



## **SECP3723: SYSTEM DEVELOPMENT TECHNOLOGY**

*SESSION 2022/2023 SEMESTER 1*

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### **INDIVIDUAL PROJECT SYSTEM: CAR BOOKING SYSTEM**

**Website link:** <https://ikkhabookinginc.000webhostapp.com/>

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## System introduction

An online platform known as a car booking system enables consumers to reserve and rent cars from car rental companies. Customers can use it to look up, compare, and reserve automobiles based on location, availability, and rental requirements. The method, which offers a quick and easy option to rent a car for specific days and times, has grown in popularity in recent years. The technology replaces the outdated process in which customers had to phone the car rental company to reserve a vehicle and travel to the car rental facility to pick up their vehicle.

A car rental booking system's main objective is to make it simple for consumers to look for and reserve a rental car from the convenience of their home or place of business. Small compact cars, bigger family cars, luxury cars, and even specialized vehicles like SUVs and minivans are all available through the system. Customers can choose the type of vehicle they need, define the dates and location of the rental, and make a secure payment during the quick and easy car reservation procedure.

One of the main advantages of using the system is the convenience that the system provides to customers. Customers are no longer required to go to a physical automobile rental office, wait in line, or get help. Instead, customers may find and reserve a rental automobile whenever they want, anywhere, using a computer, tablet, or smartphone. Those who need to make last-minute plans or who are pressed for time will find this convenience to be especially helpful.

Another advantage of a car booking system is the ability to compare prices and choose the best deal for a particular rental period. Customers can compare prices from a range of different car rental companies and choose the one that offers the best value for money. This helps customers to find the best rental car for their needs and budget, without having to spend hours searching for the right vehicle.

There are three types of users in the system: public, customer, and admin. The public can view the website's index page, but in order to book a car, they must first register as a customer. After that, they will be able to log into the system as a customer and begin making reservations by selecting the type of car, the date of the pickup, and the date of the return. The customer could edit the reservation's details to suit their needs if they wanted to. Customers may also choose to edit the information in their profiles. To make it easier for the customer to prepare for payment, the system will calculate the final cost.

The administrator monitors the car-booking process by reviewing each reservation that a customer has made. In order to confirm the reservation after the customer makes a booking, the admin must first approve or reject the request. In addition, the admin could add or modify vehicles and review all of the car inventories.

## System design

### 1. Use case diagram

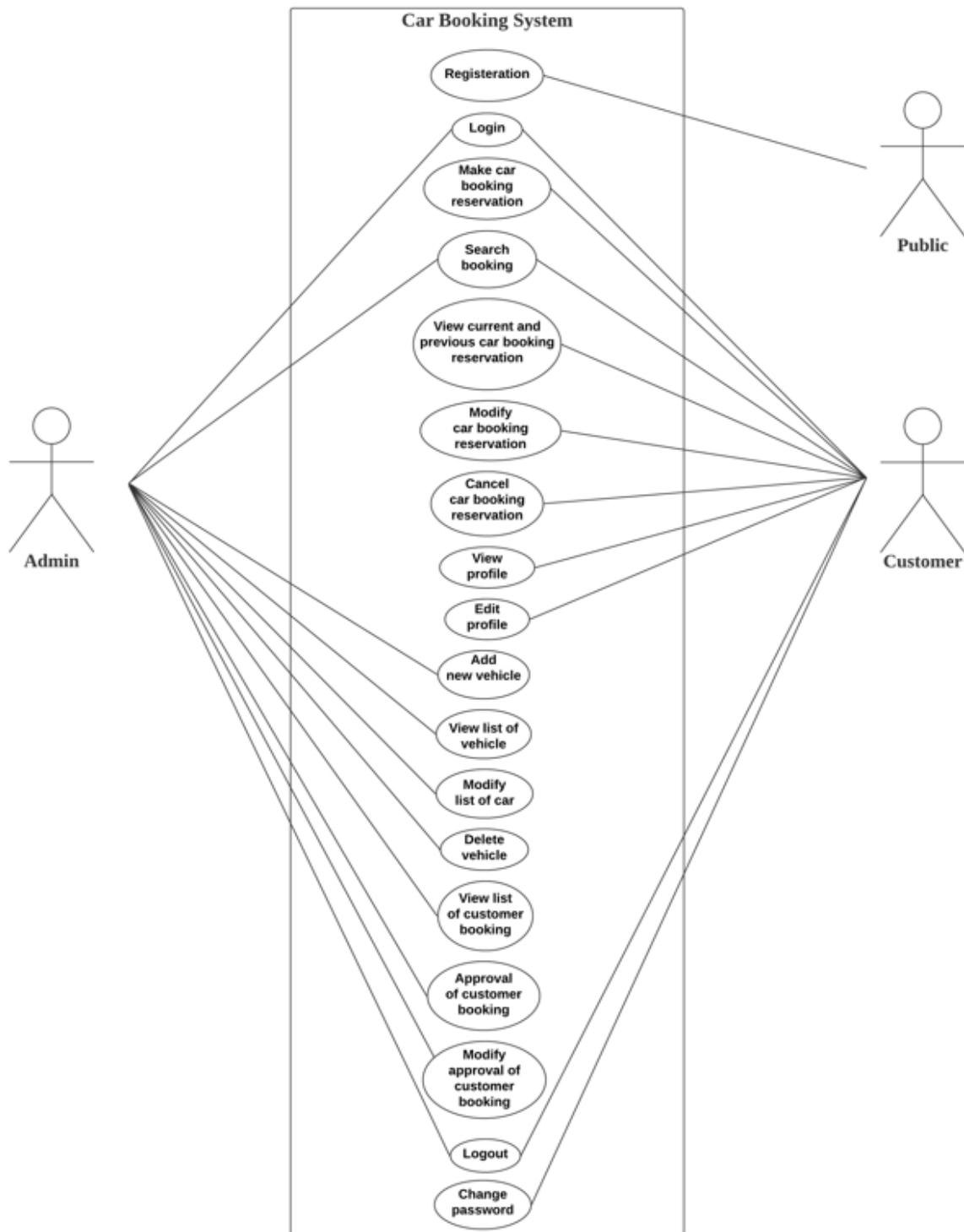


Figure 1: Car booking System Use case diagram

## 2. Entity Relationship Diagram (ERD)

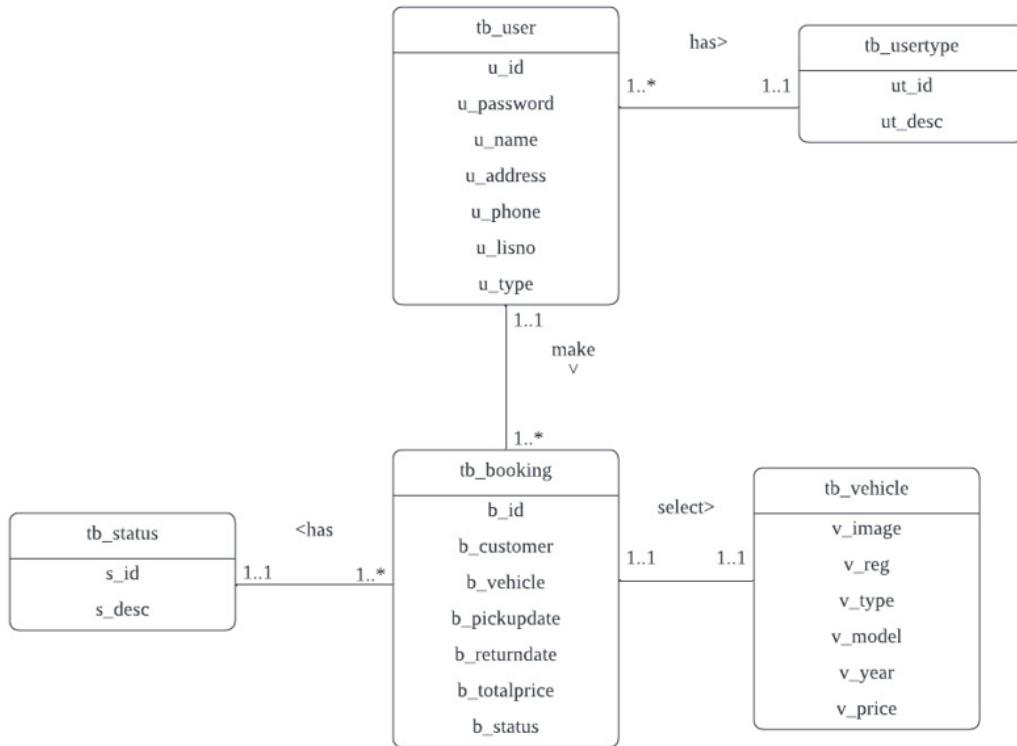


Figure 2: Car booking system ERD

## Development Software, Language, Technology and Tools

### Software

- **Sublime Text** - Sublime Text is a shareware cross-platform source code editor. It supports programming languages and markup languages. Thus this application is mainly used for making the interface of the system where it will consist of multiple components such as HTML and Bootstrap. For the car booking system, we use HTML, CSS, JavaScript, jQuery and PHP programming languages.
- **phpMyAdmin**- A PHP-coded software programme called phpMyAdmin is designed to manage MySQL administration on the Internet. Numerous MySQL and MariaDB operations are supported by phpMyAdmin. While people can still directly execute any SQL command, frequently used actions (managing databases, tables, columns, relations, indexes, users, permissions, etc.) can be carried out via the user interface.
- **XAMPP** - One of the popular cross-platform web servers is XAMPP, which enables programmers to construct and test their applications on a local web server. It consists of the MariaDB database, the Apache HTTP Server, FileZilla, Mercury and Tomcat.

### Language

- **HTML** - Web pages are typically created using the markup language HTML (Hypertext Markup Language). It stipulates how text, images, videos, and other material should be presented in a web browser and gives web content a framework. HTML is a core technology for developing and maintaining webpages and is a crucial component of the World Wide Web.
- **PHP** - The server-side scripting language PHP (Hypertext Preprocessor) was created for web development. It is used to process form data, manage sessions, and interact with databases in addition to dynamically generating HTML pages. The server runs PHP code, and the finished product is sent as plain HTML to the client's browser.
- **JavaScript** - A programming language called JavaScript is mainly used to give websites interactivity and other dynamic features. It is a client-side scripting language, which means that rather than running on a server, the code is executed directly in the user's browser. JavaScript can be used to make animations, manipulate HTML and CSS, add

interactivity to forms, and carry out other dynamic actions in response to user events, such as creating a function for an action.

- **CSS** - A stylesheet language called CSS (Cascading Style Sheets) is used to specify the appearance and formatting of an HTML document. Web designers can create styles that can be used consistently across numerous pages or even an entire website thanks to CSS, which gives them a way to separate a document's presentation from its content. CSS styles can specify font, colour, size, spacing, and positioning information for elements on a page. They can also specify responsive design strategies that make pages look good on a variety of screen sizes and devices.
- **SQL** - A programming language for managing and modifying databases is called SQL (Structured Query Language). In databases, it's used for data storage, retrieval, and manipulation. Users can create, modify, and delete database structures like tables, views, and indexes as well as insert, update, delete, and retrieve data from databases using SQL.

## **Tools**

- **Bootstrap Studio** - Using the Bootstrap framework, users can build responsive websites with the aid of Bootstrap Studio, a web design tool. It offers a visual interface for creating and personalising web pages, along with a drag-and-drop method for including elements like text, images, buttons, and forms. Users can more easily create and prototype their website designs with the aid of Bootstrap Studio's built-in CSS editor and library of pre-made templates and components.

## Database design

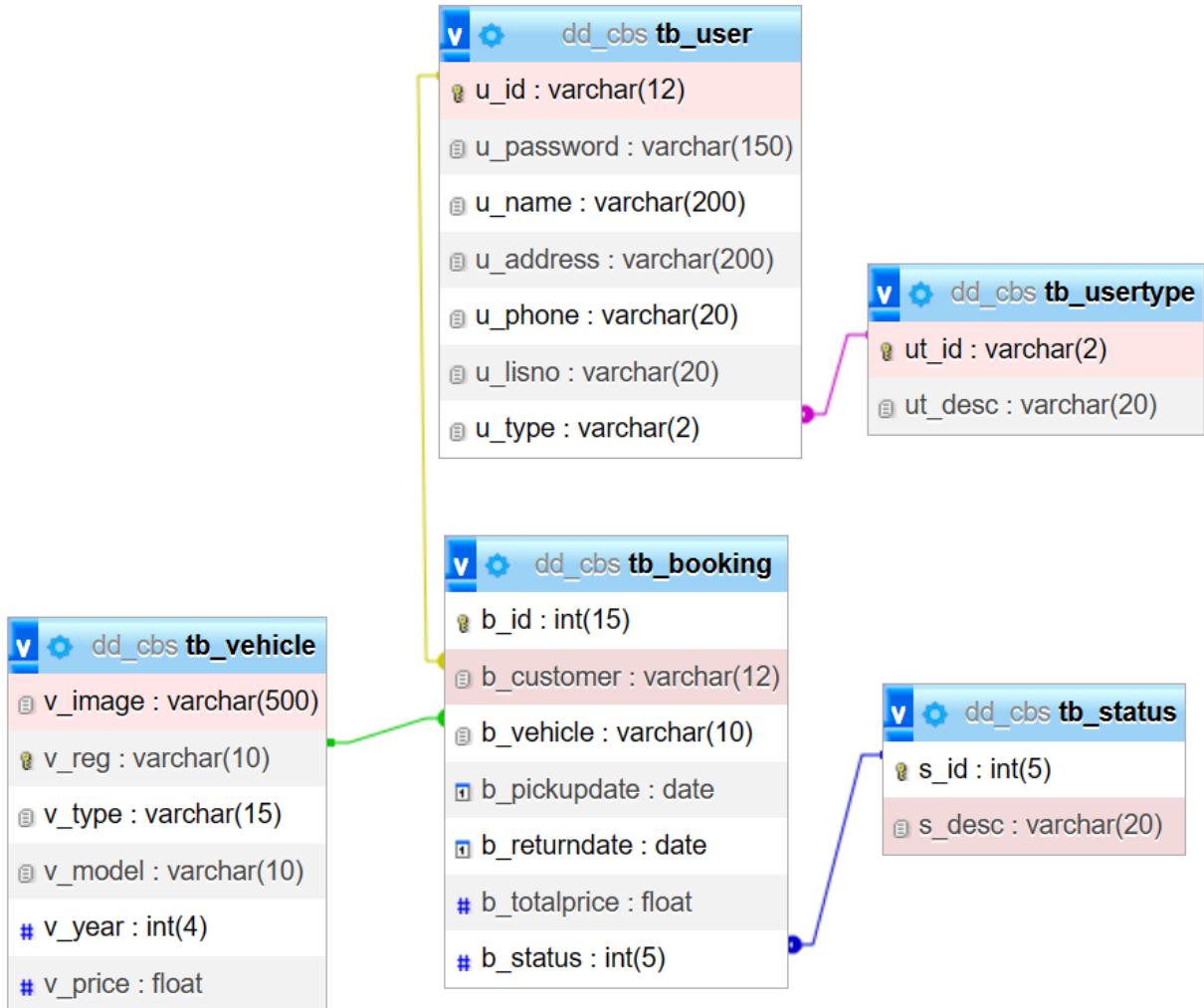


Figure 3: Car booking system database design



	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	s_id 	int(5)			No	None		 Change	 Drop More
<input type="checkbox"/>	2	s_desc	varchar(20)	utf8mb4_general_ci		No	None		 Change	 Drop More

Figure 7: tb\_status table

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	v_image	varchar(500)	utf8mb4_general_ci		No	None		 Change	 Drop More
<input type="checkbox"/>	2	v_reg 	varchar(10)	utf8mb4_general_ci		No	None		 Change	 Drop More
<input type="checkbox"/>	3	v_type	varchar(15)	utf8mb4_general_ci		No	None		 Change	 Drop More
<input type="checkbox"/>	4	v_model	varchar(10)	utf8mb4_general_ci		No	None		 Change	 Drop More
<input type="checkbox"/>	5	v_year	int(4)			No	None		 Change	 Drop More
<input type="checkbox"/>	6	v_price	float			No	None		 Change	 Drop More

Figure 8: tb\_vehicle table

## Development Steps

### 1. Planning and analysis

- Understand the case study given by the lecturer about the car booking system
- Identify the user that interacts with the system, the objective and function of the system.

User interacts with the system	<ol style="list-style-type: none"><li>1. Public</li><li>2. Customer</li><li>3. Admin</li></ol>
Objective	<ol style="list-style-type: none"><li>1. Provide an efficient and convenient platform for users to search and book vehicles and manage reservations.</li><li>2. Simplify the procedure for making a car reservation and the way the customer and the rental car business communicate.</li></ol>
Function of the system	<ol style="list-style-type: none"><li>1. Register</li><li>2. Login</li><li>3. Make a car booking reservation</li><li>4. Search booking</li><li>5. View current and previous car booking system</li><li>6. Modify car booking system</li><li>7. Cancel car booking reservation</li><li>8. View profile</li><li>9. Edit profile</li><li>10. Change password</li><li>11. Add new vehicle</li><li>12. View list of vehicle</li><li>13. Modify list of car</li><li>14. Delete vehicle</li><li>15. View list of customer booking</li><li>16. Approval of customer booking</li><li>17. Modify approval of customer booking</li><li>18. Logout</li></ol>

## 2. Design

- Design the use case diagram for car booking system.
- Design the database for the car booking system.
- Design wireframe
- Create visual assets such as navigation bar and button in the system.
- Make a final design for the car booking system.

## 3. Implementation

- Use software, programming language and tool to make the system

Software	<ol style="list-style-type: none"><li>1. Sublime Text</li><li>2. phpMyAdmin</li><li>3. XAMPP</li></ol>
Programming language	<ol style="list-style-type: none"><li>1. HTML</li><li>2. PHP</li><li>3. JavaScript</li><li>4. CSS</li><li>5. SQL</li></ol>
Tool	<ol style="list-style-type: none"><li>1. Bootstrap studio</li></ol>

## 4. Testing

- Recruit friends and assign them to the selected user to test whether the system can run smoothly without any errors.

## System Interface for All Users

### Public/Customer/Admin

#### 1. Index page

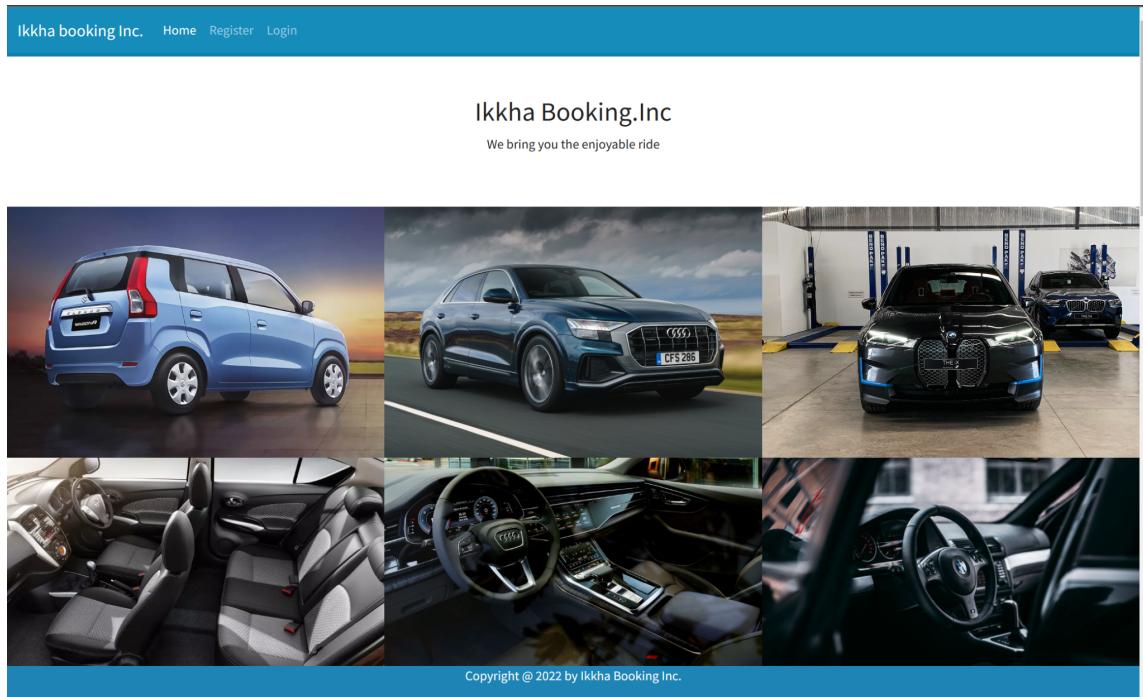
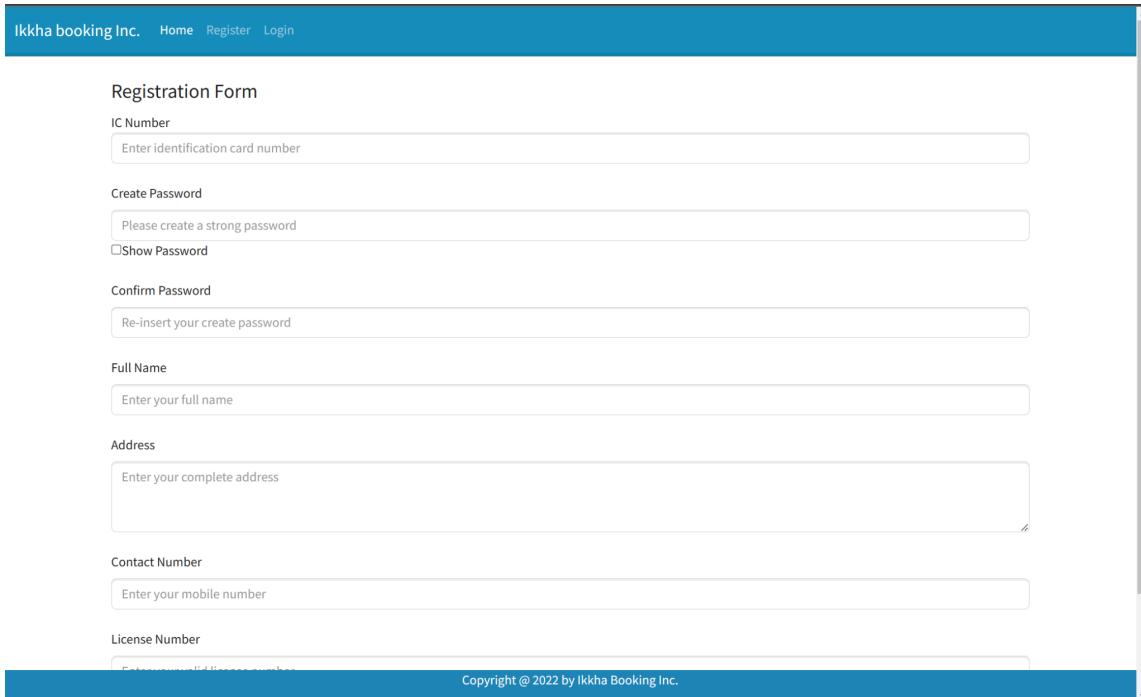


Figure 9: Index page

## 2. Registration new customer page



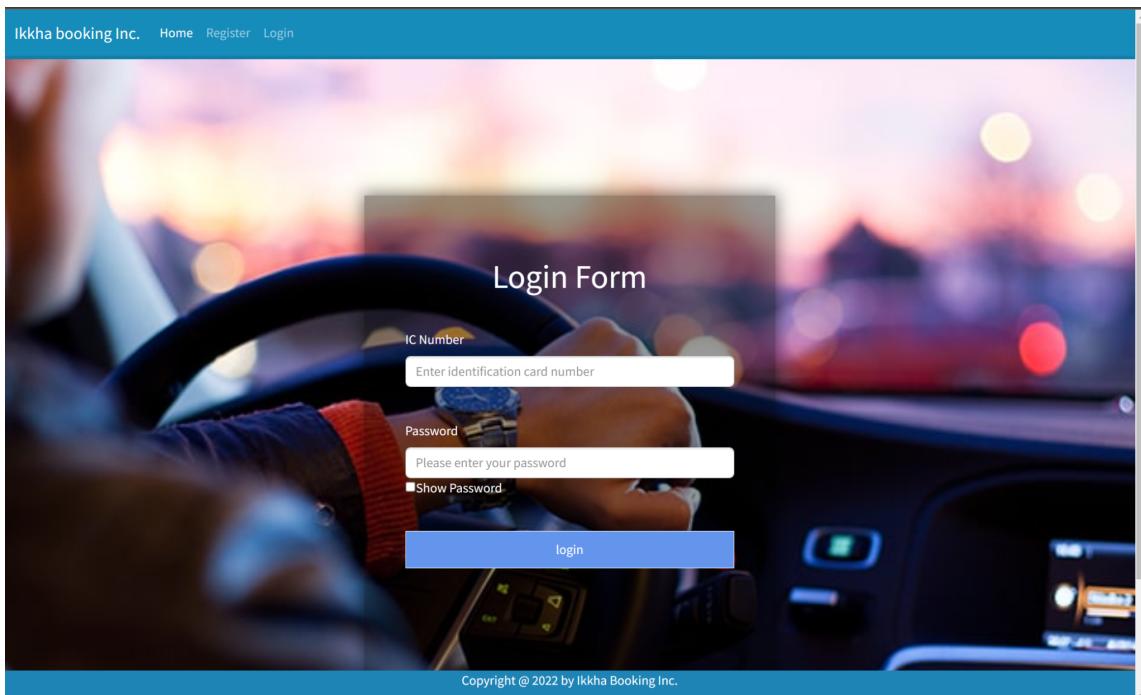
The screenshot shows the registration form for a customer. At the top, there is a navigation bar with the text "Ikkha booking Inc." followed by links for "Home", "Register", and "Login". Below the navigation bar, the title "Registration Form" is displayed. The form consists of several input fields:

- IC Number:** A text input field with placeholder text "Enter identification card number".
- Create Password:** A text input field with placeholder text "Please create a strong password". Below it is a checkbox labeled "Show Password".
- Confirm Password:** A text input field with placeholder text "Re-insert your create password".
- Full Name:** A text input field with placeholder text "Enter your full name".
- Address:** A text input field with placeholder text "Enter your complete address".
- Contact Number:** A text input field with placeholder text "Enter your mobile number".
- License Number:** A text input field with placeholder text "Enter your license number".

At the bottom of the form, there is a copyright notice: "Copyright @ 2022 by Ikkha Booking Inc."

Figure 10: Registration page

## 3. Login Page



The screenshot shows the login form overlaid on a blurred background image of a car's interior at night. The background image features a steering wheel, a dashboard with glowing blue lights, and a cityscape with blurred lights in the distance. The login form itself has a dark background with white text and input fields.

The title "Login Form" is centered at the top. The form includes two main input fields:

- IC Number:** A text input field with placeholder text "Enter identification card number".
- Password:** A text input field with placeholder text "Please enter your password". Below it is a checkbox labeled "Show Password".

At the bottom of the form is a large blue "login" button. At the very bottom of the page, there is a copyright notice: "Copyright @ 2022 by Ikkha Booking Inc."

Figure 11: Login page

## Customer

### 1. Main page customer

The screenshot shows the main customer interface. At the top, there is a navigation bar with links: 'Ikkha booking Inc.', 'Manage', 'Profile', and 'Logout'. Below the navigation bar, the title 'List of cars' is displayed. There are four car models listed with their details and images:

- Proton X70: Year 2020, RM 175/day
- Honda City 2022: Year 2022, RM 110/day
- Myvi 2020: Year 2021, RM 80/day
- Axia 2019: Year 2020, RM 75/day

To the right of the car list is a 'Booking form' section with the following fields:

- Select Vehicle: A dropdown menu currently set to 'Proton X70'.
- Pick up Date: An input field labeled 'Enter pickup date'.
- Return Date: An input field labeled 'Enter return date'.
- Buttons: 'BOOK' (blue) and 'CLEAR FORM' (orange).

At the bottom of the page, a copyright notice reads 'Copyright @ 2022 by Ikkha Booking Inc.'

Figure 12: Main page customer

### 2. Booking list page

The screenshot shows the booking list page. At the top, there is a navigation bar with links: 'Ikkha booking Inc.', 'Manage', 'Profile', and 'Logout'. Below the navigation bar, the title 'Your Booking List' is displayed. A search bar labeled 'Search...' is present. A table lists the bookings:

Booking ID	Vehicle	Pick-up Date	Return Date	Total Price	Status	Operation
32	Proton X70	2023-02-01	2023-02-02	180	RECEIVED	<button>MODIFY</button> <button>CANCEL</button>
24	Honda City 2022	2023-02-01	2023-02-04	450	APPROVED	<button>MODIFY</button> <button>CANCEL</button>

At the bottom of the page, a copyright notice reads 'Copyright @ 2022 by Ikkha Booking Inc.'

Figure 13: Booking list page

### 3. Modify booking page

Ikkha booking Inc. Manage Profile Logout

#### List of cars

	Proton X70 Year 2020 RM 175/day	<b>Modify Form</b> Booking ID: 32 Select Vehicle Proton X70
	Honda City 2022 Year 2022 RM 110/day	Pick up Date 2023-02-01
	Myvi 2020 Year 2021 RM 80/day	Return Date 2023-02-02
	Axia 2019 Year 2020 RM 75/day	<b>BACK</b> <b>BOOK</b> <b>RESET</b>

Copyright @ 2022 by Ikkha Booking Inc.

Figure 14: Modify booking page

### 4. Profile page

Ikkha booking Inc. Manage Profile Logout

#### Profile Details



User ID: 020222051111

Name: Muhammad Ubaidullah Bin Fadli

Address: No 45, Jalan Padang temu, Taman Padang Temu, 754300, Melaka

Phone Number: 0183281352

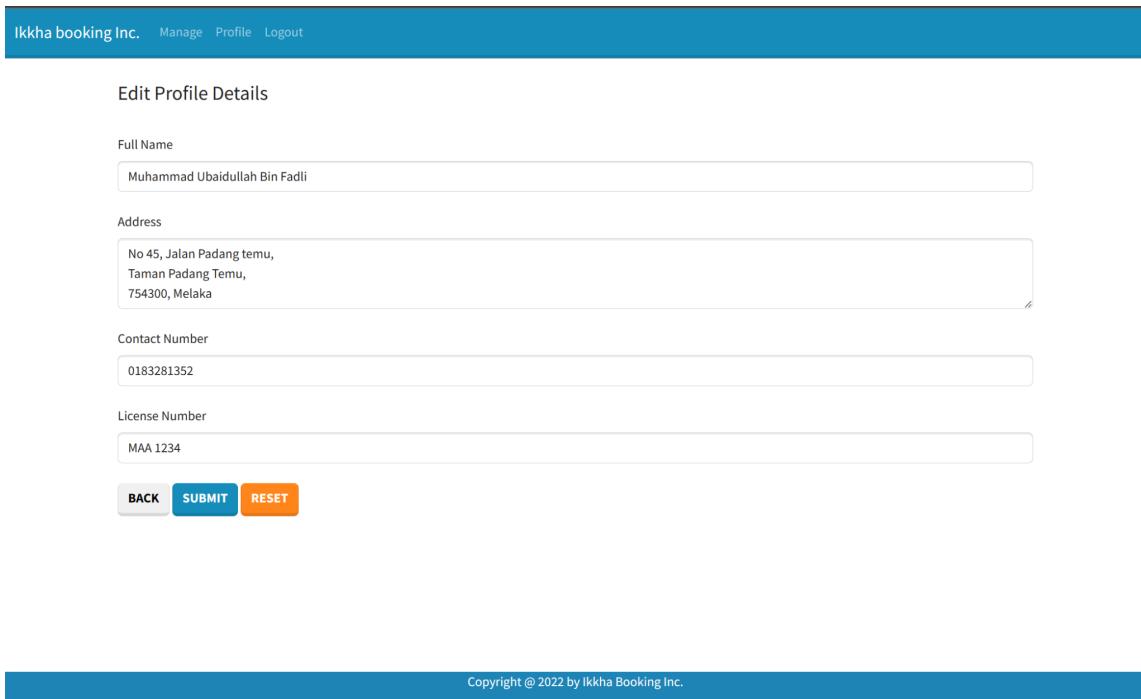
License Number: MAA 1234

**EDIT PROFILE** **CHANGE PASSWORD**

Copyright @ 2022 by Ikkha Booking Inc.

Figure 15: Customer profile page

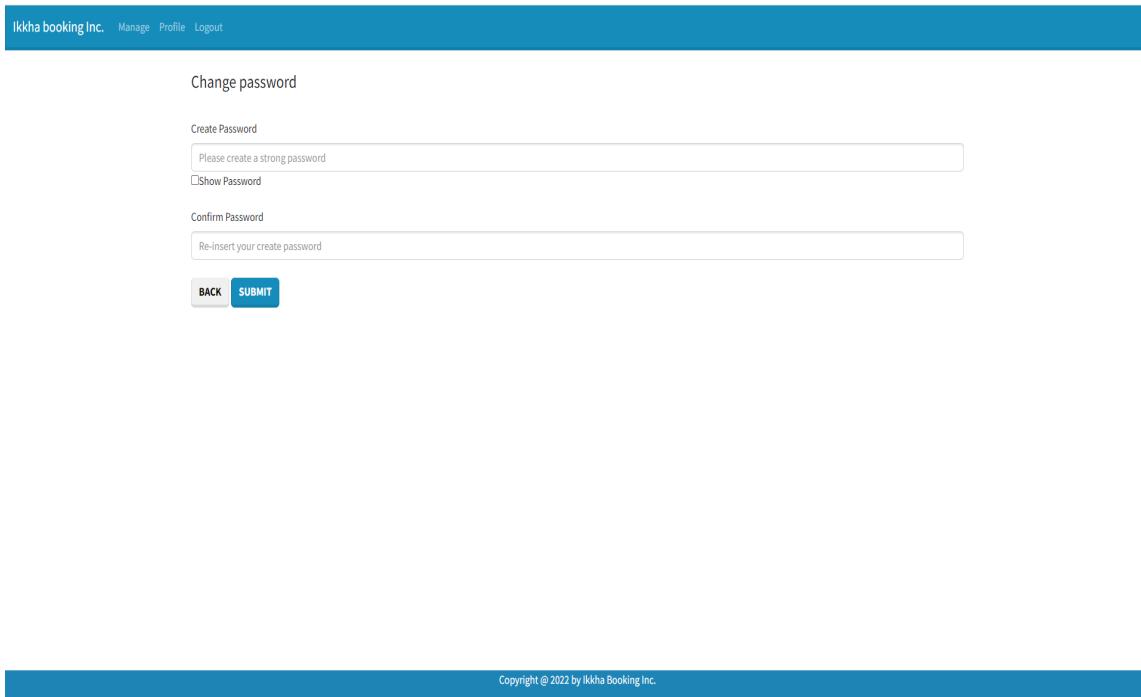
## 5. Edit profile page



The screenshot shows the 'Edit Profile Details' page. At the top, there is a blue header bar with the text 'Ikkha booking Inc.' and navigation links 'Manage', 'Profile', and 'Logout'. Below the header, the page title 'Edit Profile Details' is centered. The form contains four input fields: 'Full Name' (Muhammad Ubaidullah Bin Fadli), 'Address' (No 45, Jalan Padang temu, Taman Padang Temu, 754300, Melaka), 'Contact Number' (0183281352), and 'License Number' (MAA 1234). At the bottom of the form are three buttons: 'BACK' (gray), 'SUBMIT' (blue), and 'RESET' (orange).

Figure 16: Edit profile page

## 6. Change password page



The screenshot shows the 'Change password' page. At the top, there is a blue header bar with the text 'Ikkha booking Inc.' and navigation links 'Manage', 'Profile', and 'Logout'. Below the header, the page title 'Change password' is centered. The form has two input fields: 'Create Password' (containing placeholder text 'Please create a strong password') and 'Confirm Password' (containing placeholder text 'Re-insert your create password'). Both fields have a 'Show Password' link next to them. At the bottom of the form are three buttons: 'BACK' (gray), 'SUBMIT' (blue), and another 'SUBMIT' button.

Figure 17: Change password page

## Admin

1. Main page (Dashboard – Vehicle inventory, booking information )

The screenshot shows the Admin Dashboard with a blue header bar containing the text "Ikkha booking Inc.", "Booking List", "Car", and "Log out". Below the header is a large white area titled "Dashboard". At the top of this area are four blue rectangular boxes with white numbers and text: "5 Total car available", "5 Customer register", "3 Booking approval", and "2 Booking status". Below these boxes is a section titled "Customer Booking List Approval" containing a table with three rows of booking data. Each row includes columns for Booking ID, Customer, Vehicle, Pick-up Date, Return Date, Total Price, Status, and Operation (with a blue "APPROVAL" button). The table has a light gray background and thin black borders between the rows and columns. At the bottom of the dashboard area is a dark blue footer bar with the text "Copyright @ 2022 by Ikkha Booking Inc."

Figure 18: Main page (Dashboard – Vehicle inventory, booking information )

2. Approval customer booking page

The screenshot shows the Approval customer booking page with a blue header bar containing the text "Ikkha booking Inc.", "Booking List", "Car", and "Log out". Below the header is a white area titled "Booking Details". It displays booking information: BOOKING ID: 20, Customer Name: Amirul Fikri Bin Azmi, Customer Contact: 0122221111, Customer Address: 46 JLN WARUNA U5/135 TAMAN Taman Peringgit Permai, Vehicle: Honda City 2022, Pickup Date: 2023-01-28, Return Date: 2023-01-30, Total Price: 300. There is also an "Approval" section with a dropdown menu showing "RECEIVED". At the bottom of the page are two buttons: "BACK" and "PROCESS". A dark blue footer bar at the bottom contains the text "Copyright @ 2022 by Ikkha Booking Inc."

Figure 19: Approval customer booking page

### 3. Customer booking list page

Customer Booking List							
<input type="text" value="Search..."/>							
Booking ID	Customer	Vehicle	Pick-up Date	Return Date	Total Price	Status	Operation
20	Amirul Fikri Bin Azmi	Honda City 2022	2023-01-28	2023-01-30	300	APPROVED	<button>CHANGE</button>
24	Muhammad Ubaidullah Bin Fadli	Honda City 2022	2023-02-01	2023-02-04	450	APPROVED	<button>CHANGE</button>

Copyright @ 2022 by Ikkha Booking Inc.

Figure 20: Customer booking list page

### 4. Modify approval customer booking page

Modify Booking Details							
BOOKING ID: 20							
Customer Name: Amirul Fikri Bin Azmi							
Customer Contact: 0122221111							
Customer Address: 46 JLN WARUNA U5/135 TAMAN Peringgit Permai							
Vehicle: Honda City 2022							
Pickup Date: 2023-01-28							
Return Date: 2023-01-30							
Total Price: 300							
Approval							
<input type="button" value="REJECTED"/>							
<input type="button" value="PROCESS"/>							

Copyright @ 2022 by Ikkha Booking Inc.

Figure 21: Modify approval customer booking page

## 5. Add new car page

Ikkha booking Inc. Booking List Car Log out

Registration New Car Form

Insert car image  
 Choose File No file chosen

Number plate of car  
 Enter type of car

Car model  
 Enter model of car

Type of car: Sedan

Year of car buy  
 Enter year of car buy

Rate of rent per day  
 Enter rate of rent per day

**REGISTER** **CLEAR FORM**

Copyright @ 2022 by Ikkha Booking Inc.

Figure 22: Add new car page

## 6. List of car page

Ikkha booking Inc. Booking List Car Log out

List of car

Car image	Number Plate	Model	Type	Year	Rate per day	Operation
	UTM 1111	Proton X70	SUV	2020	175	<b>MODIFY</b> <b>DELETE</b>
	UTM 2222	Honda City 2022	Sedan	2022	110	<b>MODIFY</b> <b>DELETE</b>
	UTM 3333	Myvi 2020	Hatchback	2021	80	<b>MODIFY</b> <b>DELETE</b>
	UTM 4444	Axia 2019	Hatchback	2020	75	<b>MODIFY</b> <b>DELETE</b>

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Figure 23: List of car page

## 7. Modify car details page

Ikkha booking Inc. Booking List Car ▾ Logout

Modify Car Details Form

Insert Car Image:

Choose File No file chosen

Existing Image:



Car model

Proton X70

Type of car

SUV

Year of car buy

2020

Rate of rent per day

175

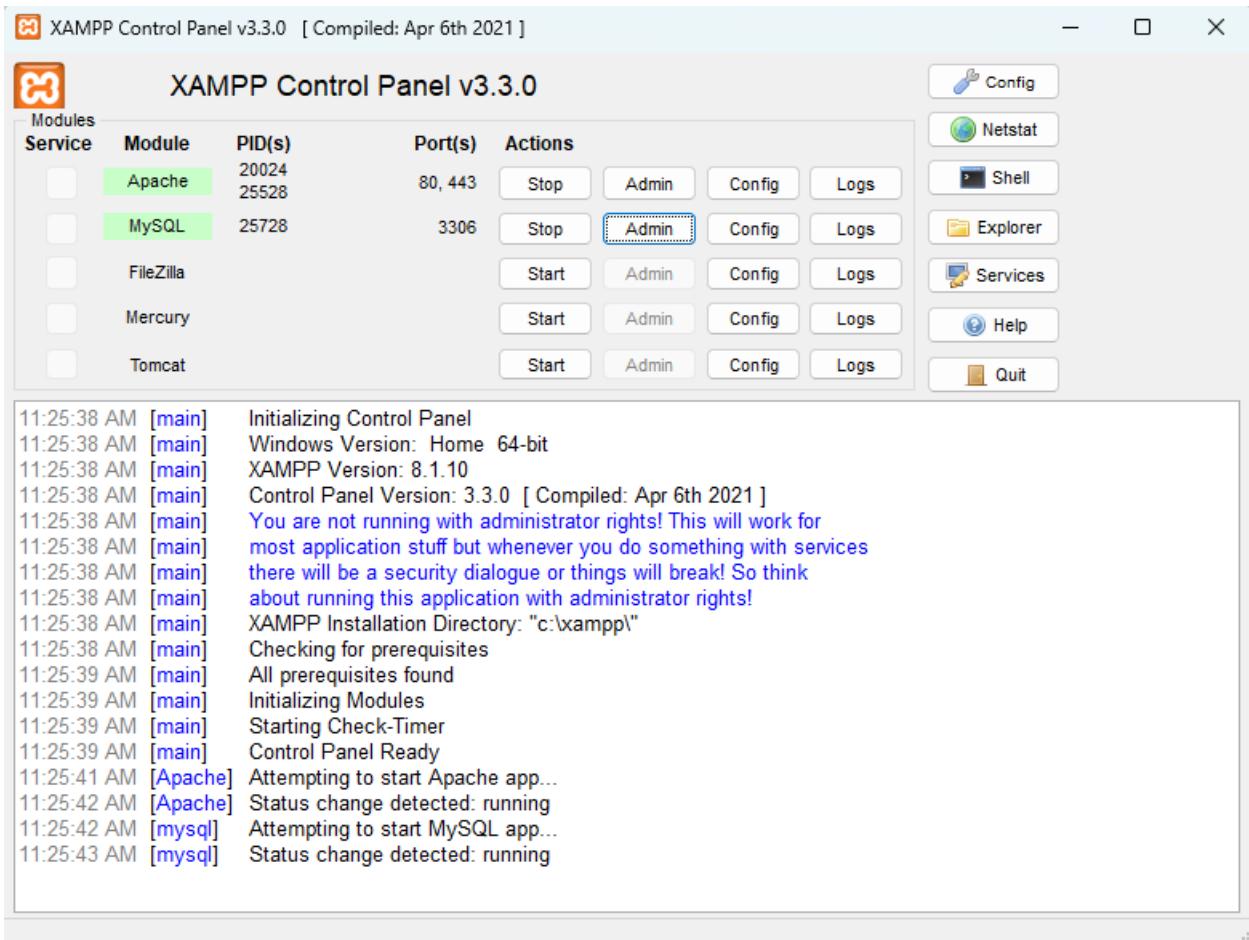
Copyright @ 2022 by ikkha Booking Inc.

Figure 24: Modify car details page

## Localhost Setup

1. Download and install XAMPP Control Panel from web pages based on the laptop or computer operating system (OS).

URL: <https://www.apachefriends.org/>



2. Download and install Sublime text from web pages based on the laptop or computer operating system (OS).

URL: <https://www.sublimetext.com/3>

C:\xampp\htdocs\cbs\_ikmal\customermodify.php (cbs\_ikmal) - Sublime Text (UNREGISTERED)

```

FOLDERS
    cbs_ikmal
        Car_image
        css
            bootstrap.css
            bootstrap.min.css
            font-awesome.min.css
            jquery-ui.css
            jquery.fancybox.min.css
            jqueryCustomScrollbar.m
            normalize.css
            slick.css
            style.css
    Index
        bookingprocess.php
        cession.php
        cover-page-login.jpg
        createcar.php
        createcarprocess.php
        customer.php
        customercancel.php
        customermanage.php
        customermodify.php
        customermodifypassword.php
        customermodifyprocess.php
        customermodifyprofile.php
        customermodifyprofileprocess.php
        customerprofile.php
        connect.php
        db_connect.php
        db_cbsql
        footerimage.jpg
        footermain.php
        headercustomer.php
        headerlogin.php
        headermain.php
        headerstaff.php
        index.php
        innercar.jpg
        login.php
        loginprocess.php
        logout.php
        myavi.png
        protonv70.png
        register.php
        registerprocess.php

    files
        Line 48, Column 106
        Spaces: 4 PHP

```

### 3. Open phpMyadmin in the XAMPP Control Panel and click admin on MySQL row

localhost/phpmyadmin/index.php?route=/database/structure&db=dd\_cbs

phpMyAdmin

Server: 127.0.0.1 » Database: dd\_cbs

Structure SQL Search Query Export Import Operations Privileges Routines Events Triggers More

Filters Containing the word:

Action	Rows	Type	Collation	Size	Overhead
Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	64.0 KiB	-
Browse Structure Search Insert Empty Drop	3	InnoDB	utf8mb4_general_ci	16.0 KiB	-
Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	32.0 KiB	-
Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_general_ci	16.0 KiB	-
Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<b>5 tables Sum</b>	<b>20</b>	<b>InnoDB</b>	<b>utf8mb4_general_ci</b>	<b>160.0 KiB</b>	<b>0 B</b>

New aa asg1 asg1q1 currental\_db db dd\_cbs New tb\_booking tb\_status tb\_user tb\_usertype tb\_vehicle information\_schema ip\_db mysql performance\_schema phpmyadmin test

Check all With selected:

Print Data dictionary Create new table

Table name Number of columns Create

Console

4. Create a new database and name the database schema ‘dd\_cbs’
5. Create table in the database schema
6. View the website page host by inserting the URL on the web browser.

## User credentials

Admin

IC Number (u_id)	Password (u_password)
020326041111	020326
020427051111	020427

Customer

IC Number (u_id)	Password (u_password)
020222051111	Ubai2027
020208871111	Quirkykraken1
020101071111	Indah54321