

DBMS - Mini Project

Title of the Project

Car Rental Management System

Submitted By:

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Section: C

## **Short Description and Scope of the Project**

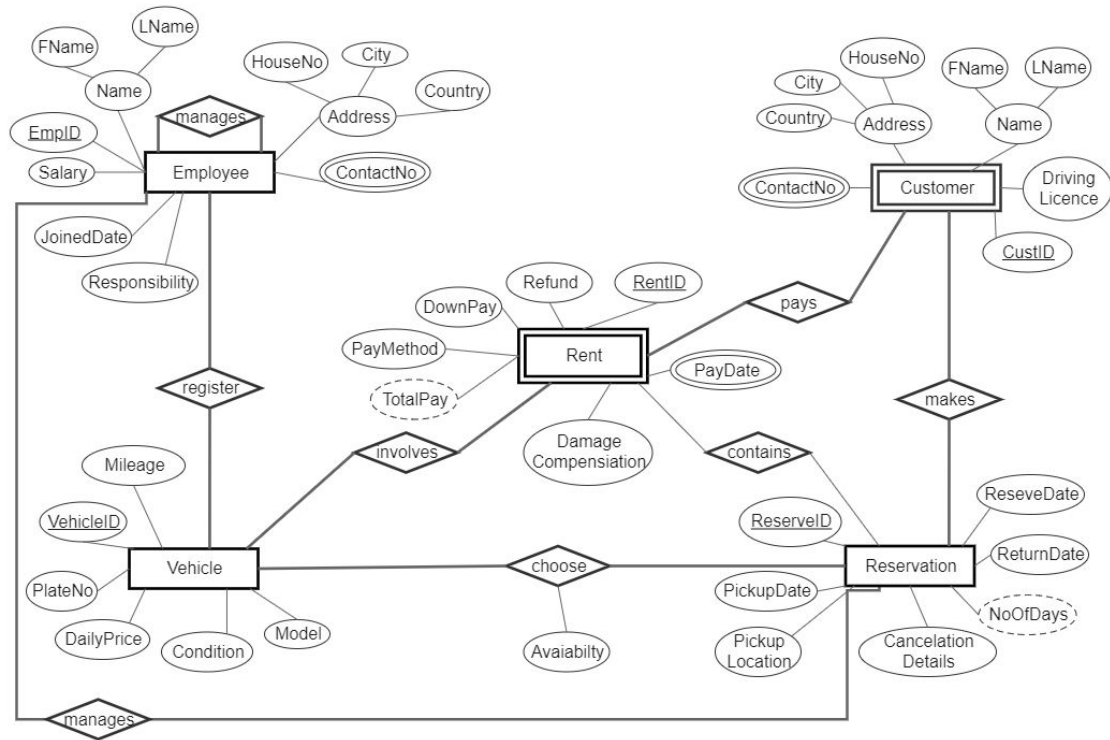
Keeping track of your fleet is no simple task. However, car rental management systems help you oversee vehicles and drivers while improving your online reservation experience. With point-and-click tools, you can quickly assign vehicles or record damage using an intuitive dashboard.

This system uses MySQL connected to a localhost using XAMPP. This data can only be accessed by respective users i.e. admins have the highest privilege and can have access to all the data and users have only select data and functionalities.

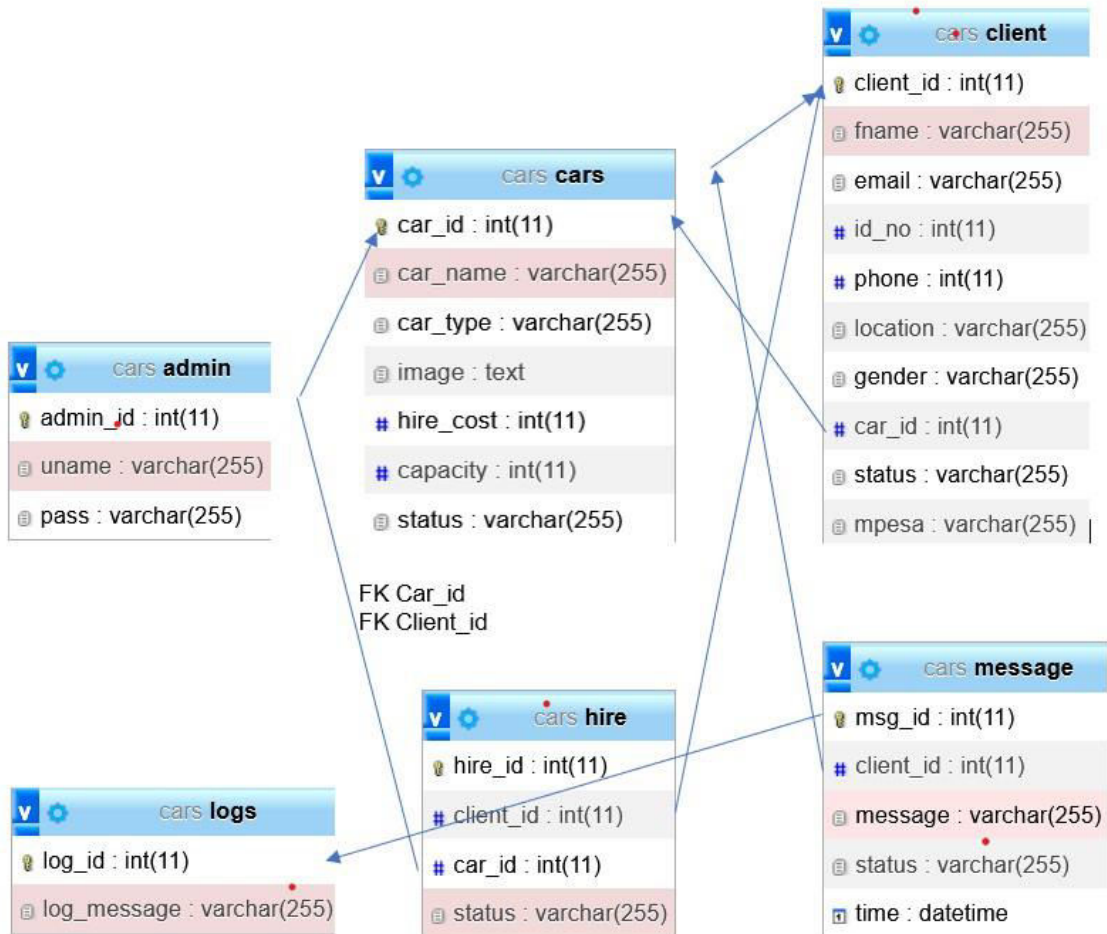
Features:

- Admin
- Customer
- Dealer
- Accountant

## ER Diagram



## Relational Schema



## DDL statements - Building the database

```
CREATE TABLE `admin` (  
  `admin_id` int(11) NOT NULL,  
  `uname` varchar(255) NOT NULL,  
  `pass` varchar(255) NOT NULL  
);
```

```
CREATE TABLE `cars` (  
  `car_id` int(11) NOT NULL,  
  `car_name` varchar(255) NOT NULL,  
  `car_type` varchar(255) NOT NULL,  
  `image` text NOT NULL,  
  `hire_cost` int(11) NOT NULL,  
  `capacity` int(11) NOT NULL,  
  `status` varchar(255) NOT NULL  
);
```

```
CREATE TABLE `client` (  
  `client_id` int(11) NOT NULL,  
  `fname` varchar(255) NOT NULL,  
  `email` varchar(255) NOT NULL,  
  `id_no` int(11) NOT NULL,  
  `phone` int(11) NOT NULL,  
  `location` varchar(255) NOT NULL,  
  `gender` varchar(255) NOT NULL,  
  `car_id` int(11) NOT NULL,  
  `status` varchar(255) NOT NULL,  
  `mpesa` varchar(255) NOT NULL  
);
```

```
CREATE TABLE `hire` (  
  `hire_id` int(11) NOT NULL,  
  `client_id` int(11) NOT NULL,  
  `car_id` int(11) NOT NULL,  
  `status` varchar(255) NOT NULL  
);
```

```
CREATE TABLE `message` (  
  `msg_id` int(11) NOT NULL,  
  `client_id` int(11) NOT NULL,  
  `message` varchar(255) NOT NULL,  
  `status` varchar(255) NOT NULL,  
  `time` datetime NOT NULL  
);
```

## Populating the Database

```
INSERT INTO `admin` (`admin_id`, `uname`, `pass`) VALUES  
(1, 'admin', 'admin');
```

```
INSERT INTO `cars` (`car_id`, `car_name`, `car_type`, `image`, `hire_cost`,  
`capacity`, `status`) VALUES  
(1, 'Mercedes BenzZ', 'Mercedes BenzZ', 'car1.jpg', 20000, 5, 'Available'),  
(2, 'Range Rover', 'LandRover', 'car2.jpg', 30000, 6, 'Available'),  
(3, 'Harrier', 'Toyota', 'car3.jpg', 20000, 6, 'Available'),  
(5, 'LandCruiser V8', 'LandCruiser ', 'images (2).jpg', 20000, 5, 'Available'),  
(6, 'Security Vehicles', 'Hammar Cars', 'sonkort2.png', 30000, 8, 'Available'),  
(7, 'Wedding Limousine', 'Wedding Limousine', 'images (3).jpg', 50000, 10,  
'Available');
```

```
INSERT INTO `client` (`client_id`, `fname`, `email`, `id_no`, `phone`,  
`location`, `gender`, `car_id`, `status`, `mpesa`) VALUES  
(2, 'felix kiamba', 'kiambafelix@yahoo.com', 30073147, 705053484, 'nairobi',  
'Male', 1, 'Approved', '30073147'),  
(3, 'conceper', 'concybogita@gmail.com', 27695131, 707403614, 'kisi',  
'Female', 2, 'Approved', 'DJFL870FDK9'),  
(4, 'enock bosire', 'enock@gmail.com', 1234567, 717056766, 'narok', 'Male',  
2, 'Approved', 'HJHK678X'),  
(5, 'John', 'h@game', 123, 0, 'lol', 'Male', 1, 'Approved', '30073147'),  
(6, 'test', 'h@game', 3306, 1234567890, 'test', 'Male', 0, 'Available', ''),  
(7, 'TestName', 'h@game', 30073147, 1234567890, 'lol', 'Male', 2,  
'Approved', ''),  
(8, 'fa', 'h@game', 123, 1234567890, 'lol', 'Female', 1, 'Pending', '');
```

```
INSERT INTO `message` (`msg_id`, `client_id`, `message`, `status`, `time`) VALUES  
(3, 0, 'Thanks for that..OK?', 'Unread', '0000-00-00 00:00:00'),  
(5, 0, 'I love this. It worked the way i want...', 'Unread', '2015-08-04  
21:45:33'),  
(6, 0, 'jhbhj', 'Unread', '2022-10-18 19:43:45');
```

# Join Queries

Showcase at least 4 join queries

Write the query in English Language, Show the equivalent SQL statement and also a screenshot of the query and the results

## 1. INNER JOIN

```
SELECT fname FROM client INNER JOIN message ON client.client_id = message.client_id;
```

Showing rows 0 - 2 (3 total, Query took 0.0004 seconds.)

```
SELECT fname FROM client INNER JOIN message ON client.client_id = message.client_id;
```

☐ Profiling [\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Explain SQL \]](#) [\[ Create PHP code \]](#) [\[ Refresh \]](#)

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Extra options

fname
enock bosire
John
TestName

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

## 2. LEFT JOIN

```
SELECT fname, message FROM client LEFT JOIN message ON client.client_id = message.client_id;
```

Showing rows 0 - 8 (9 total, Query took 0.0007 seconds.)

```
SELECT fname, message FROM client LEFT JOIN message ON client.client_id = message.client_id;
```

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☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Extra options

fname	message
enock bosire	jhbhj
John	hi
TestName	hello
felix kiamba	NULL
concepter	NULL
test	NULL
fa	NULL
Oppa	NULL
Loppy	NULL



### 3. RIGHT JOIN

```
SELECT fname, message FROM client RIGHT JOIN message ON client.client_id = message.client_id;
```

Showing rows 0 - 2 (3 total, Query took 0.0006 seconds.)

```
SELECT fname, message FROM client RIGHT JOIN message ON client.client_id = message.client_id;
```

☐ Profiling [\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Explain SQL \]](#) [\[ Create PHP code \]](#) [\[ Refresh \]](#)

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Extra options

fname	message
enock bosire	jhbhjbj
John	hi
TestName	hello

### 4. LEFT JOIN

```
SELECT fname, message FROM client LEFT JOIN message ON client.client_id = message.client_id;
```

Showing rows 0 - 8 (9 total, Query took 0.0006 seconds.)

```
SELECT fname, message FROM client LEFT JOIN message ON client.client_id = message.client_id;
```

☐ Profiling [\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Explain SQL \]](#) [\[ Create PHP code \]](#) [\[ Refresh \]](#)

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Extra options

fname	message
enock bosire	jhbhjbj
John	hi
TestName	hello
felix kiamba	NULL
concepter	NULL
test	NULL
fa	NULL
Oppa	NULL
Loppy	NULL

## Aggregate Functions

Showcase at least 4 Aggregate function queries

Write the query in English Language, Show the equivalent SQL statement and also a screenshot of the query and the results

### 1. COUNT()

```
SELECT COUNT(car_id) FROM `cars`;
```

Your SQL query has been executed successfully.

```
SELECT COUNT(car_id) FROM `cars`;
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

Extra options

**COUNT(car\_id)**

6

### 2. MAX()

```
SELECT MAX(hire_cost) FROM `cars`;
```

✓ Showing rows 0 - 0 (1 total, Query took 0.0003 seconds.)

```
SELECT MAX(hire_cost) FROM `cars`;
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all | Number of rows: 25  Filter rows:

Extra options

**MAX(hire\_cost)**

50000

### 3. MIN()

```
SELECT MIN(hire_cost) FROM `cars`;
```

✓ Showing rows 0 - 0 (1 total, Query took 0.0003 seconds.)

```
SELECT MIN(hire_cost) FROM `cars`;
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all | Number of rows: 25 ▼ Filter rows:

Extra options

MIN(hire_cost)
20000

### 4. AVG()

```
SELECT AVG(hire_cost) FROM `cars`;
```

✓ Showing rows 0 - 0 (1 total, Query took 0.0003 seconds.)

```
SELECT AVG(hire_cost) FROM `cars`;
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all | Number of rows: 25 ▼ Filter rows:

Extra options

AVG(hire_cost)
28333.3333

### 5. SUM()

```
SELECT SUM(hire_cost) FROM `cars`;
```

✓ Showing rows 0 - 0 (1 total, Query took 0.0003 seconds.)

```
SELECT SUM(hire_cost) FROM `cars`;
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all | Number of rows: 25 ▼ Filter rows:

Extra options

**SUM(hire\_cost)**

170000

## Set Operations

Showcase at least 4 Set Operations queries

Write the query in English Language, Show the equivalent SQL statement and also a screenshot of the query and the results

### 1. UNION

```
SELECT car_id FROM `cars` UNION SELECT car_name FROM `cars`;
```

✓ Showing rows 0 - 11 (12 total, Query took 0.0004 seconds.)

```
SELECT car_id FROM `cars` UNION SELECT car_name FROM `cars`;
```

☐ Profiling [\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Explain SQL \]](#) [\[ Create PHP code \]](#) [\[ Refresh \]](#)

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Extra options

car_id
1
2
3
5
6
7
Mercedes BenzZ
Range Rover
Harrier
LandCruiser V8
Security Vehicles
Wedding Limousine

### 2. UNION ALL

```
SELECT car_id FROM `cars` UNION ALL SELECT car_name FROM `cars`;
```

✓ Showing rows 0 - 11 (12 total, Query took 0.0002 seconds.)

```
SELECT car_id FROM `cars` UNION ALL SELECT car_name FROM `cars`;
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all | Number of rows:  Filter rows:  Sort by key:

Extra options

car_id
1
2
3
5
6
7
Mercedes BenzZ
Range Rover
Harrier
LandCruiser V8
Security Vehicles
Wedding Limousine

### 3. INTERSECT

```
SELECT car_name FROM `cars` INTERSECT SELECT car_type FROM `cars`;
```

✓ Showing rows 0 - 1 (2 total, Query took 0.0004 seconds.)

```
SELECT car_name FROM `cars` INTERSECT SELECT car_type FROM `cars`;
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all | Number of rows:  Filter rows:  Sort by key:

Extra options

car_name
Mercedes BenzZ
Wedding Limousine

### 4. EXCEPT

```
SELECT * FROM `cars` EXCEPT SELECT * FROM `cars`;
```

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0028 seconds.)

```
SELECT * FROM `cars` EXCEPT SELECT * FROM `cars`;
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

car_id	car_name	car_type	image	hire_cost	capacity	status
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## Functions and Procedures

Create a Function and Procedure. State the objective of the function / Procedure. Run and display the results.

### 1. FUNCTION

**Details**

Routine name

years

Type

FUNCTION ▾

Parameters

Name	Type	Length/Va
↑ date1	DATE ▾	---

Add parameter

Return type

INT ▾

Return length/values

255

Return options

UNSIGNED ▾

Definition

```
1 BEGIN
2 DECLARE date2 DATE;
3 Select current_date()into date2;
4 RETURN year(date2)-year(date1);
5 END
```

Go

Close

OUTPUT



✓ Your SQL query has been executed successfully.

```
SET @p0=''; SELECT `years`(@p0) AS `years`;
```

Execution results of routine `years`

**years**

2022

## 2. PROCEDURE

### Details

Routine name

AllCarID

Type

PROCEDURE ▼

Parameters

Direction

Name

Type

Length/Values

Options

Add parameter

Definition

```
1 BEGIN
2 SELECT car_id FROM cars;
3 END
```

OUTPUT

```
CALL `AllCarID`();
```

#### Execution results of routine `AllCarID`

car\_id

1

2

3

5

6









7

## Routines

☐ Check all

 Export

 Drop

	Name	Type	Returns	
<input type="checkbox"/>	AllCarID	PROCEDURE		 Edit  Execute  Export  Drop
<input type="checkbox"/>	years	FUNCTION	int(255) unsigned	 Edit  Execute  Export  Drop

## Triggers and Cursors

Create a Trigger and a Cursor. State the objective. Run and display the results.

### 1. TRIGGER

Objective: This trigger adds a log file when a new car has been added to the database

```
CREATE TRIGGER `AddCar` AFTER INSERT ON `cars` FOR EACH ROW INSERT INTO logs VALUES (null , 'Inserted New Car');
```

✓ Trigger 'AddCar' has been created.

```
CREATE TRIGGER `AddCar` AFTER INSERT ON `cars` FOR EACH ROW INSERT INTO logs VALUES (null , 'Inserted New Car');
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

## Triggers

☐ Check all [Export](#) [Drop](#)

	Name	Table	Time	Event	
<input type="checkbox"/>	AddCar	cars	AFTER	INSERT	<a href="#">Edit</a> <a href="#">Export</a> <a href="#">Drop</a>

			log_id	log_message
<input type="checkbox"/>	<a href="#">Edit</a>	<a href="#">Copy</a>	<a href="#">Delete</a>	1 Inserted New Car
<input type="checkbox"/>	<a href="#">Edit</a>	<a href="#">Copy</a>	<a href="#">Delete</a>	2 Inserted New Car
<input type="checkbox"/>	<a href="#">Edit</a>	<a href="#">Copy</a>	<a href="#">Delete</a>	3 Inserted New Car
<input type="checkbox"/>	<a href="#">Edit</a>	<a href="#">Copy</a>	<a href="#">Delete</a>	4 Inserted New Car
<input type="checkbox"/>	<a href="#">Edit</a>	<a href="#">Copy</a>	<a href="#">Delete</a>	5 Inserted New Car
<input type="checkbox"/>	<a href="#">Edit</a>	<a href="#">Copy</a>	<a href="#">Delete</a>	6 Inserted New Car
<input type="checkbox"/>	<a href="#">Edit</a>	<a href="#">Copy</a>	<a href="#">Delete</a>	7 Inserted New Car

[↶](#) ☐ Check all *With selected:* [Edit](#) [Copy](#) [Delete](#) [Export](#)

## 2. CURSOR

Objective: When the car has a status of available, it shows the availability in the database

✓ Routine 'getStatus' has been created.

```
CREATE PROCEDURE `getStatus`() NOT DETERMINISTIC CONTAINS SQL SQL SECURITY DEFINER BEGIN DECLARE stat TEXT; DECLARE stat_cursor CURSOR FOR SELECT status FROM `cars`; OPEN stat_cursor; FETCH FROM stat_cursor INTO stat; IF stat = "Available" THEN SELECT stat; END IF; CLOSE stat_cursor; END
```

[Edit inline](#) [Edit](#) [Create PHP code](#)

✓ Your SQL query has been executed successfully.

1 row affected by the last statement inside the procedure.

```
CALL `getStatus`();
```

Execution results of routine 'getStatus'

stat
------

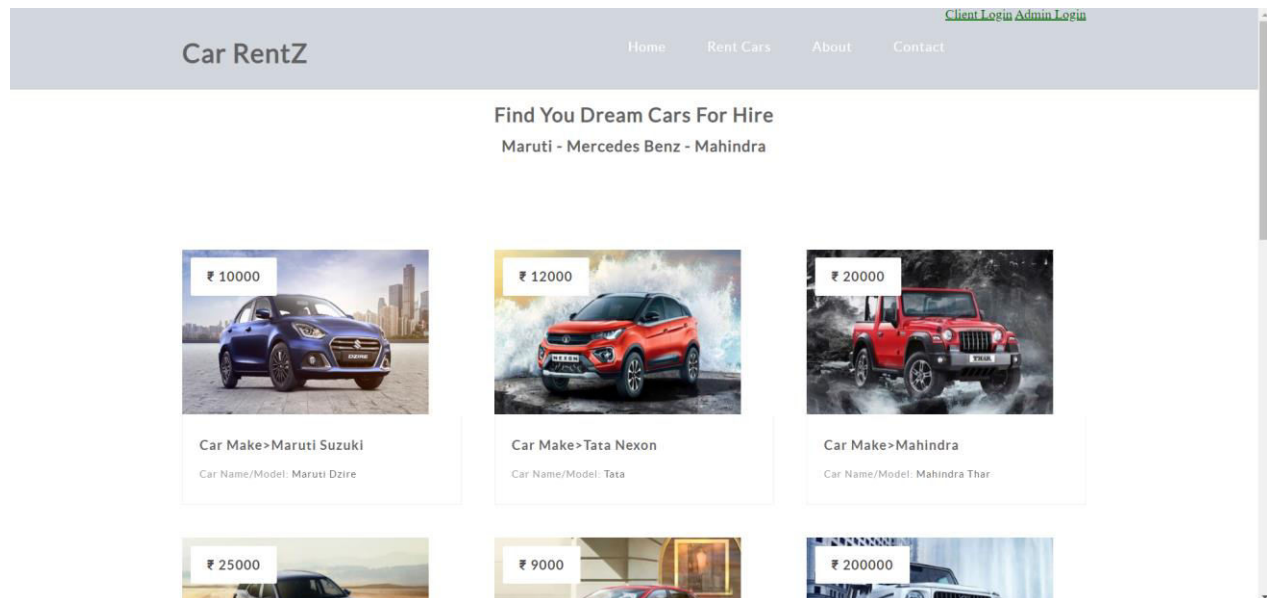
Available
-----------

## Developing a Frontend

The frontend should support

1. Addition, Modification and Deletion of records from any chosen table
2. There should be an window to accept and run any SQL statement and display the result

### HOME PAGE



## LOGIN PAGES

Car RentZ

[Client Login](#)[Admin Login](#)

[Home](#)[Rent Cars](#)[About](#)[Contact](#)

Find You Dream Cars For Hire

Maruti - Mercedes Benz - Mahindra

[Client Login Area](#)

Email Address:

Password:

[Signup Here](#)

Car RentZ

About Us

Terms

Policy

Contact

OTHERS

...

...

...

...

OUR CAR TYPES

Maruti

Tata

Mahindra

Others.

Our team is an organized company that rents cars and other vehicles to clients at lower costs. We we are here to serve every indian Citizen

[f](#)[t](#)[g](#)[s](#)

Car RentZ

[Client Login](#)[Admin Login](#)

[Home](#)[Rent Cars](#)[About](#)[Contact](#)

Find You Dream Cars For Hire

Maruti - Mercedes Benz - Mahindra

[Admin Login Area](#)

Email Address:

Password:

OUR COMPANY

About Us

Terms

Policy

Contact

OTHERS

...

...

...

...

OUR CAR TYPES

Maruti

Tata

Mahindra

Others.

Our team is an organized company that rents cars and other vehicles to clients at lower costs. We we are here to serve every indian Citizen

[f](#)[t](#)[g](#)[s](#)

## RENTING A CAR

Car RentZ


[Client Login](#) [Admin Login](#)

[Home](#) [Rent Cars](#) [About](#) [Contact](#)

Find You Dream Cars For Hire

Maruti - Mercedes Benz - Mahindra

₹ 20000



Car Make>Mahindra

Car Name/Model: Mahindra Thar

Proceed to Hire Mahindra Thar.

Full Name:

Phone Number:

Email Address:

Pin Number:

Gender:

Location:

Select Gender ▾

Submit Details

## BOOKING STATUS

Car RentZ

[Logout](#)

[Home](#) [View Status](#) [Message Admin](#)

Find You Dream Cars For Hire

Maruti - Mercedes Benz - Mahindra

Your Booking Status

Booking Status: **Approved**

OUR COMPANY

OTHERS

OUR CAR TYPES

Our team is an organized company that rents cars and other vehicles to clients at

About Us

...

Maruti

# ADMIN INTERFACE

Car RentZ

Welcome Administrator | [Help](#) | [Profile Settings](#) | [Log out](#)

Dashboard

Vehicle Management

Hire Requests

Messages

Dashboard > Vehicle Management

Our Vehicles

search vehicles

<input type="checkbox"/>	Vehicle Make	Car Type	Hire Price	Content Control
<input type="checkbox"/>	Maruti Suzuki	Maruti Dzire	10000	<input type="button" value="Delete"/> <input type="button" value="Edit"/>
<input type="checkbox"/>	Tata Nexon	Tata	12000	<input type="button" value="Delete"/> <input type="button" value="Edit"/>
<input type="checkbox"/>	Mahindra	Mahindra Thar	20000	<input type="button" value="Delete"/> <input type="button" value="Edit"/>
<input type="checkbox"/>	Toyota	Toyota Fortuner	25000	<input type="button" value="Delete"/> <input type="button" value="Edit"/>
<input type="checkbox"/>	Hyundai	Hyundai i20	9000	<input type="button" value="Delete"/> <input type="button" value="Edit"/>
<input type="checkbox"/>	Mercedes-Benz	Mercedes-Benz AMG G 63	50000	<input type="button" value="Delete"/> <input type="button" value="Edit"/>

Showing 1-12 of 44

...

Management

☐ [select all](#)

[Delete Selected](#)

Sort by

Car Type

Car Name

Hire Price

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