



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Department of Computer Science
Faculty of Computing

Individual Project

Car Booking System

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Project Link : [Project Link](#)

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1. System introduction

1.1 System overview

The purpose of the CBS car booking system to improve staff members' overall management of the vehicle inventory and manage customer's booking while improving the client reservation process. The two primary user roles in the system are staff and customers.

Customers can easily book cars, view their reservation history, search for particular bookings, modify or cancel reservations, and edit their profiles. Customers can view a dashboard full of useful data that provides insights and analytics to help with decision-making .

A complete package is offered for staff members to manage the car inventory effectively. Staff may handle reservations with ease because of these procedures, which ensures efficient workflow. Staff's dashboard is like a super helpful tool for businesses. It shows real-time info on things like sales and money earned, kind of like a car in various of graph.

1.2 System Users

- Client

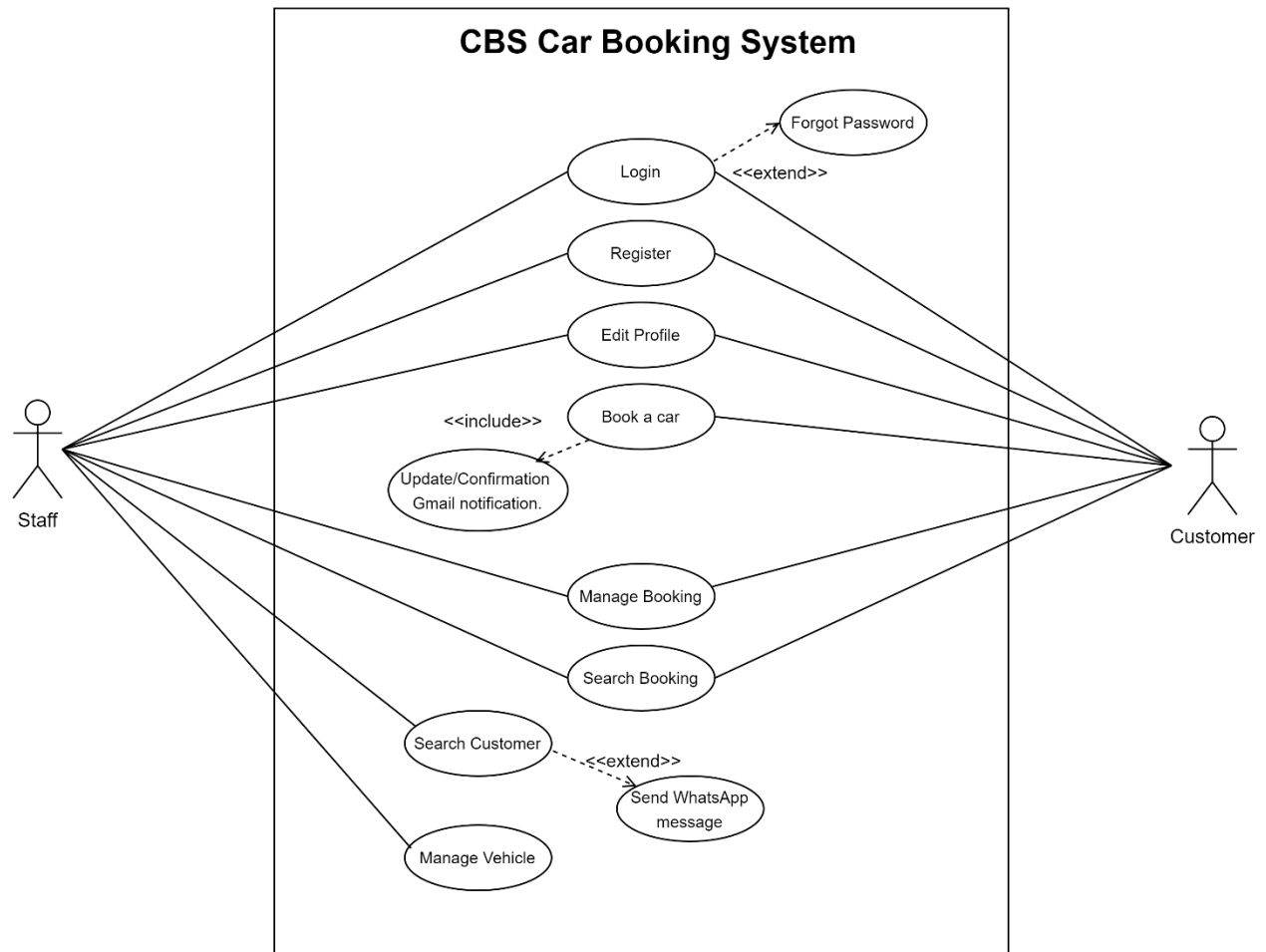
The system's primary users are its customers, whose demands are given top priority in the design. For a seamless experience, they can quickly access reservation options, view their booking history, and manage their profiles.

- Staff

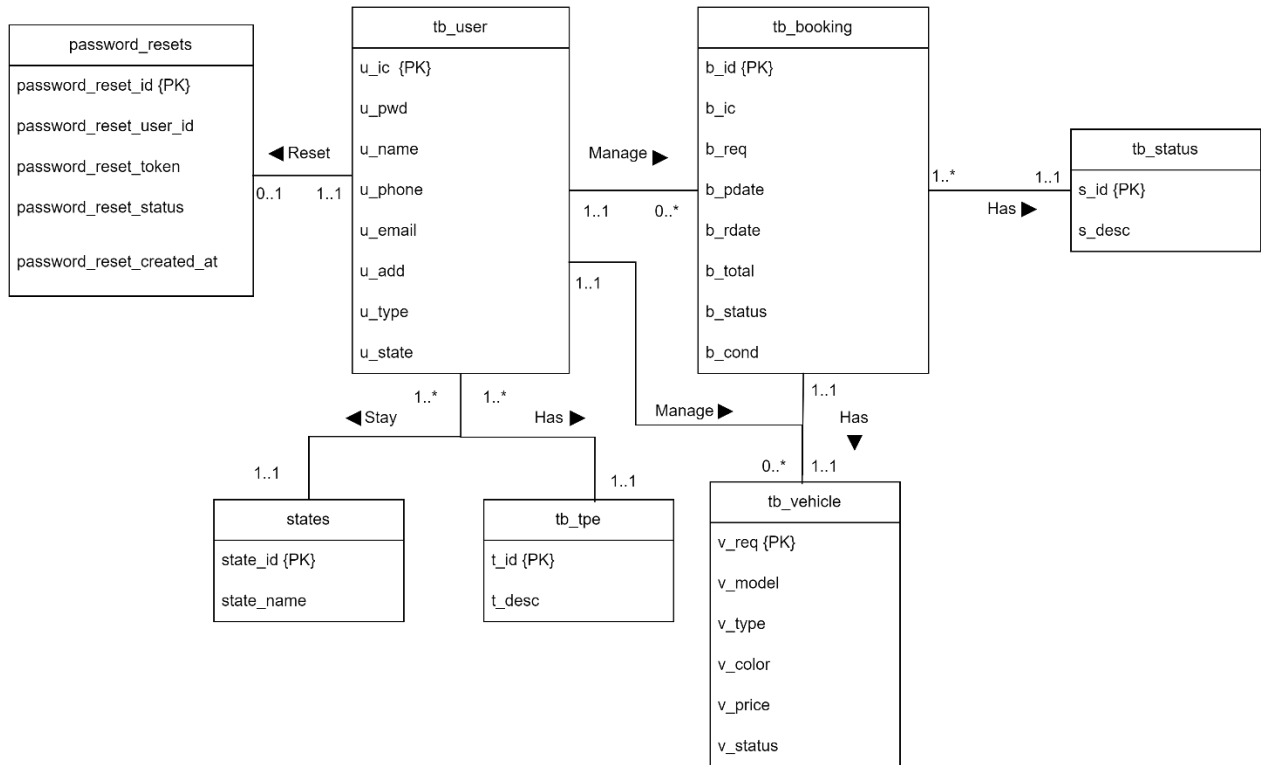
Staff, are able to access features such as car management, booking processing, and a dashboard providing a dashboard of the vehicle inventory and reservations. Their jobs are made easier by the technology, which enables them to effectively manage bookings, keep an eye on the fleet, and guarantee seamless operations.

2. System Design (ERD, Use Case)

Use Case for CBS Car Booking System



ERD CBS car booking system

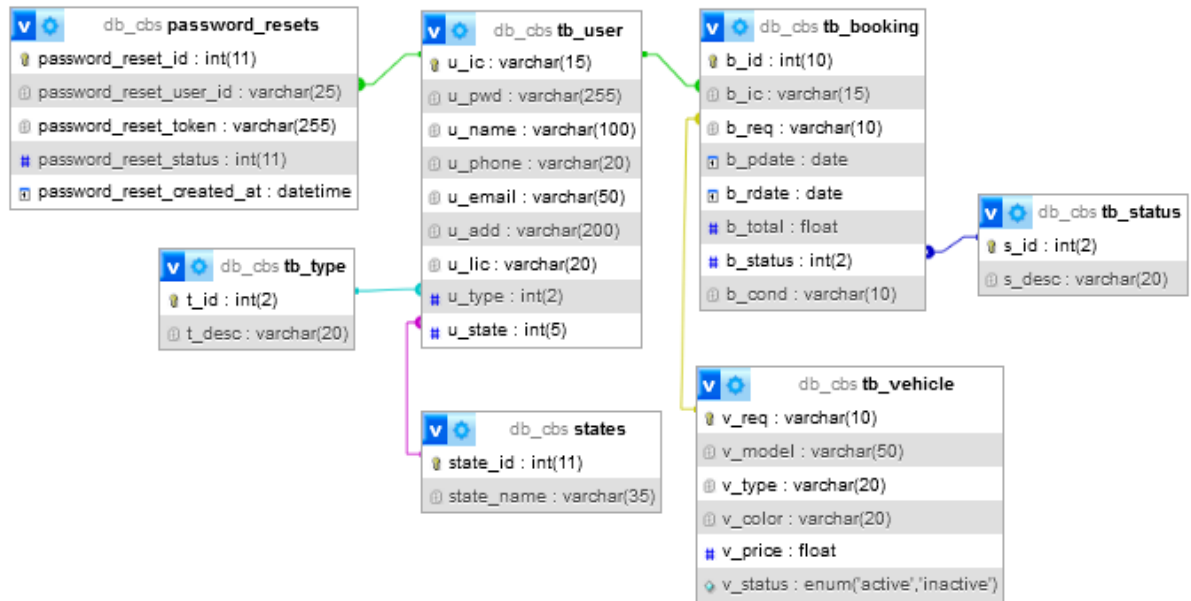


3. Development Software, Language, Technology, and Tools (provide URL)

Aspect	Technology	Description
UML Diagrams	draw.io	With the help of the flexible web tool Draw.io, making Unified Modelling Language (UML) diagrams is simple. Its support for several types of diagrams, including use case and class diagrams, makes it a great tool for project planning and visualisation.
Database	MySQL (phpMyAdmin)	The popular relational database management system MySQL works well with the web-based management use phpMyAdmin. When combined, they provide a stable and simple environment inside the CBS System that makes it easier to organise, develop, and work with data and database structures.
System Template https://startbootstrap.com/theme/sb-admin-2	Bootstrap	Making responsive and mobile-friendly web interfaces is made easier by using the dynamic front-end framework Bootstrap. By using its pre-made elements, such forms, grids, and navigation bars, Bootstrap ensures the production of consistent and aesthetically pleasing user interfaces.
Programming Languages	PHP, HTML, CSS, JavaScript, JSON	The Car System is dependent on the effective combination of PHP for front-end programming and HTML, CSS, JavaScript, and JSON for server-side scripting.
Hosting Provider	000webhost	000webhost is a free web hosting service that allows individuals and small businesses to host websites without paying. It supports PHP and MySQL for server-side scripting and database management. The service often includes a website builder for easy site creation.

4. Database design (phpMyAdmin screenshot)

Database Design for cbs car booking system

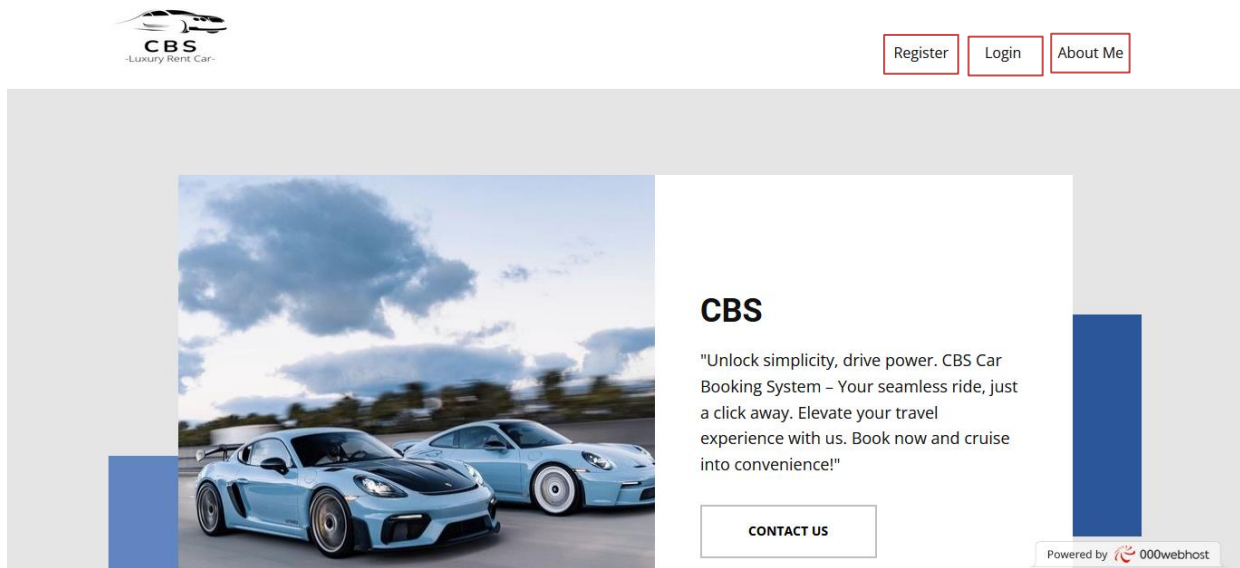


5. Development Steps

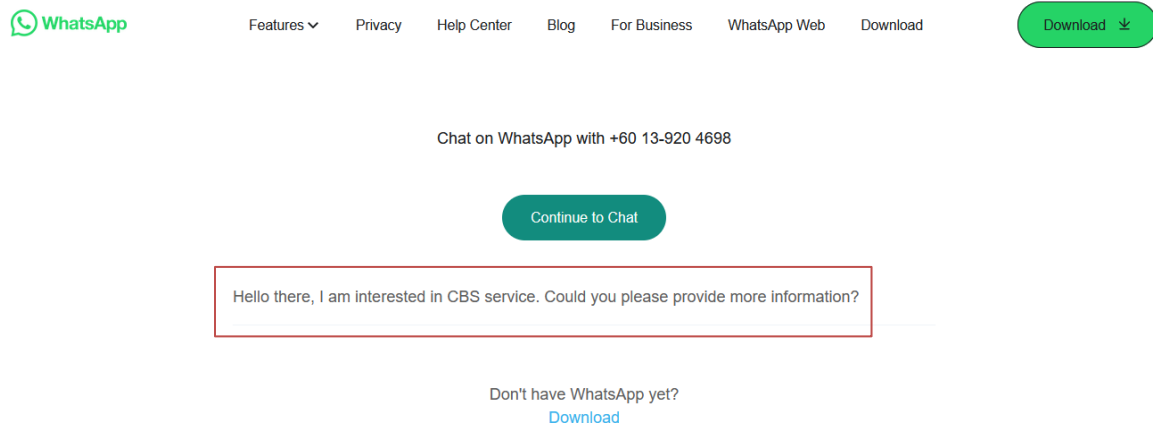
Step	Phase	Description
1	Requirements Gathering	<ul style="list-style-type: none">○ Gather detailed requirements from both customers and staff members.○ Identify key features and functionalities needed for customer and staff interactions.
2	System Design	<ul style="list-style-type: none">○ Create ERD for the system
3	Database Setup	<ul style="list-style-type: none">○ Develop a database schema to store customer data, booking details, vehicle inventory, and other relevant information.○ 7 tables in total
4	User Authentication and Authorization	<ul style="list-style-type: none">○ Implement a secure authentication system for both customers and staff.○ Define role-based access control to ensure that users only have access to functionalities relevant to their roles.
5	Customer's Component	<ul style="list-style-type: none">○ Book cars with a user-friendly interface.○ View and manage their booking history.○ Search for specific bookings.○ Modify or cancel booking.○ Edit their profiles
6	Staff's Component	<ul style="list-style-type: none">○ Manage the car inventory efficiently.○ Manage bookings with ease.○ Access a comprehensive dashboard showing real-time information on sales, earnings, and other relevant metrics
7	Gmail Notifications	<ul style="list-style-type: none">○ Implement a notification system to keep customers informed about their reservations and forgot password
8	Testing	<ul style="list-style-type: none">○ Conduct thorough testing, including unit testing, integration testing, and user acceptance testing.

6. System Interface for All Users

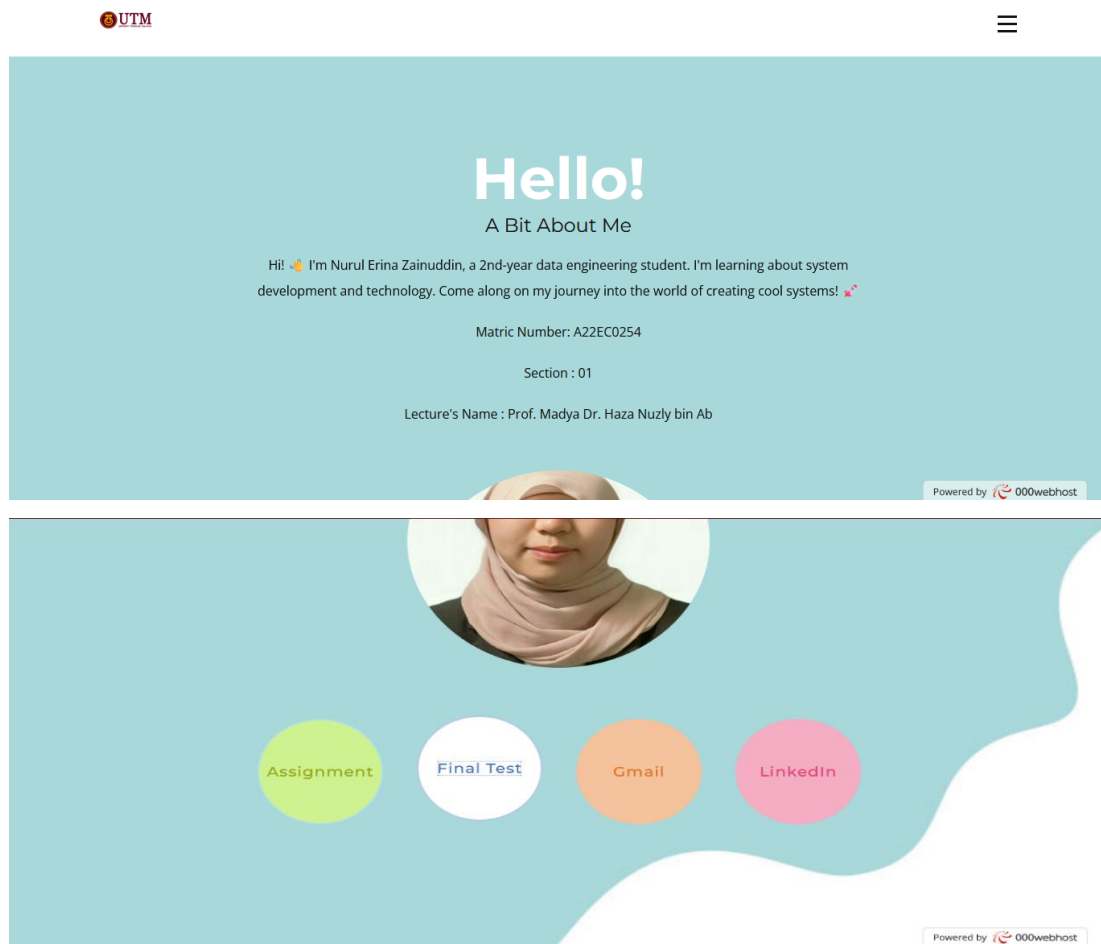
6.1 Index Page



Press the '**Contact Us**' button: The system will navigate to WhatsApp. Once there, an automatic message will be sent, saying: *'Hello there, I am interested in CBS service. Could you please provide more information?'*



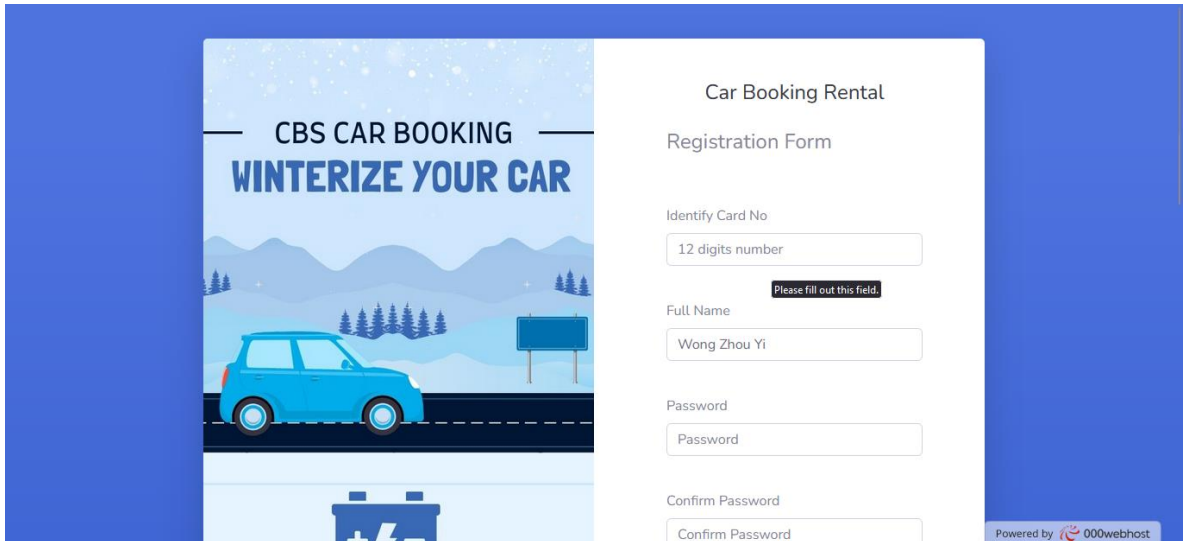
Press the '**About Me**' button: The system will navigate to my details page.



- Press the '**Assignment**' button: The system will navigate to assignment page.
- Press the '**Final Test**' button: The system will navigate to cbs project page.
- Press the '**Gmail**' button: The system will navigate to Gmail .An automatic message will be sent, saying: *'Hi!'* to my email.
- Press the '**LinkedIn**' button: The system will navigate to my LinkedIn.

6.2 User Authentication

Register:

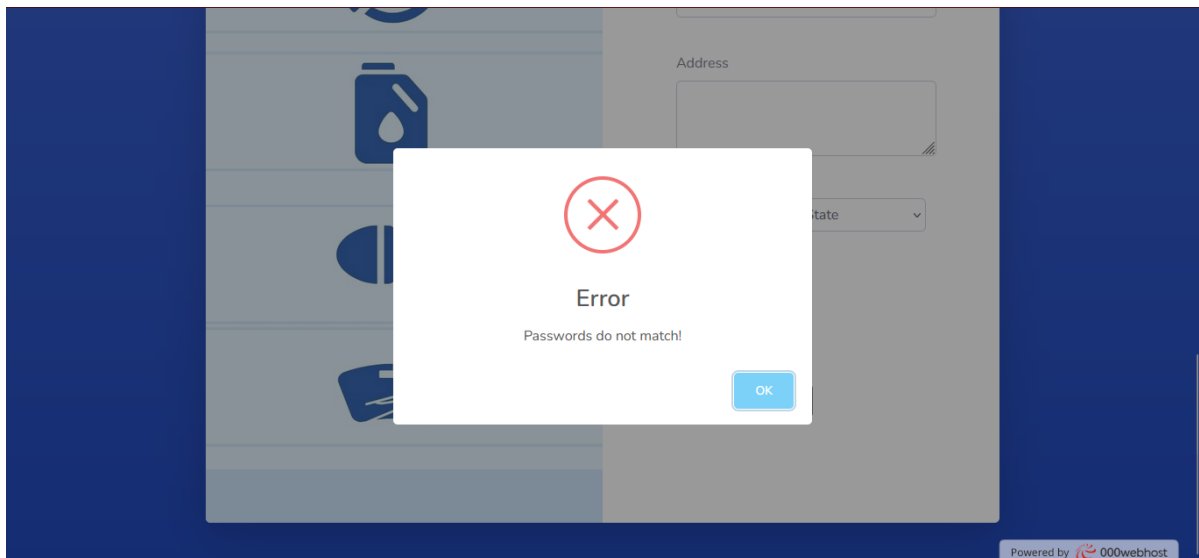


The image shows a registration form for 'CBS CAR BOOKING' with the theme 'WINTERIZE YOUR CAR'. The form is titled 'Car Booking Rental Registration Form' and includes the following fields:

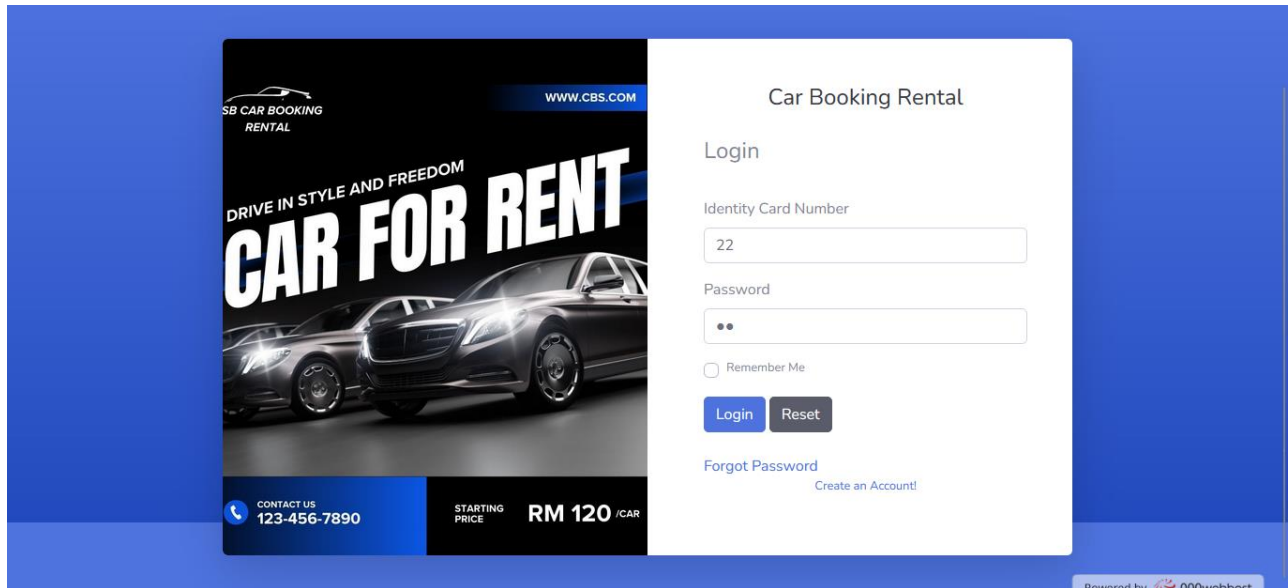
- Identify Card No: A text input field with a placeholder '12 digits number' and a tooltip 'Please fill out this field.'.
- Full Name: A text input field containing 'Wong Zhou Yi'.
- Password: A text input field with a placeholder 'Password'.
- Confirm Password: A text input field with a placeholder 'Confirm Password'.

The form is set against a blue background with a winter-themed illustration of a blue car on a snowy road. A footer at the bottom right says 'Powered by 000webhost'.

Alert will pop up once Password and Confirm Password do not match:



Login:



The image shows a login form for 'Car Booking Rental' on a blue background. On the left is a promotional banner for 'CBS CAR BOOKING RENTAL' with the website 'WWW.CBS.COM', the slogan 'DRIVE IN STYLE AND FREEDOM', and the text 'CAR FOR RENT'. It also features a contact number '123-456-7890' and a starting price of 'RM 120 /CAR'. The login form on the right has a title 'Car Booking Rental' and a 'Login' section. It includes input fields for 'Identity Card Number' (containing '22') and 'Password' (represented by dots). There is a 'Remember Me' checkbox and two buttons: 'Login' and 'Reset'. Below the login section is a 'Forgot Password' link and a 'Create an Account!' link. The footer indicates it is 'Powered by 000webhost'.

Car Booking Rental

Login

Identity Card Number

22

Password

••

☐ Remember Me

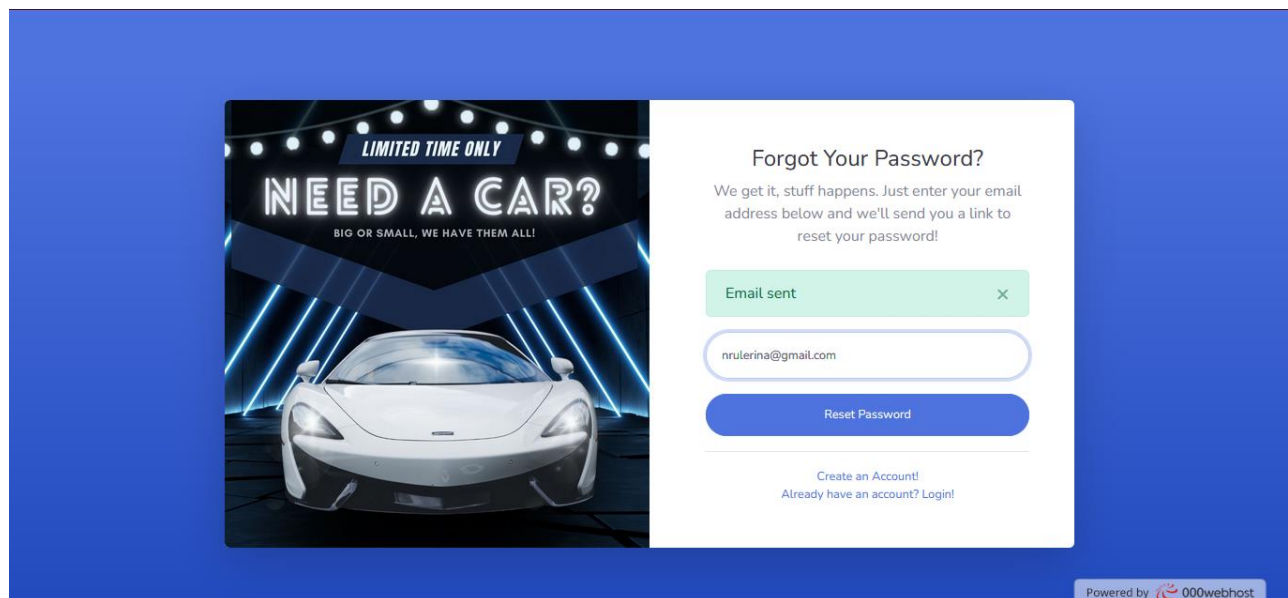
Login Reset

Forgot Password

Create an Account!

Powered by 000webhost

Forgot Password:



The image shows a 'Forgot Your Password?' form on a blue background. On the left is a promotional banner for 'NEED A CAR?' with the text 'LIMITED TIME ONLY' and 'BIG OR SMALL, WE HAVE THEM ALL!'. It features a white sports car. The form on the right has a title 'Forgot Your Password?' and a message: 'We get it, stuff happens. Just enter your email address below and we'll send you a link to reset your password!'. It includes a green notification box that says 'Email sent' with a close button. Below is an input field for the email address containing 'nrulerina@gmail.com' and a blue 'Reset Password' button. At the bottom are links for 'Create an Account!' and 'Already have an account? Login!'. The footer indicates it is 'Powered by 000webhost'.

NEED A CAR?

LIMITED TIME ONLY

BIG OR SMALL, WE HAVE THEM ALL!

Forgot Your Password?

We get it, stuff happens. Just enter your email address below and we'll send you a link to reset your password!

Email sent ✕

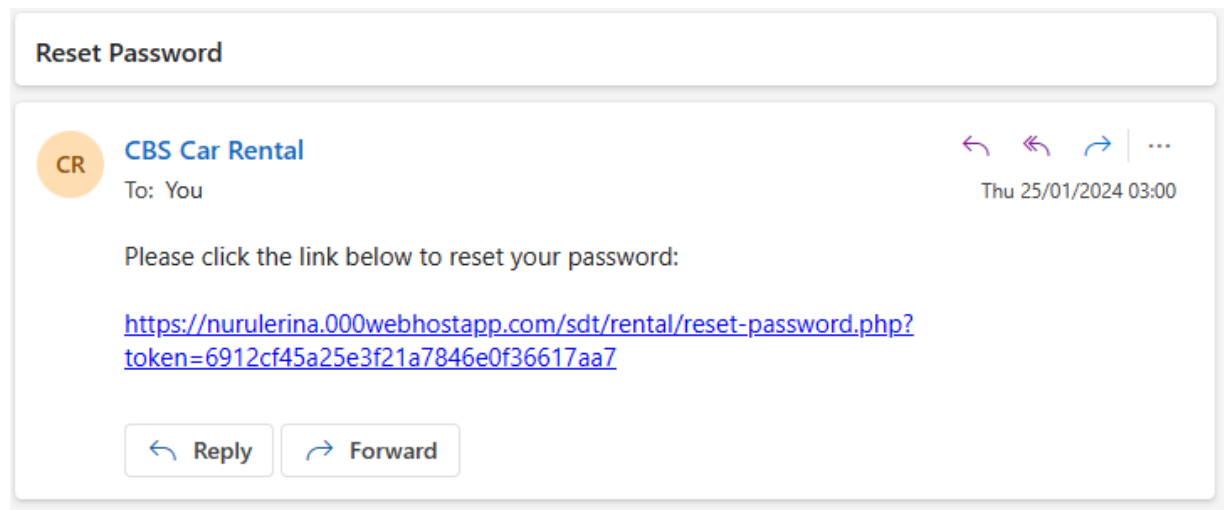
nrulerina@gmail.com

Reset Password

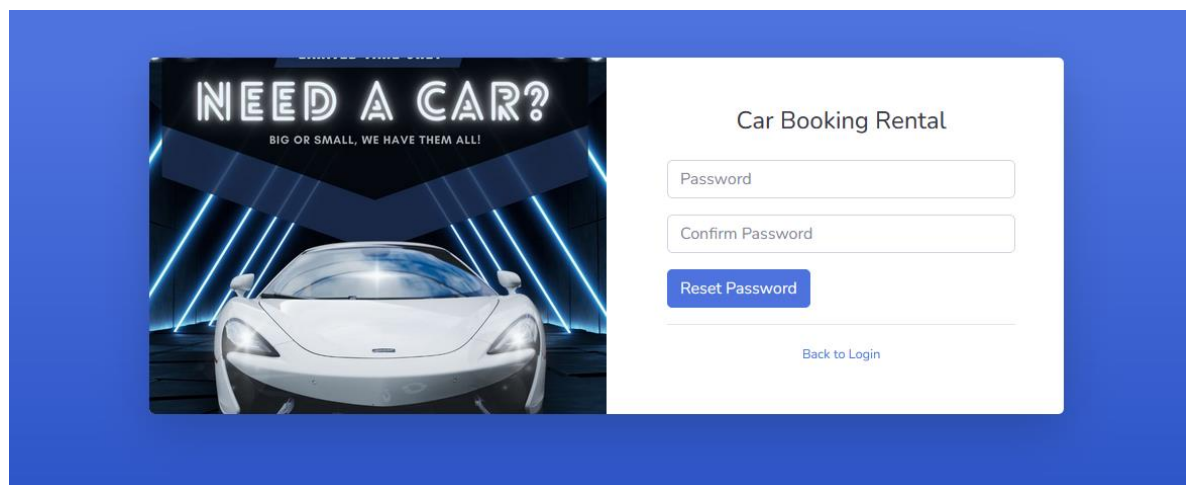
Create an Account!

Already have an account? Login!

Powered by 000webhost

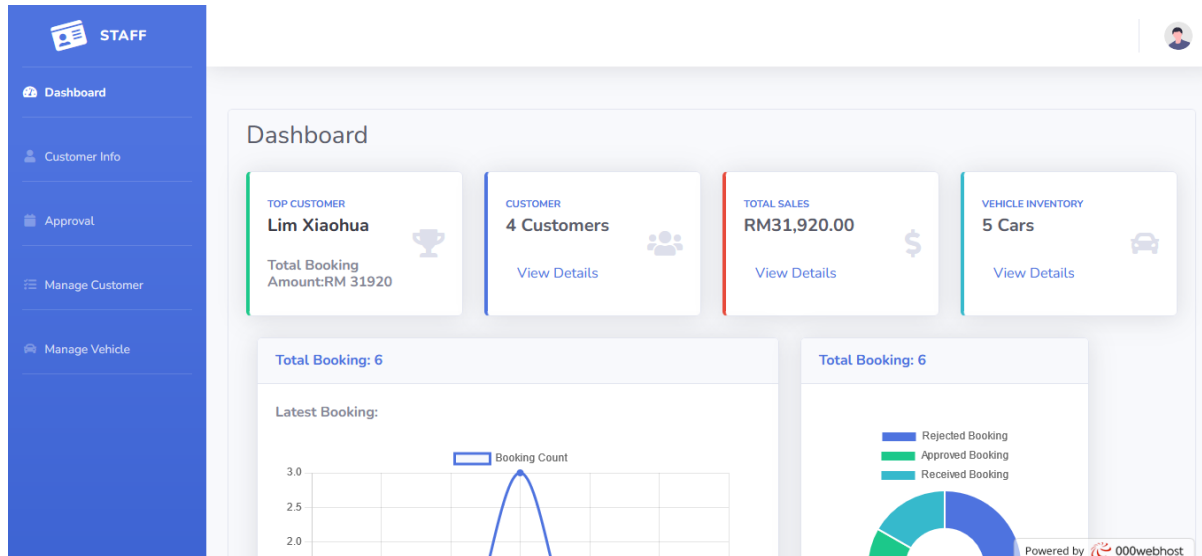


Reset Password:



6.3 Staff

Dashboard:



Customer Info:

The Staff Customer Info table displays a list of customers with columns for Customer ID, Name, Address, Phone Number, Email, and License. The table is filtered to show 10 entries. The search bar is empty. The table is powered by 000webhost.

Customer ID	Customer Name	Customer Address	Customer Phone Number	Customer Email	Customer License
001919190272	Wong Zhou Yi	H25 , Kolej Tun Fatimah , UTM Skudai	0132998770	wongyi@gmail.com	12783942
031112110272	Lim Xiaohua	Jalan Iman, 81310 Skudai	0132998330	nrulerina@gmail.com	12436524
031211110272	Zhou Yu	No. 32, Jalan Dato Yusof Shahbudin 19, Taman Sentosa, 41200	0148225052	zhouyu@gmail.com	34327812
123412341234	Customer Bob	Taman 1234	0234	1234@gmail.com	ABC1234

Showing 1 to 4 of 4 entries

Powered by 000webhost

Click on customer's phone number , The system will navigate to WhatsApp. Once there, an automatic message will be sent, saying: `Hi, we are from CBS , car booking rental ^^ Nice to meet you!!`

[Features](#)[Privacy](#)[Help Center](#)[Blog](#)[For Business](#)[WhatsApp Web](#)[Download](#)[Download](#)

Chat on WhatsApp with +60 13-299 8770

[Continue to Chat](#)

Hi, we are from CBS , car booking rental ^^ Nice to meet you!!

Don't have WhatsApp yet?

[Download](#)

Approval:

STAFF

Dashboard

Customer Info

Approval

Manage Customer

Manage Vehicle

New Bookings

Show

10

 entries

Search:

Booking ID	Customer ID	Vehicle	Pickup Date	Return Date	Total Rent	Status	Condition	Operation
8	031112110272	Lexus LX	2024-01-24	2024-01-26	1400	Received	active	<div>Approval</div>

Showing 1 to 1 of 1 entries

Previous

1

Next

Powered by 000webhost

STAFF

Dashboard

Customer Info

Approval

Manage Customer

Manage Vehicle

New Bookings

Booking ID	8
User ID	031112110272
User Name	Lim Xiaohua
Vehicle ID	JDB0222
Vehicle model	Lexus LX
Pickup date	2024-01-24
Price per date	2024-01-26
Total price	700
Approval	Approved

Powered by 000webhost

Booking Details:

STAFF

Dashboard

Customer Info

Approval

Manage Customer

Manage Vehicle

Current Bookings

Show 10 entries

Search:

Booking ID	Customer ID	Vehicle	Pickup Date	Return Date	Total Rent	Status	Condition	Operation
3	031112110272	Audi A8	2024-01-24	2024-02-02	7020	Rejected	Active	Update
4	031112110272	Jaguar F-PACE	2024-01-24	2024-02-03	7700	Approved	Active	Update
5	031112110272	Volvo V40	2024-01-29	2024-02-09	8800	Rejected	Active	Update
6	031112110272	Lexus LX	2024-01-27	2024-02-06	7000	Rejected	Active	Update

Powered by 000webhost

Manage Vehicle:

The screenshot displays a web application interface for managing vehicles. On the left is a blue sidebar with a 'STAFF' header and navigation links: Dashboard, Customer Info, Approval, Manage Customer, and Manage Vehicle. The main content area has a light grey header with an 'Add New Vehicle' button. Below this is a 'Vehicle Details' section containing a table with the following data:

Registration No.	Model	Type	Color	Price	Status	Operation
JDB0222	Lexus LX	SUV	Grey	700	Active	
JVV3333	Jaguar F-PACE	SUV	Blue	770	Active	
MLK2333	Jaguar XE	Sedan	Black	650	Active	
QWE0900	Audi A8	Sedan	Red	782	Inactive	
SMT2000	Volvo V40	Hatchback	Silver	800	Active	

At the bottom of the page, there is a URL bar showing 'https://nurulerina.000webhostapp.com/sdt/rental/vehicle.php' and a footer indicating 'Powered by 000webhost'.

Add Vehicle:

The screenshot shows a 'Vehicle Registration' form with a blue background. The form fields are as follows:

- Registration No.:** A text input field.
- Type:** A dropdown menu with 'SEDAN' selected.
- Model:** A text input field.
- Color:** A text input field.
- Price:** A text input field with a currency symbol (Rp) on the right.
- Status:** A dropdown menu.

The form is titled 'Vehicle Registration' with a car icon. At the bottom right, there is a footer indicating 'Powered by 000webhost'.

Registration No.:

Type:

?

Confirmation
Are you sure you want to cancel?

Yes No

Status:
Active

Cancel Submit

Powered by 000webhost

Registration No.:
ERY0098

Type:

✓

Success
Data inserted successfully.

OK

Status:
Active

Cancel Submit

Powered by 000webhost


Edit Vehicle:

Edit Vehicle

Requirement:	Model:
<input type="text" value="ERY0098"/>	<input type="text" value="Porsche 911"/>
Type:	Color:
<input type="text" value="Sedan"/>	<input type="text" value="RED"/>
Price:	Status:
<input type="text" value="983"/>	<input type="text" value="Active"/>
<input type="button" value="Update"/>	

Edit Vehicle

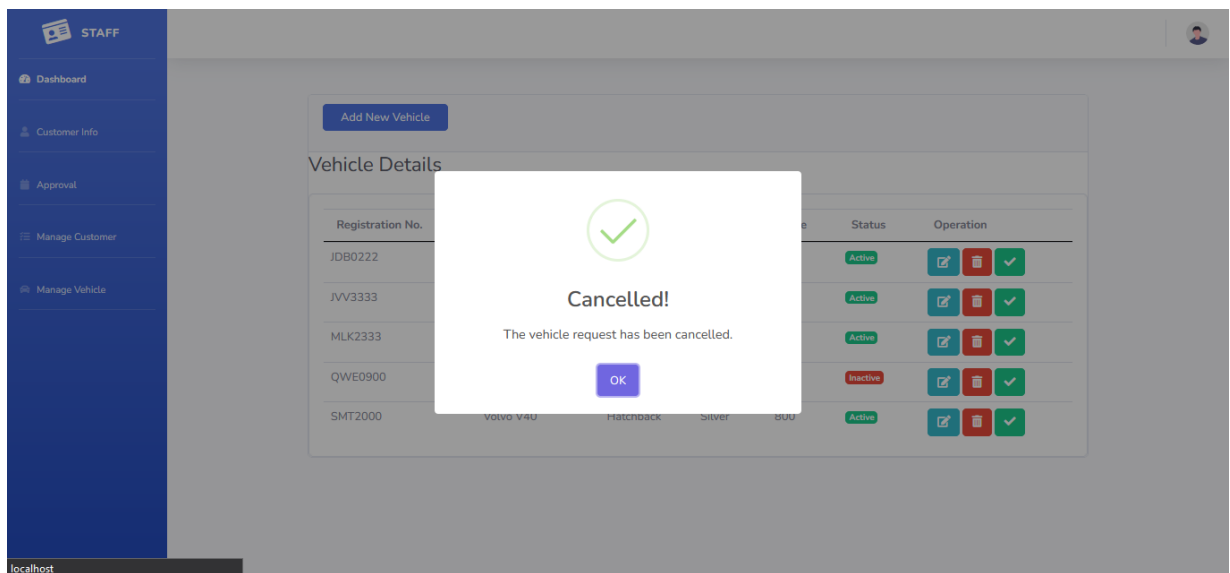
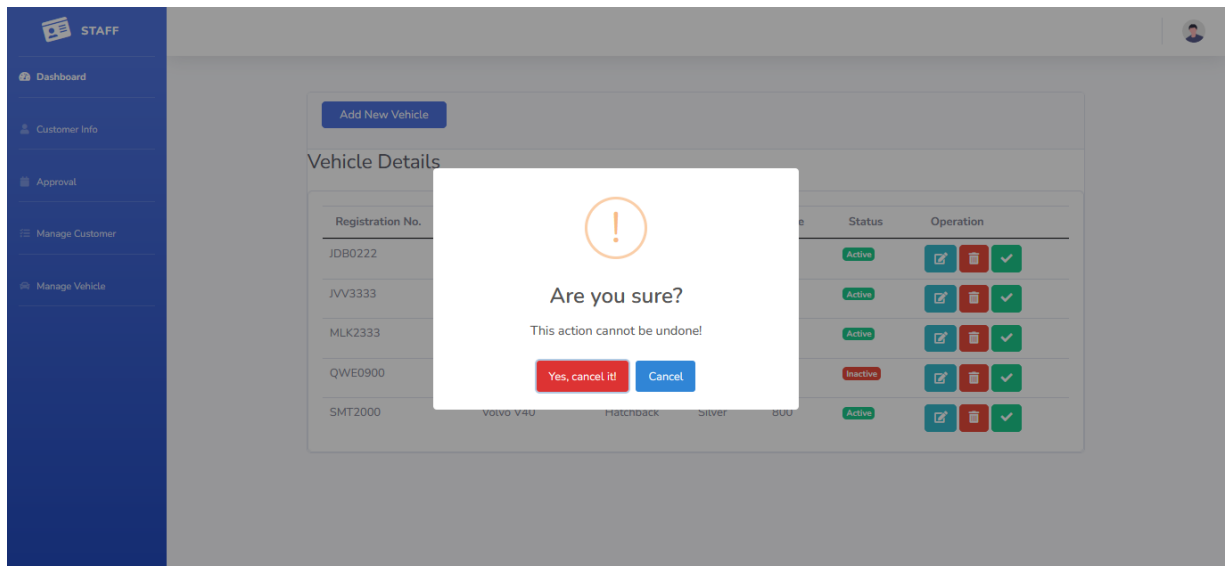
Requirement:	Model:
<input type="text" value="JDB0222"/>	<input type="text" value="Lexus LX"/>



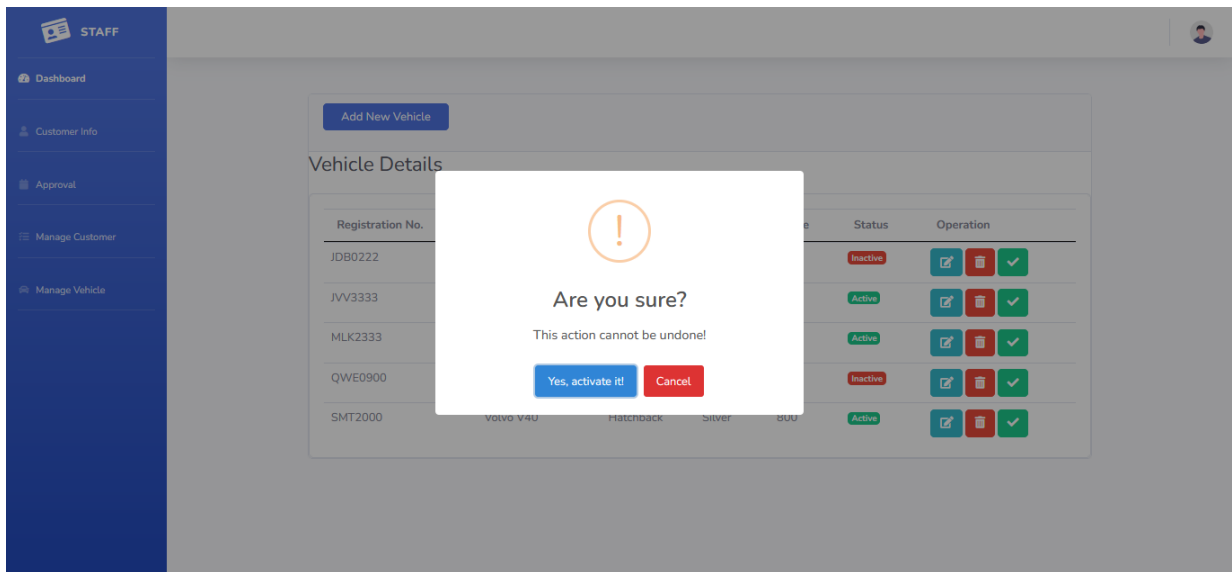
Success

Data updated successfully.

Delete Vehicle:



Activate Vehicle:



Edit Profile:

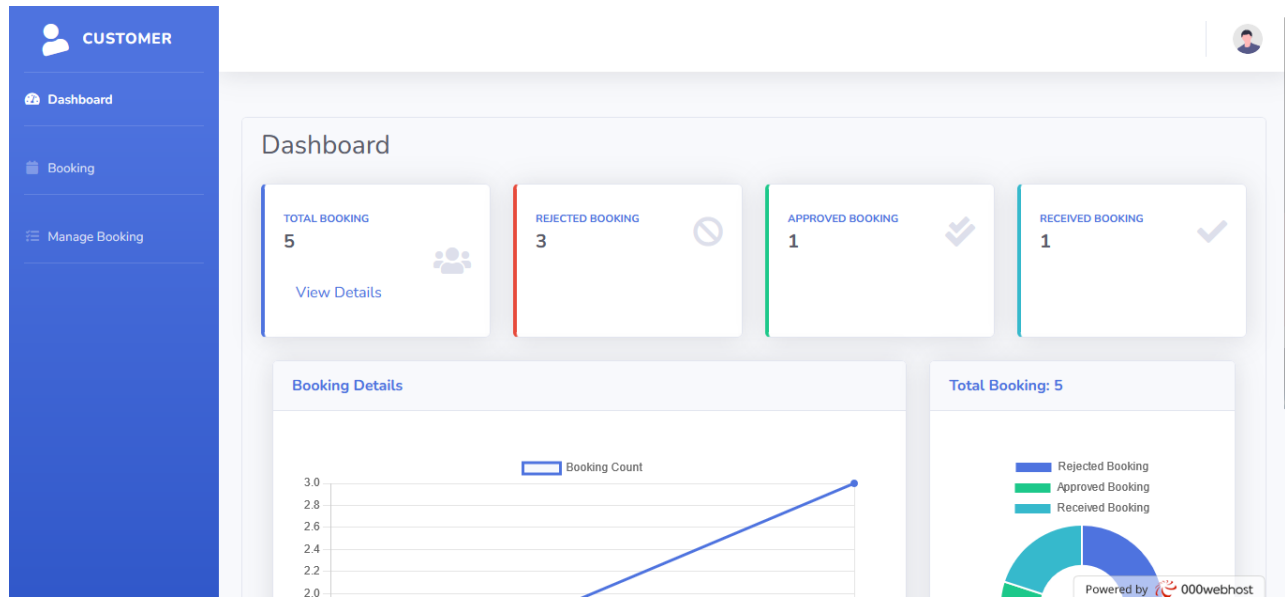
The screenshot shows the 'Edit Profile' page of the same web application. The sidebar is identical to the previous screenshot. The main content area is titled 'Edit Profile' and contains a form with the following fields:

- Identify Card No: 031111110272
- Full Name: kimjisoo
- Email address: nurulerina@graduate.utm.my
- Phone Number: 0139204698
- Password: Password
- Confirm Password: Password
- License No: erina1234
- Address: utm

Below the form are two buttons: 'Reset' (grey) and 'Update' (blue). A small note below the email field states: 'We'll never share your email with anyone else.'

6.4 Customer

Dashboard:



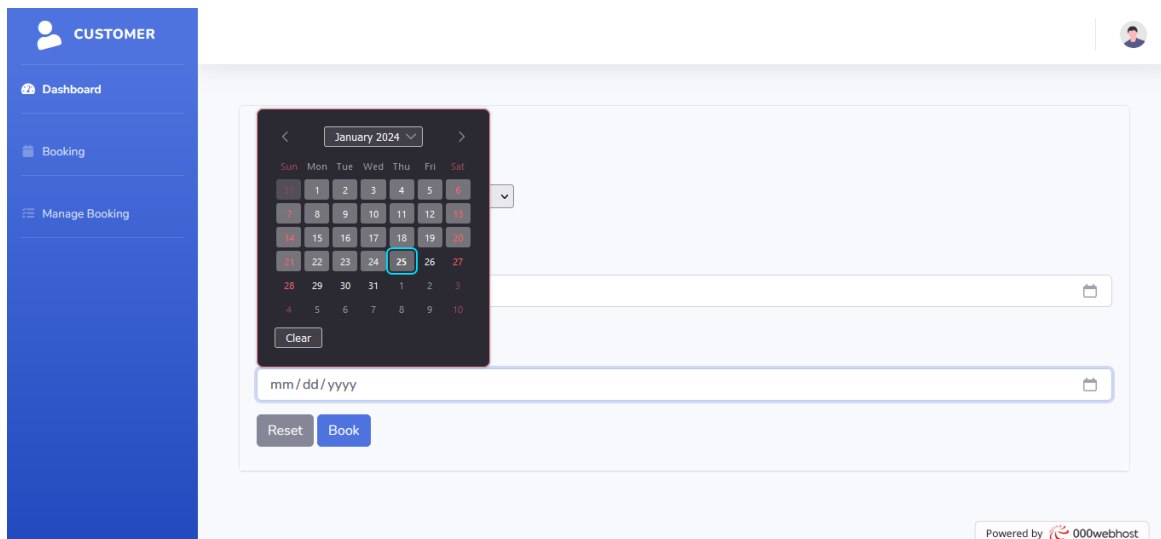
Booking:

The Booking Form allows customers to make a reservation. It includes the following fields and controls:

- Select Vehicle:** A dropdown menu currently showing 'Porsche 911, RM983'.
- Select Pickup Date:** A date input field showing '01/25/2024' with a calendar icon.
- Select Return Date:** A date input field with a placeholder 'mm/dd/yyyy' and a calendar icon.
- Buttons:** 'Reset' and 'Book' buttons.

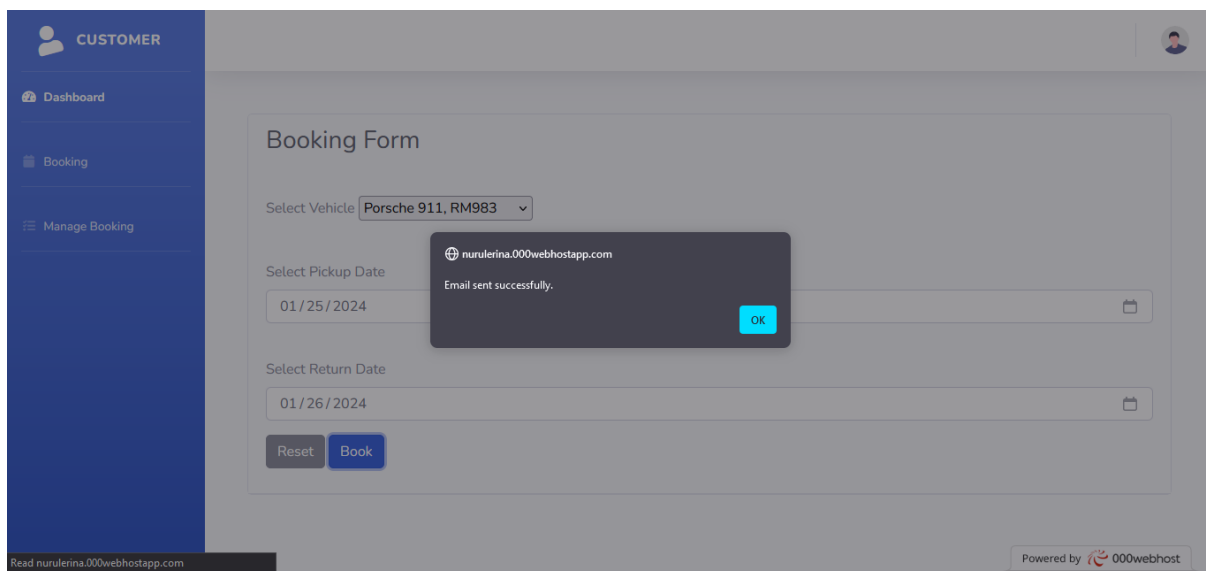
The form is powered by 000webhost.

The system does not allow to select return date before pick up date:



The screenshot shows the 'CUSTOMER' interface with a sidebar containing 'Dashboard', 'Booking', and 'Manage Booking'. The main area displays a 'Booking Form' with a date picker for January 2024. The date 25 is highlighted, indicating the pickup date. The return date field is empty, showing that the system does not allow selecting a return date before the pickup date.

Confirmation booking Gmail notification:



The screenshot shows the 'CUSTOMER' interface with a sidebar containing 'Dashboard', 'Booking', and 'Manage Booking'. The main area displays a 'Booking Form' with a confirmation message. The message states 'Email sent successfully.' and 'OK'. The form fields show 'Porsche 911, RM983' selected for the vehicle, '01/25/2024' for the pickup date, and '01/26/2024' for the return date.

Booking Confirmation

C

CBS

To: You

←

↶

↷

⋮

Thu 25/01/2024 04:56

Thank you for your booking. Please wait for staff approval. We will contact you via WhatsApp once your booking is confirmed.

↶ Reply

↷ Forward

Booking Details:

CUSTOMER

Dashboard

Booking

Manage Booking

Booking Details

Customer ID: 031112110272

Vehicle: ERY0098

Pickup Date: 2024-01-25

Return Date: 2024-01-26

Duration: 1 days

Total Price: RM983.00

Status: Received

Thank you for your booking. Here are your booking details:

Powered by 000webhost

Manage Booking :

CUSTOMER

Dashboard













Booking

Manage Booking

Booking Details

Show 10 entries

Search:

Booking ID	Vehicle	Pickup Date	Return Date	Total Rent	Status	Condition	Operation
3	Audi A8	2024-01-24	2024-02-02	7020	Rejected	Active	 
4	Jaguar F-PACE	2024-01-24	2024-02-03	7700	Approved	Active	 
5	Volvo V40	2024-01-29	2024-02-09	8800	Rejected	Active	 
6	Lexus LX	2024-01-27	2024-02-06	7000	Rejected	Active	 
8	Lexus LX	2024-01-24	2024-01-26	1400	Received	Active	 
9	Porsche 911	2024-01-25	2024-01-26	983	Received	Active	 

Powered by 000webhost

Modify Booking :

CUSTOMER

Dashboard

Booking

Manage Booking

Modify Form

Select vehicle Audi A8, RM782

Select Pickup Date01 / 24 / 2024

Select Return Date02 / 02 / 2024

ResetModify

Powered by 000webhost

Confirmation booking Gmail notification:

CUSTOMER

Dashboard

Booking

Manage Booking

Modify Form

Select vehicle: Lexus LX, P

Select Pickup Date: 01/24/2024

Select Return Date: 02/02/2024

Reset Modify

Email sent successfully. OK

Powered by 000webhost

Booking Update

CBS
To: You

Thu 25/01/2024 05:07

Thank you for reaching out to update your booking. Please wait for staff approval. We will contact you via WhatsApp once the updated booking is confirmed.

Reply Forward

Updated Booking Details :

CUSTOMER

Dashboard

Booking

Manage Booking

Booking Details

Customer ID: 031112110272

Vehicle: JDB0222

Pickup Date: 2024-01-24

Return Date: 2024-02-02

Duration: 9 days

Total Price: RM6,300.00

Status: Received

Here are your updated booking details:

Powered by 000webhost

Delete Booking:

CUSTOMER

Dashboard

Booking

Manage Booking

Booking Details

Show 10 entries

Search:

Booking ID	Status	Condition	Operation
3	Received	Active	<div></div> <div></div>
4	Approved	Active	<div></div> <div></div>
5	Rejected	Active	<div></div> <div></div>
6	Rejected	Active	<div></div> <div></div>
8	Received	Active	<div></div> <div></div>
9	Received	Active	<div></div> <div></div>

Are you sure?

You won't be able to revert this!

Yes, cancel it!

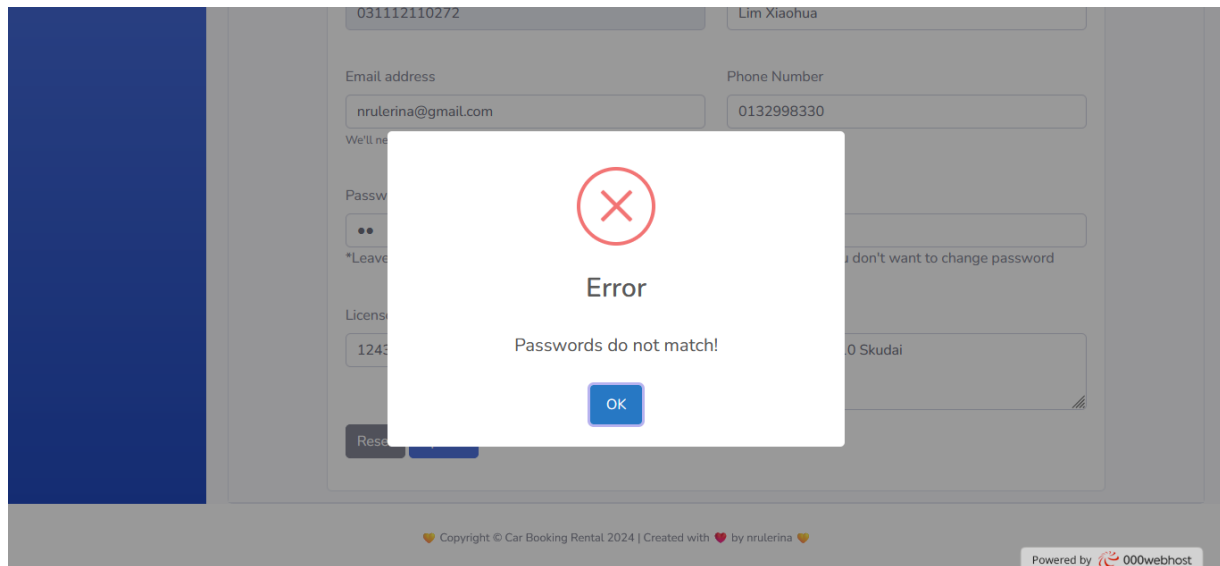
Cancel

Powered by 000webhost

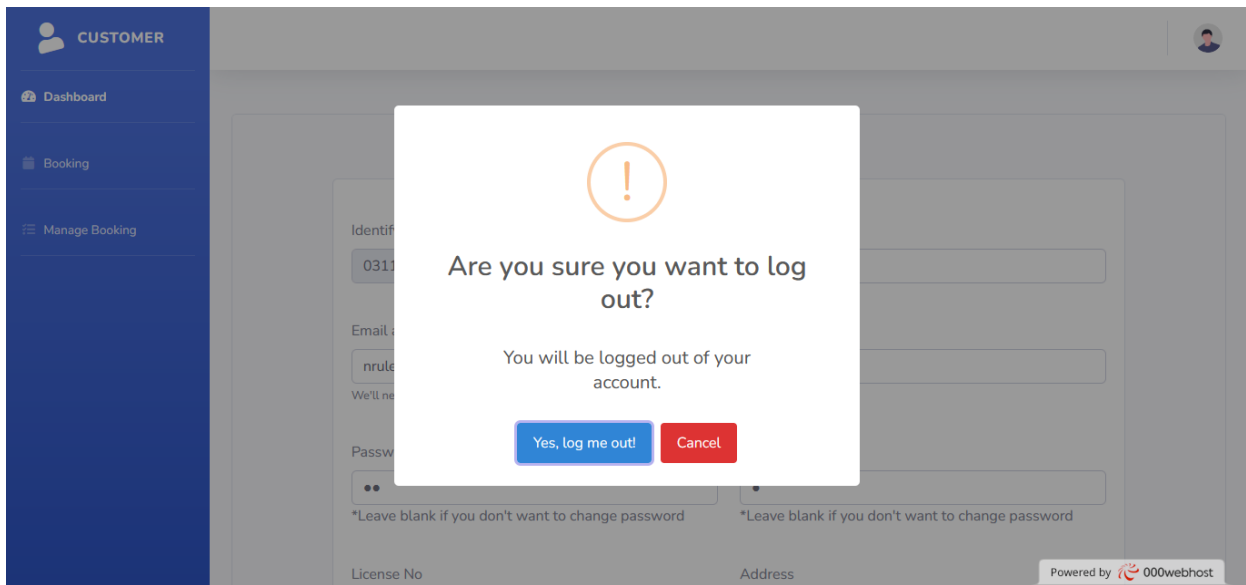
Edit Profile :

The screenshot shows a web application interface for a customer. On the left is a blue sidebar with the title 'CUSTOMER' and a user icon. Below the title are three menu items: 'Dashboard' (with a home icon), 'Booking' (with a calendar icon), and 'Manage Booking' (with a list icon). The main content area is titled 'Edit Profile'. It contains a form with several input fields: 'Identify Card No' (with the value '031112110272'), 'Full Name' (with the value 'Lim Xiaohua'), 'Email address' (with the value 'nrulerina@gmail.com'), 'Phone Number' (with the value '0132998330'), 'Password', and 'Confirm Password'. Below the 'Email address' field is a small text note: 'We'll never share your email with anyone else.' Below the 'Password' and 'Confirm Password' fields is a note: '*Leave blank if you don't want to change password'. At the bottom of the form are fields for 'License No' and 'Address'. In the bottom right corner of the main area, it says 'Powered by 000webhost' with a logo.

Alert pop up once confirm password and password do not match



6.5 Log Out



7. Localhost Setup

<http://127.0.0.1/sdt/>

1. Download Local Server Environment



XAMPP Apache + MariaDB + PHP + Perl

What is XAMPP?

XAMPP is the most popular PHP development environment

XAMPP is a completely free, easy to install Apache distribution containing MariaDB, PHP, and Perl. The XAMPP open source package has been set up to be incredibly easy to install and to use.

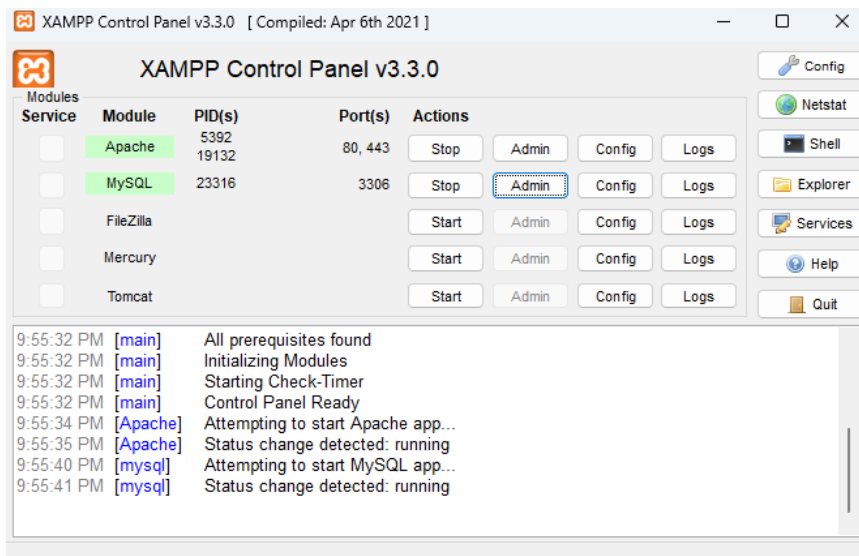
Download
Click here for other versions

XAMPP for Windows
8.2.12 (PHP 8.2.12)

XAMPP for Linux
8.2.12 (PHP 8.2.12)

XAMPP for OS X
8.2.4 (PHP 8.2.4)

2. Start Local Server










XAMPP Control Panel v3.3.0 [Compiled: Apr 6th 2021]

Service	Module	PID(s)	Port(s)	Actions
<input type="checkbox"/>	Apache	5392 19132	80, 443	Stop Admin Config Logs
<input type="checkbox"/>	MySQL	23316	3306	Stop Admin Config Logs
<input type="checkbox"/>	FileZilla			Start Admin Config Logs
<input type="checkbox"/>	Mercury			Start Admin Config Logs
<input type="checkbox"/>	Tomcat			Start Admin Config Logs

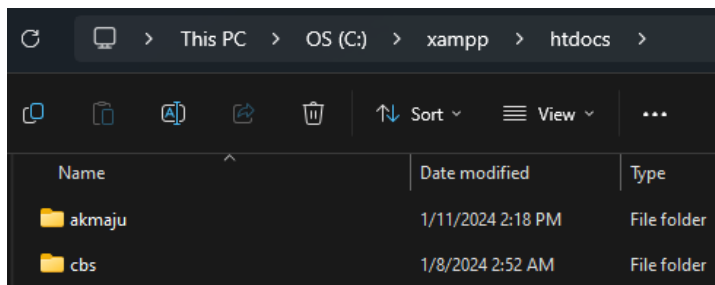
9:55:32 PM [main] All prerequisites found
9:55:32 PM [main] Initializing Modules
9:55:32 PM [main] Starting Check-Timer
9:55:32 PM [main] Control Panel Ready
9:55:34 PM [Apache] Attempting to start Apache app...
9:55:35 PM [Apache] Status change detected: running
9:55:40 PM [mysql] Attempting to start MySQL app...
9:55:41 PM [mysql] Status change detected: running

3. Verify Setup : <http://localhost>

Index of /

<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
 WBL_AKMMS/	2024-01-14 01:23	-	
 WebSite6156275(1)/	2024-01-23 12:43	-	
 akm.zip	2024-01-10 00:38	18M	
 akmaju.zip	2024-01-09 01:00	18M	
 akmaju/	2024-01-10 00:38	-	
 applications.html	2022-06-16 00:07	3.5K	
 bitnami.css	2022-06-16 00:07	177	
-			

4. Document Root: C:\xampp\htdocs



8. URL

Web Hosting : [Link](#)

Local Host : [Link](#)

9. User credentials

Web Hosting	IC Number	Password
Customer	031112110272	@lim1234
Staff	031111110272	@wong1234

Local Host	IC Number	Password
Customer	031112110272	@lim1236
Staff	031111110272	@wong1234