

CAN THO UNIVERSITY
SCHOOL OF INFORMATION TECHNOLOGY AND
COMMUNICATION



SPECIALIZED PROJECT
SCHOOL OF INFORMATION AND TECHNOLOGY

BIKE RENTAL WEBSITE

Đinh Hồ Thanh Tân
B2111950

SUPERVISOR
PhD Bùi Võ Quốc Bảo

Semester 1, 2024 – 2025

CAN THO UNIVERSITY
SCHOOL OF INFORMATION TECHNOLOGY AND
COMMUNICATION

SPECIALIZED PROJECT
SCHOOL OF INFORMATION AND TECHNOLOGY

Topic
BIKE RENTAL WEBSITE

SUPERVISOR

PhD Bùi Võ Quốc Bảo

Đinh Hồ Thanh Tân

B2111950

Specialized Project of Information and Technology

Of

Bike Rental Webstie

Prepared by Đinh Hồ Thanh Tân

19/11/2024

Table of Contents

CHAPTER 1: OVERVIEW INTRODUCTION OF THE WEBSITE.....	7
1. Introduction of website	7
2. Main features	7
3. Technologies used in website	7
4. Type of users	8
5. Website requirements	8
5.1 Software requirements.....	8
5.2 Browser Support.....	8
5.3 Functional Requirements.....	8
5.4 Non-Functional Requirements	8
CHAPTER 2: WEBSITE DIAGRAM	9
1. Usecase diagram	9
1.1 User	9
1.2 Admin.....	10
2. Directory tree diagram.....	11
2.1 Home page.....	11
2.2 Login page.....	11
2.3 Bike list page.....	11
2.4 Bike rental page.....	11
2.5 Admin page	11
CHAPTER 3: INTERFACE DESIGN	12
1. Home page	12
2. Bike list page	14
3. Rental page	15
4. Thanks page	16
5. Notfound page	16
6. Login page	17

7. Admin page.....	18
6.1 Dashboard.....	18
6.2 Users.....	18
6.3 Bikes.....	19
6.4 Brands.....	20
6.5 Rentals.....	21
CHAPTER 4: CONCLUDE.....	22
1. Achieved Results	22
2. Development Directions	22

Table of Figures

FIGURE 1: USER USECASE	9
FIGURE 2: ADMIN USECASE1.....	10
FIGURE 3: ADMIN USECASE2.....	11
FIGURE 4: HOMEPAGE 1.....	12
FIGURE 5: HOMEPAGE 2.....	13
FIGURE 6: HOMEPAGE 3.....	13
FIGURE 7: HOMEPAGE 4.....	13
FIGURE 8: BIKE LIST PAGE 1.....	14
FIGURE 9:BIKE LIST PAGE 2	14
FIGURE 10: RENTAL PAGE 1	15
FIGURE 11: RENTAL PAGE 2	15
FIGURE 12: THANKS PAGE.....	16
FIGURE 13: NOTFOUND PAGE.....	16
FIGURE 14: LOGIN PAGE 1.....	17
FIGURE 15: LOGIN PAGE 2.....	17
FIGURE 16: ADMIN DASHBOARD	18
FIGURE 17: ADMIN USERS SECTION	18
FIGURE 18: ADMIN BIKES SECTION 1	19
FIGURE 19: ADMIN BIKES SECTION 2	19
FIGURE 20: ADMIN BRANDS SECTION 1.....	20
FIGURE 21: ADMIN BRANDS SECTION 2.....	20
FIGURE 22: ADMIN RENTALS SECTION.....	21

CHAPTER 1: OVERVIEW INTRODUCTION OF THE WEBSITE

1. Introduction of website

The website is a comprehensive motorcycle booking platform that streamlines the process of reserving motorbikes online. It offers a range of user-focused features, including the ability to browse and book motorbikes easily, receive email notifications for booking confirmations and updates, and search for motorbikes based on specific segments or attributes such as model, price, or performance. Additionally, the platform includes basic management functionalities for administrators, allowing them to efficiently handle motorbike inventory, availability, and related information. This system aims to enhance convenience for customers while providing a practical tool for managing motorcycle rentals.

2. Main features

- Pages:

- Home page
- Login page
- Bike list page
- Bike Rental page
- Rental Success page
- Notfound page

- Features:

- Display bikes
- Rental bikes
- Get rental and subscribe email
- Find bikes by preferences
- Display number of users, bikes, rentals
- Signup and login
- Add, delete, edit bike
- Add new bike brand
- Delete user

3. Technologies used in website

- **Frontend:** Vuejs, VueRouter, Pinia, Tailwind, PrimeVue.
- **Backend:** Nodejs(express), Knex, Nodemailer, JWT.
- **Database:** MySql

4. Type of users

- **Normal user:** Signup, signin, find preference bikes, rent bike.
- **Admin:** Manage users, bikes, rentals.

5. Website requirements

5.1 Software requirements

- ✓ Vue.js (latest version)
- ✓ Node.js (v14+)
- ✓ MySQL (v8+)
- ✓ Knex.js for query building
- ✓ TailwindCSS for responsive design
- ✓ PrimeVue for UI components

5.2 Browser Support

- ✓ Chrome 64+
- ✓ Firefox 58+
- ✓ Edge 14+
- ✓ Safari 10+

5.3 Functional Requirements

- ✓ The website must be secure and protected from hacking attempts.
- ✓ Easily browse and book motorcycles.
- ✓ Search for motorcycles based on attributes or preferences.
- ✓ Receive email notifications for bookings and subscription updates.
- ✓ Allow for quick updates and maintenance to minimize downtime.
- ✓ Manage users and their rentals effectively.
- ✓ Total users, rentals, and motorcycle statistics.

5.4 Non-Functional Requirements

- ✓ **Performance:** The platform must load pages within 2-3 seconds to ensure a smooth user experience.
- ✓ **Reliability:** The website should handle high traffic and multiple bookings simultaneously without performance degradation.
- ✓ **Scalability:** The system should accommodate future expansions, such as additional

motorcycle categories or enhanced features.

✓ **Maintainability:** Developers should be able to efficiently update or modify the website's codebase.

CHAPTER 2: WEBSITE DIAGRAM

1. Usecase diagram

1.1 User

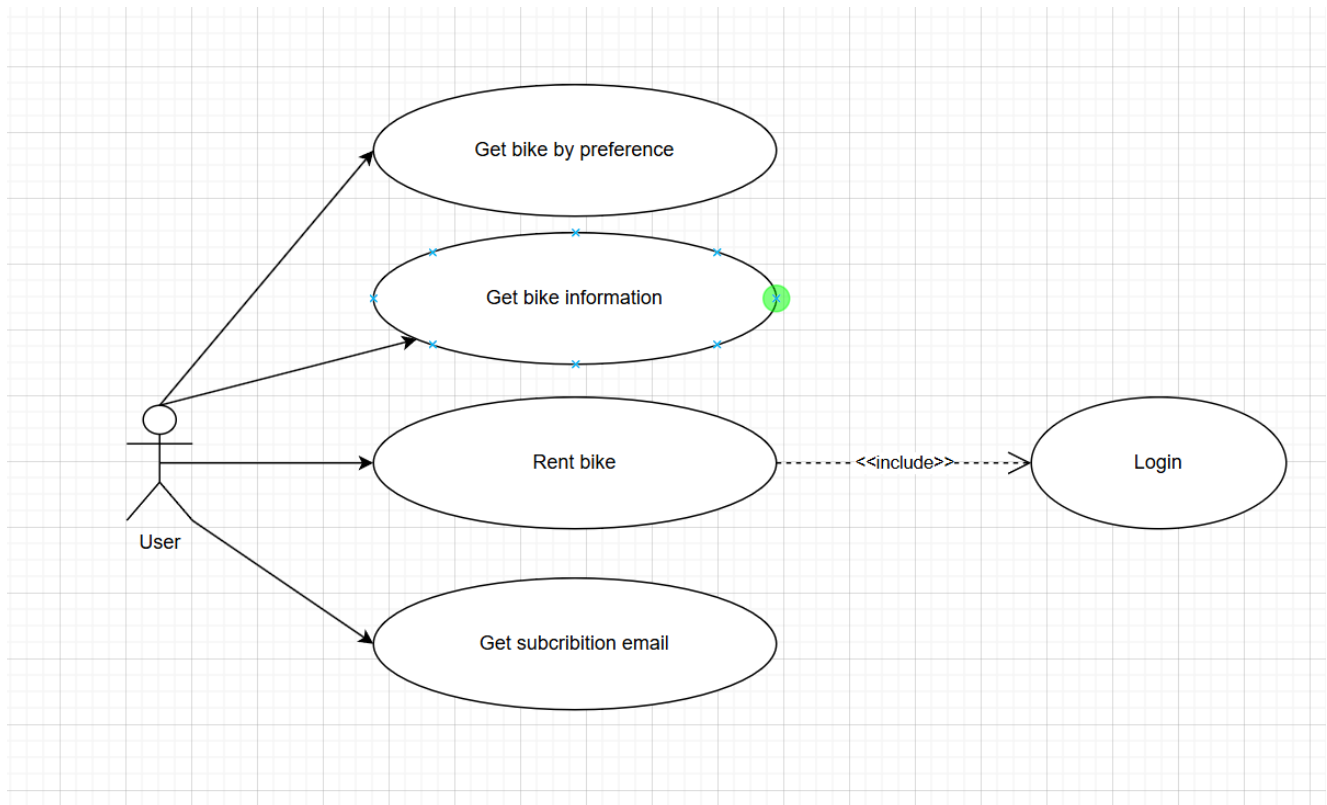


Figure 1: User Usecase

1.2 Admin

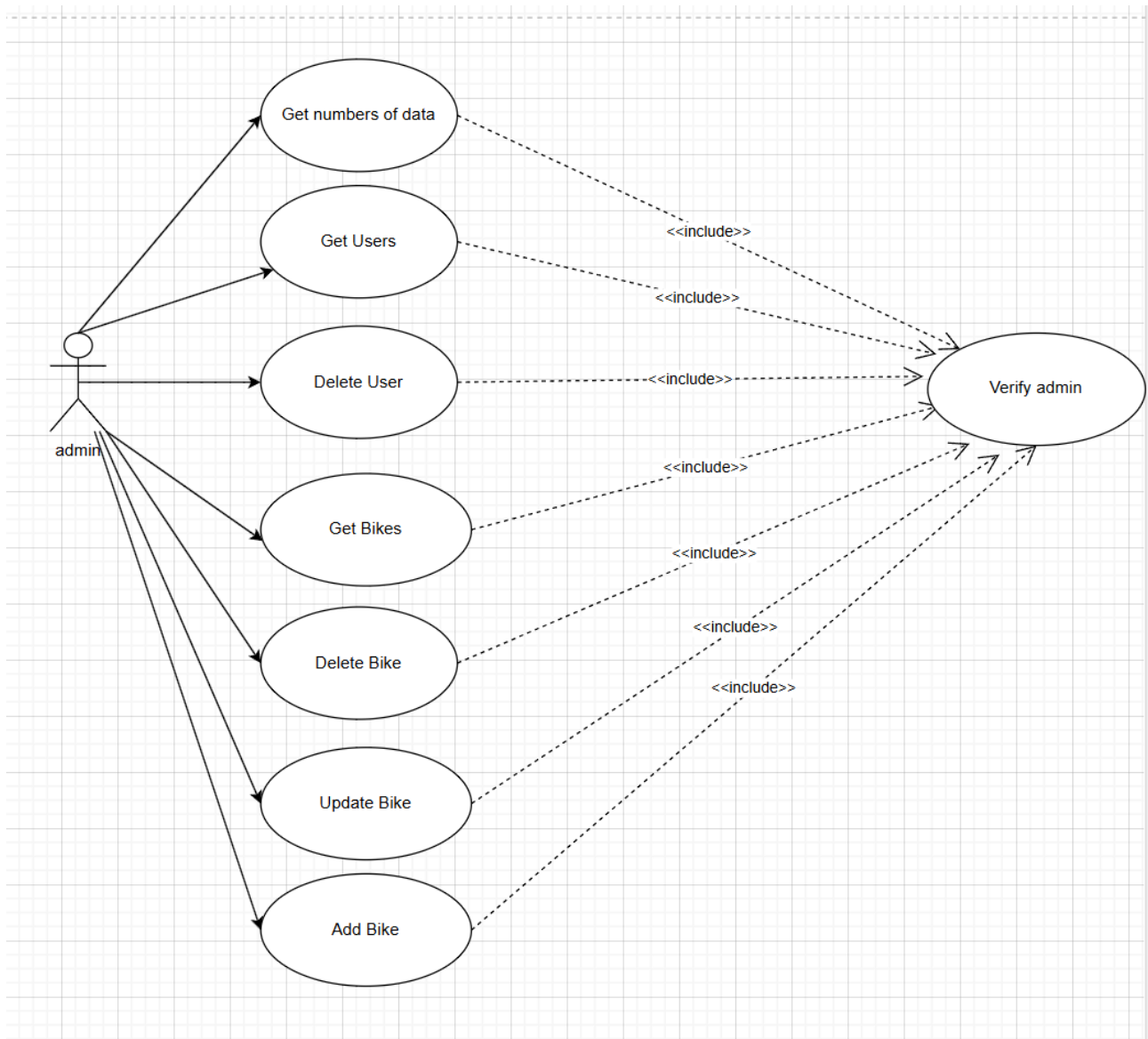


Figure 2: Admin Usecase1

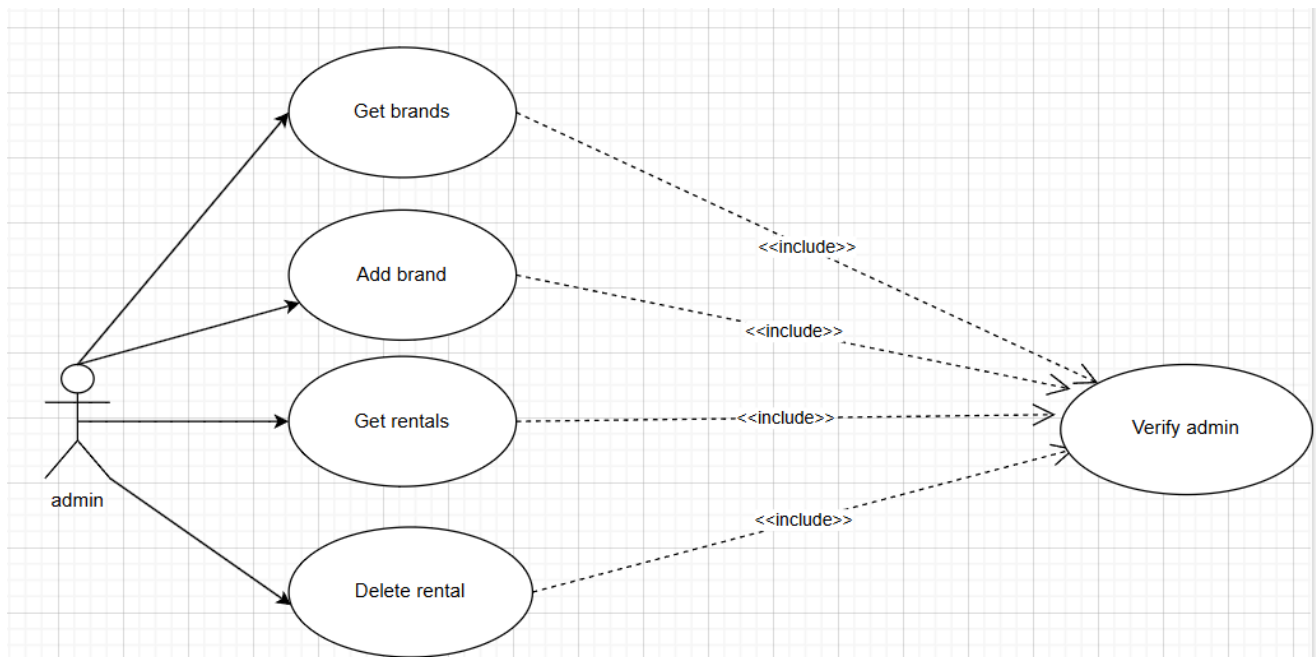


Figure 3: Admin Usecase2

2. Directory tree diagram

2.1 Home page

- Get bikes
- Get subscription email

2.2 Login page

- Login
- Signup

2.3 Bike list page

- Get bikes by preferences

2.4 Bike rental page

- Rental

2.5 Admin page

- Get numbers of data
- Get users
- Delete user
- Get bikes

- Add bike
- Delete bike
- Edit bike
- Get brands
- Delete brand
- Get rentals
- Delete rentals

CHAPTER 3: INTERFACE DESIGN

1. Home page

This page showcases a selection of available bikes for rent, highlights key features of the website, and includes a subscription form for users to sign up and receive email notifications about updates, promotions, or new bike availability. A hero section also provides a brief overview of the website and its services, aiming to engage users right from the start.

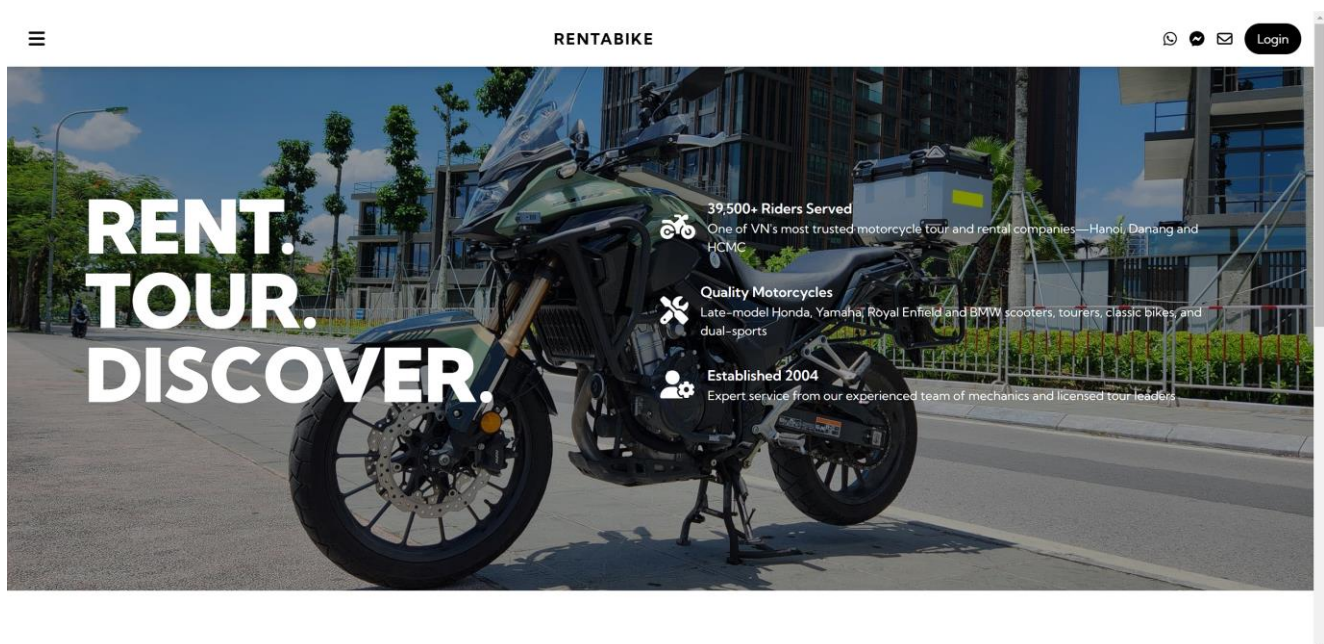


Figure 4: Homepage 1


MOTORCYCLE RENTALS

Professionally maintained late-model Honda, Royal Enfield, BMW and Yamaha motorcycles.

- ✓ Garages in Hanoi, Danang and HCM City
- ✓ Save money with awesome Tourist and Expat deals
- ✓ One-Way Rental, Guides and Damage Waiver add-ons available

BMW 1250 GS

150\$/day




World-class touring bike

20 litres 1255 cc

Book Now

Honda CB 500X

55\$/day




Excellent mid-sized tourer

17.7 litres 470 cc

Book Now

All Motorcycle Rentals >>

Figure 5: Homepage 2



Mailing list

Subscribe to our newsletter for the latest updates and promotions

☐ I would like to receive occasional emails containing discounts, travel inspiration and special offers from Rentabike!

Subscribe

Figure 6: Homepage 3

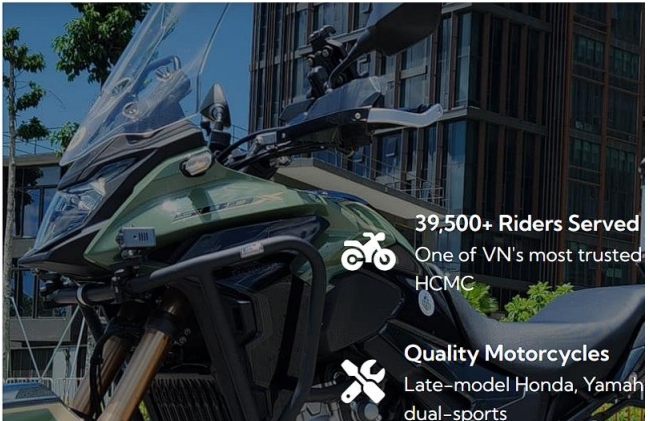


Home

Bikes

Contact Us

RENTABIKE



39,500+ Riders Served

One of VN's most trusted HCMC

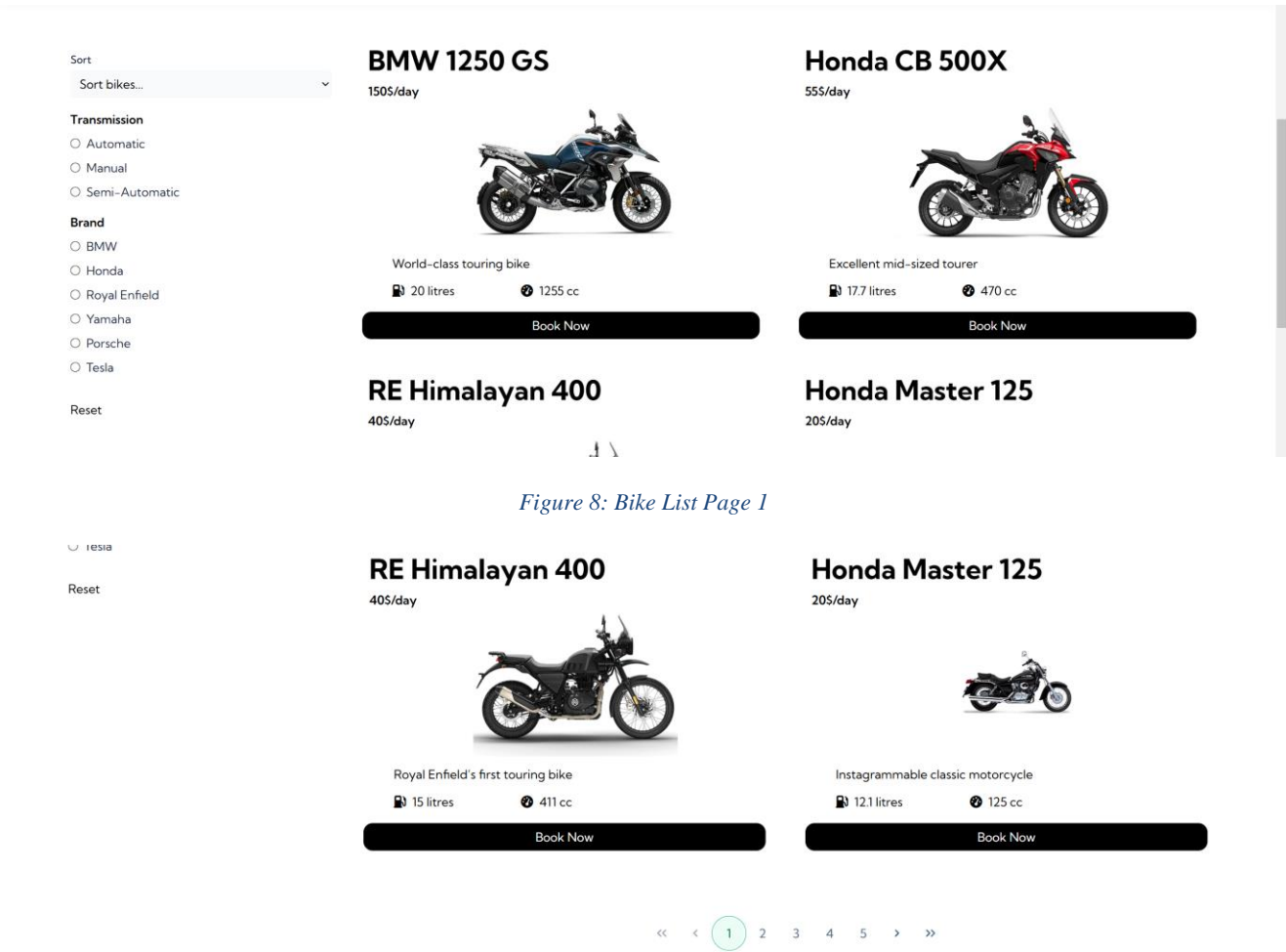
Quality Motorcycles

Late-model Honda, Yamaha dual-sports

Figure 7: Homepage 4

2. Bike list page

This page allows users to view a list of bikes based on their preferences, such as bike type, brand, and other filters. Each bike is displayed with detailed information, including tranmission, pricing, and brands, helping users make an informed decision when selecting a bike for rent.



3. Rental page

On the bike rental page, users can fill out a rental form to request a bike rental. After submission, a confirmation email is sent to the user with details of the rental, ensuring they receive all necessary information to proceed with the booking.

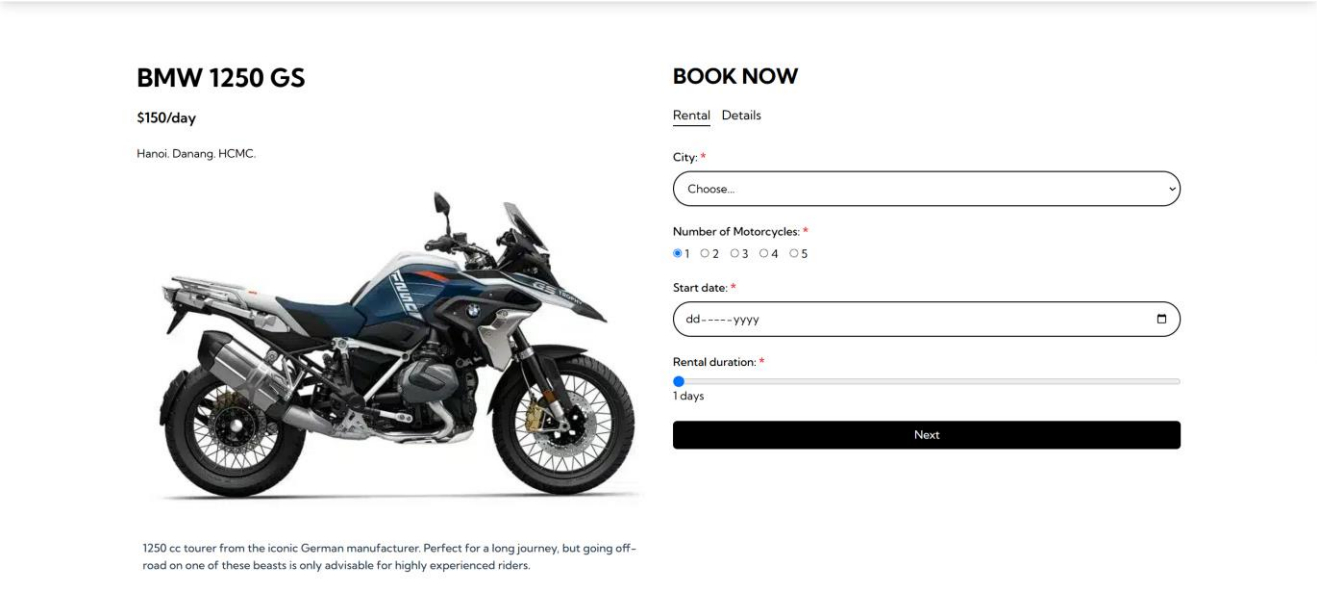


Figure 10: Rental Page 1

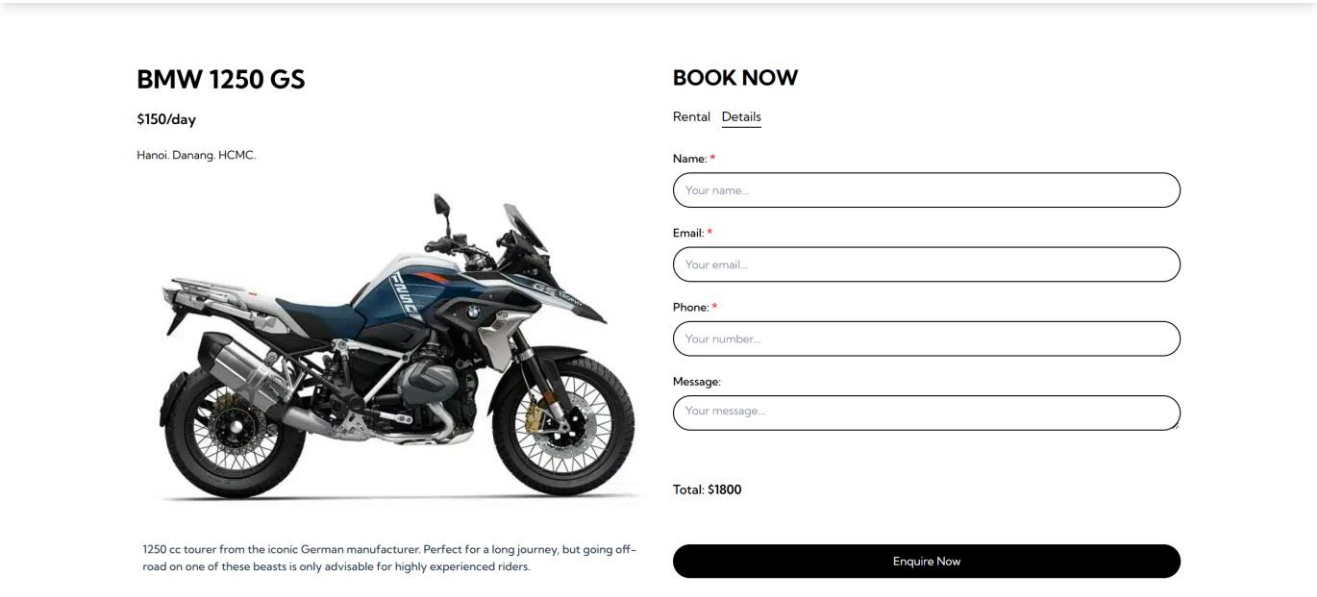


Figure 11: Rental Page 2

4. Thanks page

Show when user successfully rent a bike

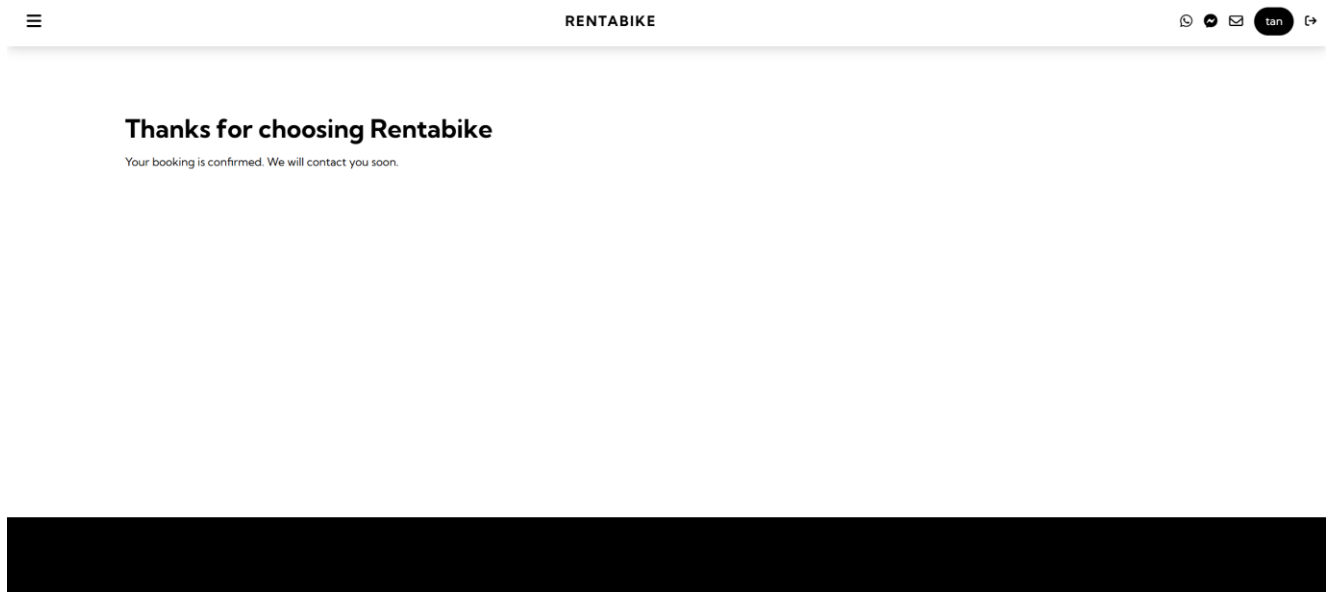


Figure 12: Thanks Page

5. Notfound page

Show when access an undefiend route.

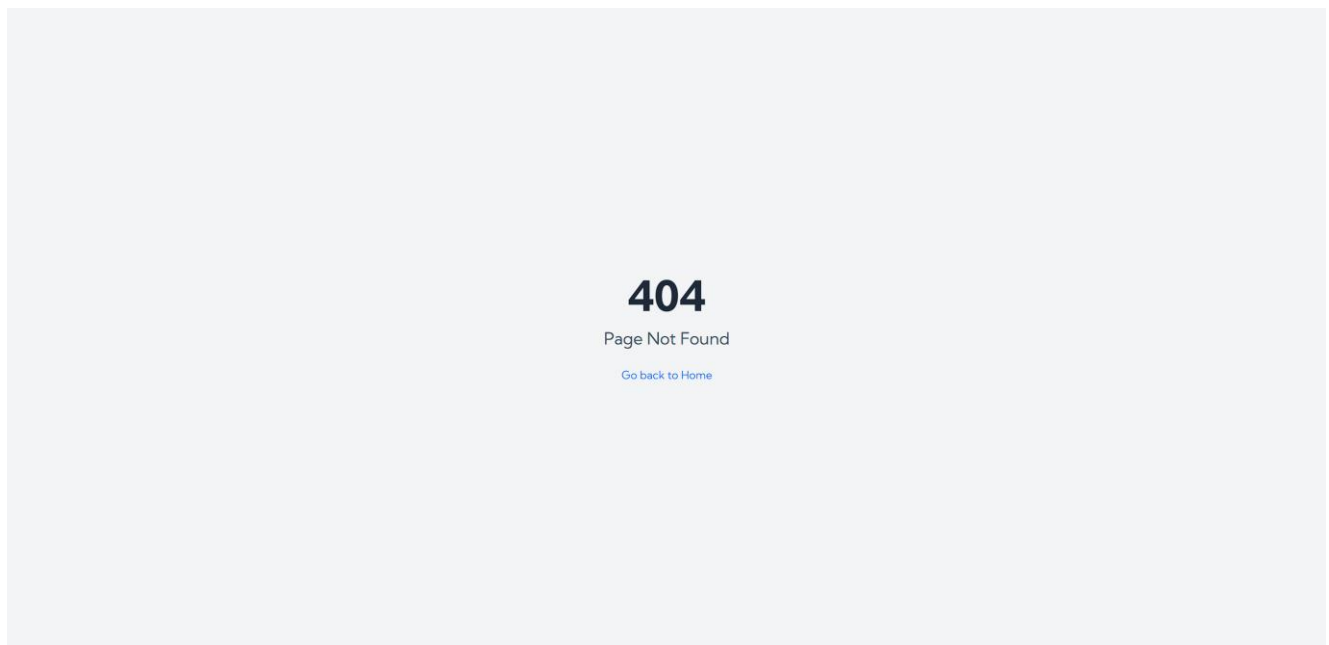


Figure 13: Notfound Page

6. Login page

The login page allows returning users to access their accounts by entering their credentials. It also provides a sign-up option for new users to create an account and join the platform, enabling them to complete rental bookings.



Figure 14: Login Page 1



Figure 15: Login Page 2

7. Admin page

The admin page provides an overview of key metrics such as the number of users, bikes, and rentals. It offers functionalities for managing users, including the ability to delete accounts, and bikes, with options to add, edit, or delete entries. Admins can also manage bike brands, view and delete rental records, ensuring smooth operation and maintenance of the platform.

6.1 Dashboard



Figure 16: Admin Dashboard

6.2 Users








Admin			
Users			
ID	Name	Role	
18	admin	admin	Delete
28	test	user	Delete
32	sadasd	user	Delete
33	Beatae tempor volupt	user	Delete
34	Voluptatibus labore	user	Delete
40	tan	user	Delete
« < 1 > »			

Figure 17: Admin Users Section

6.3 Bikes

Bikes

Add new bike

ID ↑↓	Name ↑↓	Brand ↑↓	Type ↑↓	Price ↑↓	Status ↑↓	Image	Engine ↑↓
1	<input type="text" value="BMW 1250 GS"/>	<input type="text" value="BMW"/>	<input type="text" value="manual"/>	<input type="text" value="150"/>	<input type="text" value="available"/>		<input type="text" value="1255"/>
2	<input type="text" value="Honda CB 500X"/>	<input type="text" value="Honda"/>	<input type="text" value="manual"/>	<input type="text" value="55"/>	<input type="text" value="available"/>		<input type="text" value="470"/>
3	<input type="text" value="RE Himalayan 400"/>	<input type="text" value="Royal Enfield"/>	<input type="text" value="manual"/>	<input type="text" value="40"/>	<input type="text" value="available"/>		<input type="text" value="411"/>
4	<input type="text" value="Honda Master 125"/>	<input type="text" value="Honda"/>	<input type="text" value="manual"/>	<input type="text" value="20"/>	<input type="text" value="available"/>		<input type="text" value="125"/>
5	<input type="text" value="Honda Winner 150"/>	<input type="text" value="Honda"/>	<input type="text" value="manual"/>	<input type="text" value="20"/>	<input type="text" value="available"/>		<input type="text" value="150"/>
6	<input type="text" value="Honda XR 150"/>	<input type="text" value="Honda"/>	<input type="text" value="manual"/>	<input type="text" value="20"/>	<input type="text" value="available"/>		<input type="text" value="149"/>
7	<input type="text" value="Honda CRF 300"/>	<input type="text" value="Honda"/>	<input type="text" value="manual"/>	<input type="text" value="55"/>	<input type="text" value="available"/>		<input type="text" value="286"/>

<<

<

1

2

3

4








>

>>

Figure 18: Admin Bikes Section 1

Bikes

Add new bike

ID ↑↓	Name ↑↓	Brand ↑↓	Status ↑↓	Image	Engine ↑↓
1	BMW 1250 GS	BMW	available		1255
2	Honda CB 500X	Honda	available		470
3	RE Himalayan 400	RE	available		411
4	Honda Master 125	Honda	available		125
5	Honda Winner 150	Honda	available		150
6	Honda XR 150	Honda	available		149
7	Honda CRF 300	Honda	available		286

Add a new bike

Name

Brand

Type

Status

Description

Overview

Price

Engine

Gas

Image

Choose File

No file chosen

Cancel

Add

Figure 19: Admin Bikes Section 2

6.4 Brands

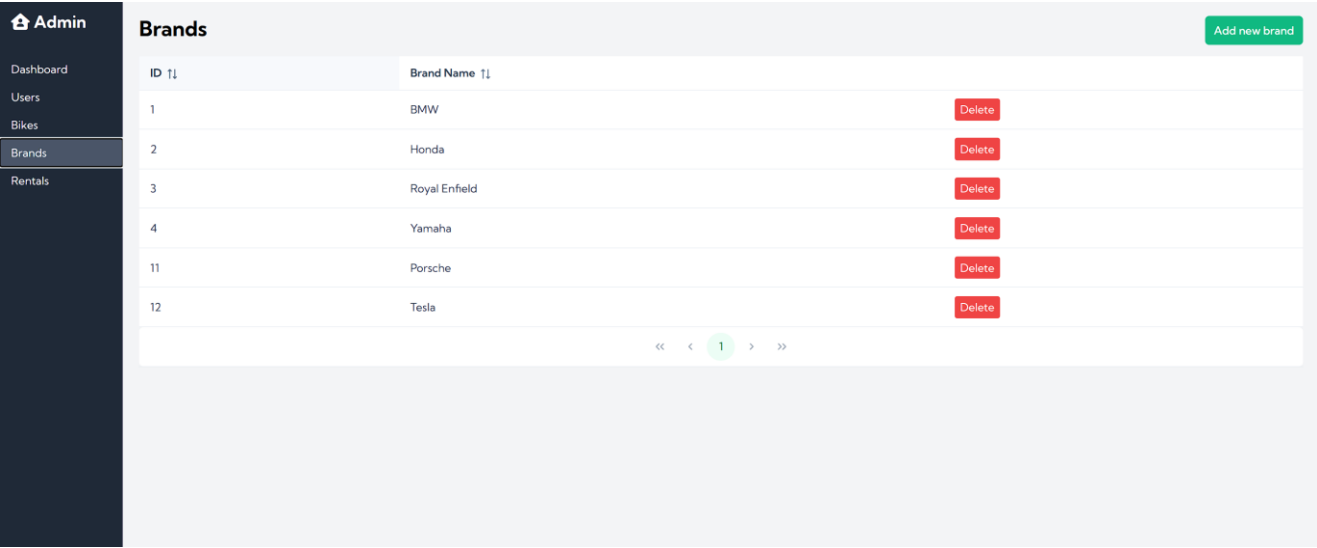


Figure 20: Admin Brands Section 1

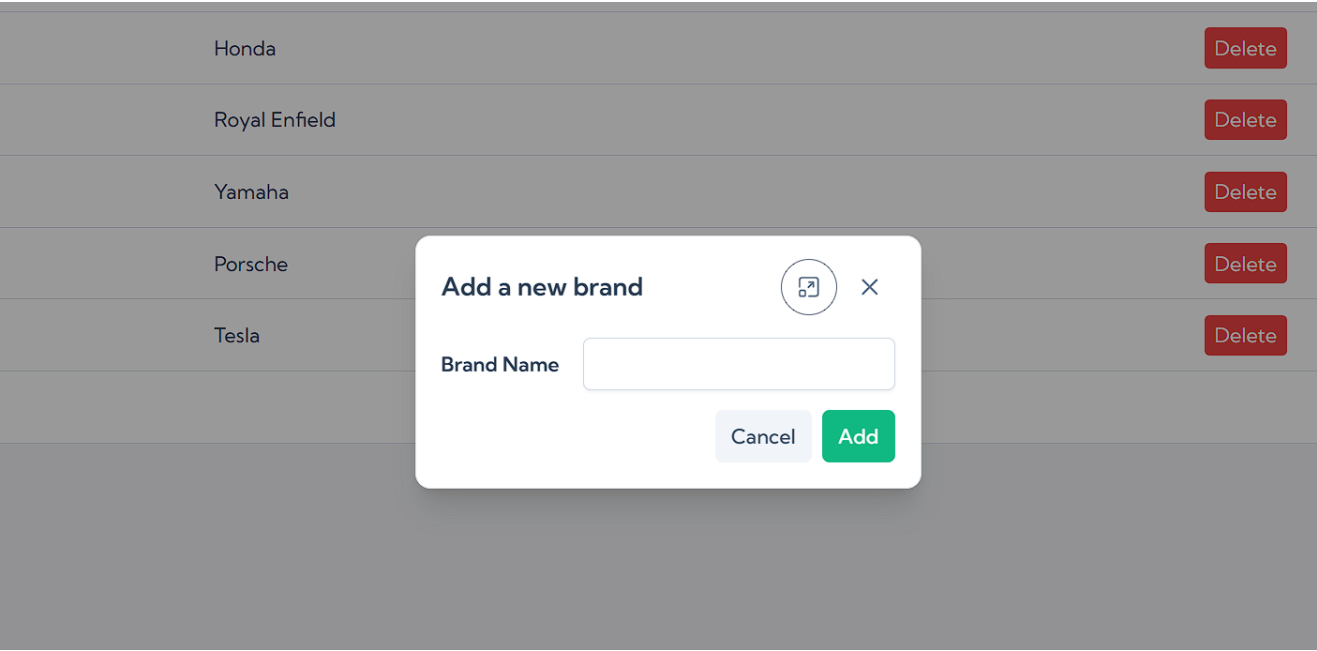


Figure 21: Admin Brands Section 2

6.5 Rentals

<div>Admin</div> <div>Dashboard</div> <div>Users</div> <div>Bikes</div> <div>Brands</div> <div>Rentals</div>	Rentals											
	ID	User Name	Phone	Email	Bike Name	Start Date	End Date	City	Quantity	Total Price	Message	
	31	Christian	+1 (119) 3	jypijo@mailinator.com	BMW 1250 GS	03-10-1982	21-10-1982	HCMC	2	5400	Qui libero est ut si	Delete
	33	Vivien	+1 (668) 6	dhttgaming@gmail.com	Honda Master 125	03-11-2024	14-11-2024	Danang	5	1100	Ex sint ipsa maior	Delete
	34	Macaulay	+1 (202) 9	xomoky@mailinator.com	Honda CB 500X	07-05-1983	14-05-1983	Hanoi	2	770	Nobis vitae laborum	Delete
	35	Bruce	+1 (299) 1	dhttgaming@gmail.com	Honda CB 500X	17-06-2009	03-07-2009	Hanoi	4	3520	Ex quisquam providen	Delete
	36	Lois	+1 (814) 5	dhttgaming@gmail.com	Honda Master 125	05-03-1982	30-03-1982	Danang	3	1500	Laboris numquam ex u	Delete
	37	May	+1 (607) 7	dhttgaming@gmail.com	Honda CB 500X	21-04-2020	25-04-2020	Danang	2	440	Excepteur perferendi	Delete
	38	Lacy	+1 (771) 4	dhttgaming@gmail.com	Honda CB 500X	10-06-2024	27-06-2024	Hanoi	3	2805	In quidem velit labo	Delete
	39	Kameko	+1 (194) 4	buky@mailinator.com	BMW 1250 GS	28-01-1998	19-02-1998	Danang	1	3300	Est doloreque volup	Delete
	40	Dinh	0909009009	dhttgaming@gmail.com	Honda CB 500X	11-11-2024	16-11-2024	Hanoi	4	1100	asdasd	Delete
	41	Liberty	+1 (666) 1	dhttgaming@gmail.com	BMW 1250 GS	23-01-2008	02-02-2008	HCMC	1	1500	Quaerat amet mollit	Delete
	<< < 1 2 > >>											

Figure 22: Admin Rentals Section

CHAPTER 4: CONCLUDE

1. Achieved Results

The motorcycle booking website has been successfully completed with essential features meeting the needs of both users and administrators. Key functionalities such as bike search based on segment, engine type, fuel capacity, and the online booking system have been fully implemented, making it easy for users to search for and rent bikes.

Additionally, the email notification system helps users receive updates on their booking status, enhancing the overall user experience. Admin functions, including adding, deleting, and editing bikes, managing users, and maintaining bike information, have been fully integrated, allowing administrators to efficiently manage the website's operations.

With a user-friendly interface and easy navigation, the website has successfully met user demands and improved the motorcycle rental process, providing convenience and saving time for users when booking bikes.

2. Development Directions

In the future, the website can be expanded and upgraded with several new features to improve service quality and increase user satisfaction. Potential development directions include:

- **Integration of online payment methods:** Allowing users to make instant payments after booking a bike, making the rental process more convenient.
- **Development of a mobile app:** Creating a mobile app so users can book bikes directly from their phones, enhancing convenience.
- **Enhanced review and feedback system:** Allowing users to rate bikes and share their experiences after using the service, helping to improve the overall service quality.
- **Expanding the bike rental selection:** Adding more types of bikes to meet the growing demands of customers.
- **Enhanced security:** Implementing more advanced security technologies to ensure user and administrator data safety.
- **Data analytics system:** Developing analytics tools to help admins manage more effectively and optimize services for users.