CAN THO UNIVERSITY

SCHOOL OF INFORMATION TECHONOLOGY AND COMUNICATION

SPECIALIZED PROJECT

SCHOOL OF INFORMATION AND TECHONOLOGY

BIKE RENTAL WEBSITE

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SUPERVISOR

PhD Bùi Võ Quốc Bảo

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Topic

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Specialized Project of Information and Technology

Of

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Prepared by Đinh Hồ Thanh Tân

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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 prefernce 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

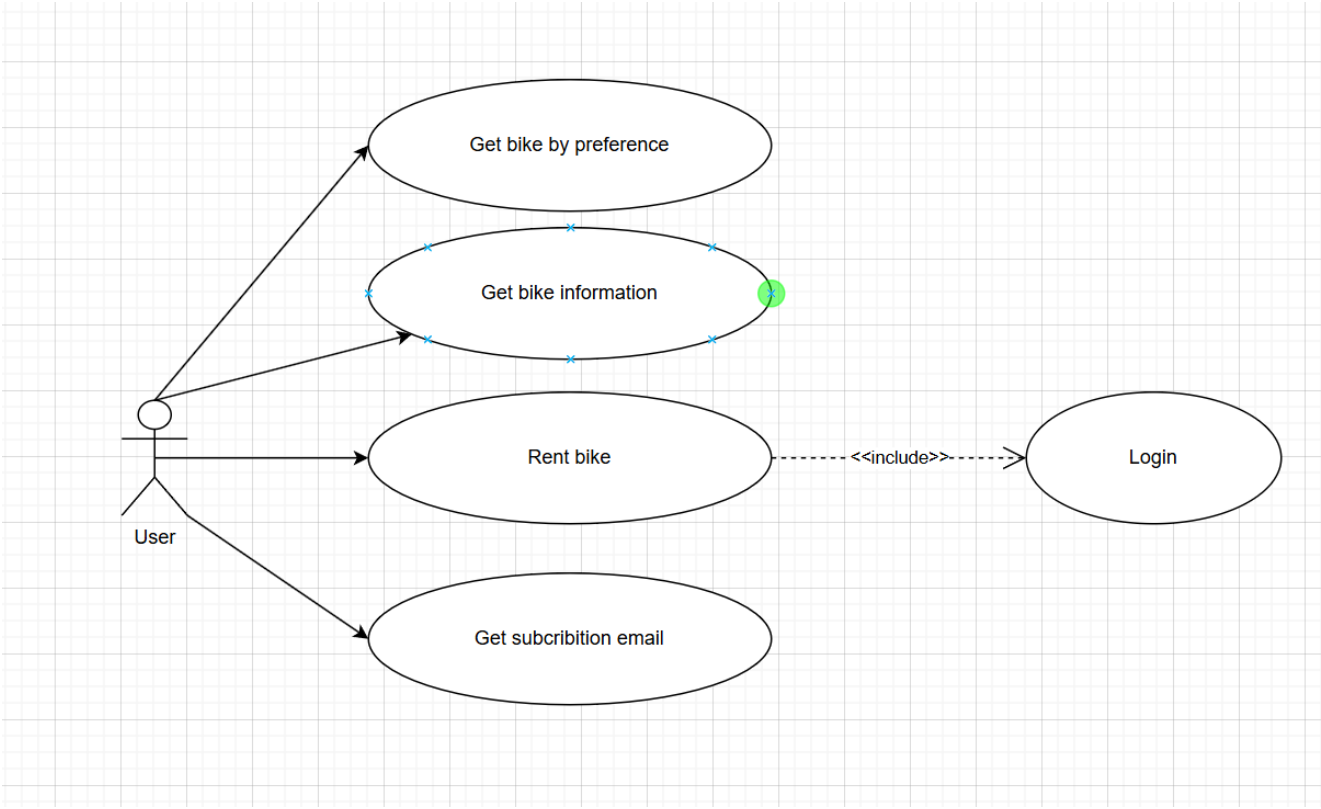

Figure 1: User Usecase

1.2 Admin

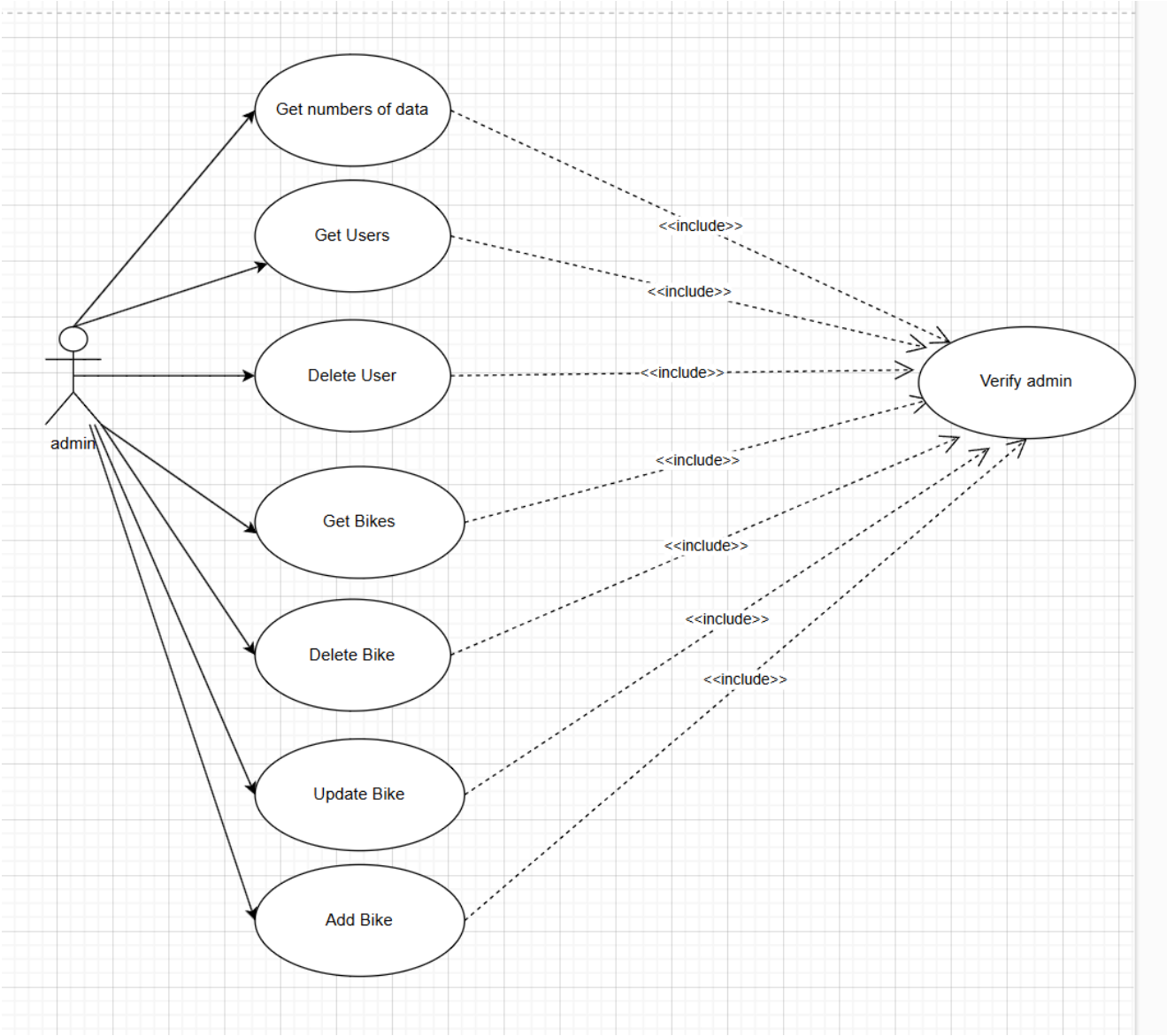

Figure 2: Admin Usecase1

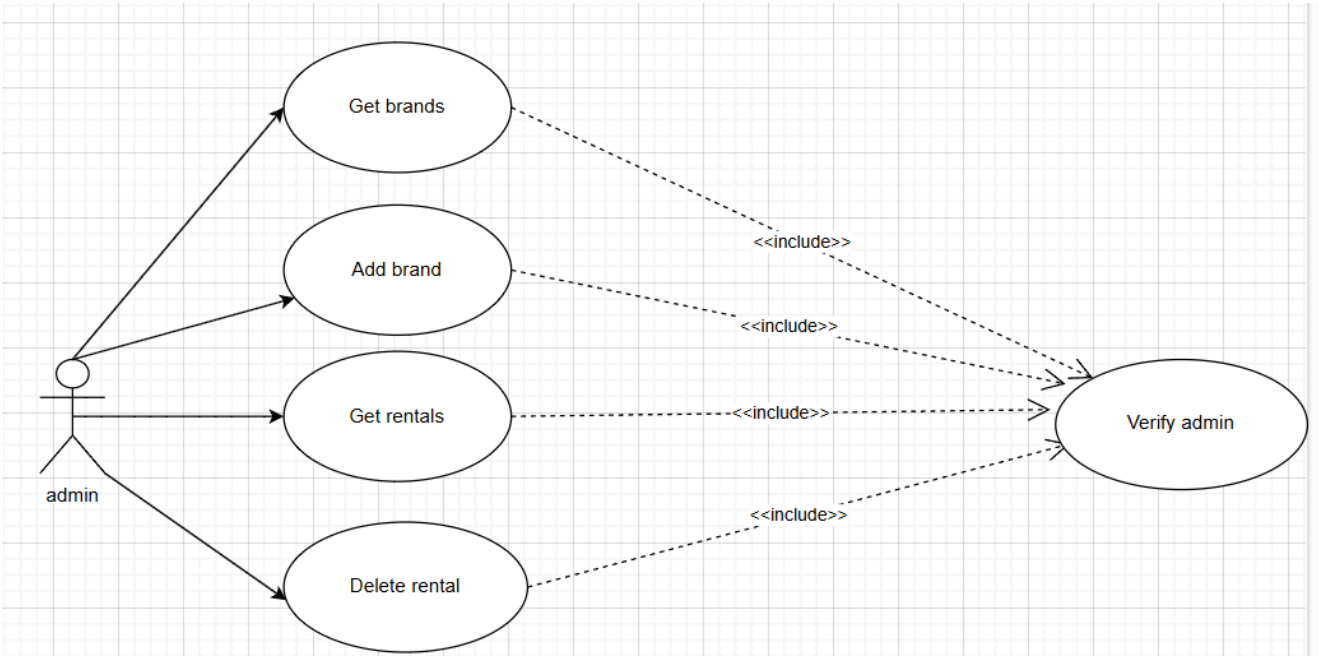

Figure 3: Admin Usecase2

2. Directory tree diagram

2.1 Home page

- Get bikes
- Get subscribtion email

2.2 Login page

- Login
- Signup

2.3 Bike list page

- Get bikes by prefernces

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.

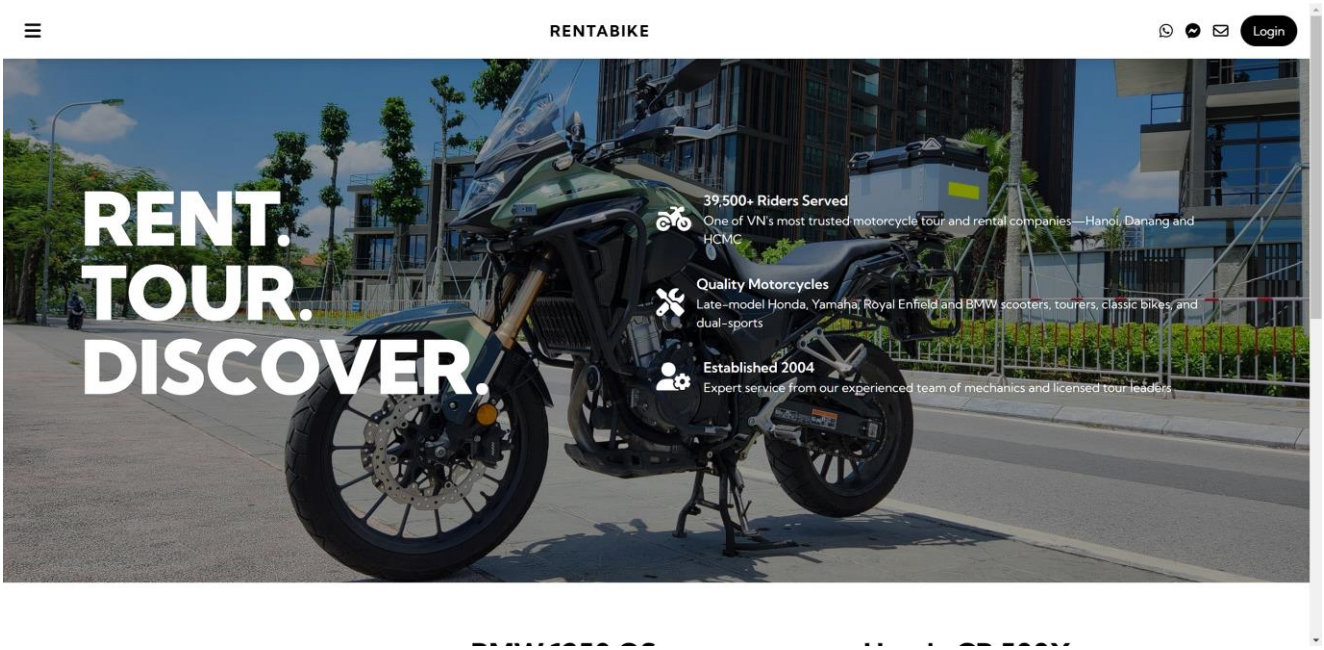

Figure 4: Homepage 1

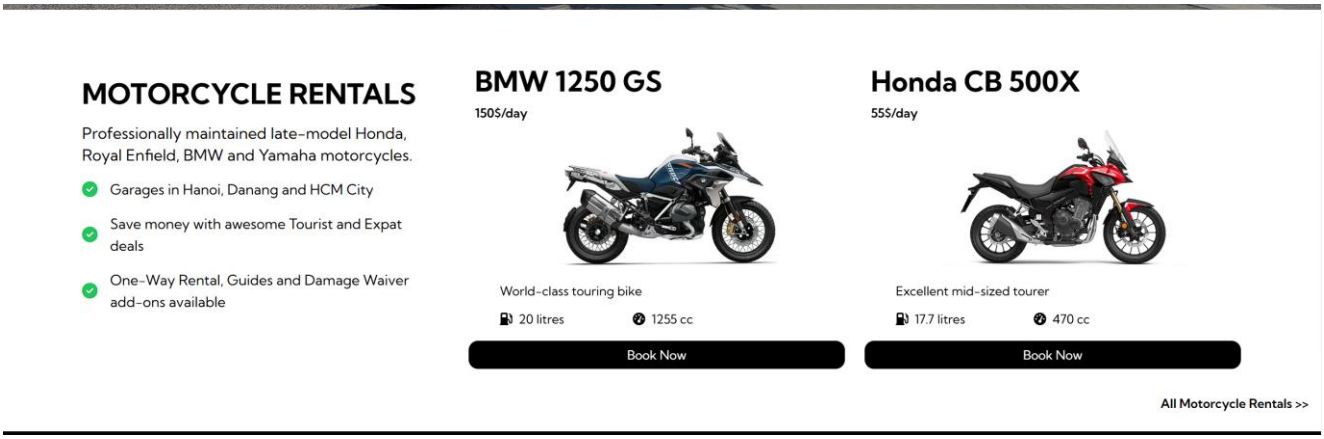

Figure 5: Homepage 2

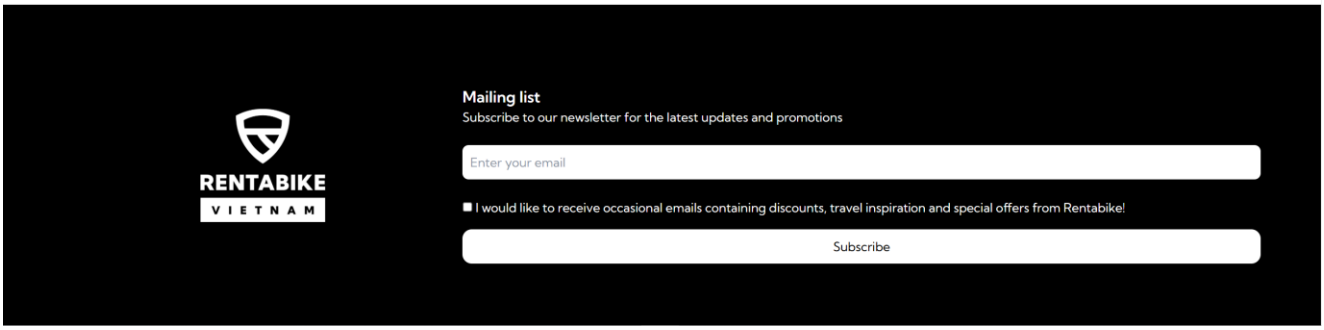

Figure 6: Homepage 3

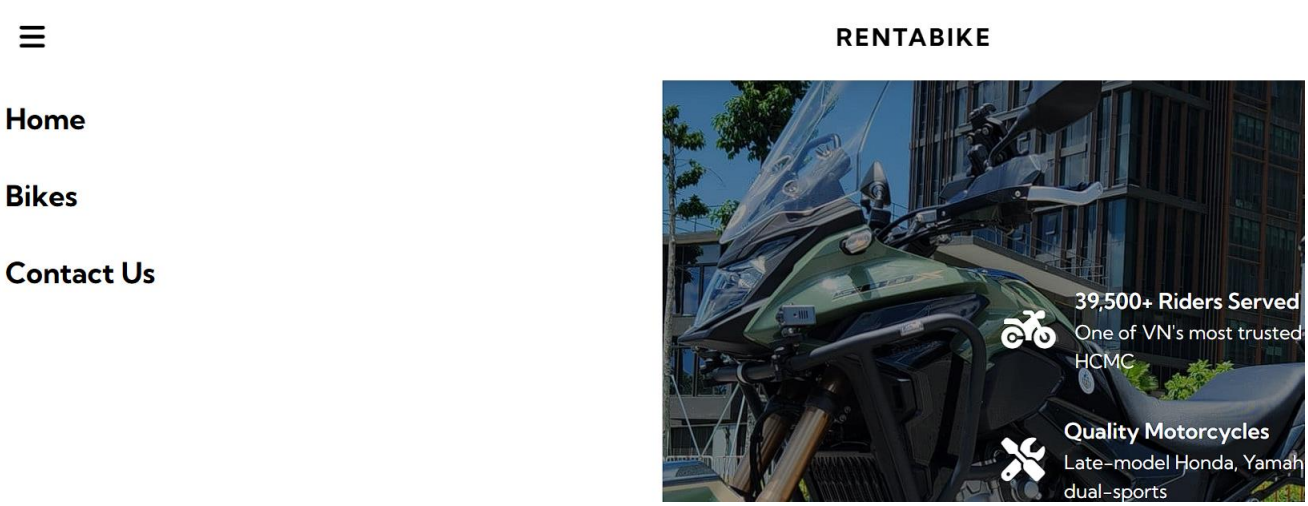

Figure 7: Homepage 4

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.

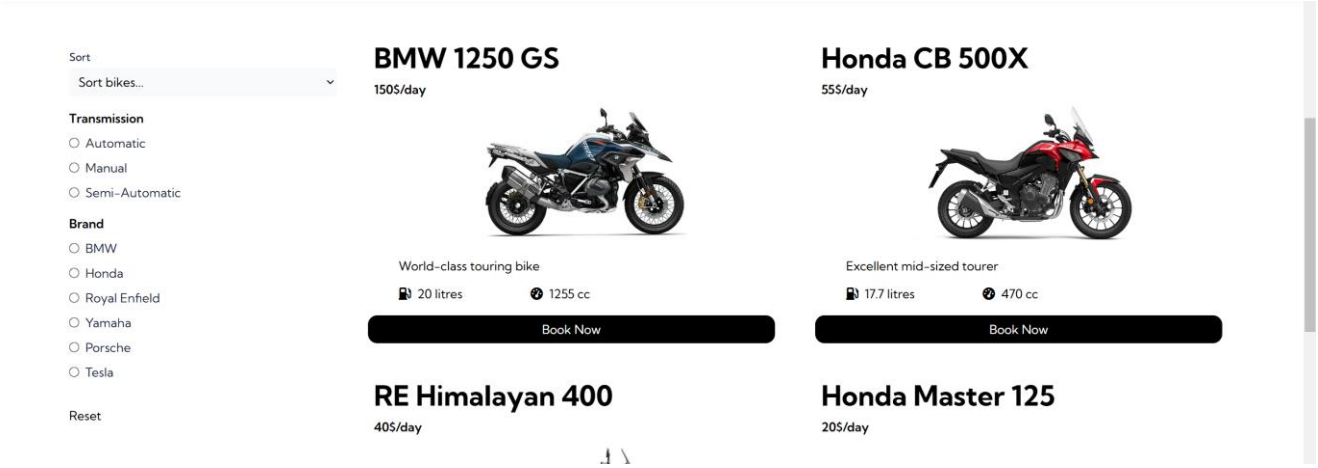

Figure 8: Bike List Page 1

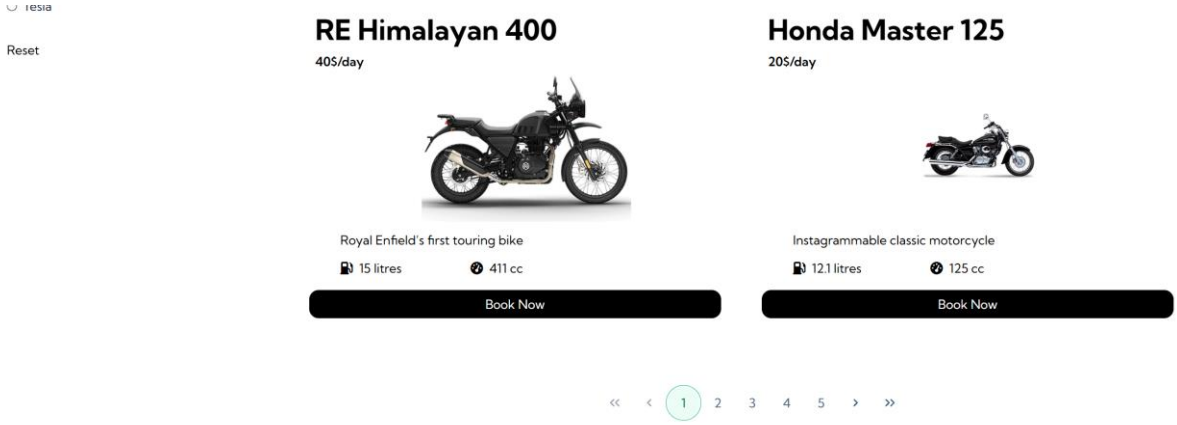

Figure 9:Bike List Page 2

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.

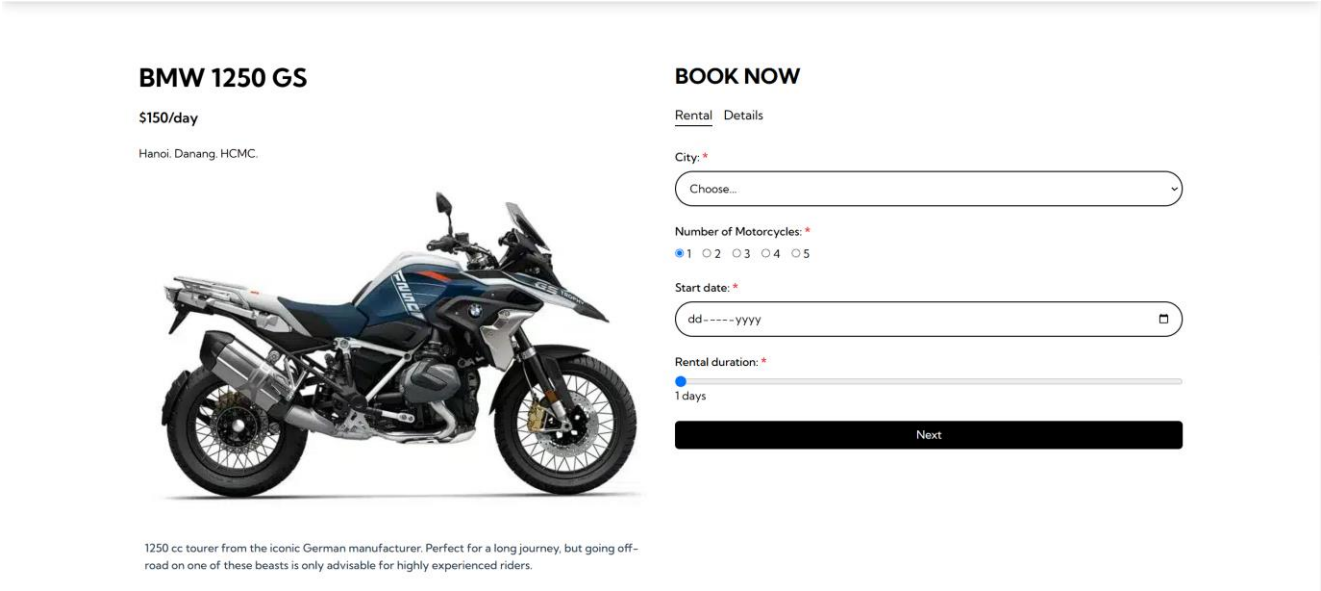

Figure 10: Rental Page 1

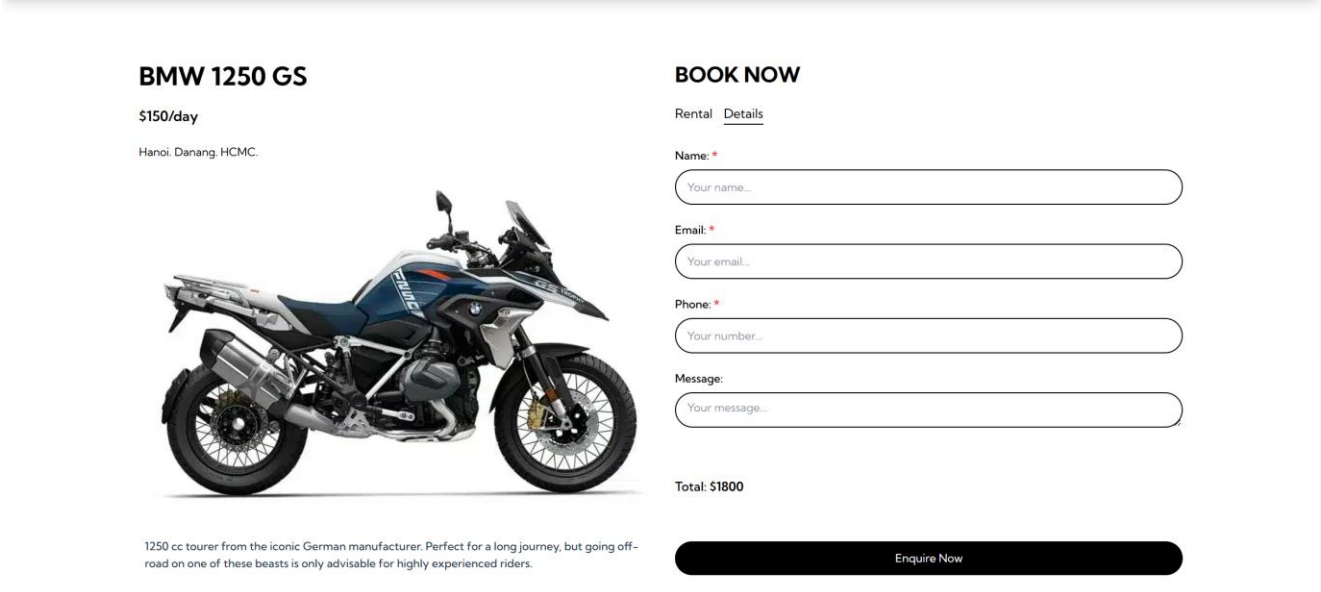

Figure 11: Rental Page 2

4. Thanks page

Show when user successfully rent a bike

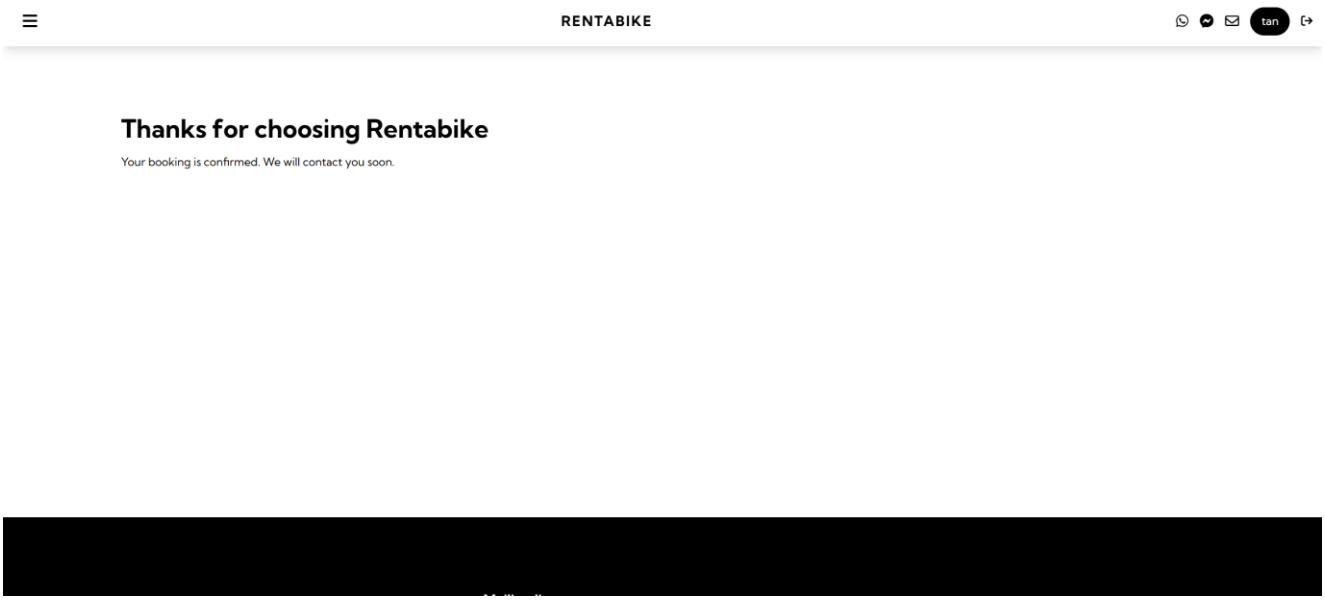

Figure 12: Thanks Page

5. Notfound page

Show when access an undefiend route.

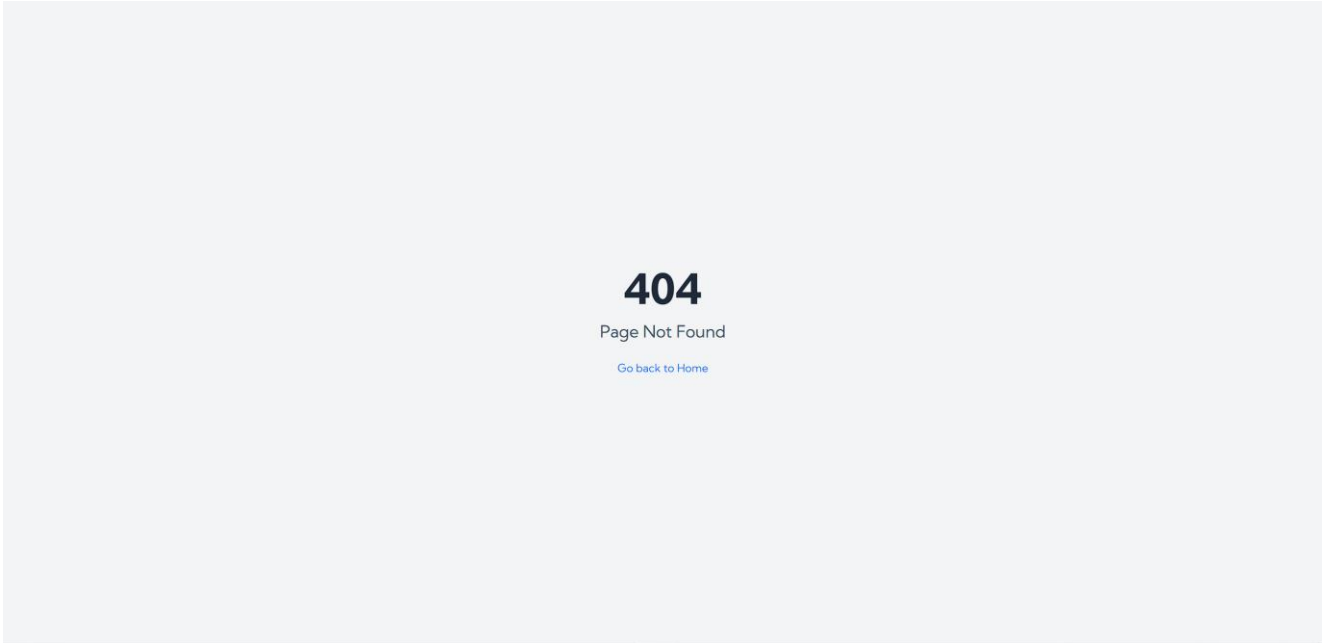

Figure 13: Notfound Page

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.

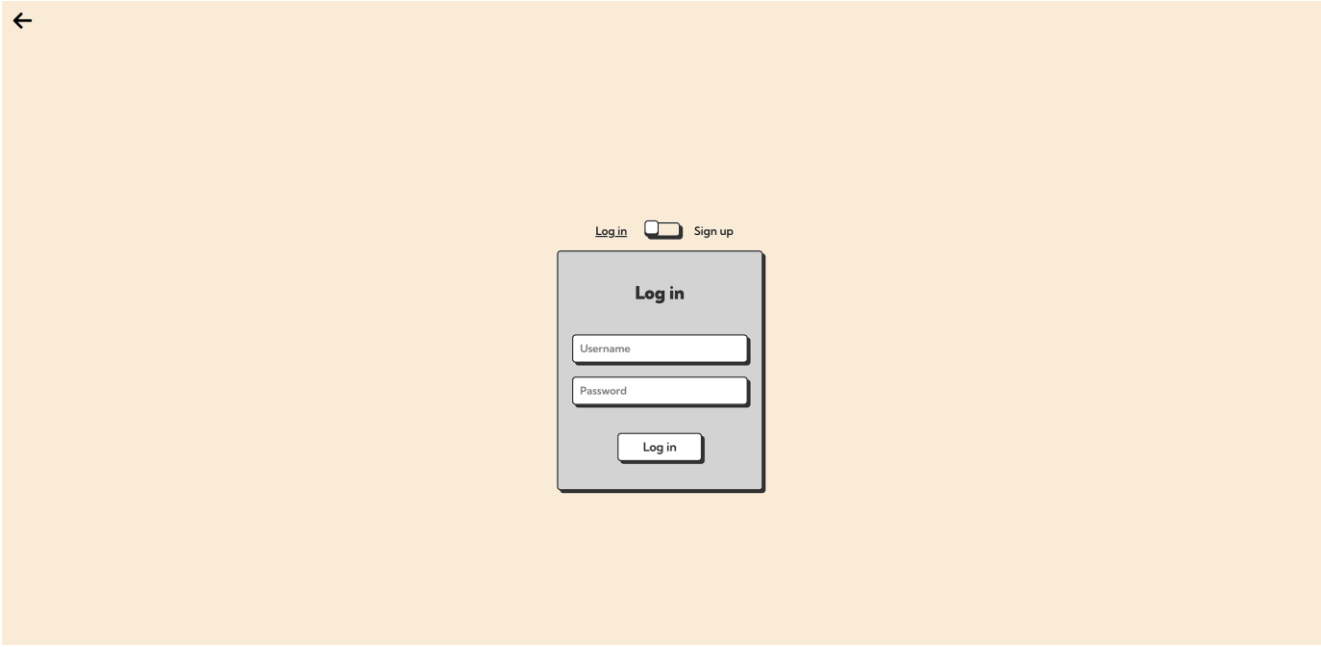

Figure 14: Login Page 1

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

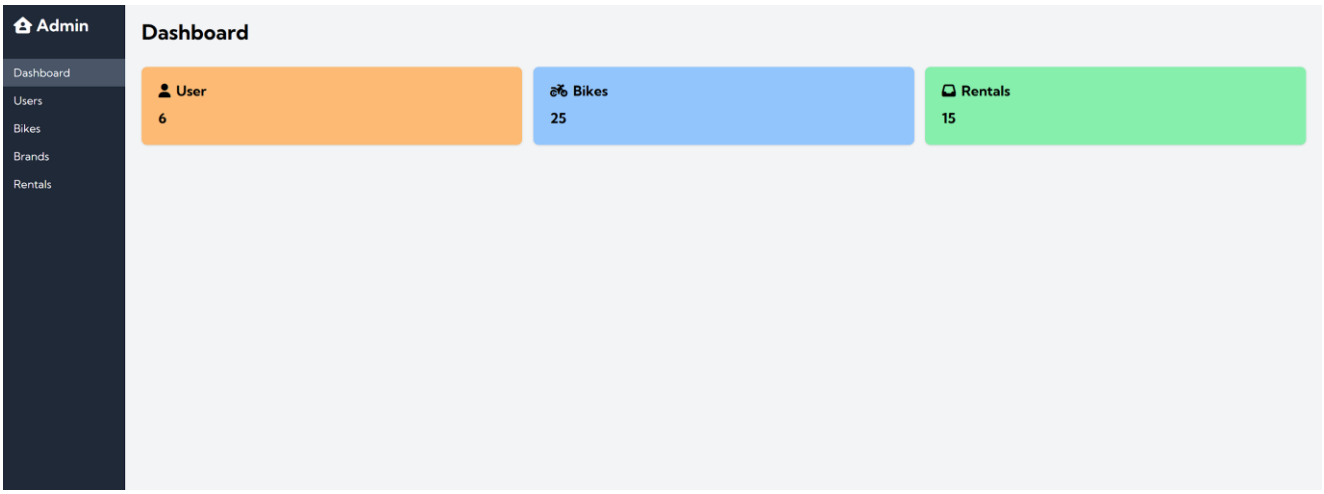

Figure 16: Admin Dashboard

6.2 Users

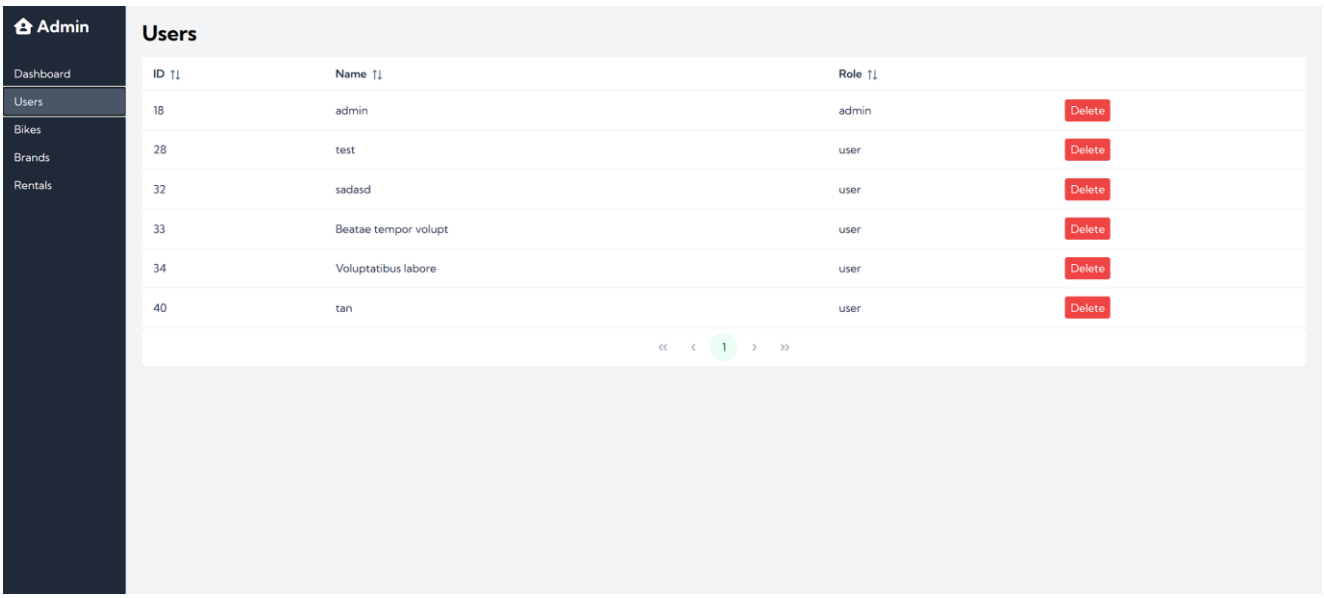

Figure 17: Admin Users Section

6.3 Bikes

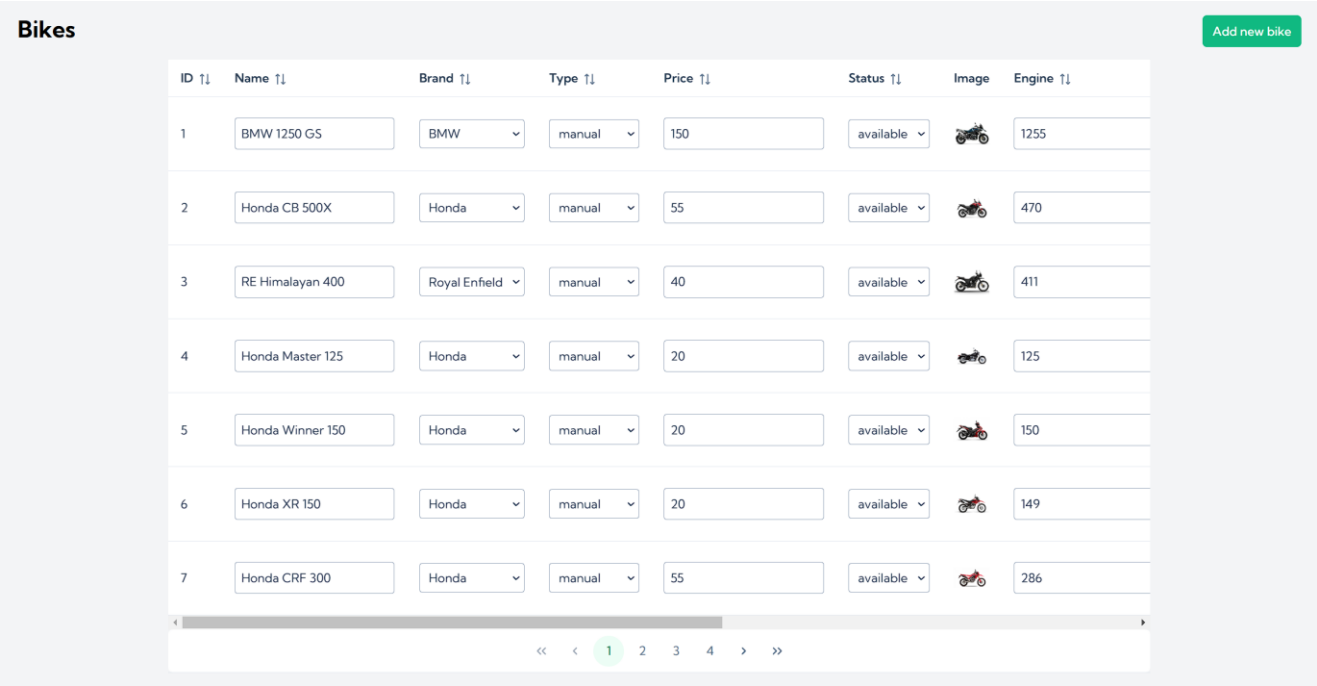

Figure 18: Admin Bikes Section 1

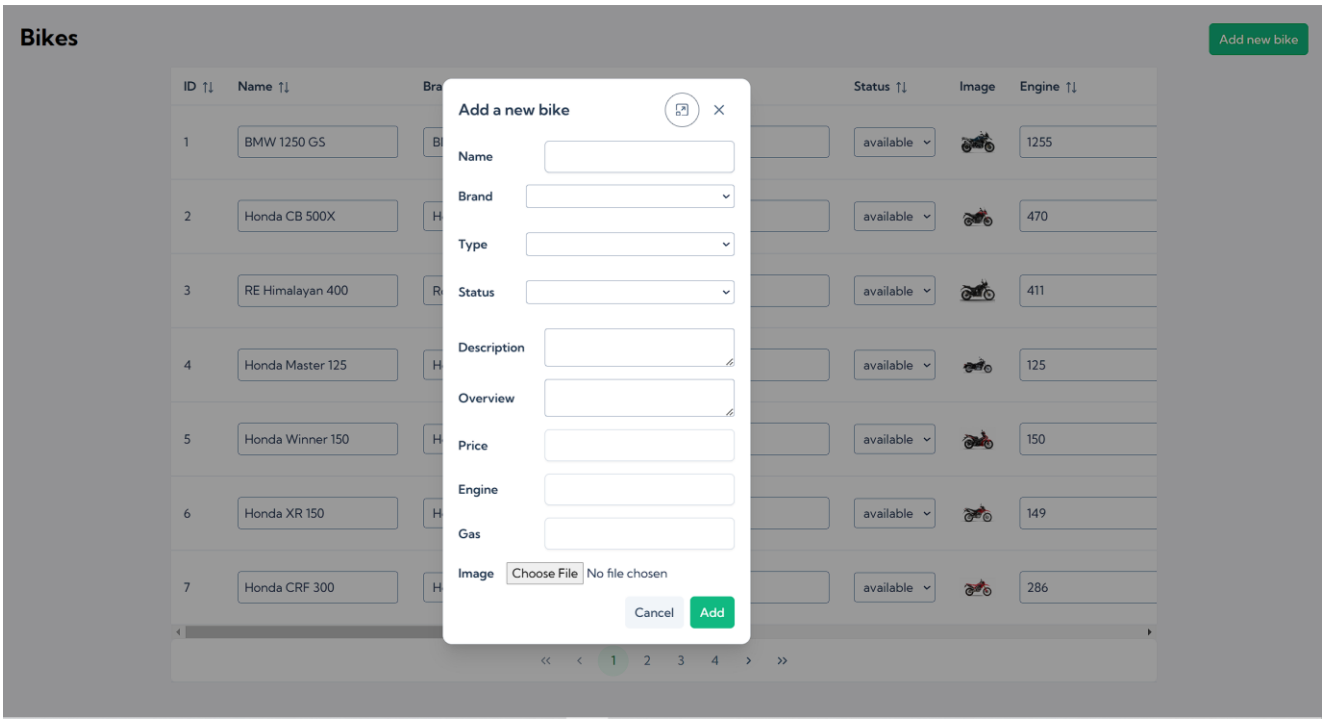

Figure 19: Admin Bikes Section 2

6.4 Brands

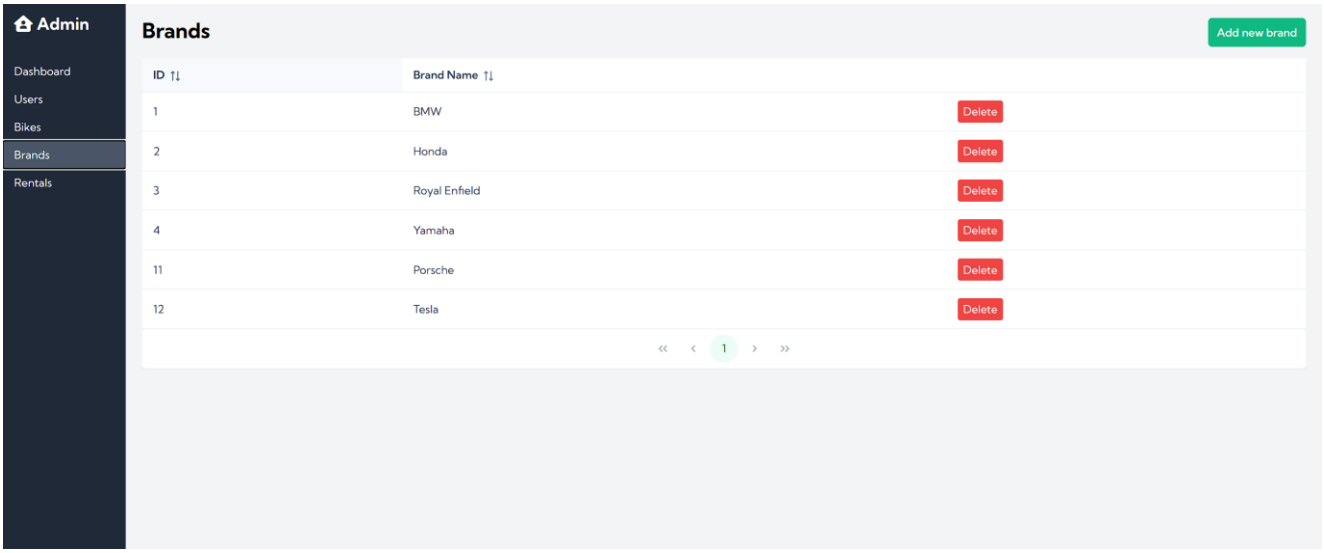

Figure 20: Admin Brands Section 1

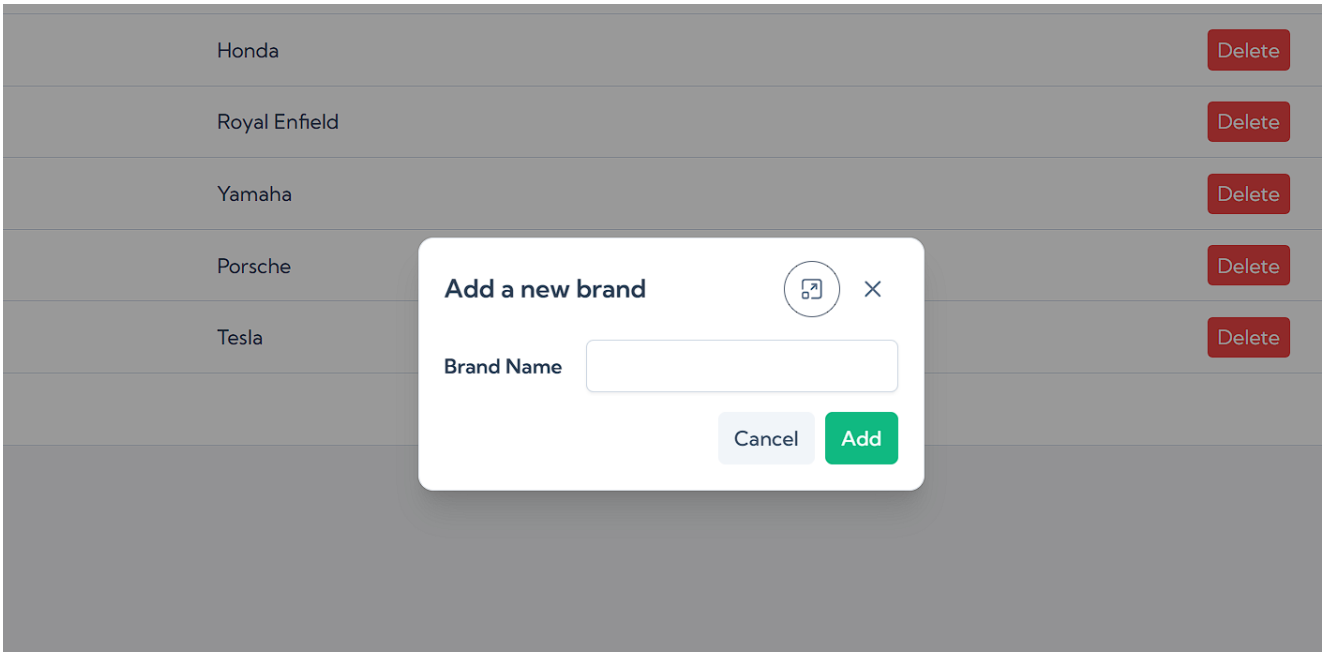

Figure 21: Admin Brands Section 2

6.5 Rentals

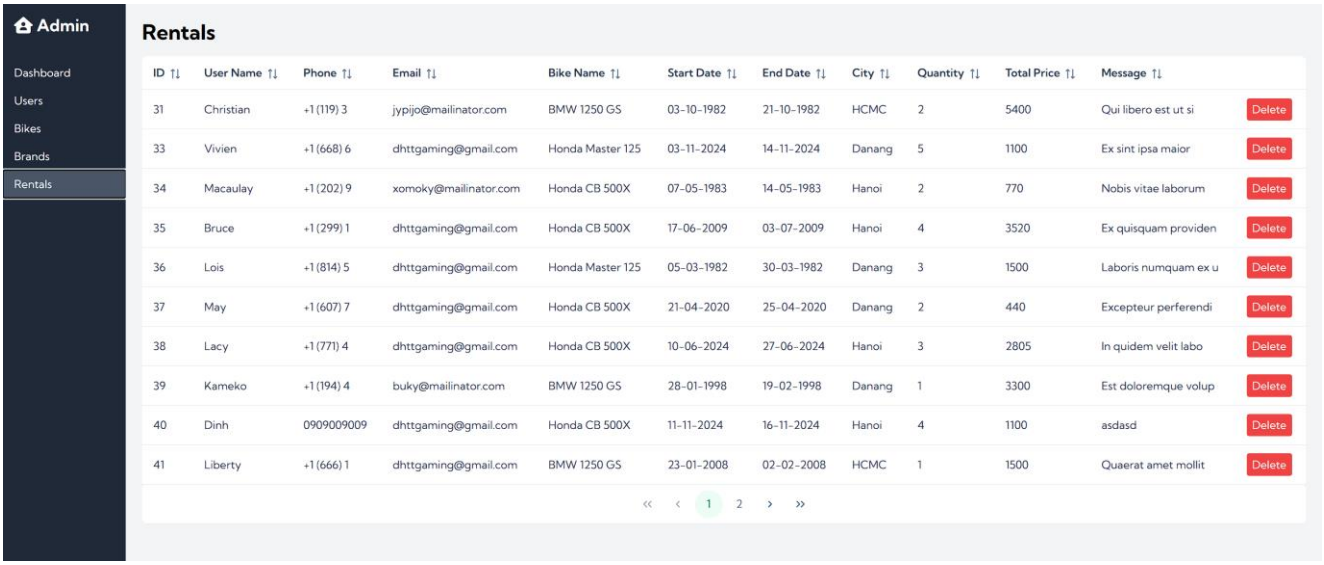

Figure 22: Admin Rentals Section

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.