private passenger cars were registered nationwide. 14,321 from them were in Dhaka alone, continually adding to Dhaka's deterring traffic situation [12]. So, whatever it was Introducing this large number of people or users with the new technology is the main concern and for that purpose this website is created and bringing all the users under one organized website will reduce their results and save time.

#### 2.2 Existing System

By studying the previous research paper and surveying some garages and repair station we get to know there are fewer system exists but not many web applications are there for vehicle services in Bangladesh. While analyzing, there was a website named “Gaadizo”. It is mainly located in Delhi NCR. It was developed by Vikas Mitra who was earlier a senior executive at Honda company [8]. The Gaadizo system has different service centers for example- Noida, Gurgaon, Ghaziabad, etc. This system consisted of features like genuine part assurance, service warranty, easy tracking of the service progress, etc. There is web application which don't provide the chatbot module for user. We will be providing this module to make payment easier to do and will help to save the time. Not necessary to carry cash everywhere there are card and digital payment made available for that. To minimize all the drawbacks from the previous system of Automobile servicing, this system reduces complexities in the process of finding garages in emergency and difficulties in management of services of automobiles. The gap between the existing system and the proposed system is mainly slot booking to remove time consumption, auto-billing



for transparency, FAQ for general queries, navigation services to get the exact location of the service center. Automobile servicing becomes easy through this application. With the help of this application car owners can easily locate all the nearby garages in case of car breakdown in an unknown location. This application aims at providing the best way for managing automobile servicing.

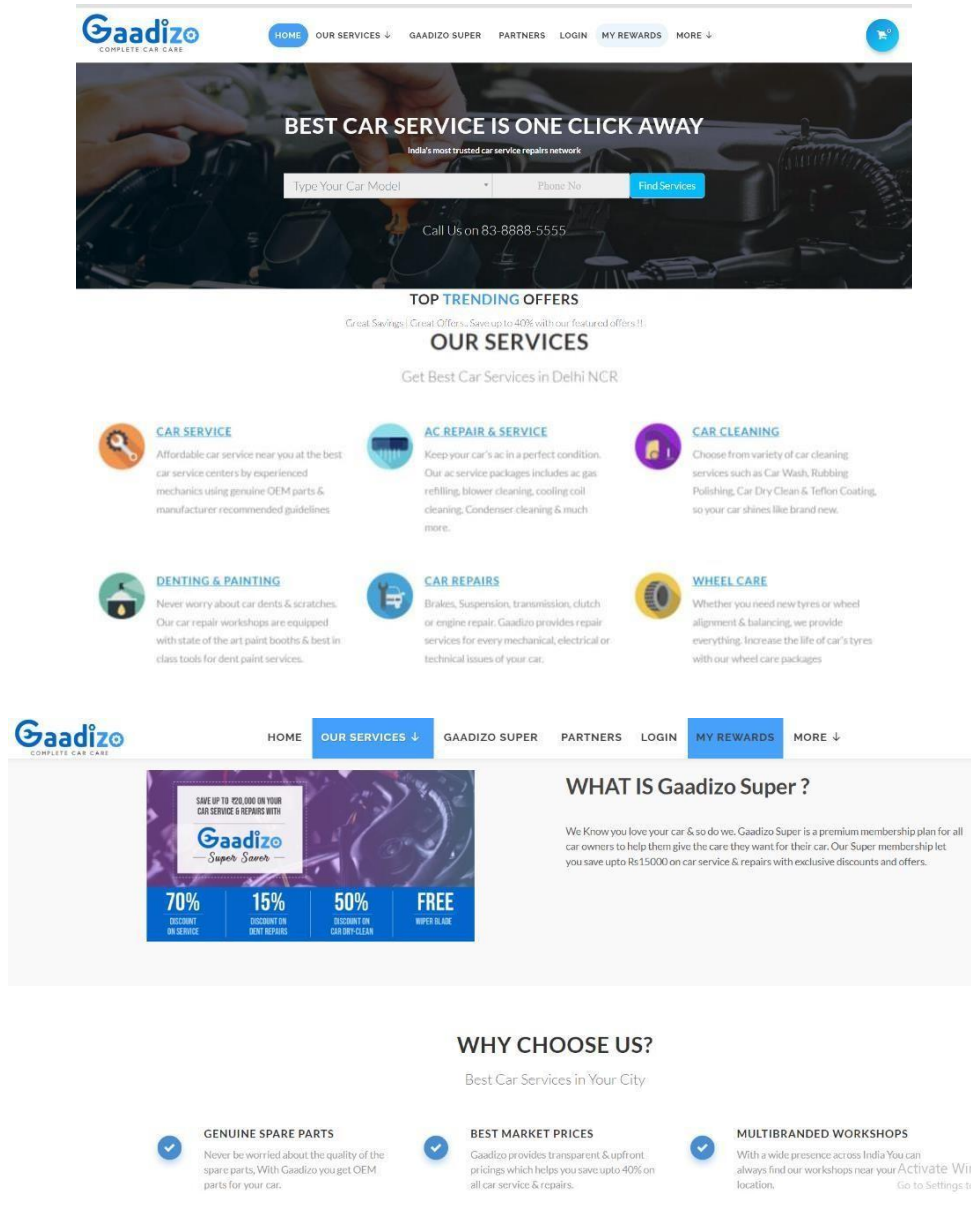


Figure: 2.2.1 Existing work Interfaces

## **2.3 Comparative Studies**

The efficiency of online car service helplines has been examined in a number of researches. According to these research, online helplines can be a useful tool for people, giving them access to maintenance advice and knowledge that they might not otherwise have. Using a web-based helpline increased users' likelihood of being satisfied with their car care compared to not using the helpline, according to a U.S. study [8]. The helpline decreased the number of needless garages visits. According to the study. A web-based on spot car service helpline proved helpful at giving information and support to user with any problem, according to a different study carried out in other country. This study will also reveal additional benefits of the helpline.

## **2.4 Challenges**

**Integration with Vehicle Systems:** Connecting the app to the vehicle's internal systems can be challenging due to the variety of protocols and technologies used in different vehicles. **Technology:** The project calls on the use of technology, which can be difficult in Bangladesh because there are fewer people who have access to the internet than in other countries. **Real-time Data Processing:** Managing real-time data streams from the vehicle, such as location, speed, and diagnostic information. **Geographic Coverage:** Ensuring that the on-spot car services app can provide coverage in a wide range of locations. **Managing logistics for service providers to reach customers in both urban and remote areas.** Stable internet connection is required for accessing the website. This website may need to be used in remote locations such as cities and villages where stable network connection may be an issue.

## **2.5 Conclusion**

A suggested project that could enhance Bangladesh's car maintenance system is the web-based Bangladesh on spot car servicing project. People who would not otherwise be able to get free advice and information would have access to it thanks in advance to the helpline. Additionally, the helpline would lessen the amount of unneeded garage visits. Numerous difficulties with technology, human resources, money, and cultural aspects are faced by the project. However, by engaging with neighborhood automobile organizations, utilizing low-cost technological solutions, looking for funding from a range of sources, and speaking with cultural specialists, these difficulties can be overcome.

## CHAPTER 3

### REQUIREMENT SPECIFICATION

By using the word "requirement specification," it is possible to get an understanding of the characteristics and actions of a system or system application [1]. The requirement definition serves as the foundation for the whole project. Engineers and developers create projects specifically for clients depending on their needs.

#### 3.1 Data Flow Diagram

The flow of a process or system is depicted in a data flow diagram. It is primarily the first stage in creating a detailed project overview. Additionally, data visualization uses it. I am displaying the DFD for my project in Figure 3.1.1 My project completely utilizes the DFD technique.

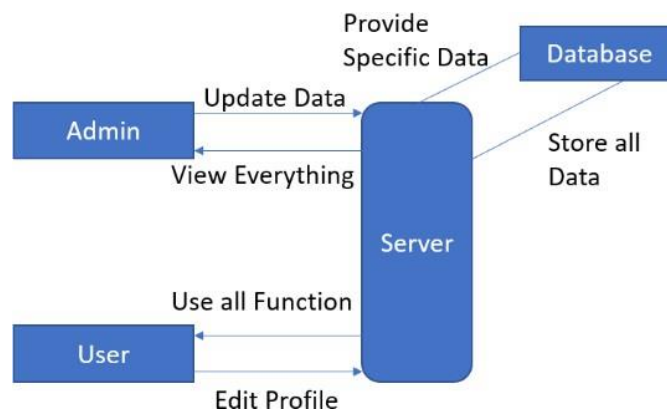


Figure: 3.1.1 Data Flow Diagram

#### 3.2 Requirement Analysis

For the development of any project, requirement collections are essential. It is crucial for both building projects and the project management system. The project management system's most crucial stage is this one. In essence, requirements are gathered based on client desire. When a project falls short of meeting all the requirements, risks are involved. The project's outcome won't be able to satisfy clients throughout that period. Therefore,

gathering requirements is essential to a successful project management system. Because of this, I gather all needs based on client requests, and I plan to continue gathering requirements as projects progress.

### **SDLC Model**

Any project development depends on it. It covers every step of the project development process, from planning through development [2]. Agile is the finest project development methodology out of all of them. Because the agile paradigm suggests using incremental and iterative software design methods [3].

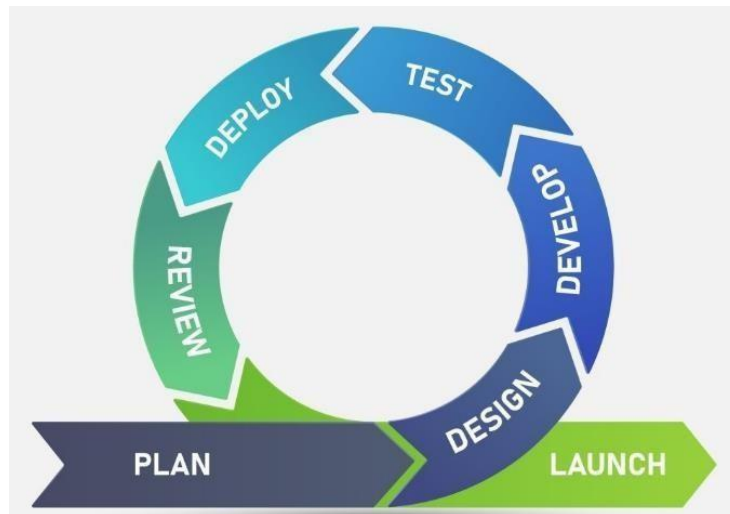


Figure: 3.2.1 Software Development Life Cycle (Agile Model)

There are some requirements that must be met in order to use our system.

Table 3.2 Requirements Analysis

| <b>Serial No</b> | <b>Requirement Name</b>                    | <b>Requirement Analysis</b>   |
|------------------|--|---|
| 01               | Admin login                                | The administrator must be logged in with a username and password in order to change any catalog on the website.                     |
| 02               | Consumer registration                      | Before availing the benefits, users must register on the website.   |
| 03               | Consumer Login                             | A consumer who has already registered must sign in using their existing username and password.                                      |
| 04               | Consumer Shipping address                  | Consumer must accurately provide their shipping address while placing a purchase or where they need servicing the on spot location. |
| 05               | Service provider Registration              | Prior to setting up a store and including items, sellers or service provider must register on the website.                          |
| 06               | Seller/Service Provider Login              | Sellers who have already registered must sign in using their existing username and password.  |
| 07               | Seller/ Service Provider Shop Registration | The service provider must correctly set up his or her business before adding any products.  |
| 08               | Seller Adding Product                      | The seller entered the seller account after setting up a shop and adding the product to it.   |

### 3.3 Functional and Non Functional Requirements

For the project of on-spot car servicing, functional and non-functional requirements play crucial roles in defining what the system should do and how it should perform. Below are both types of requirements for this project:

#### **Functional Requirements:**

- **User Registration and Authentication:** Users should be able to register for the on-spot car servicing platform.
- **Location-based Services:** Users should be able to select the nearest available service providers.
- **Real-time Notifications:** Service providers should be notified instantly when a service request is made.
- **Payment and Invoicing:** Users should be able to make payments securely through the platform. The system must generate invoices for completed services.
- **Feedback and Ratings:** Users should have the ability to provide feedback and ratings for the service received. Service providers should be able to view and respond to feedback.
- **Service History:** Users should have access to a history of their past service requests. Service providers should have a record of the services they have provided.

#### **Non-functional Requirements:**

- **Performance:** The system should handle a specific number of service requests concurrently.
- **Scalability:** The system should be scalable to accommodate an increasing number of users and service providers.
- **Usability:** The user interface should be intuitive and user-friendly.
- **Compatibility:** The platform should be compatible with a variety of devices and browsers
- **Data Backup and Recovery:** There should be a robust data recovery plan in case of data loss or system failures.

### 3.4 ER Diagram

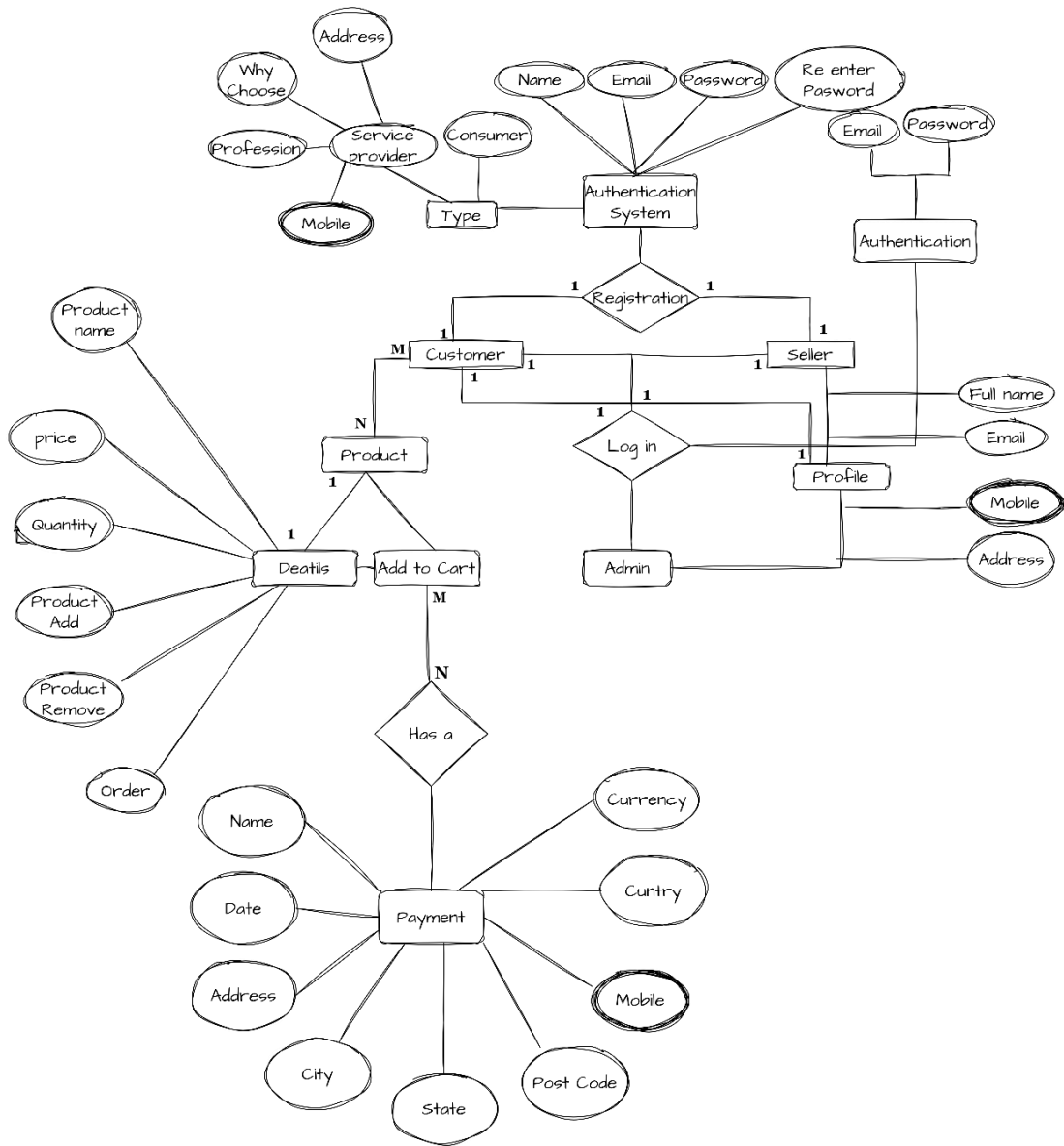


Figure: 3.4.1 ER Diagram



### 3.5 Use Case Diagram:

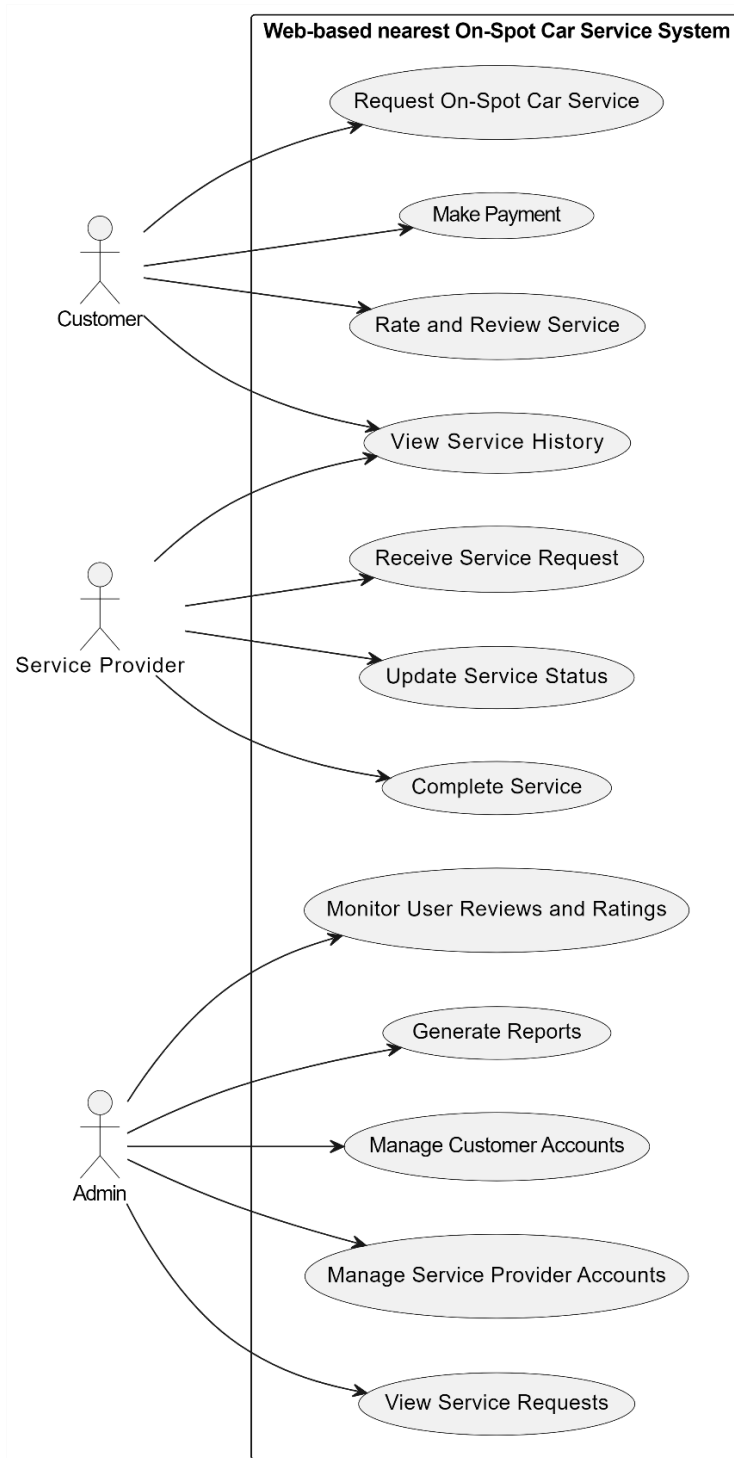


Figure: 3.5.1 Use Case Diagram

### 3.6 Class Diagram

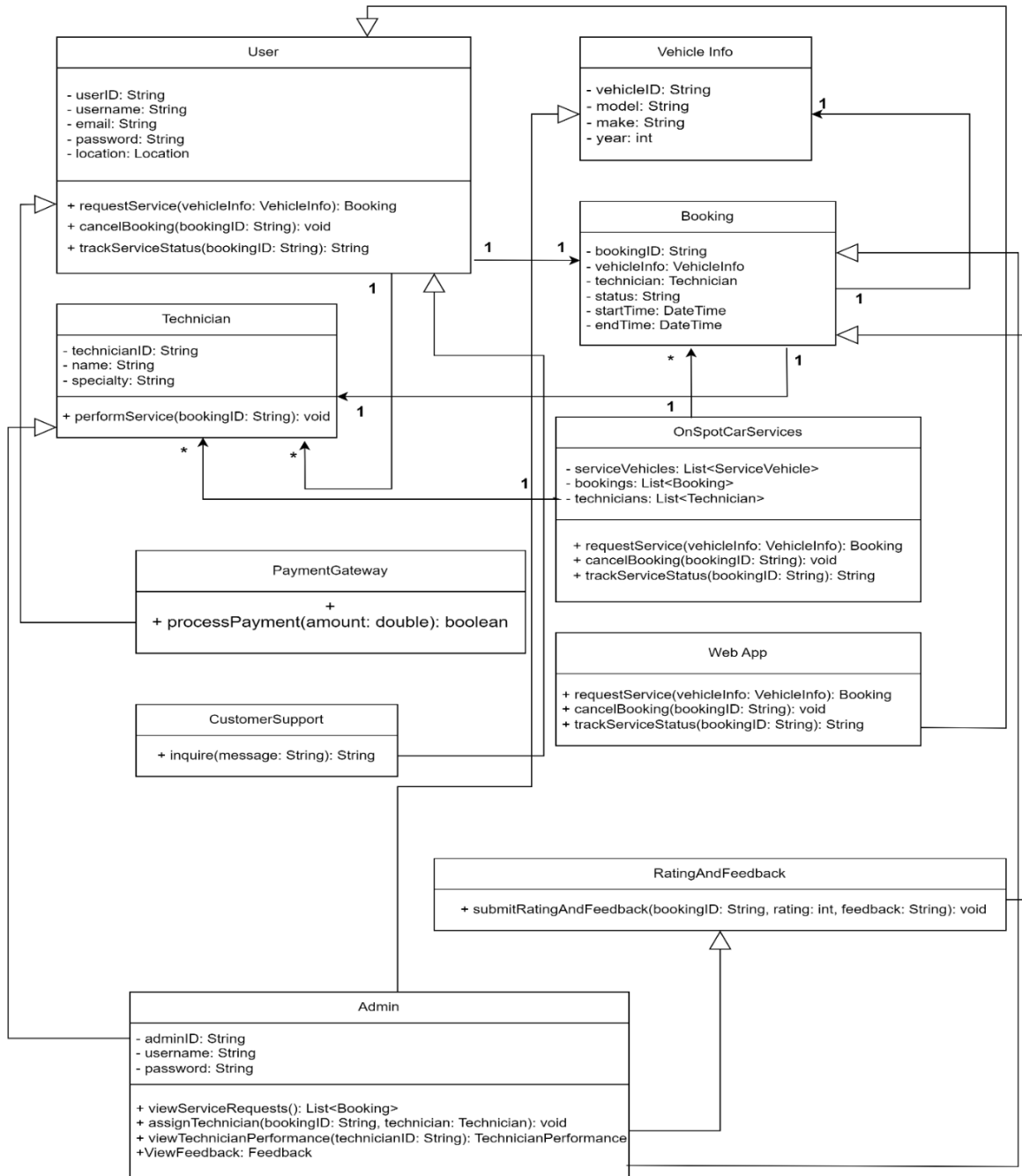


Figure: 3.6.1 Class Diagram

### **3.7 Design Requirements**

My platform is an interactive/responsive/multi-vendor website. Both the front end and the back end of our website were developed using several web programming languages. In order to create websites, I used HTML, CSS, React JS, React router and Bootstrap framework. React is what I used for front-end design. On the other side, the backend is created using the well-known programming language Node JS. Here, the MongoDB database server aids in making it dynamic.

#### **HTML**

There are several methods I may use to add more space to my HTML code on a web page, depending on the type of space I need. The following sections discuss a wide range of methods for adding more space using HTML and CSS.

#### **CSS**

The language used to express how web pages are presented, including their colors, layout, and text styles, is called CSS. Any XML-based markup language may be used with CSS, which is HTML free.

It is applied to create aesthetically appealing web pages. An effective website must be visually appealing.

#### **Bootstrap**

In contrast to web applications, producing informative web pages is made easier with the help of the Bootstrap HTML, CSS, and JS package. It is used to implement design choices for a website in terms of color, size, font, and layout.

## CHAPTER 4

### DESIGN AND DEVELOPMENT

#### 4.1 Structure of the project

A The system mainly consists of three-part customer side, garage side and one is admin side. Whenever user need assist then using google map API location his/her request gets into our fire-base cloud. With the help of Service Request Manager and Real-Time database of fire-base cloud user will get the list of nearby garages and he can check the services offered by them. Garage will get the request if user demands. If garage owner accepts the request, then they can communicate through message or via call. After providing the service to user garage owner can fill the details of services he has done on vehicle in our app and accordingly system will generate bill and send one copy to user. Admin will be the monitoring body. He will do the update, delete, create operations according to the need.

#### 4.2 Front-end Design

Front-end design refers to everything that a user sees while visiting a website. It gives users a channel of communication with the server. The process of collecting user, system, business, and other requirements and having the sponsor and project team "formally" accept them is the easiest. However, the majority of projects' front ends actually require a lot more labor than this seems [5]. A website's user interface not only draws visitors, but also makes it simple for users to interact with the site. I created my multivendor website using React JS and Material UI for front-end design.

#### React JS

A well-liked JavaScript library for UI development is React JS. I can create reusable components, create handler states that are excellent, and effectively construct my code using React Js.

## **React Router**

A JavaScript framework called React Router enables us to manage client- and server-side routing in React applications. It enables the development of one-page websites and mobile applications that allow navigation without refreshing the page [11]. Additionally, while maintaining the appropriate application view, it enables us to use browser history functions.

## **React Hook Form**

A library called React Hook Form makes it easier to validate forms in React. It is a basic, performant, and minimal library that doesn't have any other dependencies. As a result, it requires fewer lines of code from developers than other form libraries.

## **React Paginate**

The react-paginate package makes it simple to render pagination in React. It offers adjustable choices for things like page size, page range, and the amount of pages and allows you to list stuff on pages.

## **Material UI**

A component library for React is called Material UI. MUI offers a comprehensive, scalable collection of fundamental and sophisticated components, enabling me to create my design system and a React website rapidly.

## **4.3 Back-end Design**

The core, logical portion of a program is known as the back-end or server-side design. There are number of programming languages and technologies for back end like CSS/HTML, PHP, SQL, JavaScript, Python [6]. Using the backend, I can control security, authentication, sessions, data validation, database administration, data sharing, etc. For the login, logout page, new user or new customer registration page I used Firebase. For the server site language, I wrote all of the system's functionality in Node JS. My data are managed and stored in the Mongo DB database.

## **Node JS**

Based on the V8 JavaScript engine in Chrome, Node.js is a JavaScript runtime. I can create scalable, reliable server-side logic with node.js, as well as REST APIs and sophisticated apps [7]. It has simplified my job since I can create a front-end and back-end for an application using only JavaScript, saving me time and effort.

## **MongoDB**

It is a document-oriented No-SQL database that stores documents in a JSON-like manner. Storing structured or unstructured data, including authentication, sessions, data validation, database administration, data sharing, security, etc., makes my work simple.

## **Firebase**

Passwords and email addresses are used to verify users. Create and manage users who log in with their email addresses and passwords using the tools provided by the Firebase Authentication SDK. Additionally, emails for password resets are sent using Firebase Authentication.

### **4.4 Implementation Requirements**

1. JavaScript should be used to create the system's backend.
2. The ideal database for storing and managing all the data is MongoDB.
3. I require HTML and CSS for developing and organizing web pages.
4. Effective measures must be taken to prevent unauthorized access.
5. Putting in place practical session management.
6. The form should give different error warnings if any improper data is entered.
7. All database queries need to function correctly.
8. To make front-end design more aesthetically pleasing and responsive for all devices, utilize the Bootstrap framework.

## 4.5 Interaction Design and UX

**Homepage:** Users will see advertising, a list of the top-selling product, and a list of certain specific services on the homepage or landing page. Figure 4.5.1 showing my website homepage interface.

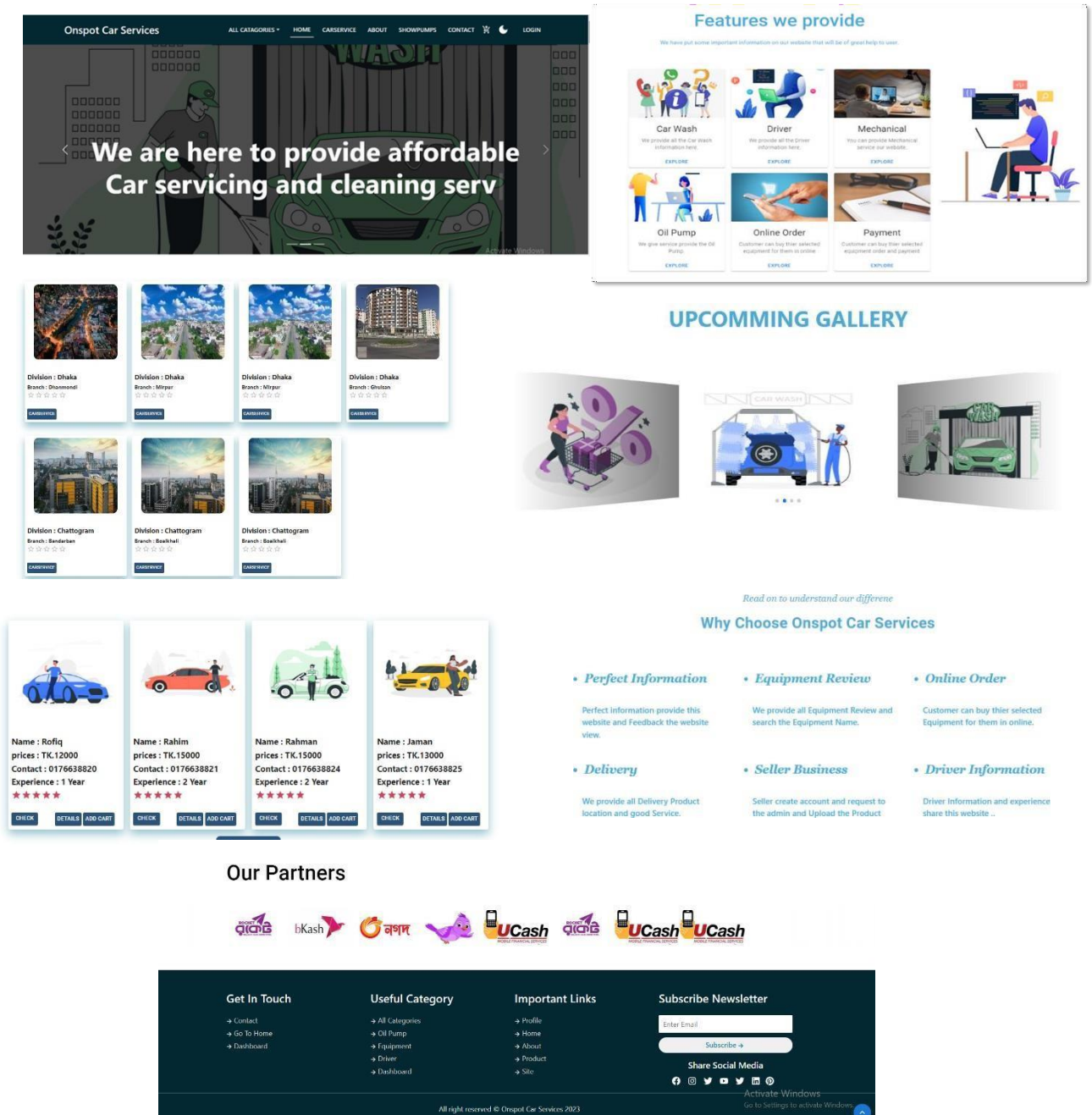


Figure: 4.5.1 Homepage Interface

**Signup and Login:** From the signup page, both a customer and a seller can make their own accounts. The option will be given to the seller to register both his account and the business. Figure 4.5.2 contains signup and login interface.

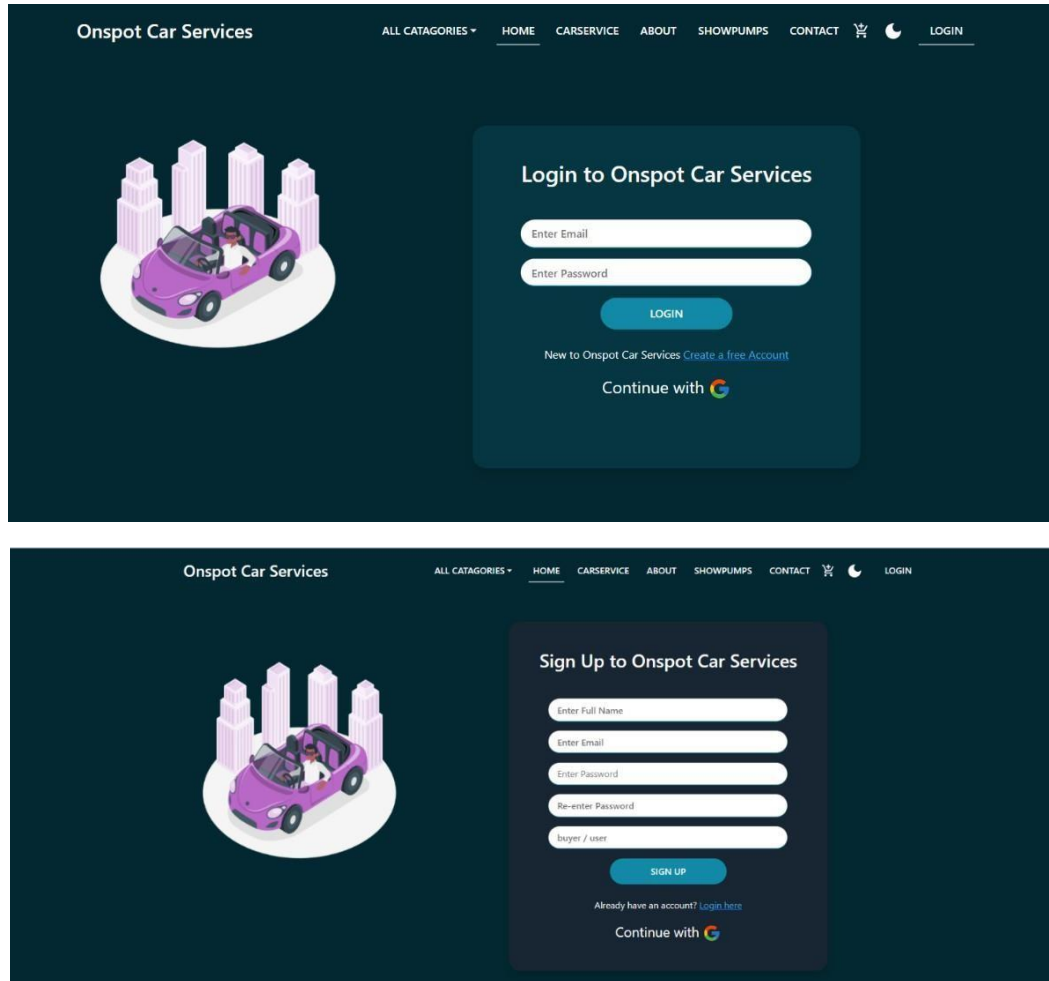


Figure: 4.5.2 Signup and Login Page



**After seller Login:** An overview of the mechanic's tasks, assignments, or pending jobs. Can access quickly to frequently used features and tools. Technician able to see details about each job, including customer information, vehicle details, and job description. Information about available parts and inventory and they have ability to order new parts if needed. Messaging or communication tools to interact with customers. Updates on job progress or additional repairs needed. Personalized settings for the mechanic, including account details and preferences. They can add their shop , tel pump address and name and upload parts or product.

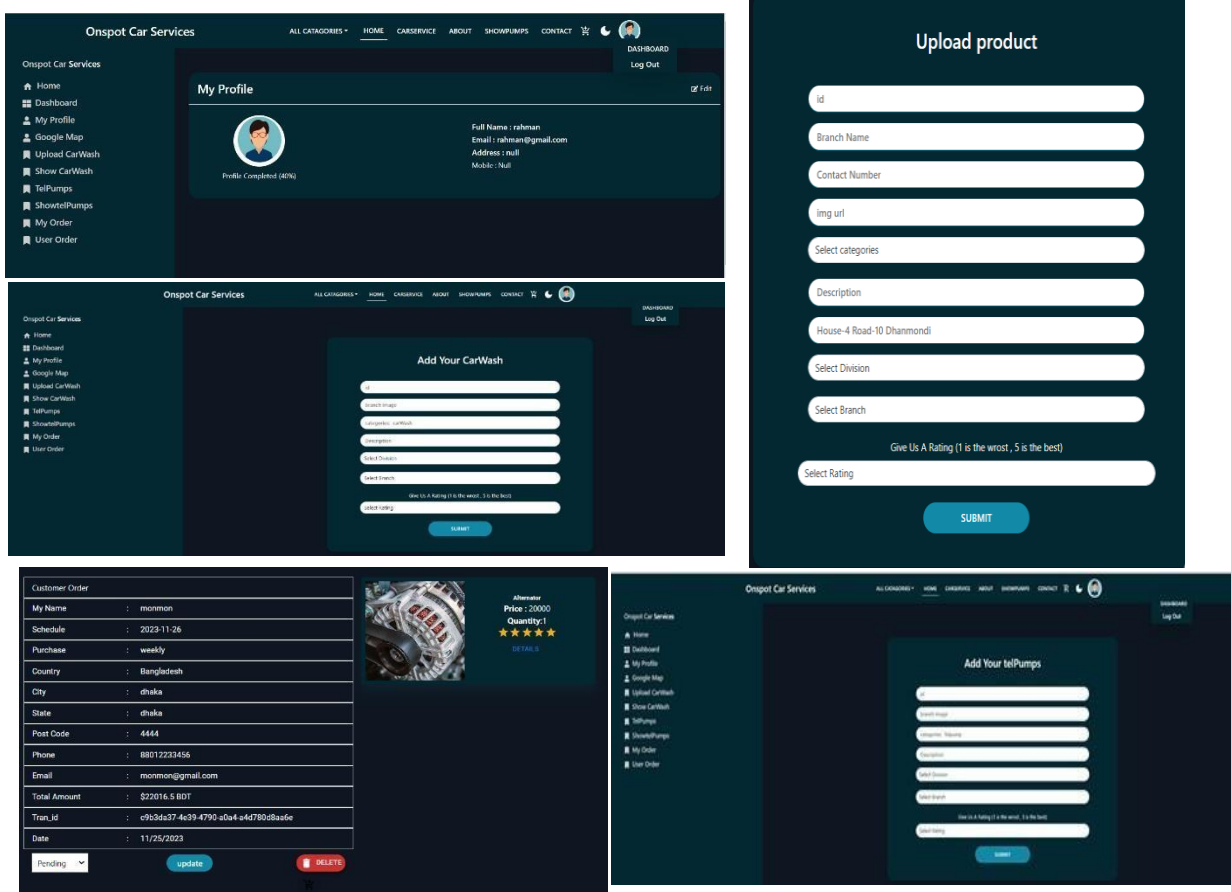


Figure: 4.5.3 Add shop and product Interface

**Shop and product History:** By selecting from the drop-down menu and pressing the button, a seller can add his shop and parts items for sale to his business in Dhaka and Chittagong. Figure 4.5.4 contains servicing shop and product history interface.

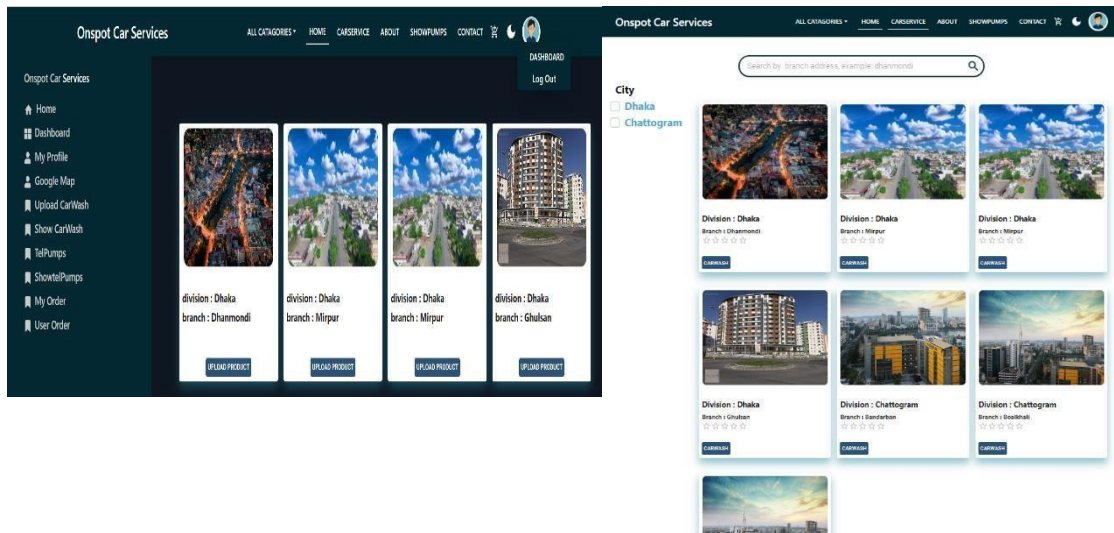


Figure: 4.5.4 Shop and Product History Interface

## After user Login:

### My Profile

#### 1. Edit Profile:

It should be simple to use and navigate the Edit Profile page. The instructions should be simple to grasp, and the user interface should be clear and succinct. The page should be secure and have the necessary safeguards in place to protect user information.

### Buy Products:

1. Buy Products: Users can view the product and order the product as per their requirement and use the product.

2. Payment: If the product matches his needs, he can buy and use the product through payment. Users can make payments through their preferred payment gateway.

## My Cart:

1. Quantity: Users can usually adjust the quantity of each product in their cart.
2. Add/Remove Items: The ability to add or remove items from the cart.
3. Total Price: The total cost of all items in the cart.
4. Checkout Button: A button that directs the user to the checkout process.
5. Promo Codes/Discounts: A section where users can apply promo codes or discounts.

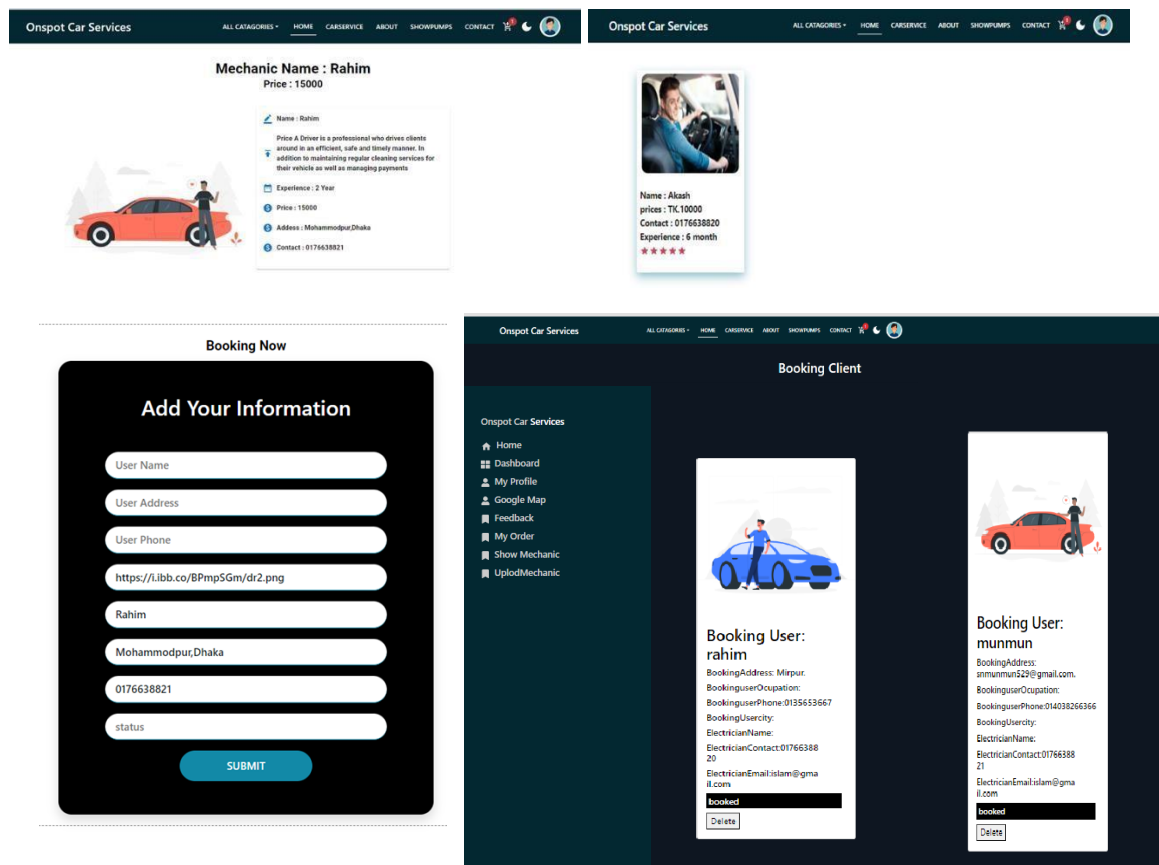


Figure: 4.5.5 Mechanic and Driver booking Interface

**Search and Filter Product:** Customers can quickly select and locate the products they want based on category and cost. They can also do searches utilizing terms connected to equipment. Figure 4.5.6 representing Search and Filter shop, parts bar interface.

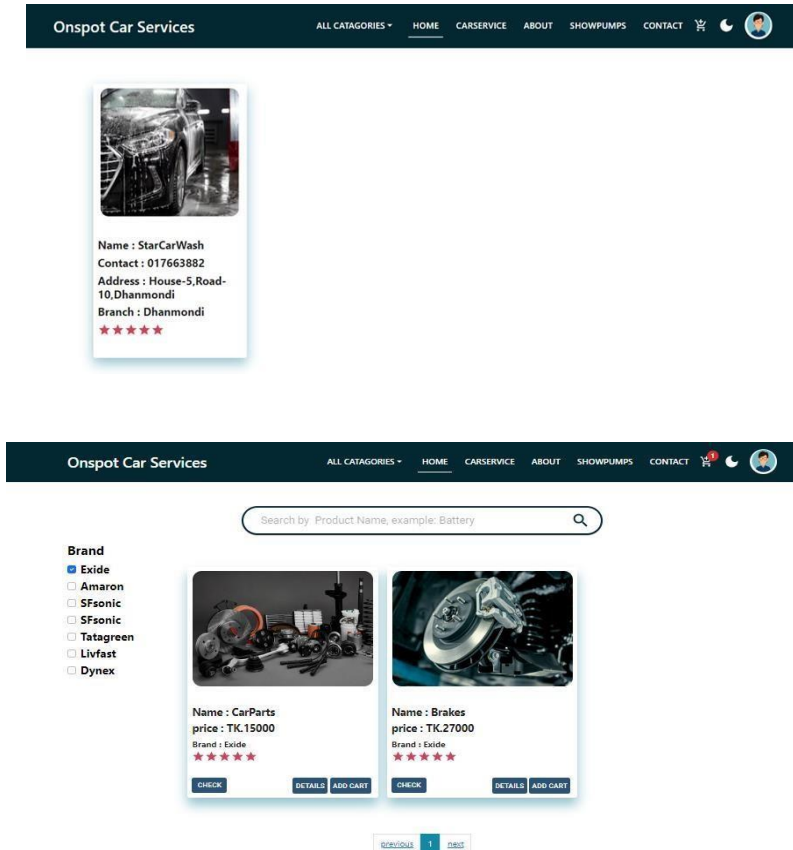


Figure: 4.5.6 Search and Filter Shop and Parts Interface

**Product Details and Review:** You can simply get all the details about a car parts on the product description page. It is possible to read reviews on product and services and submit fresh reviews. Figure 4.5.7 showing product details and review.

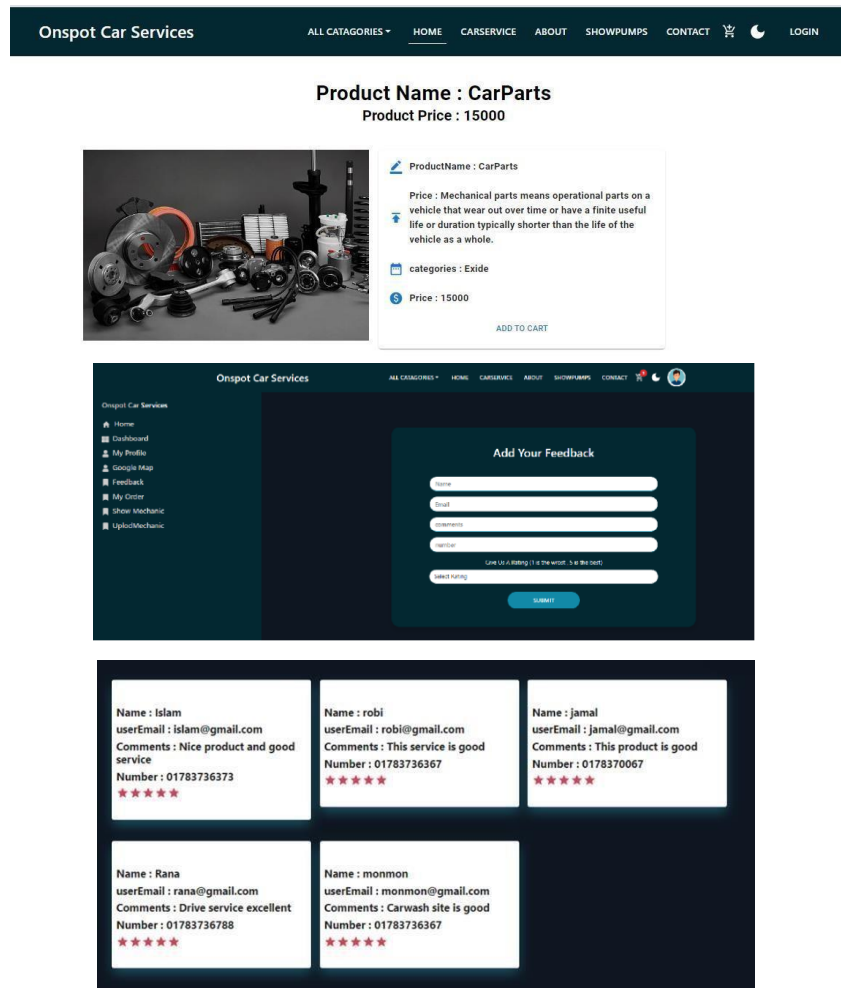


Figure: 4.5.7 Product Details and Review Interface

**Cart Page:** An user may order several parts whenever and wherever they need in various quantities. Figure 4.5.8 explains add to cart page.

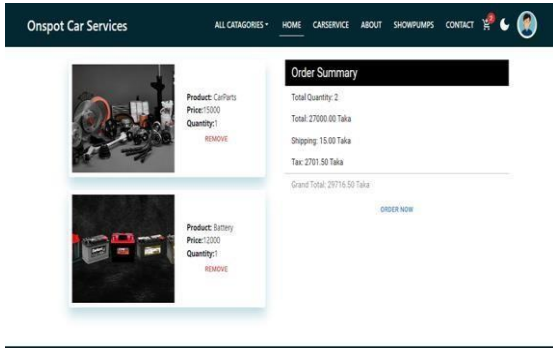


Figure: 4.5.8 Cart Page Interface

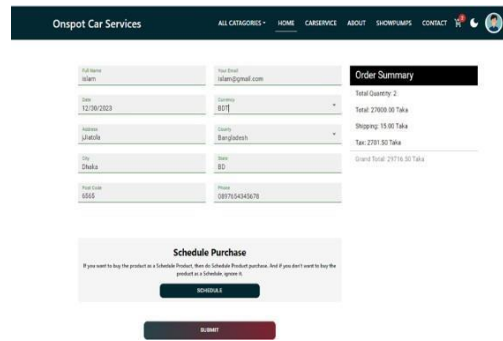


Figure: 4.5.9 Checkout Page Interface

**Payment Methods:** If a user, seller, or customer so chooses, they may finalize the order and booking by paying for the services and product using a Visa card, mobile banking, or net banking. Figure 4.5.10 showing the different payment methods.

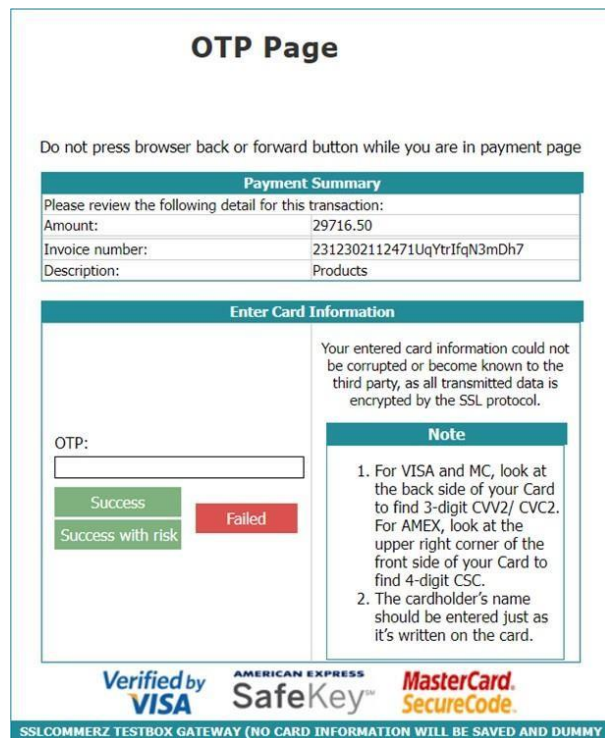
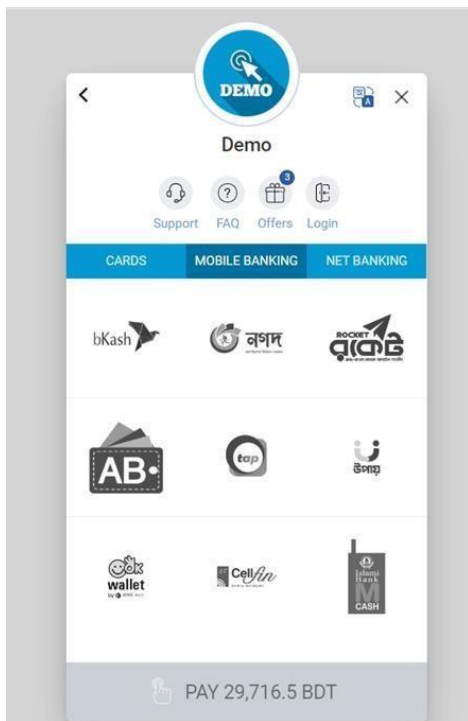


Figure: 4.5.10 Payment Methods Interface

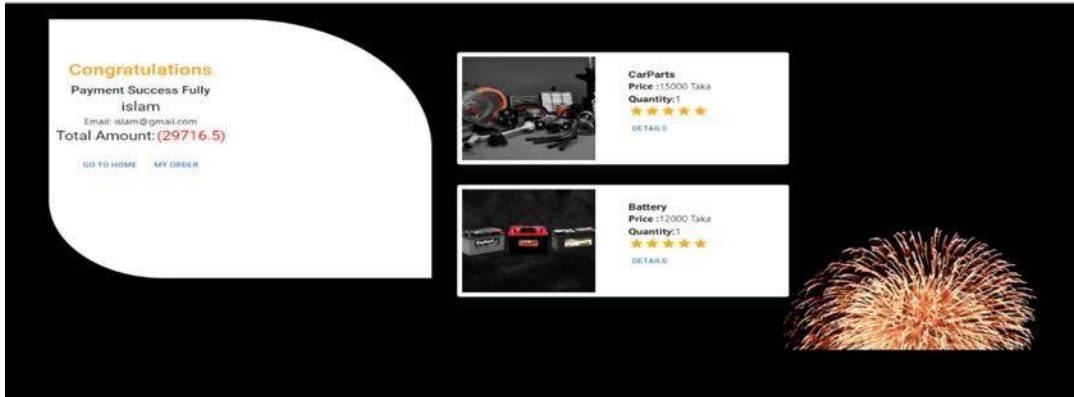


Figure: 4.5.11 Success page Interface

## After Admin Login

### 1. Add Product:

#### 1.1 Add Product:

Admin or Seller can add product in the page and input the product Information can upload Data

#### 1.2 Edit Product:

Admin or Seller can edit product name, product price or product description.

#### 1.3 Delete Product:

Select "Products" from the menu. Decide which product page you want to remove.

Select "Delete" from the menu. Verify the removal.

### 2. Add Admin:

Only authorized users should be able to access the secure admin page.

Additionally, it must be simple to use and navigate.

### 3. User Order :

#### 3.1 Approval:

User will buy the product and admin or seller will approve it.

#### 3.2 Cancel:

If the user buys the product and wants to cancel it, the admin or the seller has the access to cancel it.

### 3.3 Pending:

The user will see the Pending page until the finalization of the purchase of a product.

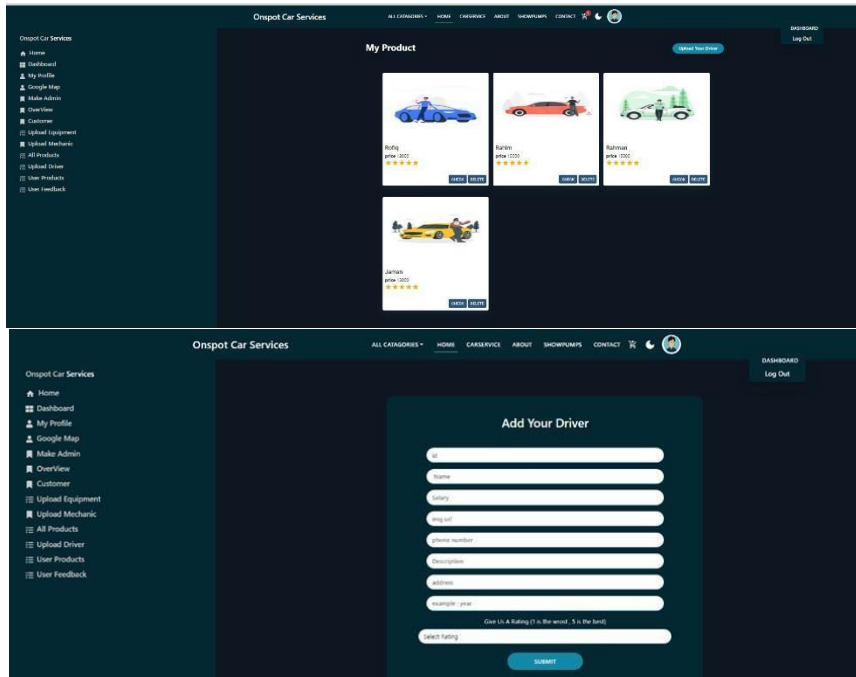


Figure: 4.5.12 Add Driver Interface

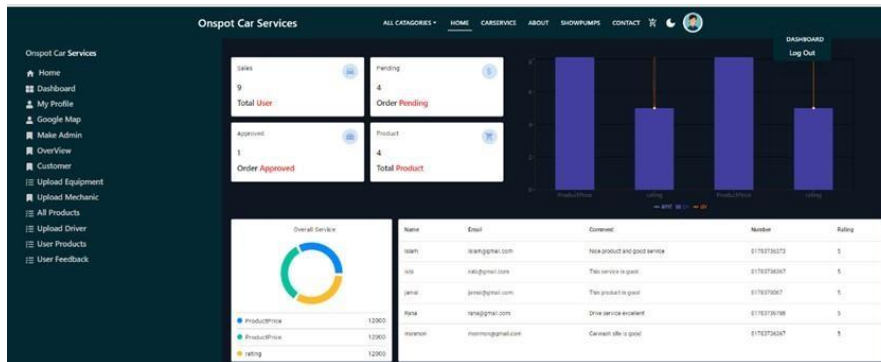


Figure: 4.5.13 Admin Overview Page



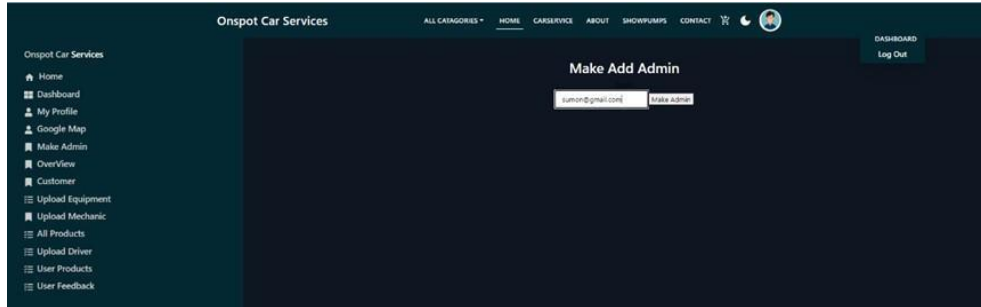


Figure: 4.5.14 Add Admin Page

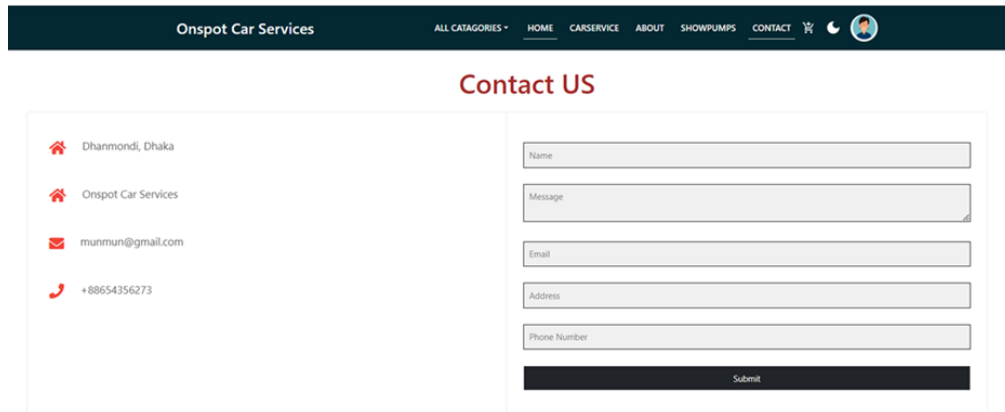


Figure: 4.5.15 Contact Page

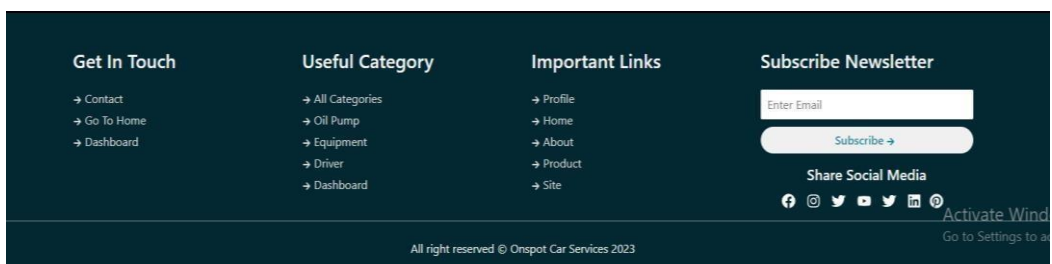


Figure: 4.5.16 Footer Section

## CHAPTER 5

### TESTING AND IMPLEMENTATION

#### 5.1 Database Implementation

I utilize a database to store the data that I receive from my users (Seller and Customer). The MongoDB (NOSQL) database, which serves as a store for all of the site's data, is one of several types of databases that are available, and I chose it for my project. I take data from users who provide it and utilize it in an organized way to provide it to users of the website. I also use user-provided data. It adds to the website's size and utility and is continually saved data.

#### 5.2 Front-End Implementation

Since my project is web-based, I've created a front end for the user of this program. React is used to create the front-end. Here, I combine the vanilla CSS stylesheet with the Material UI CSS framework to add more design. Additional CSS enables me to fully tweak the front-end's look.

1. Design of a straightforward and appealing webpage.
2. Clear, comprehensive product page.
3. An easy-to-use login and registration page.
4. A cart that is appealing and simple to use.
5. Simple to pay for (cash on delivery and online payments).

#### 5.3 Back-End Implementation

Node JS must first be downloaded and installed on the computer before it can be used. The next step is for me to make a file called app.js. Provide a hostname and port, such as "const hostname = "127.0.0.1"; const port = 5000," and then use HTTP to construct a server and provide a status code.

## 5.4 Testing & Implementation

As crucial as designing software is testing it. My web-based system has been made as safe as possible by myself. In order to test my system, I implemented several test cases.

The Following Table 5.4 Displays My Testing Report

| Test No | Description  | Test Data                               | Expected Result                               | Actual Result |
|---------|--|---|---|---------------|
| 01      | By pressing the login button while using the correct user name and the incorrect password. | User name: user 1<br>Password: 12345678 | Wrong username or password.                   | Pass          |
| 02      | Checking whether the user name entered during registration has previously been used.       | User Name: user1                        | Same username already taken.                  | Pass          |
| 03      | By pressing the login button while using an incorrect username, password, or both.         | User name: used<br>Password: 2223334    | Wrong username or password.                   | Pass          |
| 04      | Activating the login button with a valid login and password.                               | User Name: user1<br>Password: 12345678  | Redirecting to the homepage after logging in. | Pass          |
| 05      | Admin update profile.  | Give all required information.          | Update successful.                            | Pass          |
| 06      | Admin panel.   | Add Driver, product, Shop.              | Added Successfully.                           | Pass          |
| 07      | Search garages.  | Desire shop or product.                 | Successful found.                             | Pass          |

## **CHAPTER 6**

### **IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY**

#### **6.1 Impact on Society**

Our system will have some impact on our society. As a social network with features like an online library, a job board, and event planning, our website is really beneficial. We provide each of those options on a single page. As a result, it will influence and enhance our current society.

#### **6.2 Impact on Environment**

The amount of unnecessary servicing shop visits may be decreased with the aid of the helpline. The impact on the environment of an automobile servicing app can be both positive and negative, depending on various factors such as the app's features. The web based app can optimize service routes, reducing the overall distance traveled by service vehicles and minimizing fuel consumption and emissions. By facilitating easy scheduling of regular maintenance services, the app can contribute to better vehicle efficiency and longevity, reducing the need for more resource-intensive repairs or replacements

#### **6.3 Ethical Aspects**

We acknowledge that privacy, confidentiality, and anonymity were the most often brought up ethical concerns. Our efforts in creating our website were directed by these ideas. We'll provide our customers with top-notch service. We'll make sure that the response we give our visitors meets their needs.

## **6.4 Sustainability Plan**

We have a special approach to sustainability. We put a lot of effort into the design of our website to make sure it serves its purpose while having the fewest possible adverse effects on our customers.

Creating a sustainability plan for an on-spot car servicing project involves incorporating environmentally and socially responsible practices into the operations. Here's a comprehensive plan

**Energy Efficiency:** Utilize energy-efficient equipment and tools. Invest in electric or hybrid service vehicles to reduce carbon emissions.

**Eco-friendly Products:** Use environmentally friendly and biodegradable cleaning products. Consider offering eco-friendly options for car parts and fluids.

**Long-term Partnerships:** Foster long-term relationships with customers, suppliers, and other stakeholders to create a stable economic ecosystem that benefits all parties involved. By integrating these considerations into your sustainability plan, the spot car servicing project can contribute not only to the economic development of Bangladesh but also to the well-being of its communities and the environment. Our three pillars of sustainability—economic viability, environmental preservation, and social equality—are things we work very hard to uphold.

## CHAPTER 7

### CONCLUSION AND FUTURE SCOPE

#### 7.1 Conclusion

A promising project with the potential to raise Bangladesh's car care standards is the Web-Based Bangladesh car care Helpline. People who would not otherwise be able to afford or get mechanical advice and information can get access to it through the helpline. Additionally, it can aid in lowering the amount of unnecessary service station visits. The purpose of this project is to provide car or any other auto-mobile servicing system more effectively than the existing system. There are some disadvantages of the existing service center management systems. Those disadvantages are overcome by this Automobile repair services web based application. And it can be made handily available to every person. Previously people could not get help or locate the service centers conveniently in case of their car breakdown or any other emergencies. Thus, this web based vehicle repair application is proposed to assist people and fulfill their requirements easily. It will take less time. It is a legitimate issue. This website has three part Admin panel, Seller/Buyer panel, Customer Panel. Each dashboard is different. And, “SSL COMMERZ” is the payment gateway technique is available. Every customer will pay in different way like every mobile banking, every net banking even by Visa card system.

## **7.2 Potential for Future Development**

In future, we hope this system helps users to easily find nearby garages for Automobile repair services. This work can be extended by adding functionality such as: Vehicle health monitoring system: In future we can add this vehicle health monitoring system in app so that user can check its vehicle health and will know if any minor problem comes so that how user time will be saved [9]. Marketing platform: Like Daraz, Ajkerdeal we can extend our work and can make marketing platform available for retailers and automobile parts provider from where they can directly sell or purchase the automobile parts on their own. Towing providers: Towing services can be crucial in emergency situations such as accidents, breakdowns, or when a vehicle is not in a drivable condition. Adds an additional layer of convenience and comprehensive support for vehicle owners . To enhance UI design, additional functionality will be included. Get this service where service providers carry vehicles to garages. As of now there is no towing service provided if that garage which is selected by user provides then only, he can ask for that service but in future we can integrate with towing service provider so that user can directly contact with them in case of emergency and ask for service.

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## Plagiarism Report

