“DEVELOPMENT OF AN E-COMMERCE SITE ALPHATRACKS”

BY

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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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APPROVAL

This Project titled "Development of an e-commerce site AlphaTracks" submitted by Ashik Mahmud Reshat, ID No: 191-152757 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 Bachelor of Science in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 04/02/23.

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I hereby declare that, this project has been done by us under the supervision of **Mohammad Monirul Islam, Assistant Professor, 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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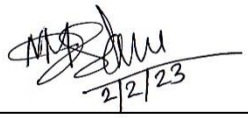

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Finally, I must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

Alpha Tracks is a web application that is useful for companies who run hardware stores, where the store owner maintains track of sales and purchases. While selling a vehicle to a buyer in online, this program assists the administrator in updating data in a step-by-step manner. The management staff may collect orders, update customer information, car information, payment and insurance details, and more using this system. Particularly for the sport motorcycles, new bike kinds have been created with appealing shapes and patterns. In order to draw in more clients and boost sales margins, bike firms operate both online and offline. By using this web application, a user can effortlessly buy a bike; they do not need to physically visit the store. Instead of having so many section in a bike showroom and so many people for each & every section, it is enough to have only one person to do all works in a computer. So the web app save space, time, money and the like. The system wide specification takes the place of manual work. Currently, every car and bike showroom uses this type of web application to computerize the entire system.

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CHAPTER 1
INTRODUCTION

1.1 Introduction

In order to overcome the difficulties in winning inside the practicing manual system, "Alpha Tracks" was developed. This computer software is supported to eliminate and, in some circumstances, lessen the difficulties this current framework faces. Additionally, this framework is laid out to meet the specific needs of the business to conduct operations in a convincing and efficient way. The program is kept as simple as possible to minimize the chance of data entry errors. Additionally, it displays an error notice when entering inaccurate information. This framework can be used by the client without any formal information being provided. This proves that it is user-friendly all in all. The motorcycle showroom management framework shown above can result in an error-free, secure, reliable, and efficient administration system. The client may find it easier to focus on their other workouts or even the record-keeping. In this approach, it'll offer assistance an organization make superior utilize of its assets. Every firm, no matter how big or little, faces difficulties managing the information about the company, the motorcycle, the client, the installment, and the reservation. We choose employee administration frameworks that are tailored to your managerial requirements because each motorcycle showroom administration framework has unique bicycle needs. Usually designed to aid in strategic planning, this will help you ensure that your company is equipped with the appropriate level of data and details for your future goals.Additionally, our systems include restricted access features that let you manage your workforce whenever you need to, even if you're an active official who is constantly on the go. You will soon be able to better oversee assets thanks to these frameworks.

1.2 Objective

The Project on "AlphaTracks" aims to monitor the finer details of motorcycle, Company, Type, and Booking. It oversees all the data about motorcycle Payment, Booking. At the administrative conclusion, the system is fully constructed, guaranteeing access to just the administrator. The

purpose of the extension is to create a software program that will lessen the manual work involved in managing the motorcycle, company, and payment.It tracks all the subtle elements approximately the Type, Buyer, Booking.

1.3 Motivation

Basically offering items online is now not sufficient for e-businesses to distinguish themselves from their online competitors. With many more companies now having an online presence, companies are looking for other ways to exceed their competitors. Businesses need to come up with modern procedures to influence the purchasing decision of their buyers. I watch this kind of web app, there are various Android applications available, but a few are web-based. Hence, I believe I would make this kind of web platform for a bike showroom.

1.4 Expected Outcome

This kind of online software will help a user to easily purchase a motorcycle from online, they don't got to visit the store physically. I think rather than having so numerous section in a bike showroom and so numerous people for each & each section, it is sufficient to have as it were one person to do all works in a computer. So the app will save space, time, money.

1.5 Management and Finance

I need to pay hosting and maintenance expenses for my project. Besides, I have to be promote my project, which means that i'll need to pay for promoting.

CHAPTER 2
BACKGROUND

2.1 Related Works

There are a lot of websites in Bangladesh, however it's improbable that there are any without e-commerce websites. However, there are some of these websites located outside of Bangladesh. One of the website for bike showroom is https://www.motorcyclevalley.com/motorcycle-tips/buy-sell/. MotorcycleValley.com is the primary and biggest site about bikes in Bangladesh.

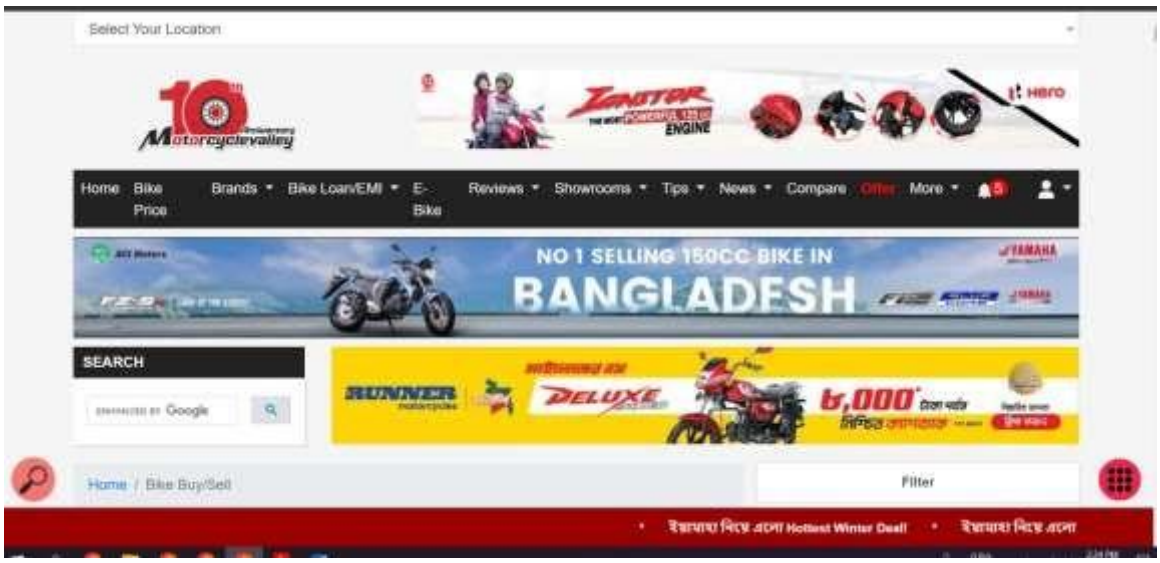

Figure 2.2.1: MotorcycleValley.com's home page

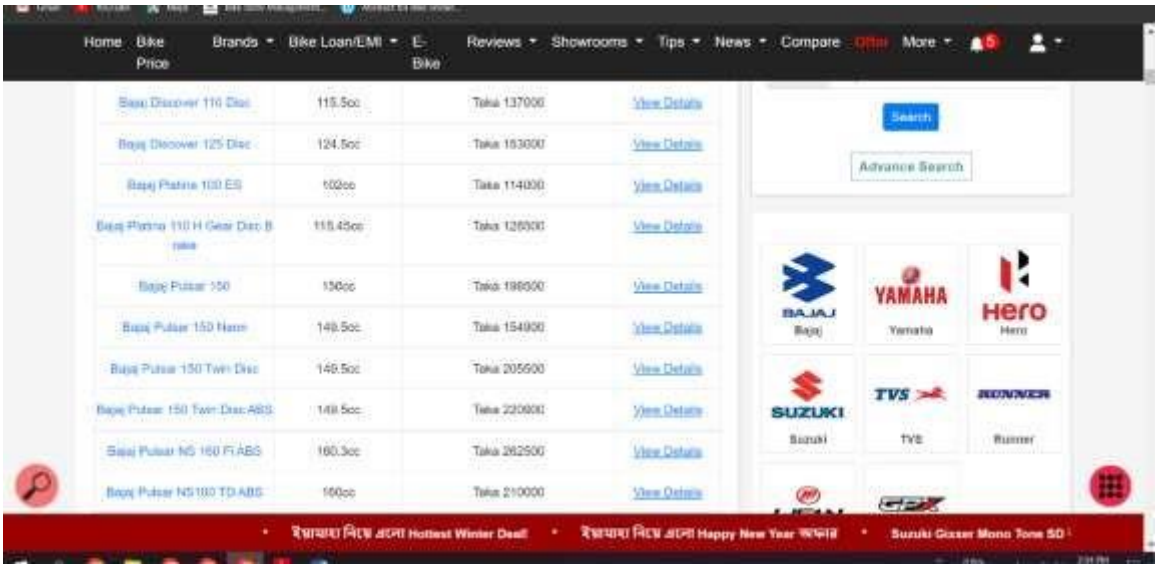

Figure 2.2.2: Bike price page

Another example is the website at https://www.banglamotor.net/motorcycle-price-inbangladesh.html.

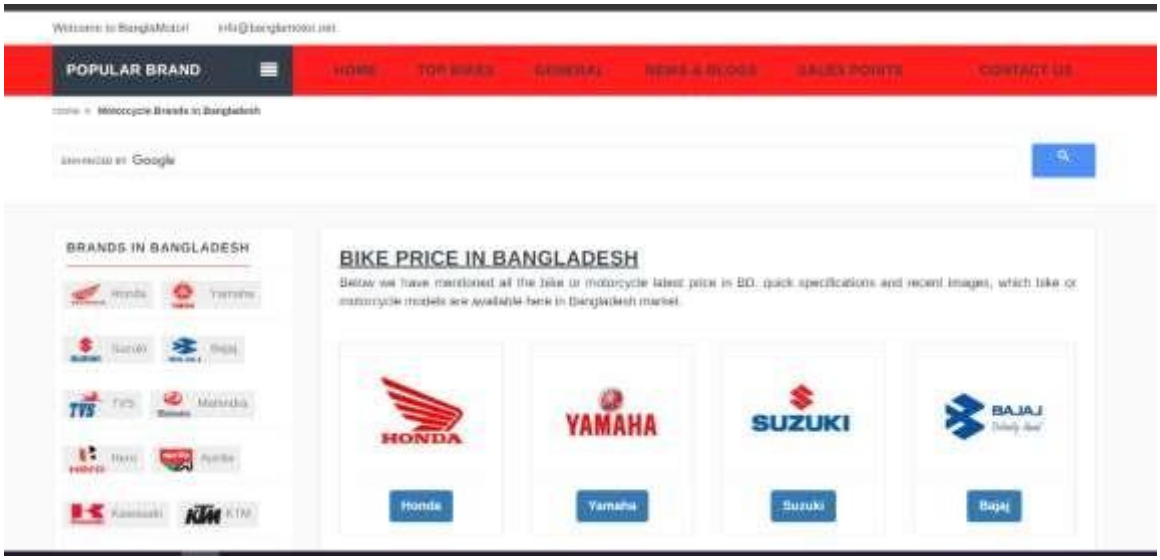

Figure 2.2.3 Banglamotor home page

Figure 2.2.4 Bike brand page

Another web app they are providing web service https://www.motorcyclebd.com/.

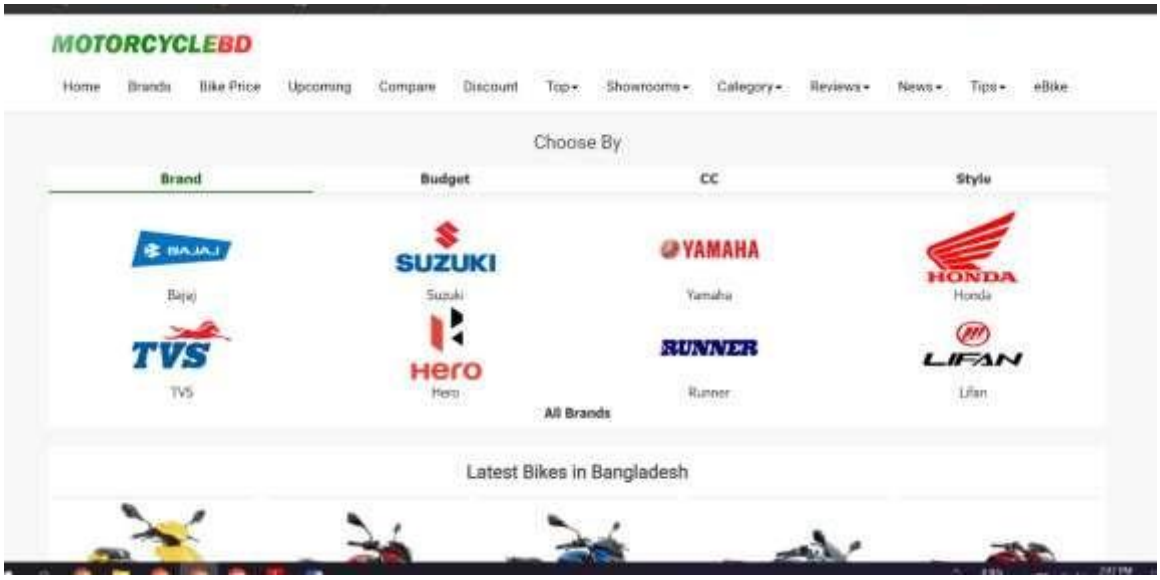

Figure 2.2.5 Motorcyclebd.com's home page

The user must register on our website before they are able to visit and order bikes and prices, which is essential for buyers.

2.2 Scope of the Problem

We noticed some issues while working on our project

- Choose our type
- Design for the right way.

2.3 Challenges

- To supply administrations correctly.
- It will be convenient.

Totally dependent connected to the internet

CHAPTER 3

REQUIREMENTS SPECIFICATION

3.1 Business Process Modeling

This is our model for business processes –

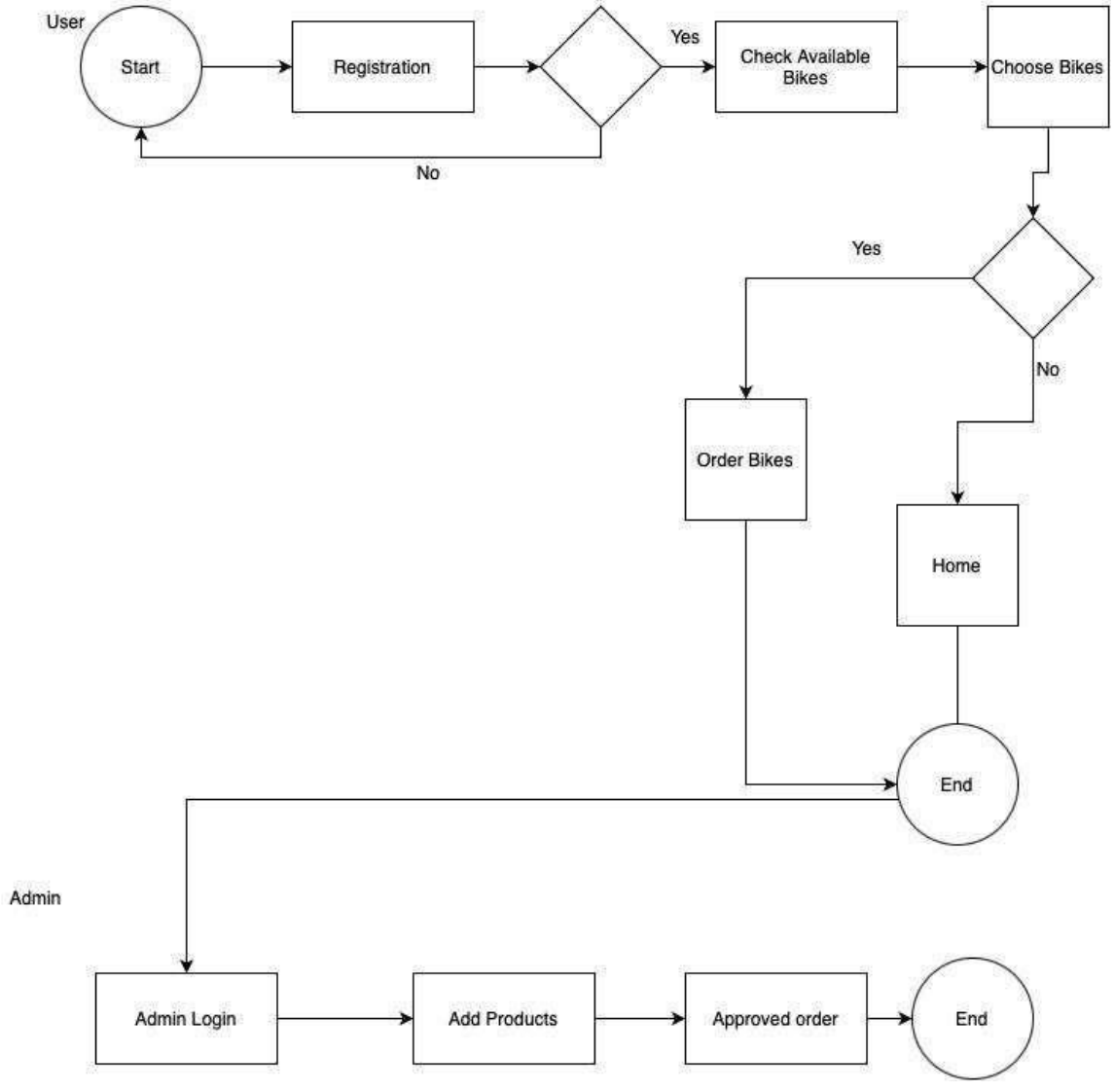

Figure 3.3.1 Business process modeling

3.2 Requirement Collection and analysis

There are a few fundamental necessities in our system that are required for utilizing the system.

1. Smart Devices (Mobile, Laptop, Desktop, iPod etc.)
2. Strong Internet Connection

3.3 Use case Modeling and Description

Use case diagrams are utilized to assemble information on a system's necessities, taking into Consideration both inner and outside components. As an case, the following diagram illustrates our system's modeling,

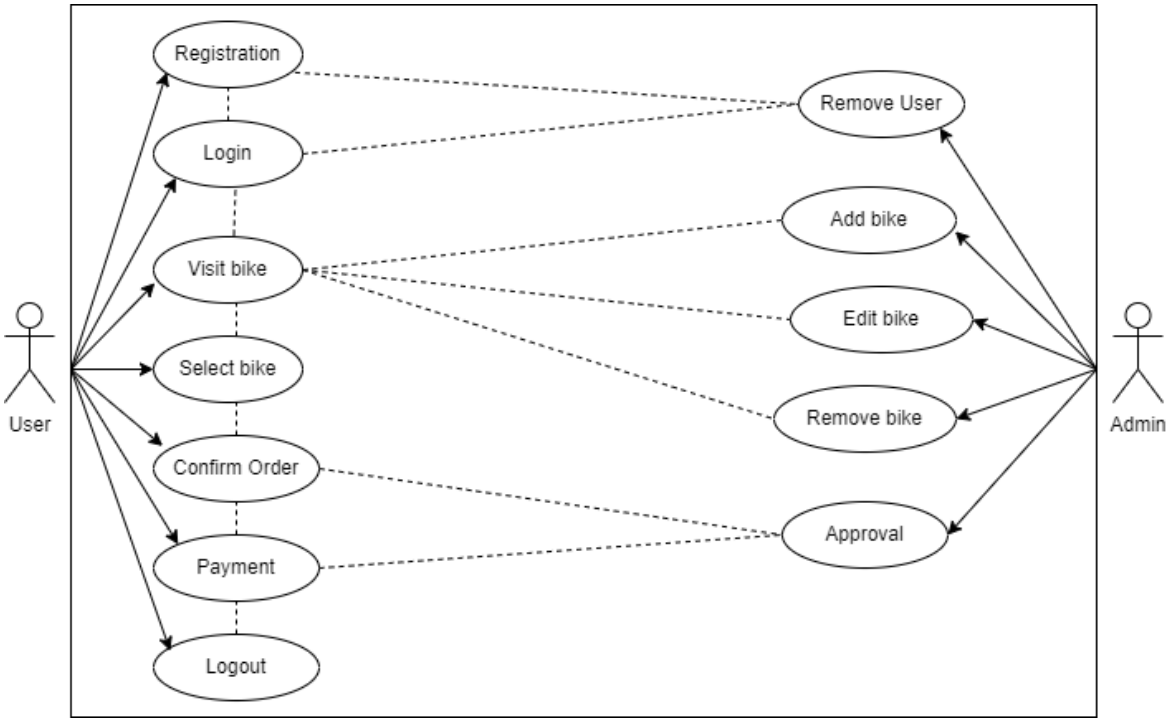

Figure 3.3.2 Use-case diagram for Alphatracks

Actors: - Admin and User

Use Case: Remove User, Add bike, Edit bike, Remove bike, Set price, registration, Login, logout, Visit bike, Select bikes, Request for order.

The comparing utilize cases for these performing artists are: -

Admin: Remove User, Add bike, Edit bike, Remove bike, Set price,cancel or confirm order.

User: registration, Login, logout, Visit bike, Select bike, Request for order.

3.4 Logical Data Model

This paradigm permits us to indicate the exact structure and connections of data Components inside a framework utilizing rationale and logic-based models, which able to at that point test and approve. In expansion to giving as a establishment for the physical information show, they also depict the information things presented by a conceptual information show and serve as a basis for the physical information show. It is common hone in commerce design to utilize the UML class notation to build a consistent data model, which may be a consistent representation of data that's utilized to create choices.

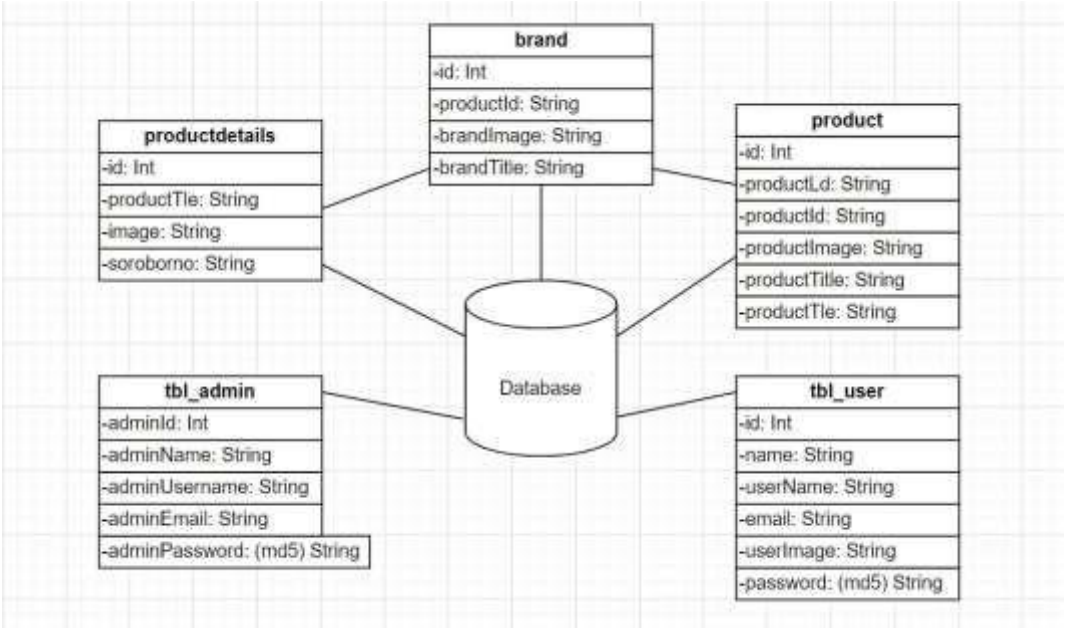

Figure 3.3.3 Logical Data Model

Activity Diagram

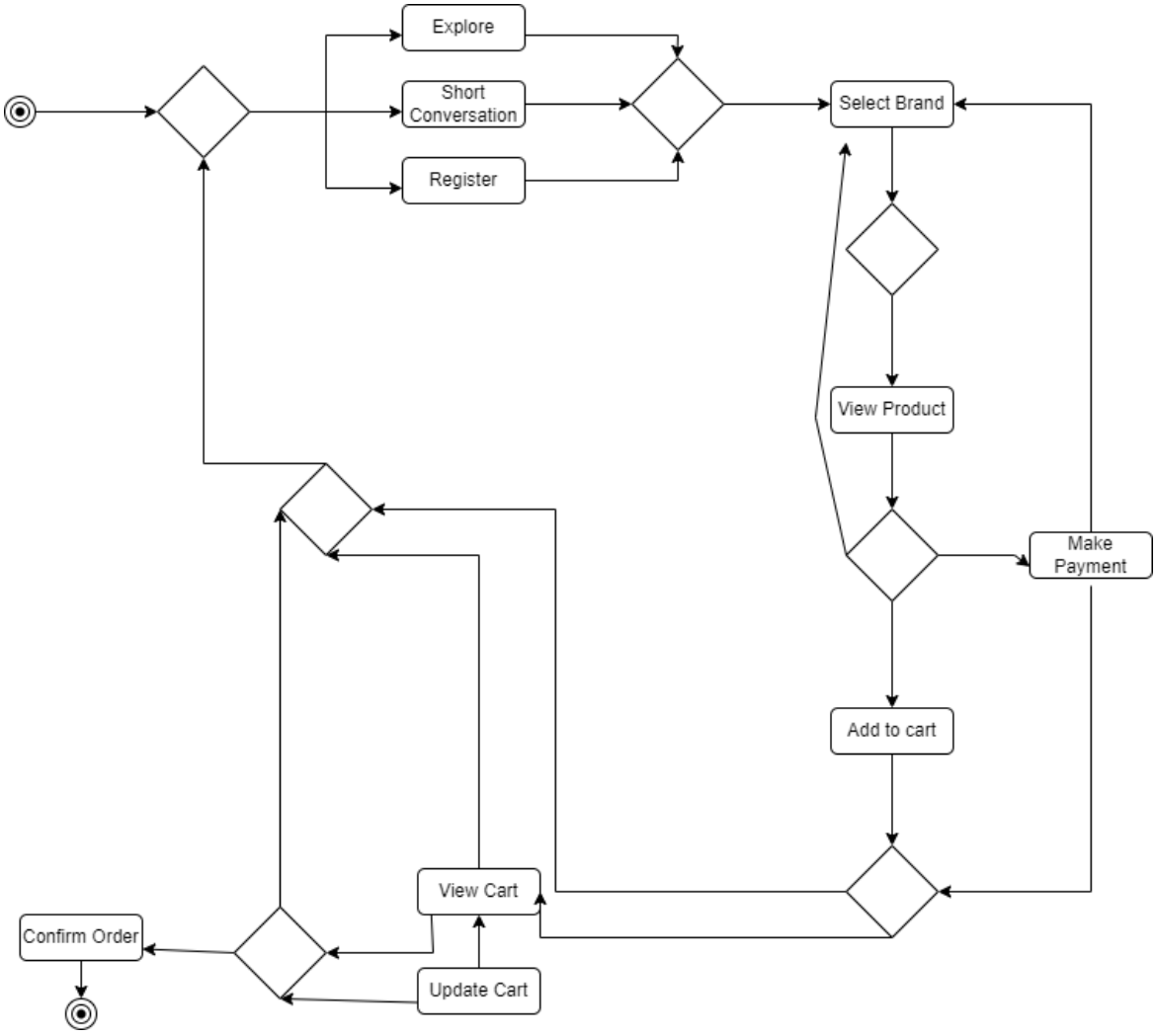

Figure 3.3.4 Activity Diagram

3.5 Design requirement

My framework is built on beat of a energetic webpage that serves as the basic establishment and center of functionality. My website's front end and back end were both created using a assortment of web development languages and frameworks to achieve their goals. The following scripting languages and systems were utilized to make the front end of the site: html, css, react js, react-bootstrap, react-messenger-customer-chat, react-router-dom, firebase Authentication. On the other hand, nodejs, mongodb, expressJs are the title of the computer programming languages that was utilized to make the back-end of the site.

HTML: HTML is utilized to organize things such as content and mixed media as well as to produce links within pages. HTML is utilized to portray a website's organizational structure.

CSS: The markup language CSS (Cascading Fashion Sheets) is utilized to indicate how web pages see, counting the colors, designs, and content styles that show up on them.

React.js: A JavaScript system that is open-source is called React.js. It is used to create web apps quickly and effectively with virtually less code than you would with plain-vanilla JavaScript.

React-Bootstrap: The Bootstrap JavaScript is replaced by React-Bootstrap. Because React-Bootstrap is one of the most experienced Respond libraries, it has advanced and matured close to Respond, giving it a fantastic choice as your UI foundation. Each component has been designed from scratch as a genuine Respond component, without unnecessary conditions like jQuery.

React-messenger-customer-chat: A react component for Facebook Messenger Chat Plugin with additional Client Chat SDK features.

React-Router-Dom: Make React App doesn't incorporate page routing. React Router is the most prevalent solution.

Firebase Authentication: While advancing the sign-in and onboarding experience for end users, Firebase Authentication makes it simple to construct safe verification frameworks. It provides an end-to-end character arrangement, and supports login for Google, Twitter, Facebook, and GitHub in addition to mail and secret word accounts, phone auth, and other services.

Node.js: Node.js may be an open-source, cross-platform server environment that works with Windows, Linux, Unix, macOS, and other working systems.

MongoDB: MongoDB could be a document database with the versatility and adaptability merely need with the questioning and ordering that you simply require.

Express Js: Express could be a lightweight and adaptable Node.js online application system that gives a strong set of highlights for both web and convenient apps.

CHAPTER 4
DESIGN SPECIFICATION

4.1 Front-end design

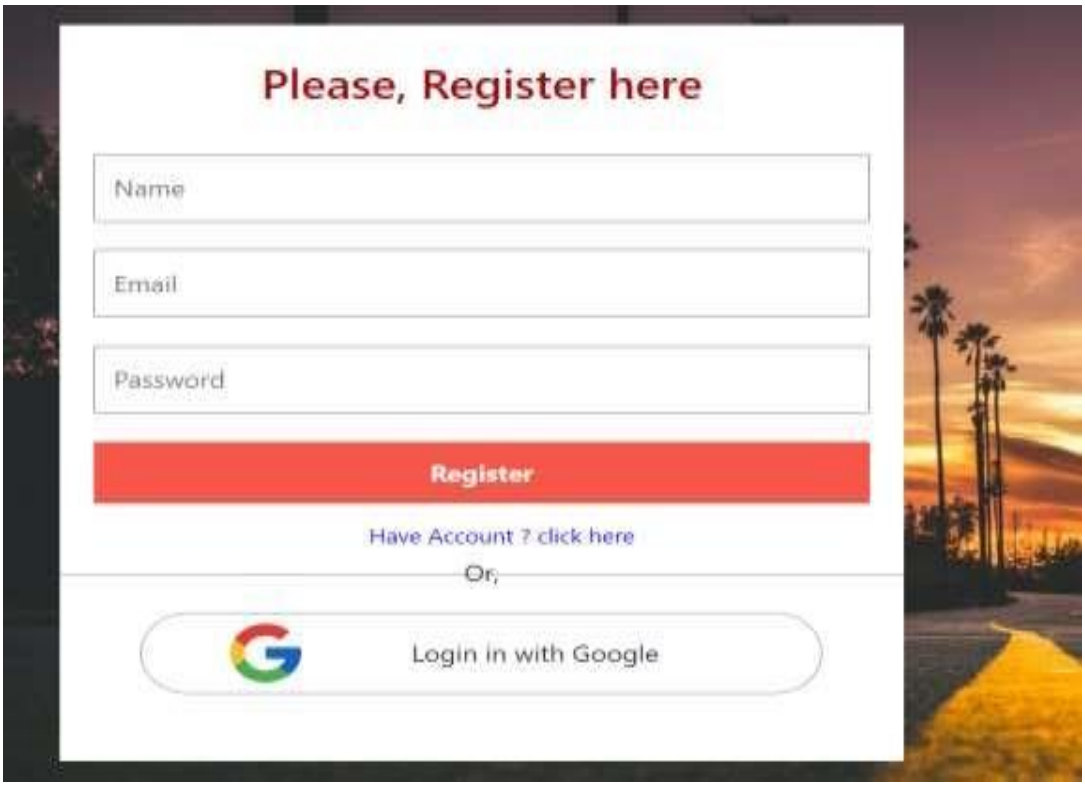

Figure 4.4.1 User register

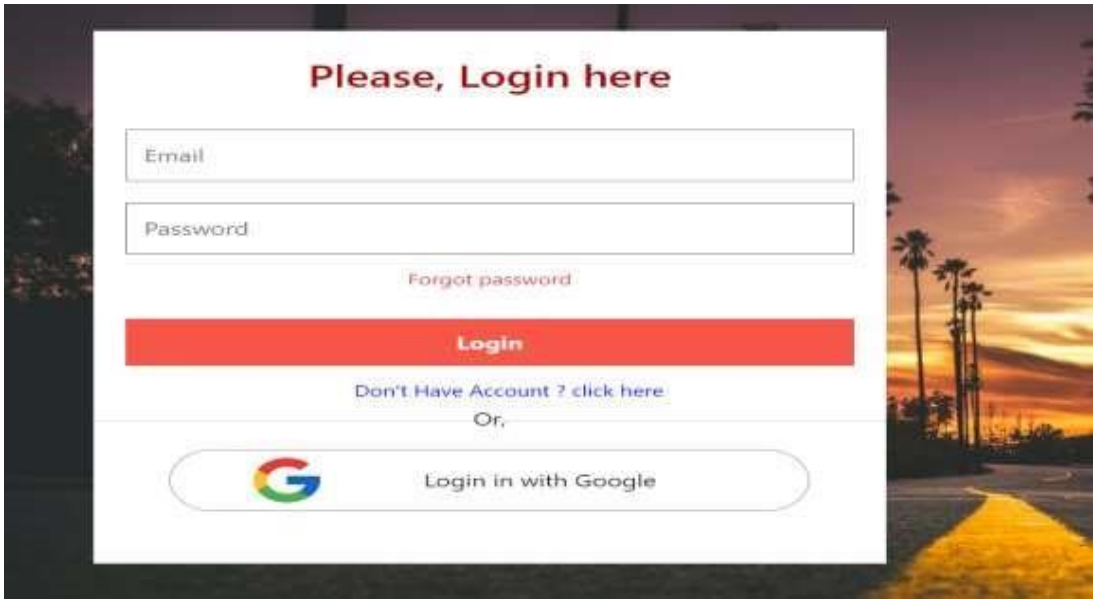

Figure 4.4.2 User login

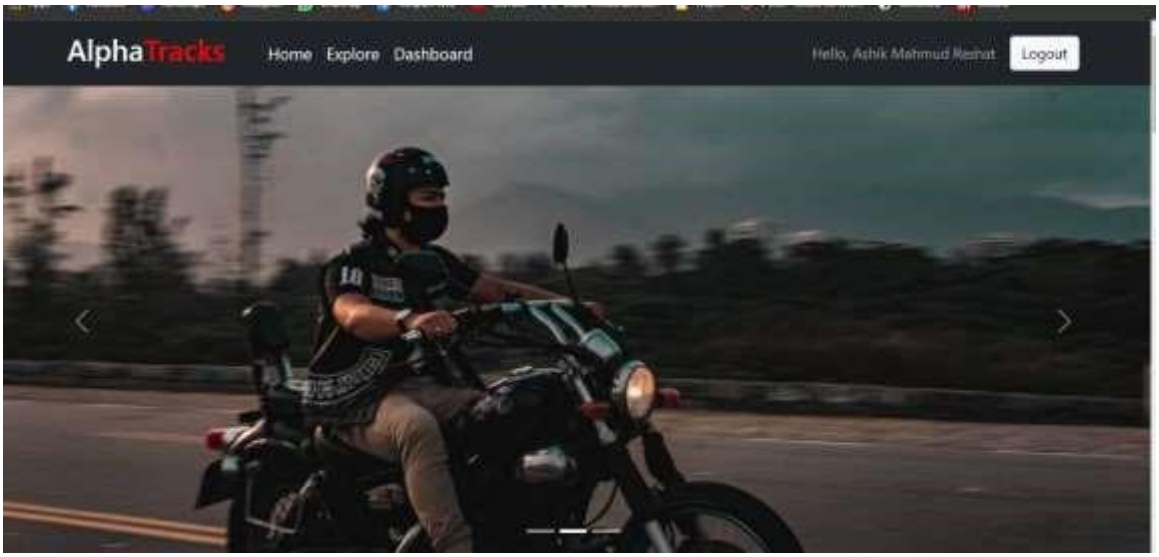

Figure 4.4.3 Home page

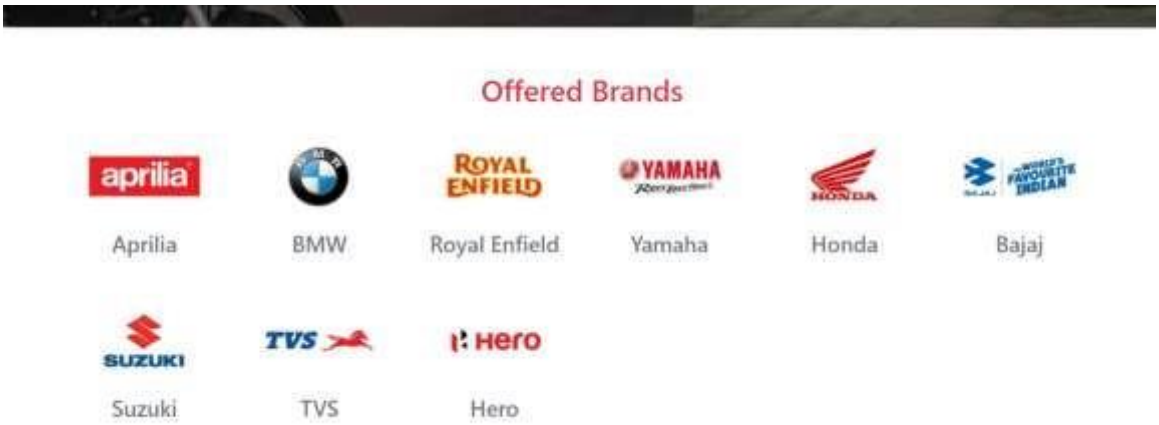

Figure 4.4.4 Bike brands

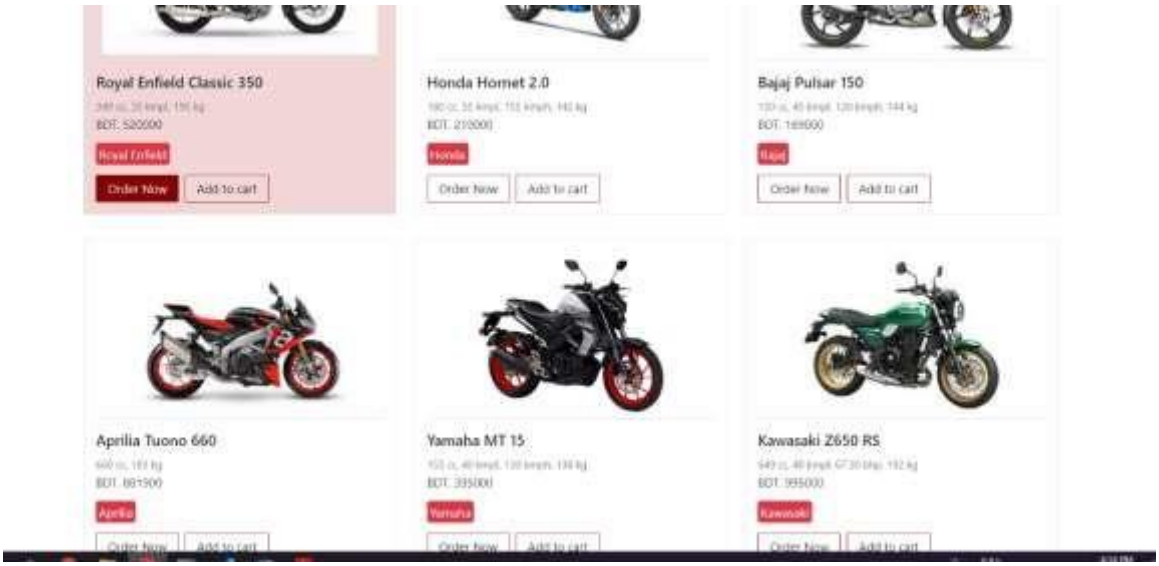

Figure 4.4.5 Bike price

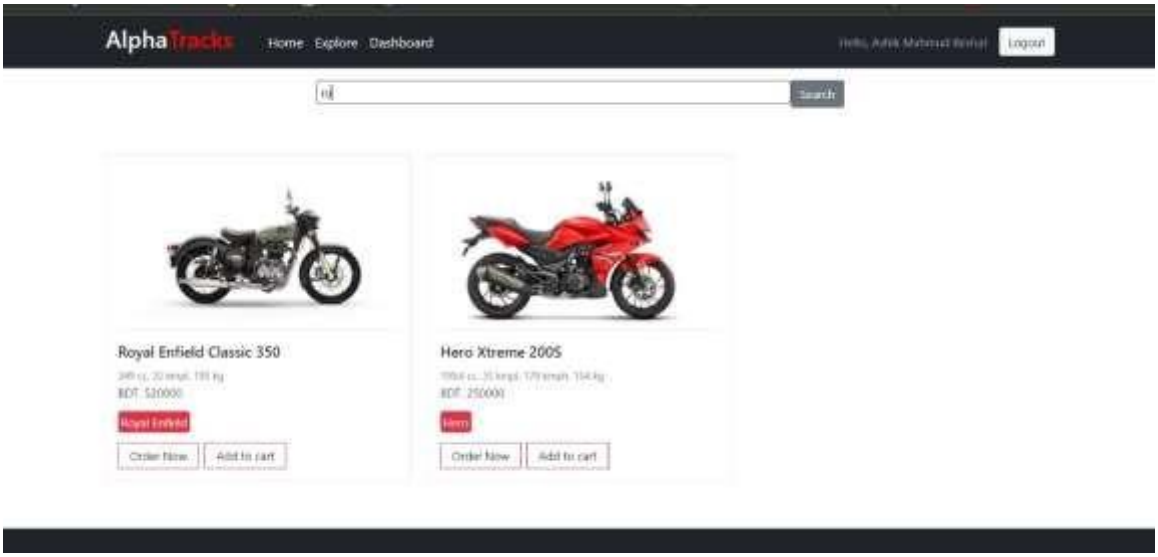

Figure 4.4.6 Search bike

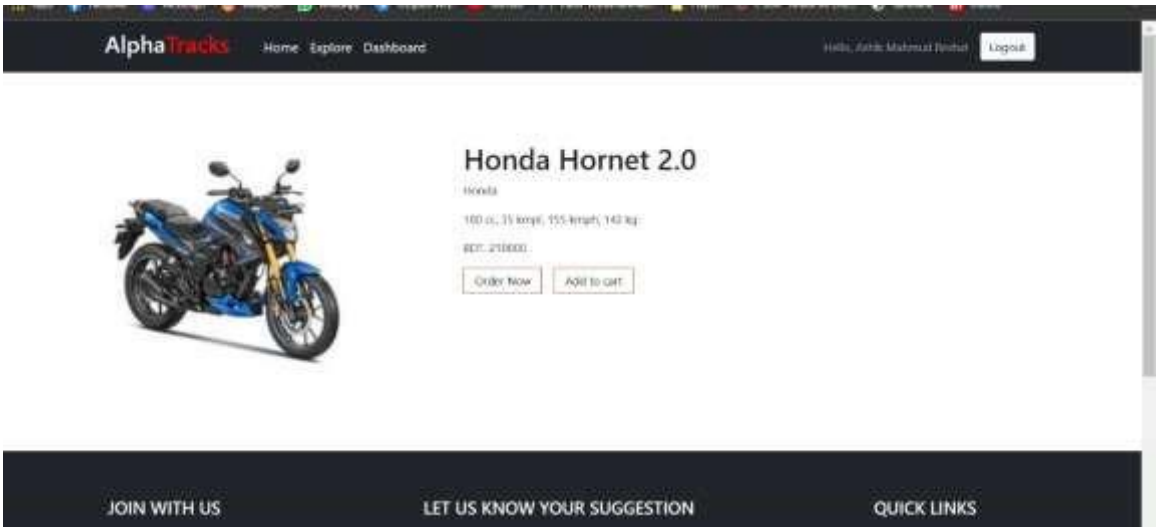

Figure 4.4.7 Bike preview

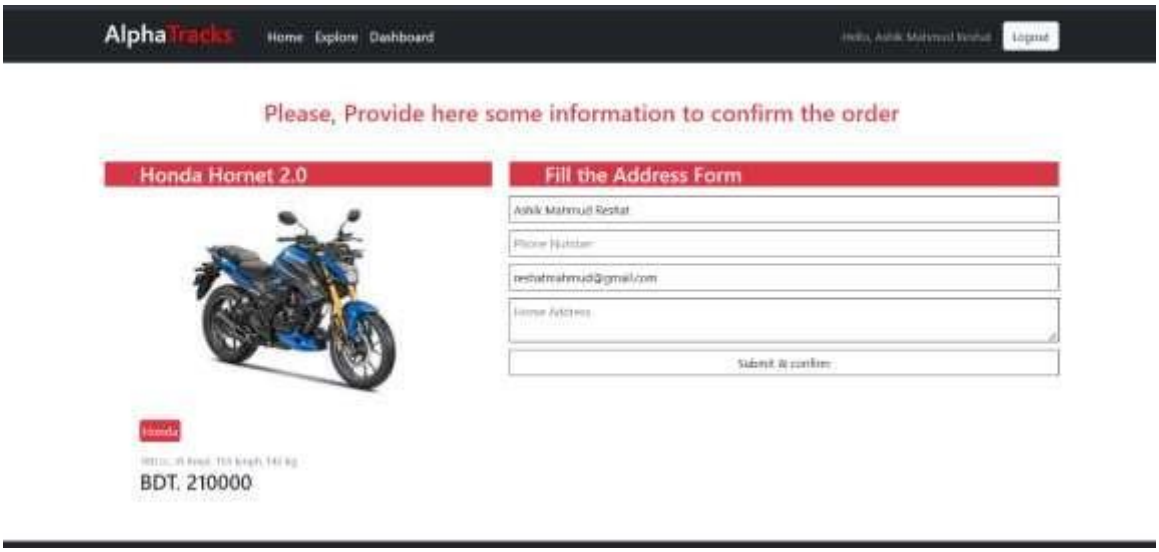

Figure 4.4.8 Order bike

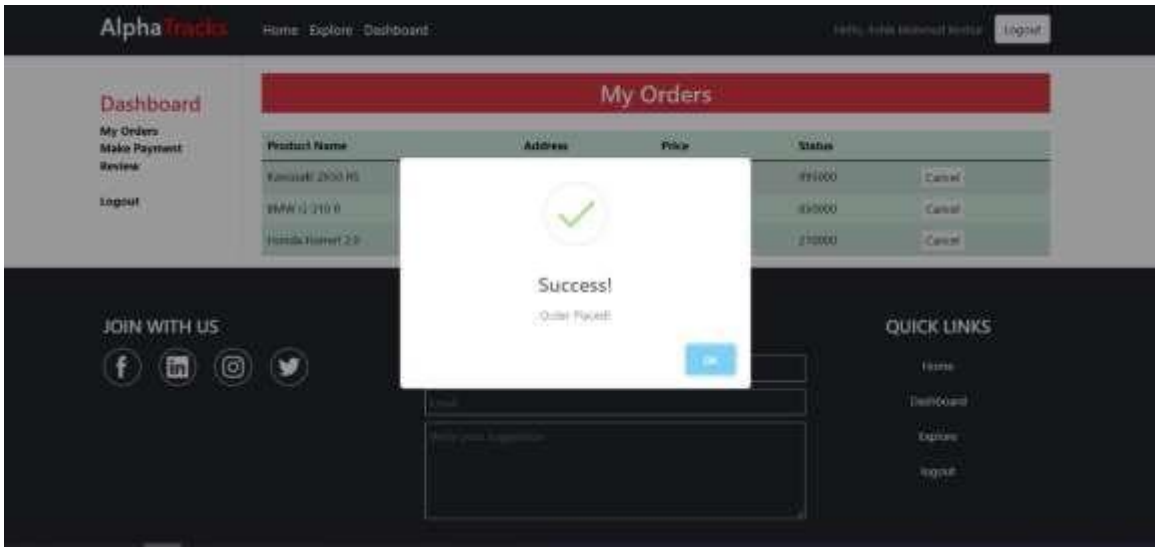

Figure 4.4.9 Order successful

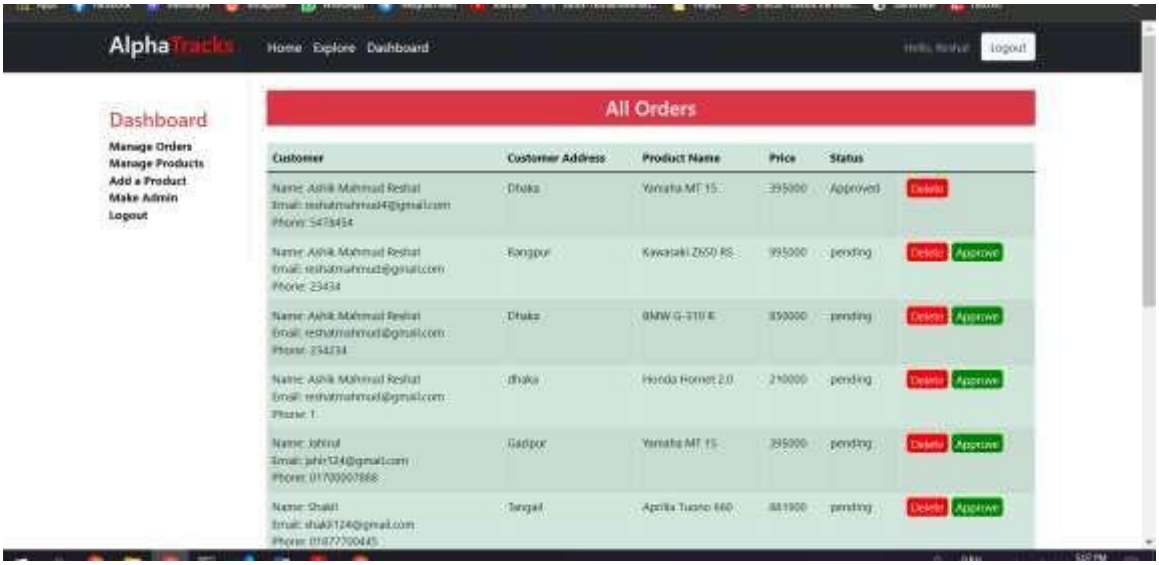

Figure 4.4.10 Order list

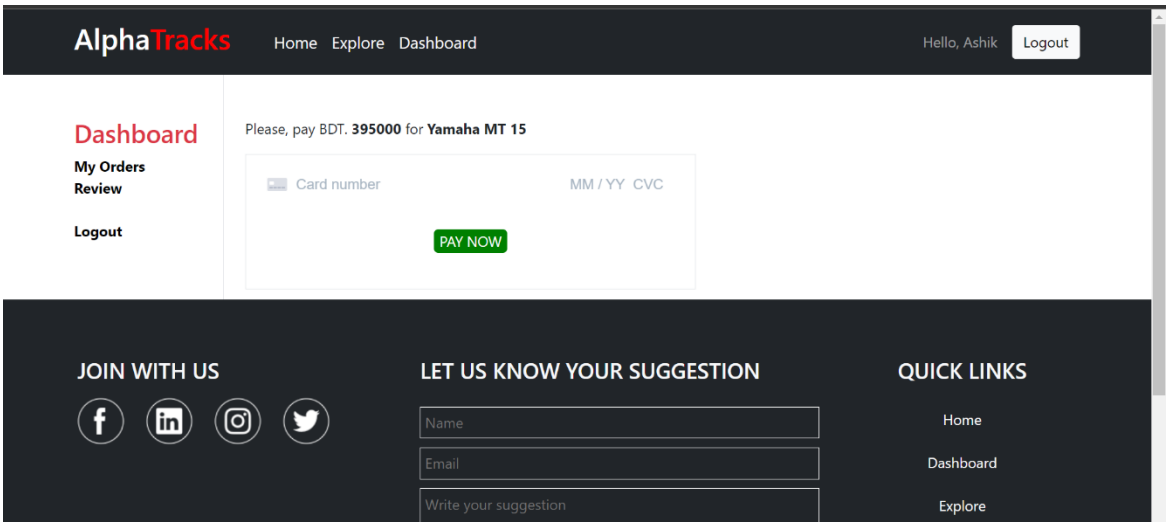

Figure 4.4.11 Payment

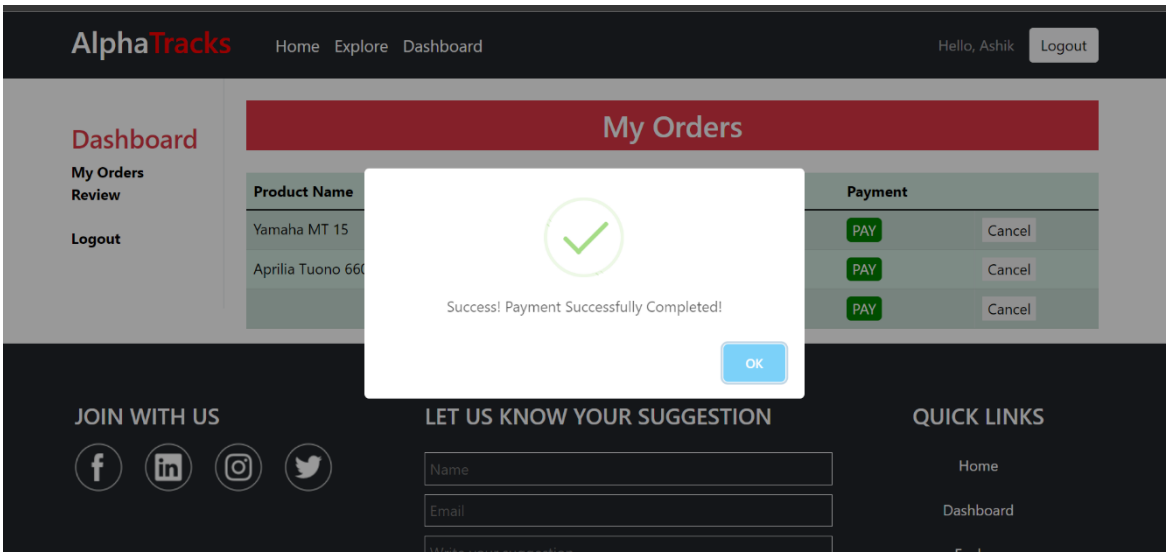

Figure 4.4.12 Payment successfully.

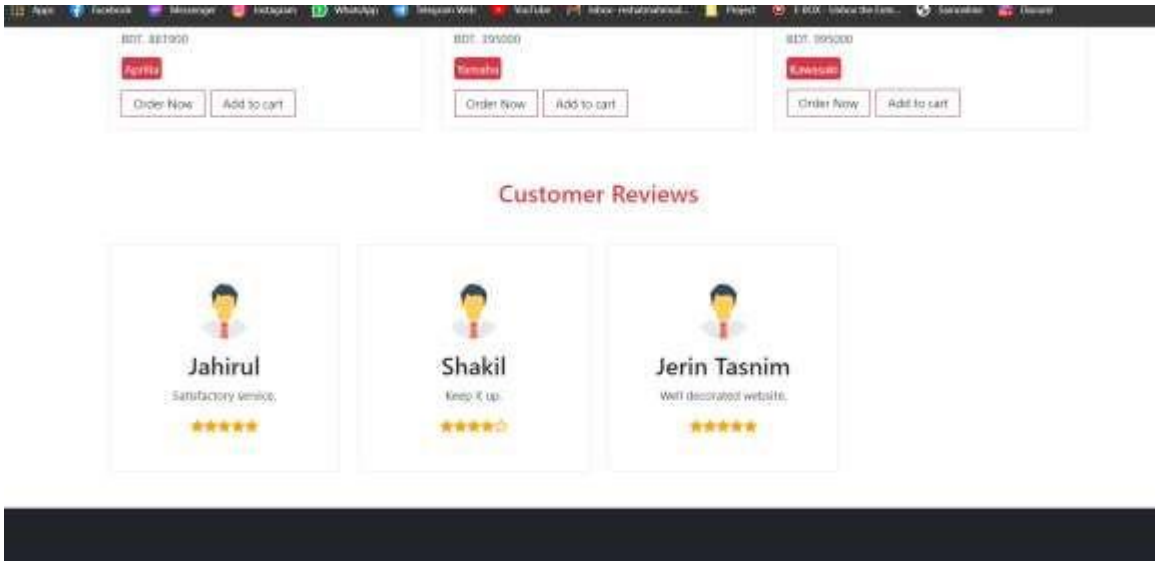

Figure 4.4.13 Customer review

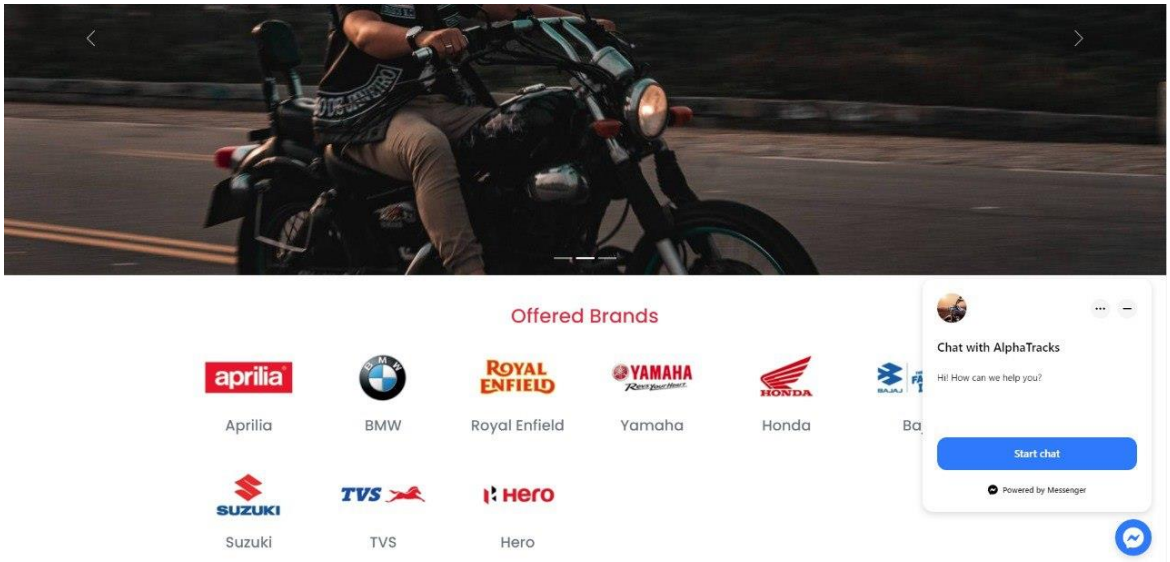

Figure 4.4.14 Messenger chat

4.2 Back-end design

Any application's consistent center is its back end, which is frequently alluded to as serverside plan. Dynamic websites are supported by back-end plan. It indicates how the application have to be work. The back end of the application is both its most difficult and crucial component. The complete framework is subordinate on the back conclusion, or server side. A back-end designer is in charge of various troublesome assignments, counting security, information passing, database administration, information approval, verification, sessions, and numerous more. I given our system's entirety logic utilizing the nodejs, mongodb, expressJs programming languages.

```
const express = require('express');
// const { MongoClient } = require('mongodb');
const { MongoClient } = require('mongodb');
const cors = require('cors');
const ObjectId = require('mongodb').ObjectId;
require('dotenv').config();

const app = express();
const port = process.env.PORT || 5000;
// middleware
app.use(cors());
app.use(express.json());
```

Figure 4.4.15 Import packages and middle work.

```
const uri = `mongodb+srv://${process.env.DB_USER}:${process.env.DB_PASS}@cluster0.v29pqxe.mongodb.net/?
retryWrites=true&w=majority`;
const client = new MongoClient(uri, { useNewUrlParser: true, useUnifiedTopology: true });
```

Figure 4.4.16 Import packages and middle work

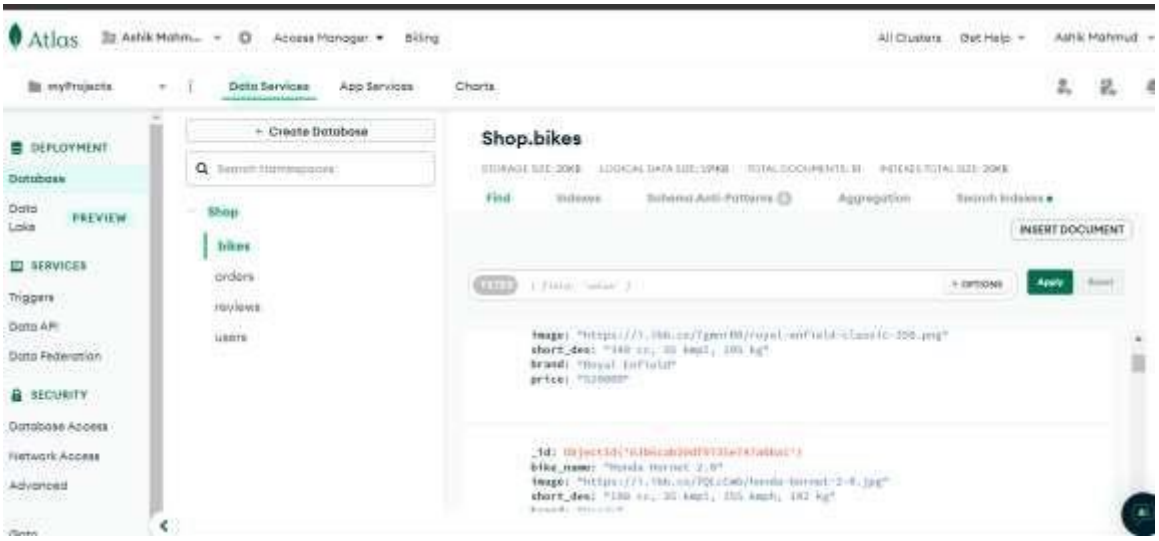

Figure 4.4.17 Mongodb bikelist

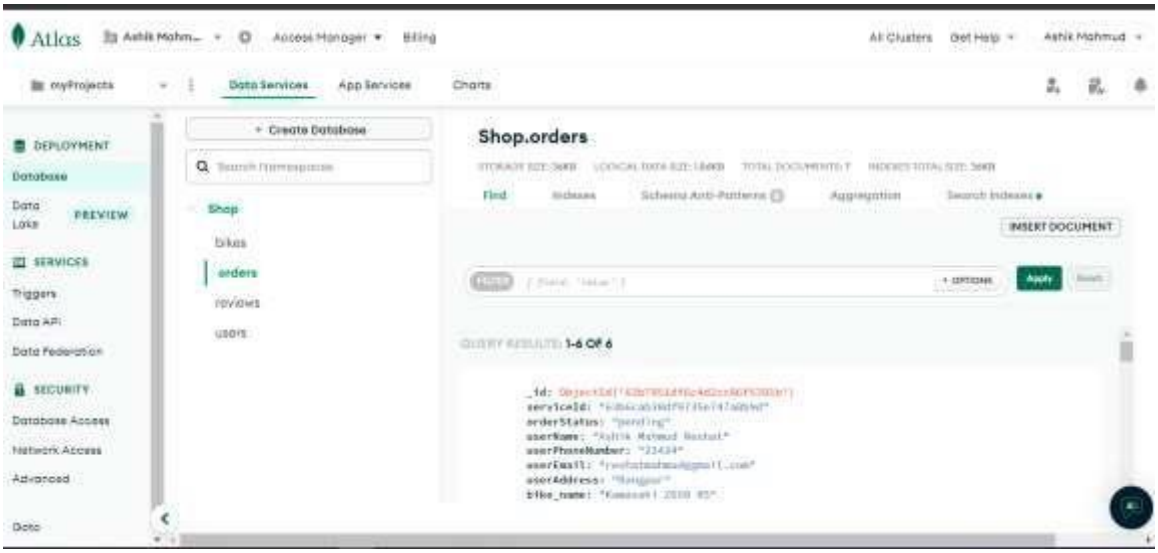

Figure 4.4.18 Mongodb orderlist.

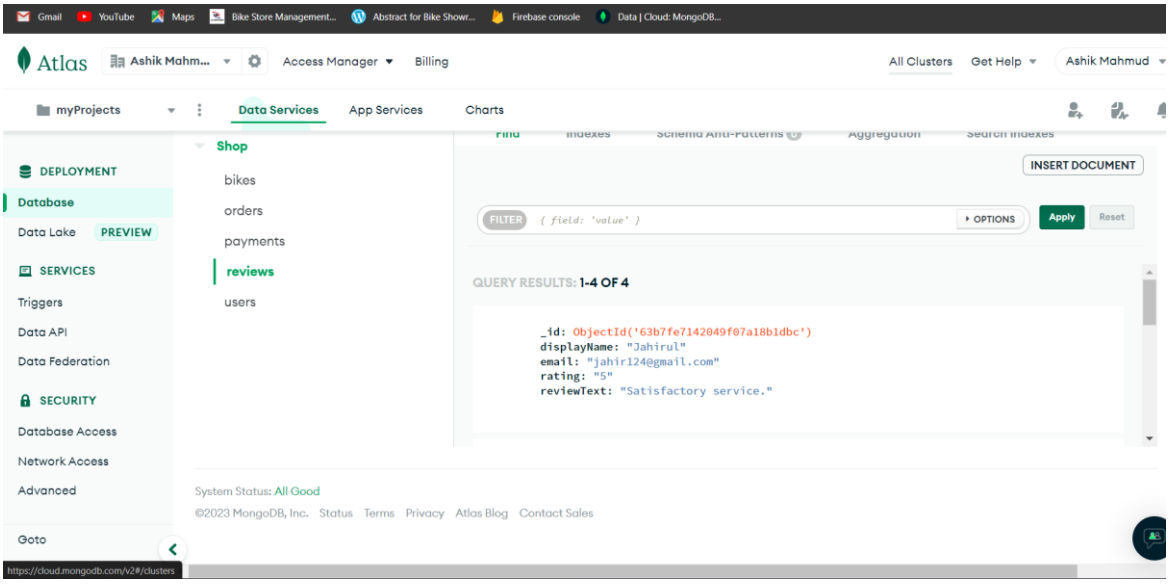

Figure 4.4.19 Mongodb reviewlist

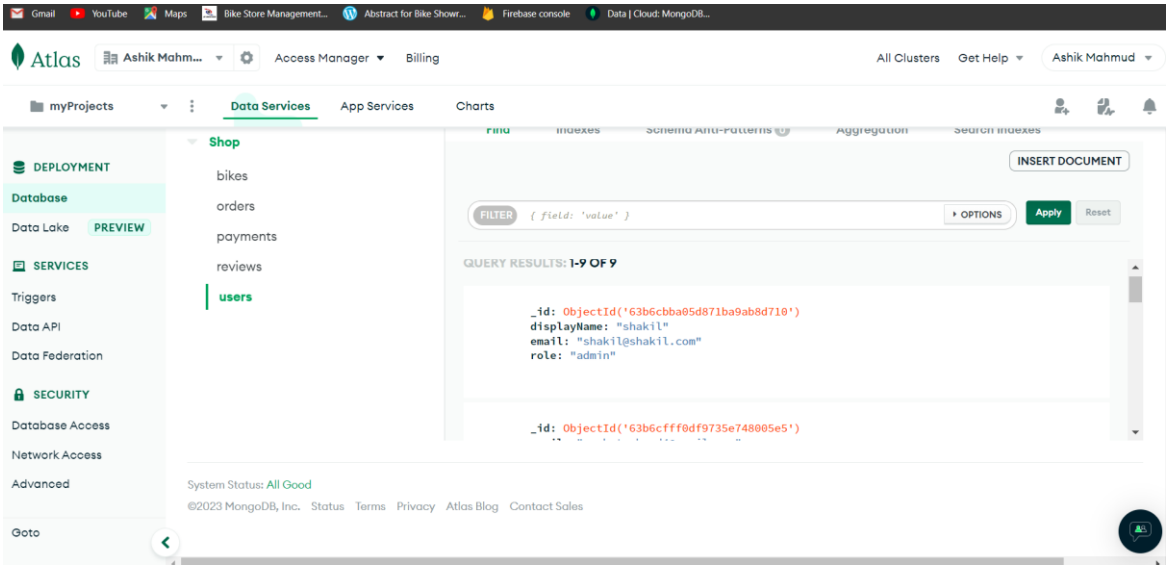

Figure 4.4.20 Mongodb userlist

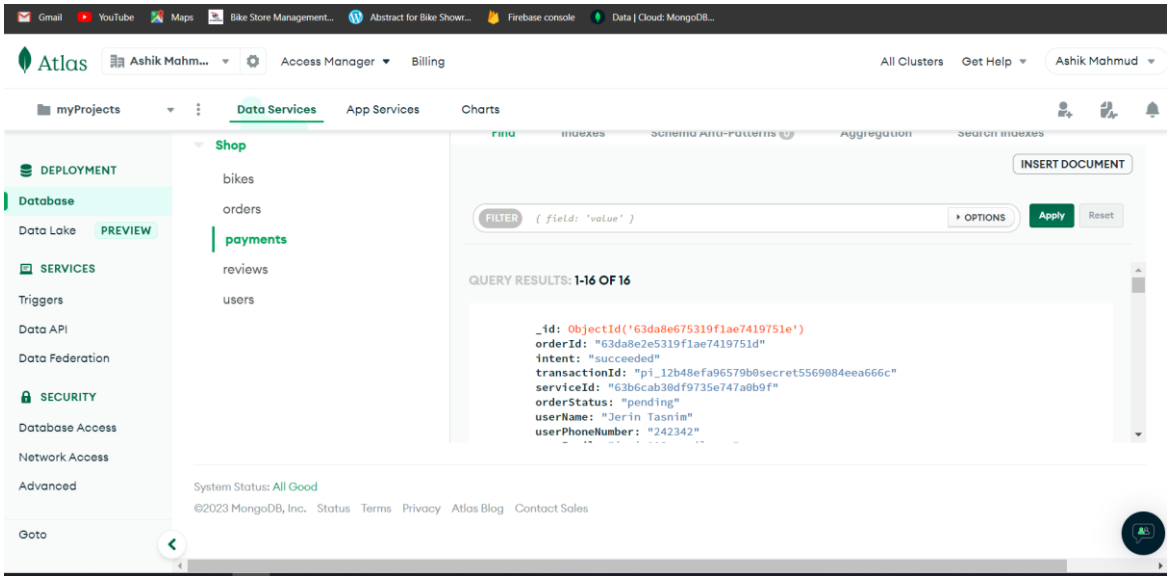

Figure 4.4.21 Mongodb payment list

4.3 Interaction Design and user Experience

I made the user interface (UI) of our programs as clear as conceivable so that any sort of user seems promptly get it the whole UI process. Each action presently contains a route drawer, making it inconceivably simple and speedy to move through. Buyer can purchase easily without experiencing any issues. They can order their bike easily.

4.4 Implementation requirements

1. ExpressJs, nodejs, and mongodb should be used to build the system's backend.

2. Unauthorized access must be effectively prevented.

3. A variety of error messages should be displayed before any erroneous data is entered in the input area.

4. All database queries need to function correctly.

CHAPTER 5
TEST AND IMPLEMENTATION

5.1Implementation of database

Among the most beneficial components of every activity is the data. We are aiming to create a database model for each unique category in our project. For our project, we started using a database called MongoDB.

Here is our associated ER diagram:

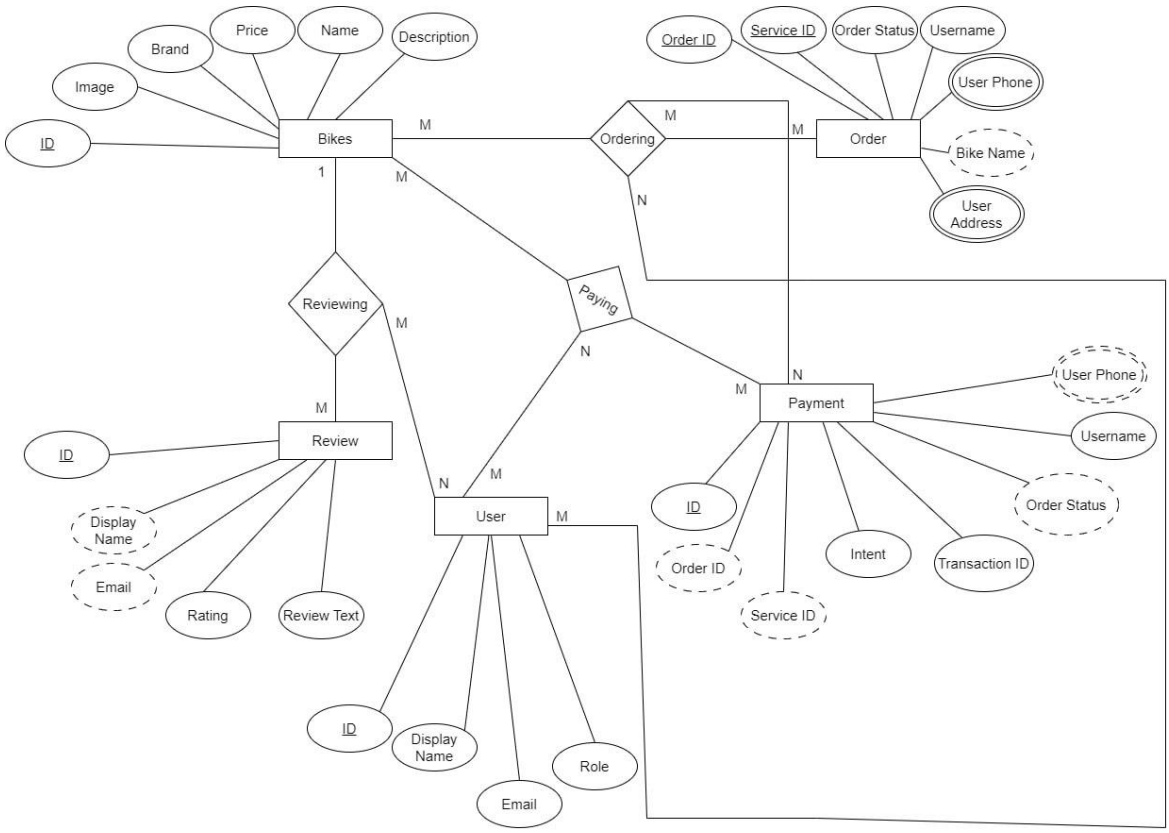

Figure 5.5.1: ER Diagram

Here's a table from our database:

All of the data in a database is stored in tables, which are database objects.

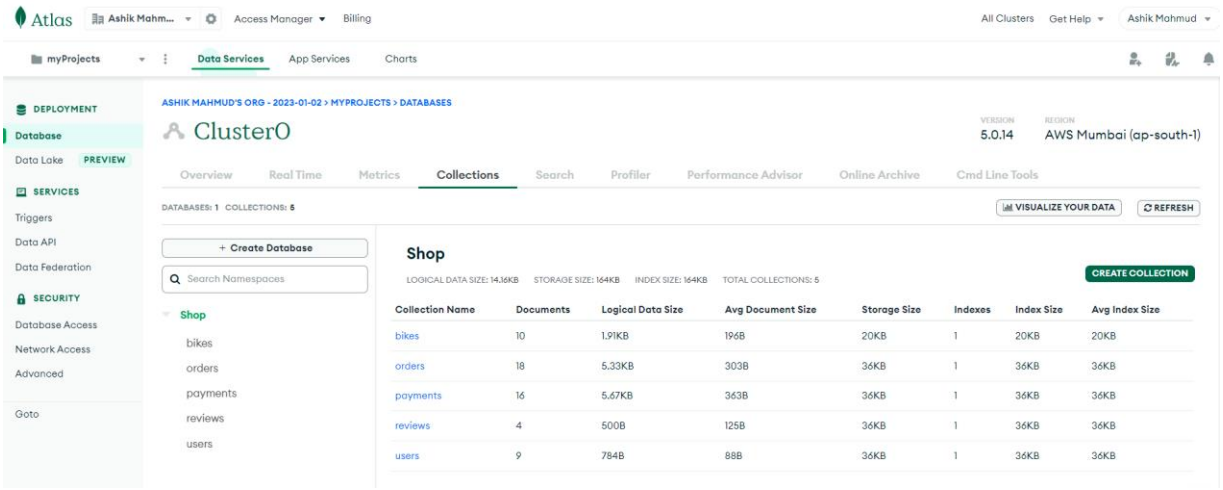

Figure 5.5.2: Data Table

5.2Implementation of Front-end Design

Any development may benefit greatly from the use of computer programs that have been shown to develop code and structures. It is a platform that promotes applications. In this sector, codes have been written, and the fundamental parts are put together to establish a system.

5.3Testing Implementation

I try to put everything in place in each test extension in that range. Then, naturally found bugs are what I see.

5.4Test Results and Reports

The functional testing process for a website includes several testing components, including user interface, API, database, verification, and validation testing, as well as testing of core website functionality. Functional testing looks to be straightforward because it enables users to conduct both manual and automated testing.

CHAPTER 6
EFFECTS ON SOCIETY, ENVIRONMENT, & SUSTAINABILITY

6.1 Impact on Society

Here is an astounding outcome of these websites. Really, these websites offer a comprehensive view of a bikes selling system. For everyone who enjoys new bikes, it is a time-saving choice. No one could ever know everything about a new put because of how friendly it is. It'll be a terrific way and this might also lead to the growth of many commercial enterprises, which can be a positive social consequence of websites that are associated to tourism. Things of this nature might also improve local expressions and communities. Actually, these kinds of activities provide opportunities for people from all walks of life, including minorities, children, and women. the advantages of infrastructure growth as well. After connecting at the root level and using this website to cover the entire network. By promoting the bikes produced by people looking for work, it helps to end poverty. In actuality, we seek to strengthen the relationships that already exist across communities.

6.2 Impact on Environment

Although protecting and preserving the environment might be advantageous for the e-commerce industry, it is a key objective of the industry. The need of keeping a clean and safe environment should not be overlooked at an e-commerce area where the natural environment isn't the most appealing. The environment plays a significant role in e-commerce most of the time.

We must therefore always keep these things in mind. Using our web-based service, we must make sure that nothing affects or has a negative impact on our environment. We want to help spread the word about how vital the environment is to humanity in the first place and in the most important way possible [7]. By providing detailed directions, we will be able to improve the environmental conditions.

After that, we will be the ones to help people understand our environmental duties. In actuality, we'll act as a medium for travelers and tourist attractions. As a result, it is up to us to protect the environment.

6.3 Ethical Aspects

To provide the intellectual foundation for equity, acceptable use of control and expertise, and suitable connections, ethics is linked to social meaning and social control. Customers will receive support from this section to maintain their security. No one is able to hack into or steal any of their info. All types of customers have access to this opportunity, but they must follow the rules and guidelines related to our web-based service.

6.4 Plan for Sustainability

Therefore, there is a manual for achieving long-term goals as well as archives approaches to continue with the workouts. While meeting the needs of customers, businesses, the environment, or local communities, tourism or its support takes into account all of its past, present, and future historical, commercial, and ecological consequence.

CHAPTER 7
CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

Customers will benefit from the computerized learning framework offered by this website. It was a terrific experience working on the online project. This web application is merely a modest attempt to meet the demands of handling their venture task. Several simple to comprehend coding was also appreciated. This package will work well because it satisfies all the requirements. Software planning is done at the start of a project to give the project manager a framework for making estimations in a condensed amount of time. As the project advances, this framework should be constantly updated.

7.2 Scope of further development

We will develop:

1. Payment method.
2. More features.
3. More security.

REFERENCES

[1] Understanding the basic of google scholar, available at https://scholar.google.com, last accessed on 03-02-2023 at 12:00 PM.

[2] Learn about academia, available at https://www.academia.edu ,last accessed on 03-02-2023 at 12:00 PM.

[3] Learn aboutsweetalert, available at https://sweetalert.js.org/guides/#getting-started, last accessed on 02-02-2023 at 12:00 PM.

[4] Understanding the basic of Gihub, available at https://github.com/, last accessed on 03-02-2023 at 12:00 PM.

[5] Learn about Netlify, available at https://app.netlify.com/, last accessed on 03-02-2023 at 12:00 PM.

[6] Learn about Vercel, available at https://vercel.com/dashboard /, last accessed on 03-02-2023 at 12:00 PM.

[7] Understanding the basic of NodeJs, available at https://nodejs.org/en/docs/, last accessed on 03-02-2023 at 12:00 PM.

[8] Learn about Express, available at https://expressjs.com/en/starter/installing.htmllast accessed on 03-02-2023 at 12:00 PM.

[9] Understanding the basic of MongoDB, available at https://www.mongodb.com/cloud/atlas, last accessed on 03-02-2023 at 12:00 PM.

[10] Learn about Firebase, available at https://console.firebase.google.com/u/0/, last accessed on 03-02-2023 at 12:00 PM.

[11]Understanding the basic of Bootstrap, available at https://getbootstrap.com/docs/5.0/getting-started/introduction/, last accessed on 03-02-2023 at 12:00 PM.

[12] Learn about React Bootstrap, available at https://react-bootstrap.github.io/getting-started/introduction, last accessed on 03-02-2023 at 12:00 PM.

[13] Learn about CSS, available at https://www.w3schools.com/css/css_website_layout.asp, last accessed on 03-02-2023 at 12:00 PM.

[14] Understanding the basic of HTML, available at https://www.w3schools.com/html, last accessed on 03-02-2023 at 12:00 PM

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