

#### SEMESTER 1/20232024

# SECP3723-01 SYSTEM DEVELOPMENT & TECHNOLOGY

## **Individual Test**

## < Vehicle Booking System>

### Lecturer: Assoc. Prof. Dr. Haza Nuzly bin Abdull Hamed

Name	Matric No.
Tang Yan Qing	A22EC0109

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#### **System Introduction**

The Vehicle Booking System is designed to streamline reserving, managing and tracking vehicle rentals. Accessible to admin and customers, this system offers various features to make reservations more effortless and efficient.

Customers can easily make reservations with the system after accessing detailed information on each vehicle, such as price and features. They can also view current and previous reservations, search for specific bookings, modify the existing reservations and cancel the reservation if needed. Last, the system allowed them to update their profile information, such as password and address.

For admin, they are allowed to add new vehicles, modify vehicle details and delete vehicles from the system if needed. Besides, they can search for customers' bookings and amend or reject the reservation. Suppose the customer's booking is within the vehicle's range of availability. In that case, the system will auto-approve the booking to make it more convenient for the customer and admin. Same as the customer, they can edit their profile. In addition, they have a dashboard that can view the number of pending approval bookings, the current status of vehicle inventory, the number of completed orders and the number of cancelled orders. They can also view the booking information in the past 30 days and also the vehicle information to know vehicle availability.

All of these features contribute to the overall operational efficiency of the system, ensuring that both customers and admin benefit from a user-friendly platform for all their vehicle reservation needs.

## **System Design**

#### Logical ERD

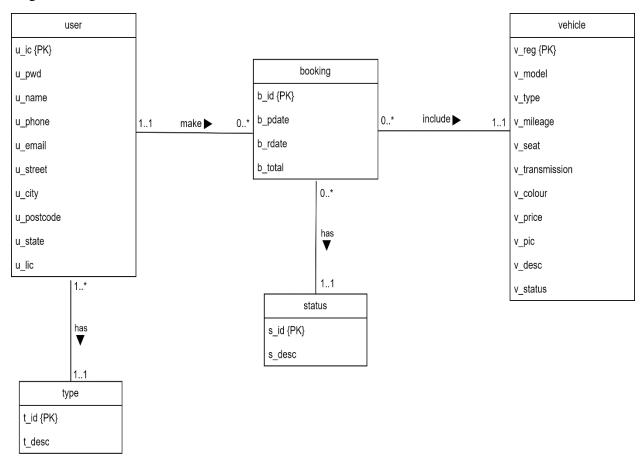


Figure 1: ERD Diagram for Vehicle Booking System

#### Use Case Diagram

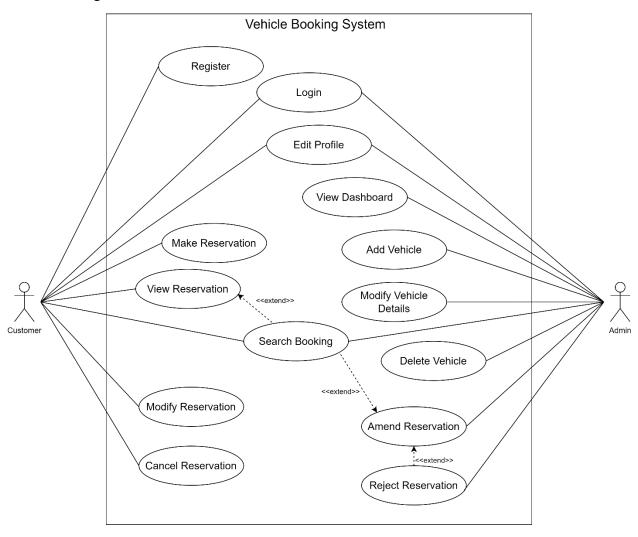


Figure 2: Use Case Diagram for Vehicle Booking System

**Development Software, Language, Technology and Tools** 

**Software** 

The software for developing the Vehicle Booking System includes Sublime Text, XAMPP Control

Panel, FileZilla and Microsoft Edge browser. Sublime Text is a code editor tool that supports

various programming languages such as HTML, CSS and PHP. XAMPP Control Panel consists

of an Apache HTTP server and MySQL database, which helps host the Vehicle Booking System

locally. FileZilla is an FTP client that helps to transfer files between the computer and the web

host server. Lastly, the Microsoft Edge browser is used to view and test the Vehicle Booking

System.

Language

The languages used in developing the Vehicle Booking System include HTML, CSS, JavaScript,

PHP and SQL. HTML defines the content structure and directs users through the system's

functionality, while CSS offers design frameworks to improve the user experience. Furthermore,

JavaScript can add dynamic functionality and interactive aspects to increase user engagement.

Besides, PHP acts as a link between HTML and the database, which is controlled via phpMyAdmin.

Lastly, SQL is used to manage the MySQL database, essential to the system's functioning.

**Tools** 

The tools used in developing the Vehicle Booking System include 000WebHost and draw.io.

000webhost is a free web hosting service for the Vehicle Booking System. Additionally, draw.io

is used in designing the system, such as constructing the ERD diagram and the Use Case Diagram.

URL for 000WebHost: https://www.000webhost.com/

URL for draw.io: <a href="https://app.diagrams.net/">https://app.diagrams.net/</a>

## Database design

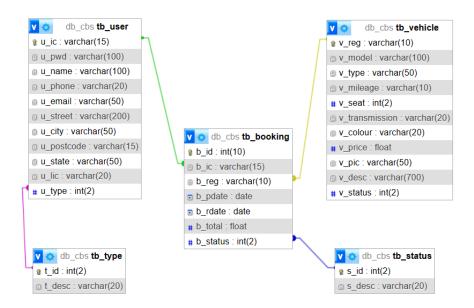


Figure 3: Database Designer

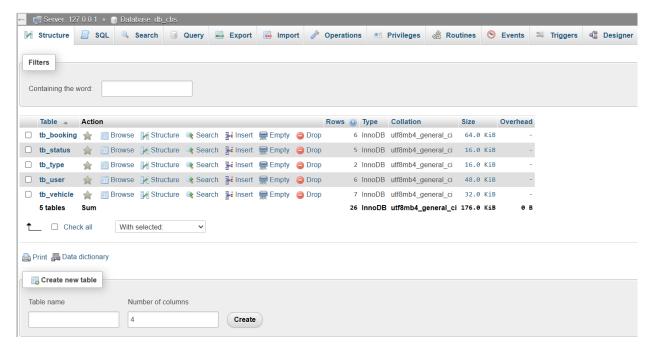


Figure 4: All Database Tables

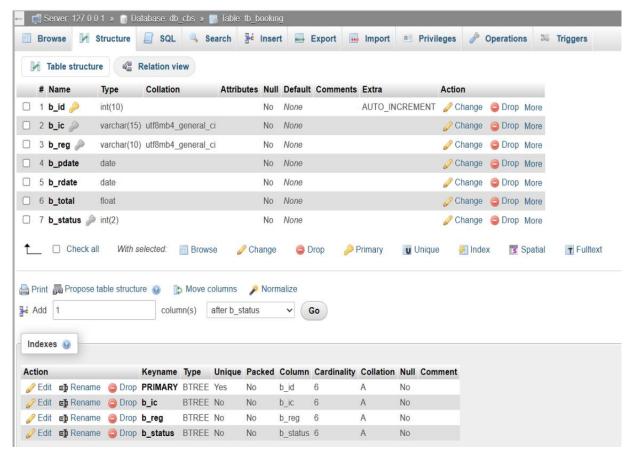


Figure 5: tb\_booking

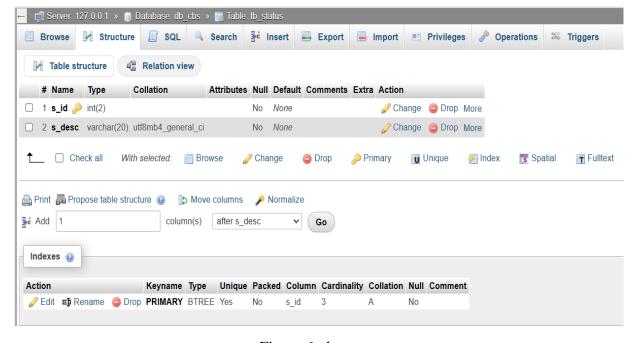


Figure 6: tb\_status

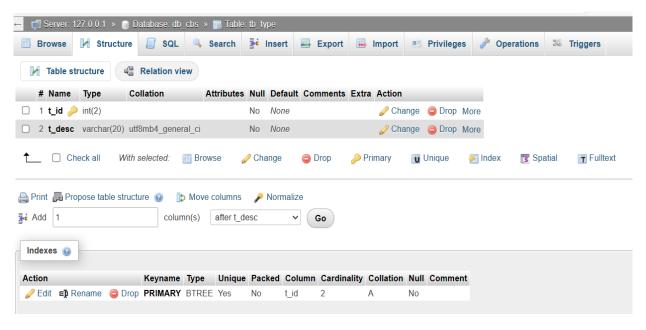


Figure 7: tb\_type

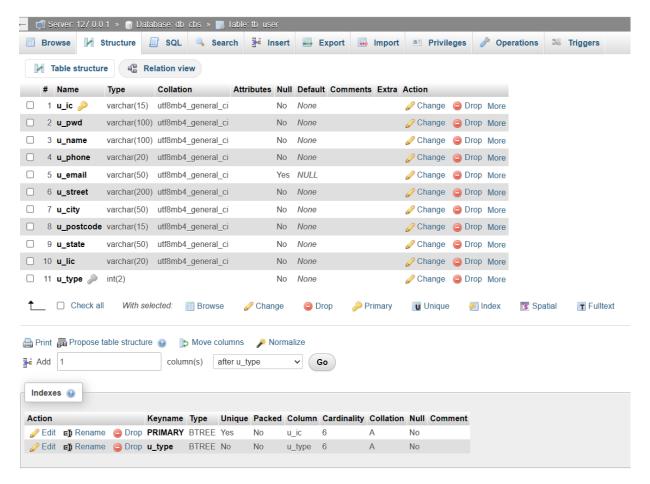


Figure 8: tb\_user

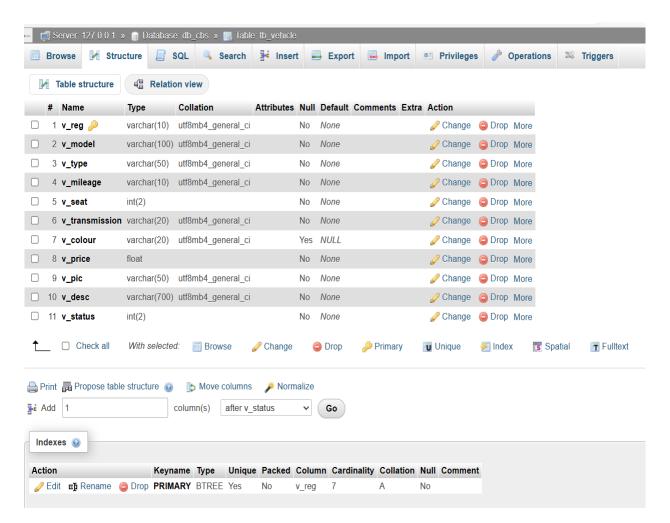


Figure 9: tb\_vehicle

#### **Development Steps**

#### Phase 1: Planning

The system's purpose, objective and scope are determined in this phase. The purpose of the system is to streamline the rental vehicle booking and management procedures. The system's objective is to enhance the booking experience for the users. The system involved two users, which are the admin and the customer.

#### Phase 2: Analysis

The use case is defined in this phase based on the requirements gathered. For the functionality, making and managing reservations are two primary use cases identified earliest. The "Making Reservation" use case involved the process of customer reserving cars according to their preferences, which includes picking the kind of vehicle they want and the pickup and return date. "Managing Reservation" covers features like accepting or declining reservations, changing reservation specifics, and keeping track of the booking procedure. Other use cases are then identified based on these two use cases, such as changing the specifics of reservations and cancelling reservations.

#### Phase 3: Design

In this phase, the requirements are converted into design. The ERD and use case diagrams are constructed, visually representing data relationships and user interactions. The logical ERD diagram is then converted into the physical database design. Besides, the interface elements of the Vehicle Booking System are then created after finding the template that will be used for the Vehicle Booking System.

#### **Phase 4: Development**

In this phase, the design is converted into a functional system. Vehicle Booking System is developed using different software tools like sublime text and languages such as HTML, CSS, JavaScript and PHP. Some of the functions developed include login, register, edit profile, make a reservation, view reservation, manage a reservation, search reservation, add a vehicle, manage vehicle, amend a reservation, auto-approval and dashboard. Critical security issues are also

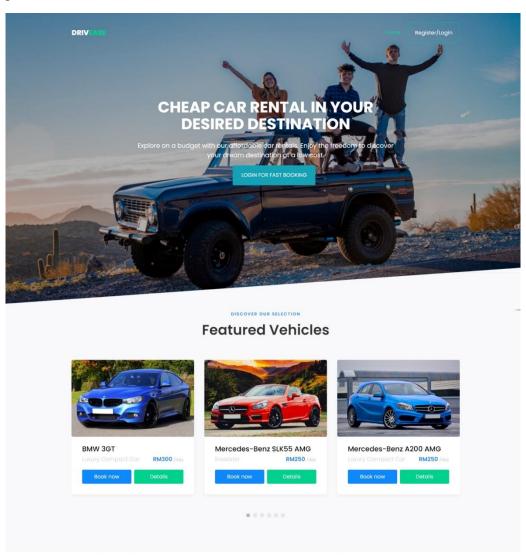
addressed during development to protect user data and system integrity. It includes setting up password encryption, protecting against SQL injection, verifying passwords, and fixing issues with booking and logging in. For instance, the user cannot log in to other user's pages. Once the development process is done, all the files are uploaded to 000WebHost.

#### **Phase 5: Testing**

The system is tested on different devices in this phase to ensure compatibility and responsiveness. To ensure a reliable application, any defects or problems found are fixed. For instance, during testing, it was discovered that the auto-approval function did not cover all conditions, highlighting a potential area for improvement, and it has been solved once discovered.

## **System Interface**

#### Main Page for All Users



#### Our Commitment to You



clock assistance. Our dedicated team ensures your car needs are met anytime, anywhere.

Discover our vast network of locations, making it easy for you to pick up and drop off your rental car wherever your journey takes you.

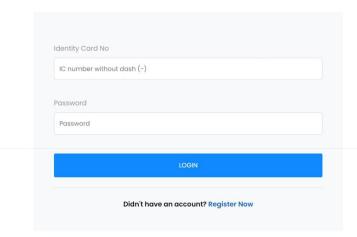
Reservation Anytime

Enjoy the flexibility of reserving your preferred car at any time. We make the booking process seamless for your convenience.

## Login Page for All Users



#### **LOGIN TO YOUR ACCOUNT**

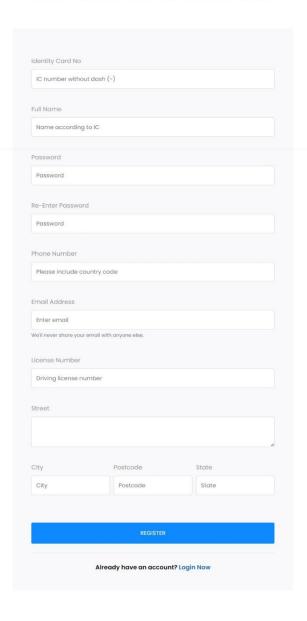


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### Register Page for All Users



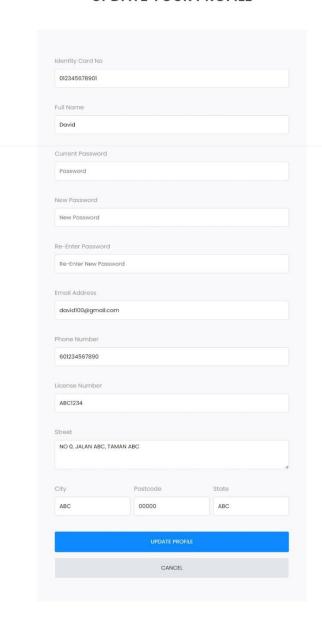
#### **NEW CUSTOMER REGISTER HERE**



### Update Profile Page for All Users



#### **UPDATE YOUR PROFILE**



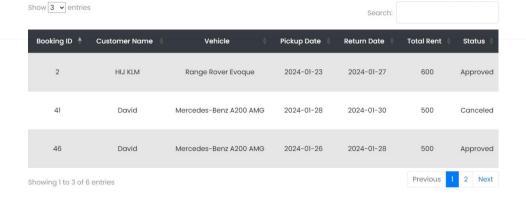
#### Dashboard Page for Admin



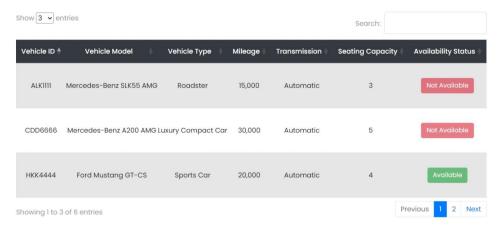
Hello, Mary!



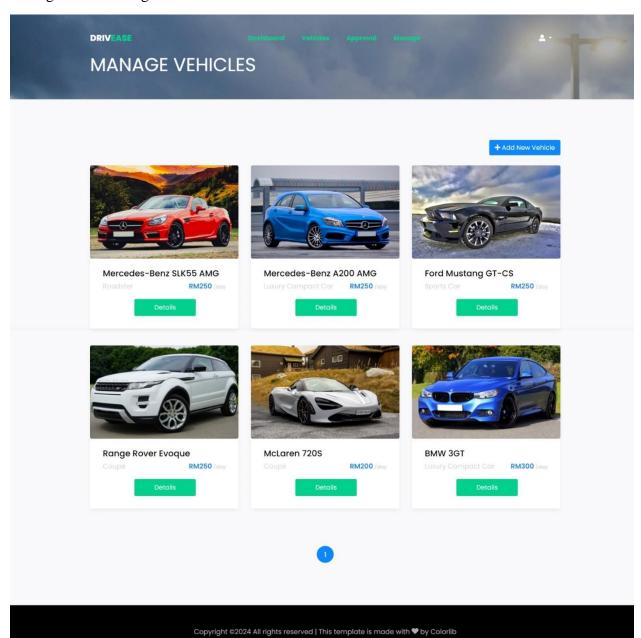
#### **Booking Information**



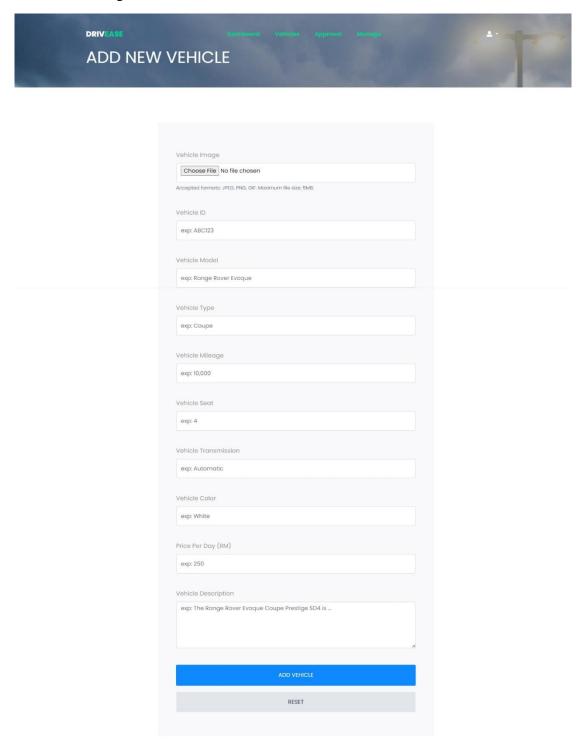
#### Vehicle Information



#### Manage Vehicles Page for Admin



### Add New Vehicle Page for Admin



#### Vehicle Details Page for Admin





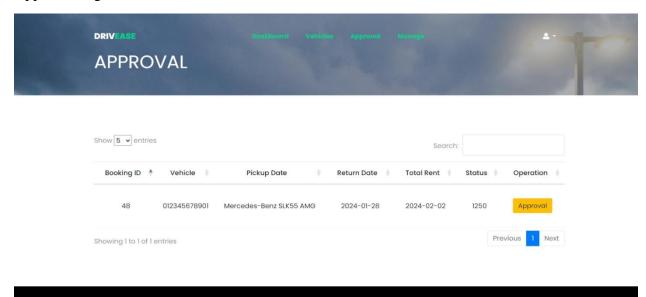
## Mercedes-Benz SLK55 AMG

RM 250 /Day



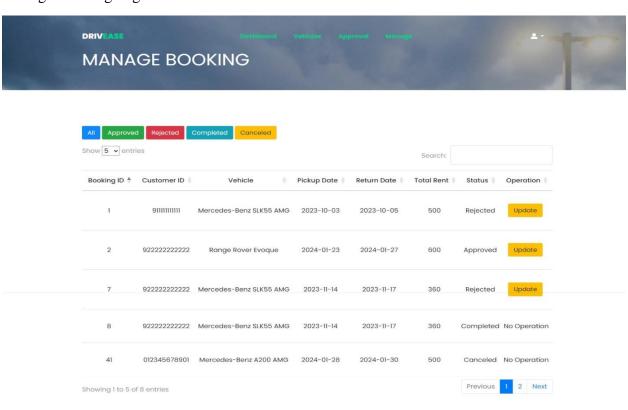
The Mercedes-Benz SLK55 is a high-performance roadster known for its sporty design and powerful performance. With a sleek and compact body, it offers a thrilling driving experience. Under the hood, it is equipped with a robust engine, delivering impressive speed and responsiveness. The SLK55 combines luxury and sportiness, making it a desirable choice for those seeking an exhilarating ride in a stylish convertible.

#### Approval Page for Admin

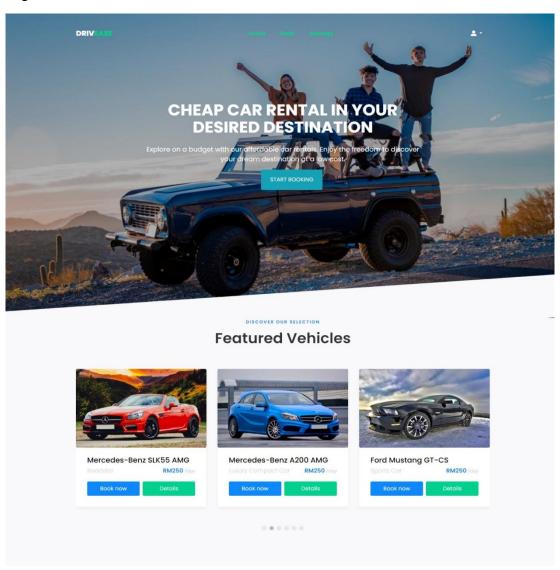


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#### Manage Booking Page for Admin



#### Main Page for Customer



#### WHY CHOOSE US Our Commitment to You



#### 24/7 Car Support

Experience the convenience of round-theensures your car needs are met anytime,



#### Lots of Locations

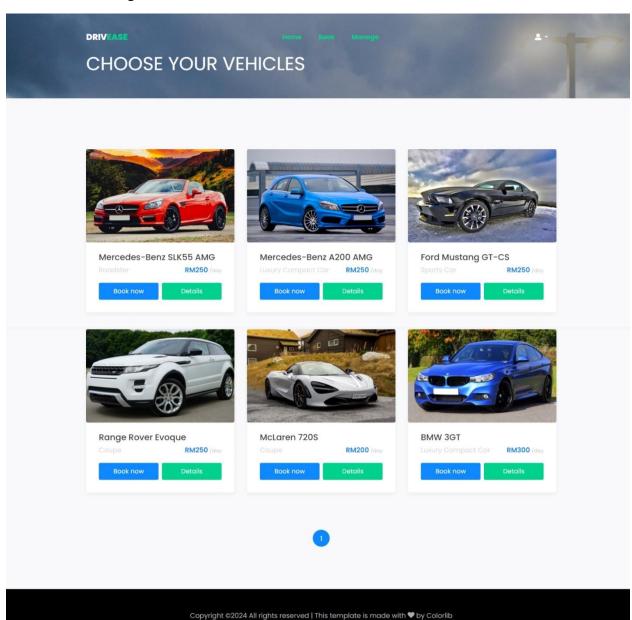
Discover our vast network of locations, clock assistance. Our dedicated team making it easy for you to pick up and drop preferred car at any time. We make the off your rental car wherever your journey



#### Reservation Anytime

Enjoy the flexibility of reserving your booking process seamless for your

#### Choose Vehicle Page for Customer



#### Vehicle Details Page for Customer





## Mercedes-Benz SLK55 AMG

RM 250 /Day



15,000



Transmissio



3 Adults

Description

The Mercedes-Benz SLK55 is a high-performance roadster known for its sporty design and powerful performance. With a sleek and compact body, it offers a thrilling driving experience. Under the hood, it is equipped with a robust engine, delivering impressive speed and responsiveness. The SLK55 combines luxury and sportiness, making it a desirable choice for those seeking an exhilarating ride in a stylish convertible.

Book Now !

### Book Vehicle Page for Customer





Mercedes-Benz SLK55 AMG RM 250 /Day



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### Add Booking Page for Customer



## Here's your new booking details

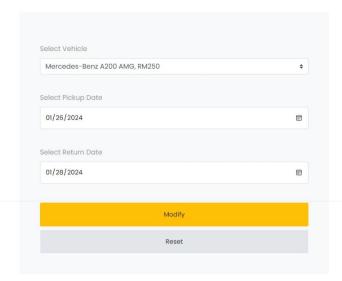
Vehicle ALKIIII
Pickup Date 2024-02-22
Return Date 2024-02-29
Duration 7
Total Price RM 1750
Status Approved

Back

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## Modify Booking Page for Customer





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#### Modify Booking Page for Customer



## Here's your new booking details

 Vehicle
 CDD6666

 Pickup Date
 2024-01-26

 Return Date
 2024-01-28

 Duration
 2

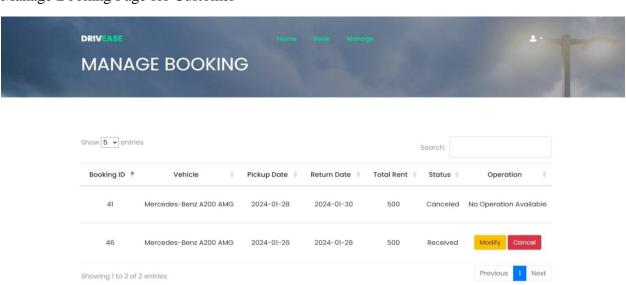
 Total Price
 RM 500

 Status
 Approved

Back

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#### Manage Booking Page for Customer



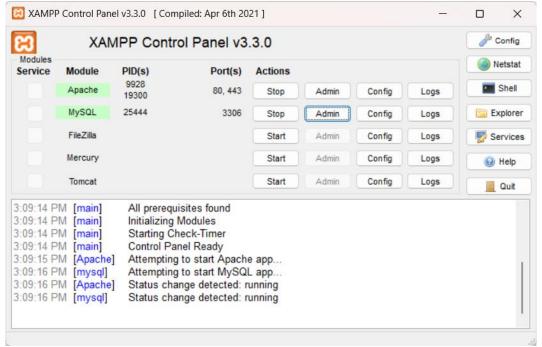
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### **Localhost Setup**

1. Download and install XAMPP Control Panel from <a href="https://www.apachefriends.org/">https://www.apachefriends.org/</a>

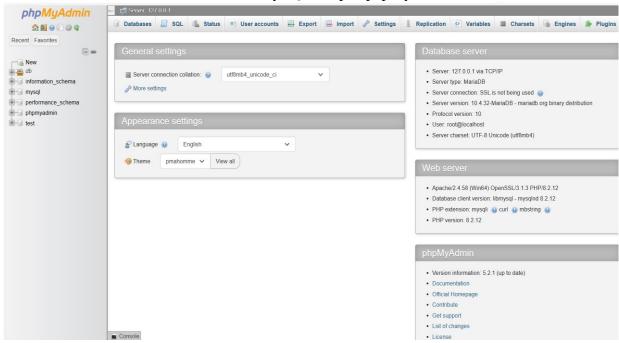


2. Open the XAMPP Control Panel and start the Apache and MySQL.

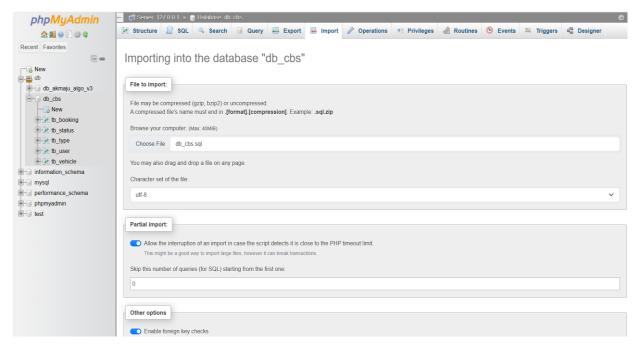


3. Extract the "TangYanQingA22EC0109.zip" file into /xampp/htdocs file path.

4. Click on the "Admin" button for MySQL to open phpMyAdmin.



5. Create a new database with name "db\_cbs" and import the "db\_cbs.sql" (find from yqtest folder) into the database.



6. After all the files are extract into htdocs and the database is created and imported, you can use any web browser and type "localhost/yqtest/index.php" to open the system.

## **URL**

URL for Local Host: <a href="https://localhost/yqtest/index.php">https://localhost/yqtest/index.php</a>

URL for Web Host: <a href="https://yanqing.000webhostapp.com/">https://yanqing.000webhostapp.com/</a>

## **User Credentials**

- 1. Admin
  - Identity Card No: 987654321098
  - Password: 123456
- 2. Customer
  - Identity Card No: 012345678901
  - Password: 123456