



Project Report

Project Title: Car Rental Management System

UE20CS352 - Object-oriented Analysis and Design with Java

Submitted by:

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FACULTY OF ENGINEERING

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Synopsis

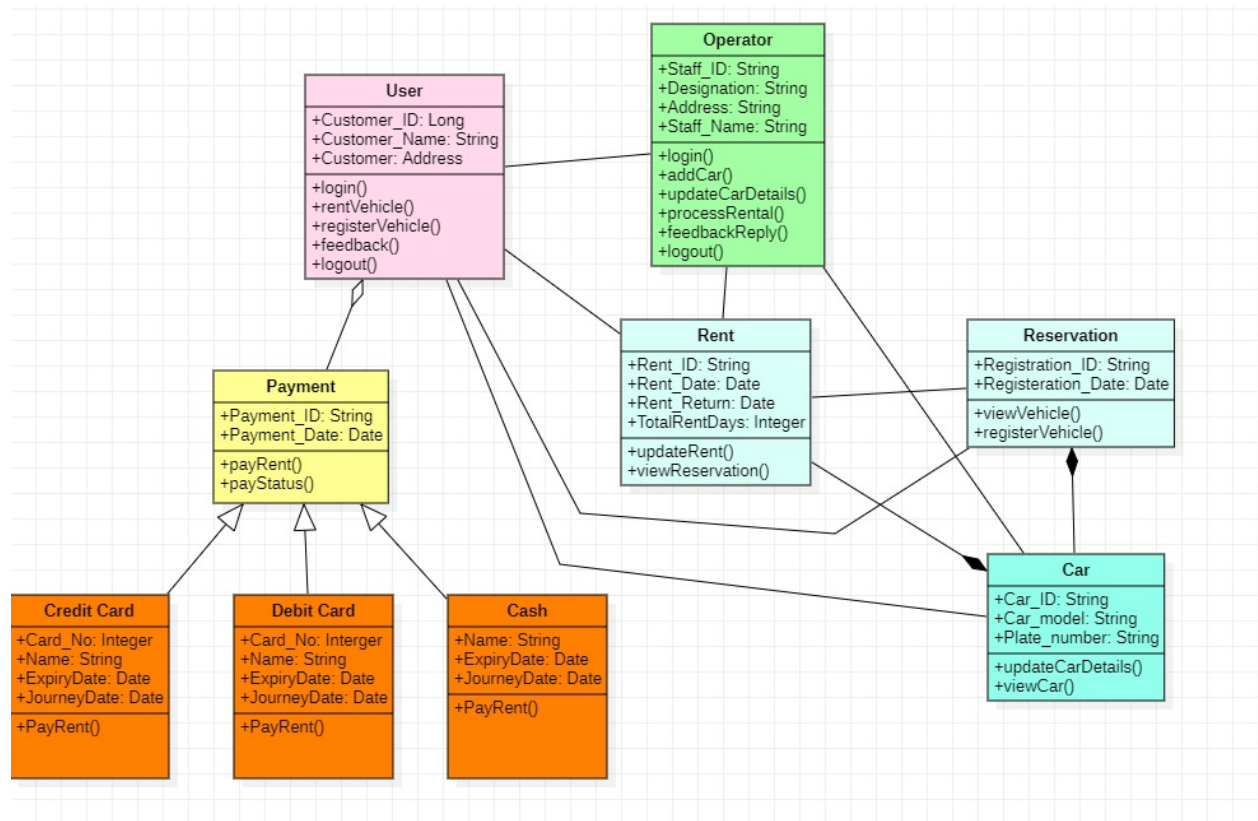
Car rental management software is used to help car rental management businesses manage their operations. The software helps companies to keep track of their cars and customers. Customers can use the software to rent cars, view rental rates, and select the car they want to rent. The software also stores customer information, like their contact details and rental history. The car rental system typically includes a database of cars that are available for rental, along with their rental rates and availability. Customers can browse the available cars, select the dates and times they need the car, and make a reservation. The system also lets users make payments after returning the rental vehicle. Users can also see and pay the additional charges incurred during their travel. The software also has a customer interaction feature which helps the customer interact with support staff. Customers can also leave their feedback about the cars, service, etc. after their rental.

Functionalities

- **Car Rental Interface:** Clients can visit the website and choose a car of their choice and booking can be done as per their requirements. Feedback can also be provided on avail of the car rental service.
 - **Payment Portal:** Order placing and cancellation are maintained by the admin. Amount is generated based on the type of car and duration of rental.
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- **Staff:** Data about the repair/replacement of any parts of the car are maintained by the staff post inspection on pick up.

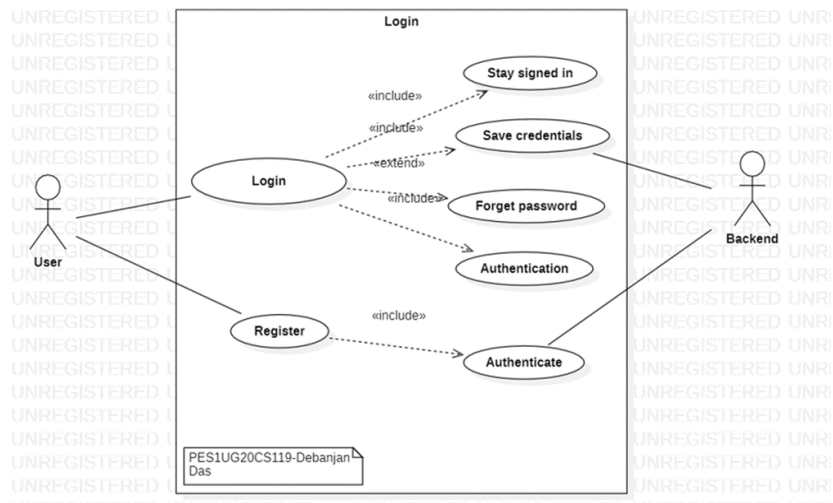
Use Case and Class models

Class Diagram:

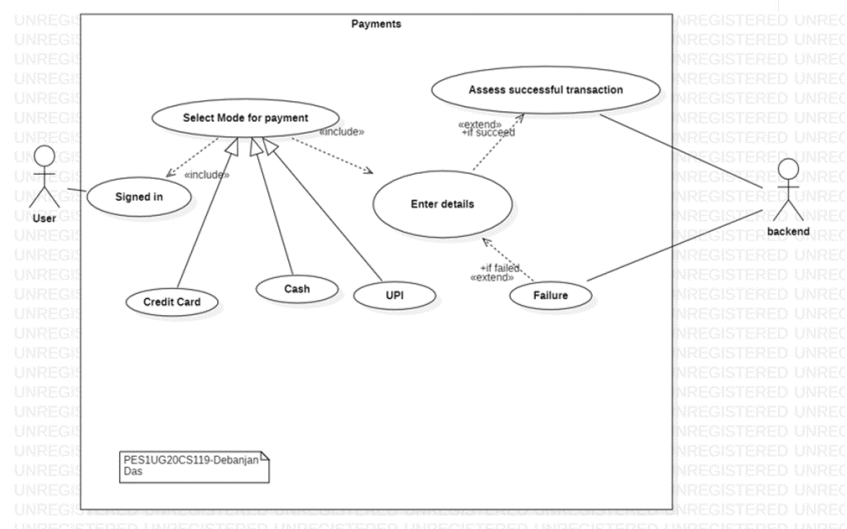


Use case diagrams:

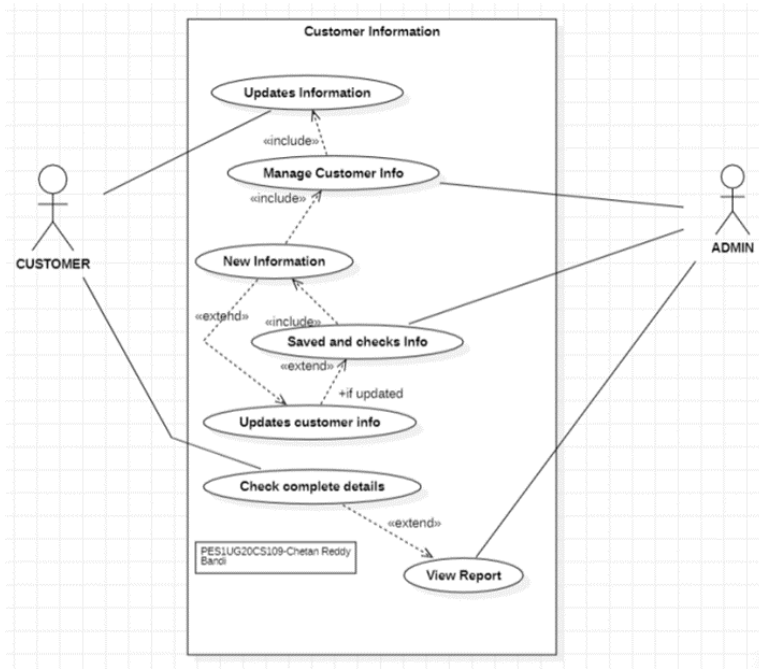
- **Login**



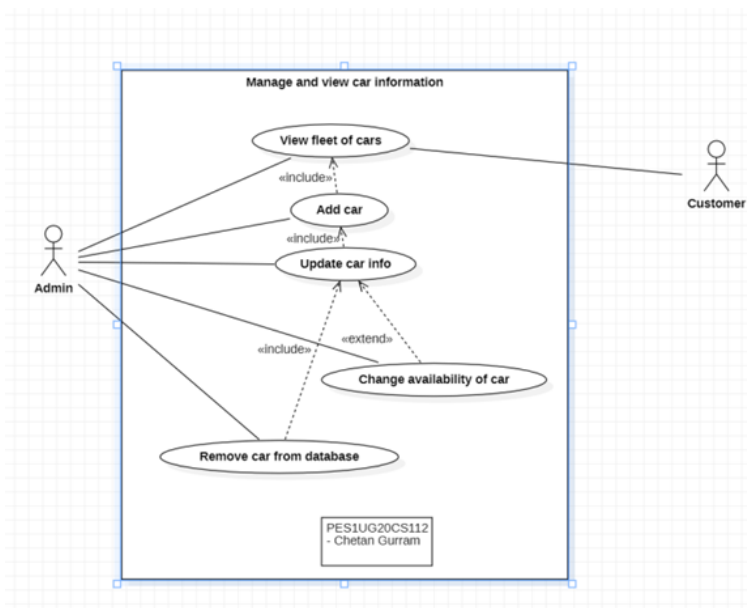
- **Payments**



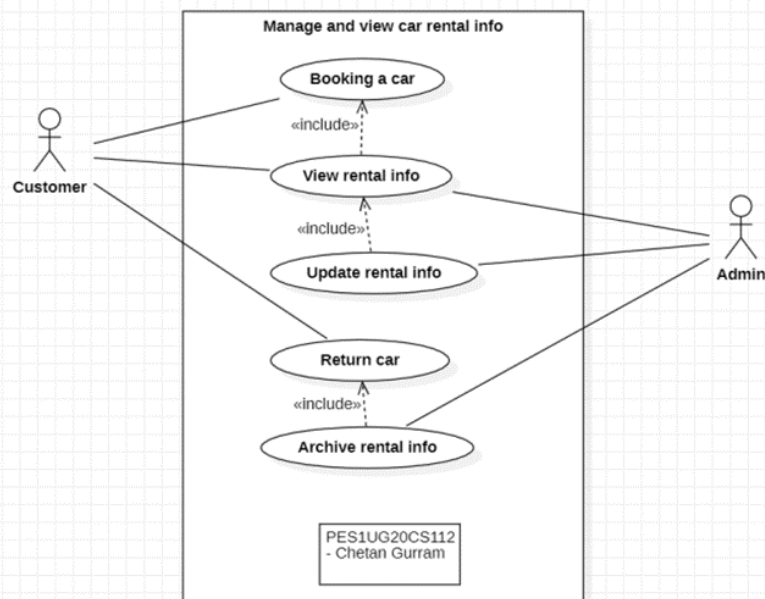
- **Customer Information**



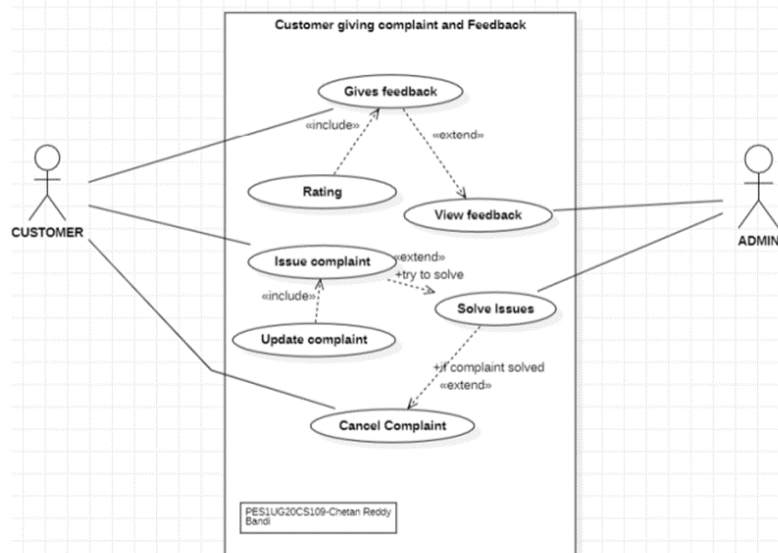
- **Manage and view care information**



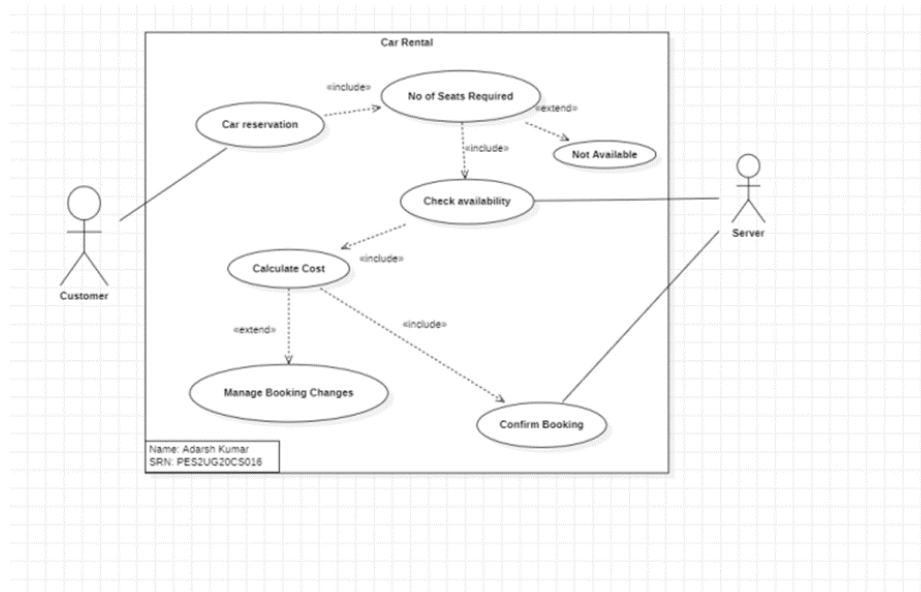
- **Manage and view car rental information**



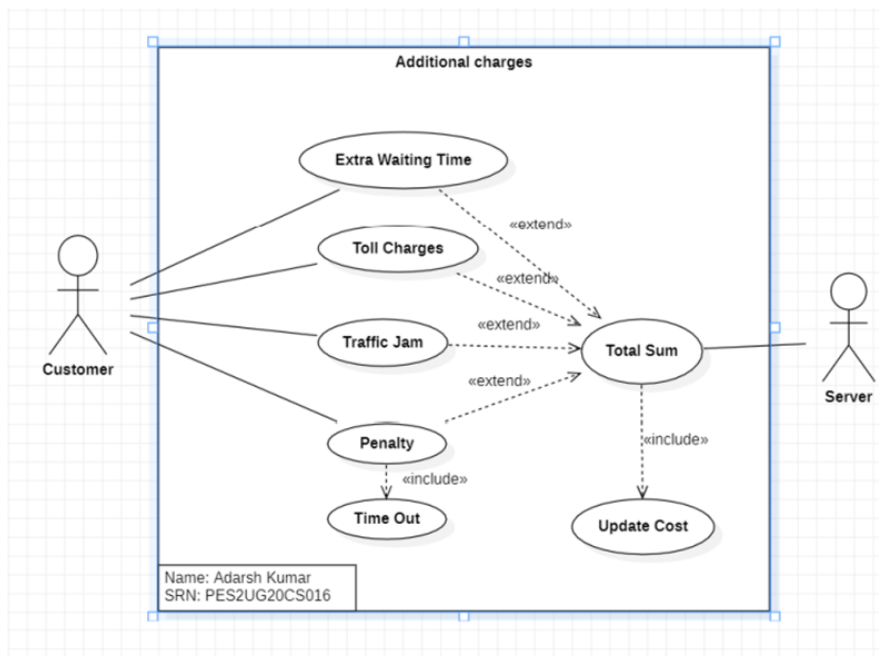
- **Customer Feedback**



- **Car Rental**



- **Additional Charges**



Architecture Patterns, Design Principles and Design Patterns used

The **design principles** used in this project include:

- **Single Responsibility Principle (SRP):** Each class in the project has a single responsibility, and its behavior is focused on that responsibility only.
- **Open/Closed Principle (OCP):** The project is designed in a way that allows extension but does not require modification of the existing code.
- **Keep It Simple, Stupid (KISS):** The project is designed to be simple and easy to understand, with straightforward code and minimal complexity.
- **Separation of Concerns (SoC):** The project separates different concerns and functionalities into different classes, allowing for better maintainability and scalability.

The **architectural patterns** used are:

- **Model-View-Controller (MVC)** - This pattern is used to separate the application into three interconnected components, namely the Model, View, and Controller. The Model represents the data and the business logic, the View represents the user interface, and the Controller acts as an intermediary between the Model and the View.

Github link to the codebase:

https://github.com/AugeGottes/OOADJ_Project

Individual contributions of team members

- Debanjan Das: Login and Payments
- Chetan Gurram: Car Information and Rental Information.
- Chetan Reddy Bandi: Customer Information and Operator details.
- Adarsh Kumar: Booking and new Registration.

Screenshots of the GUI

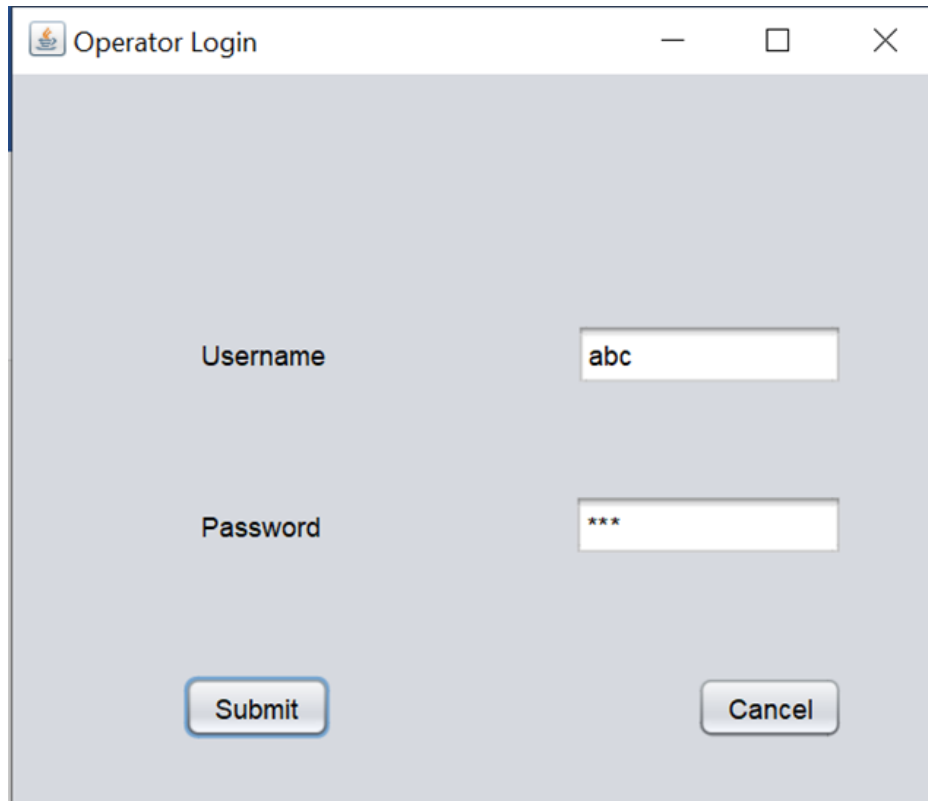
Landing Page:-



Login Page for user:



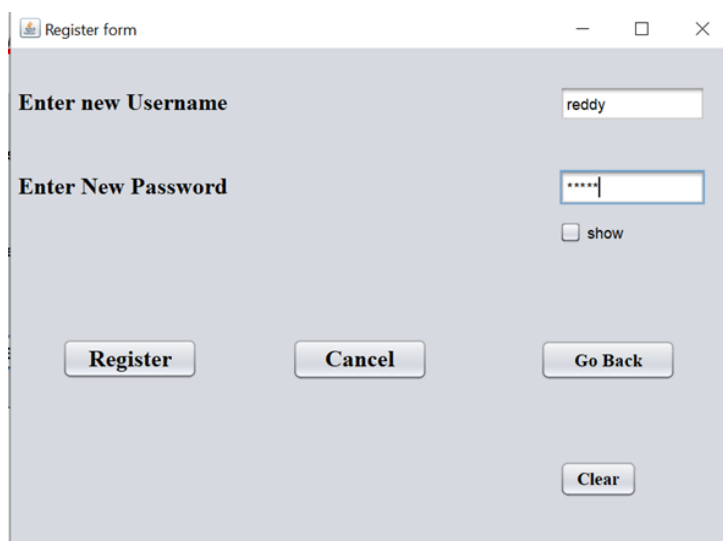
Operator Login Page:-



A screenshot of a web application window titled "Operator Login". The window has a light gray background and a standard Windows-style title bar with minimize, maximize, and close buttons. The login form consists of two input fields: "Username" with the text "abc" and "Password" with three asterisks "***". Below the input fields are two buttons: "Submit" and "Cancel".

Username	abc
Password	***
Submit	Cancel

New User Register Page:



A screenshot of a web application window titled "Register form". The window has a light gray background and a standard Windows-style title bar. The registration form includes two input fields: "Enter new Username" with the text "reddy" and "Enter New Password" with five asterisks "*****". Below the password field is a checkbox labeled "show". At the bottom of the form are four buttons: "Register", "Cancel", "Go Back", and "Clear".

Enter new Username	reddy		
Enter New Password	*****		
<input type="checkbox"/> show			
Register	Cancel	Go Back	Clear

Operator adding Details of car page:-

Add form

Vehicle name

Vehicle number

From

To

Arrival time

Departure time

Facility level

Driver Name

Selection form :

Selection form

MENU OF AVAILABLE CARS

Vehicle Number	Vehicle Name	Facility Level
KA123	Santro	High

☒ SHOW AVAILABLE CARS

Reservation Page:-

Reservation

ENTER DETAILS

Name	Chetan
Phone No	99890349
From	Bangalore
To	Kolkata
Journey Date (yyyy-mm-dd)	2023-01-23
Facility Level	Ac
No of seats required	4
Enter Vehicle No.	KA123
Cost	4000

Done

Delete car from operator:-

Delete

Vehicle Number

KA123

Delete

Go Back

Payment:-

Payment

Enter Name to Confirm:

Payment Through

☐ Credit Card

☐ Debit Card

☐ Cash/dd/Cheque

Submit

Tracker:-

Payment

Enter Name to Confirm:

Payment Through

☐ Credit Card

☐ Debit Card

☐ Cash/dd/Cheque

Submit

Database:

```

C:\ Command Prompt - mysql -u root -p
mysql> show tables;
+-----+
| Tables_in_e_reservations |
+-----+
| bill                      |
| card                     |
| credit                   |
| debit                    |
| details                  |
| ope                      |
| user                     |
| vehicles                 |
+-----+
3 rows in set (0.00 sec)

mysql> select * from details;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| name      | from_place | to_place | facility_level | price  | phno      | qty_seats | journey_date | vehicle_no |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| Chetan   | Mysore     | Mumbai  | Ac             | 3000.00 | 9383388383 | 3         | 2023-08-13  | 1234       |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> select * from ope;
+-----+-----+
| username | password |
+-----+-----+
| abc      | abc      |
| xyz      | xyz      |
| jkl      | jkl      |
+-----+-----+

```

```
mysql> select * from bill;
```

name	vehicle_no	driver_name	from_place	destination	departure_time	arrival_time	price	vehicle_name
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL
Chetan	1234	NULL	Mysore	Mumbai	NULL	NULL	3000.00	NULL

```
3 rows in set (0.00 sec)
```



```
mysql> select * from user;
```

username	password
chetan11718	chetan

```
1 row in set (0.00 sec)
```



```
mysql> select * from vehicles;
```

vehicle_name	vehicle_no	from_place	destination	arrival_time	departure_time	facility_level	cost	Driver_name	status
BENZ	1234	Mysore	Mumbai	04:00:00	07:00:00	Ac	NULL	Adarsh	BOOKED

```
1 row in set (0.00 sec)
```



```
mysql>
```