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# CAR RENTAL MANAGEMENT

EXPERIENCE THE FUTURE OF DRIVING TODAY

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The image displays a car rental management system interface. At the top right is a red sports car. Below it are three windows: 1) 'Car Details' showing a list of cars with columns for ID, Make, Model, Year, License Plate, and Hourly Rate. 2) 'Customer Details' showing fields for First Name, Last Name, Email, and Phone. 3) 'Rental Details' showing a list of rentals with columns for ID, Car, Customer, Rental Date, Return Date, and Total Cost. A bottom window shows a 'Login' screen with fields for Username and Password and a 'Login' button. The date '29/06/2025, 20:41' is visible in the bottom right corner.

ID	Make	Model	Year	License Plate	Hourly Rate
3	Toyota	Avanza	2020	B 1234 ABC	150000.0
4	Toyota	Innova	2020	B 2345 DEF	180000.0
5	Toyota	Fortuner	2021	B 3456 GHI	250000.0
6	Toyota	Aqya	2019	D 4567 JKL	120000.0

ID	Car	Customer	Rental Date	Return Date	Total Cost
215	10	15	2023-11-01T08:00:00Z	2023-11-01T17:00:00Z	1350000.0
216	8	5	2023-11-01T08:00:00Z	2023-11-01T17:00:00Z	1350000.0
217	6	12	2023-11-02T09:00:00Z		0.0
218	23	3	2023-11-03T10:00:00Z	2023-11-05T10:00:00Z	1800000.0



# FEATURES



## ***Login***

Authentication user.



## ***Car Management***

Add, update, delete, and show data car.



## ***Customer Management***

Add, update, delete, and show data customer.



## ***Rental Management (Transaction)***

Add, update, delete, show, and calculate data rental.



## ***Validation***

Can't borrow a car because a particular car is being borrowed



# TECHNOLOGY STACK

## 01 **Backend & Logic:**

- Java: Primary programming language for application logic.
- JDBC Driver MySQL: Library for connecting the Java application to a MySQL database.

## 02 **Database:**

- MySQL: Relational database management system (RDBMS) for storing and managing data.

## 03 **GUI / Frontend:**

- Swing: Standard Java library for building graphical user interfaces (GUIs).
- SwingX 1.6.0: An extension of Swing that provides advanced components like JXDatePicker.

<https://mvnrepository.com/artifact/org.swinglabs/swingx/1.6.1>

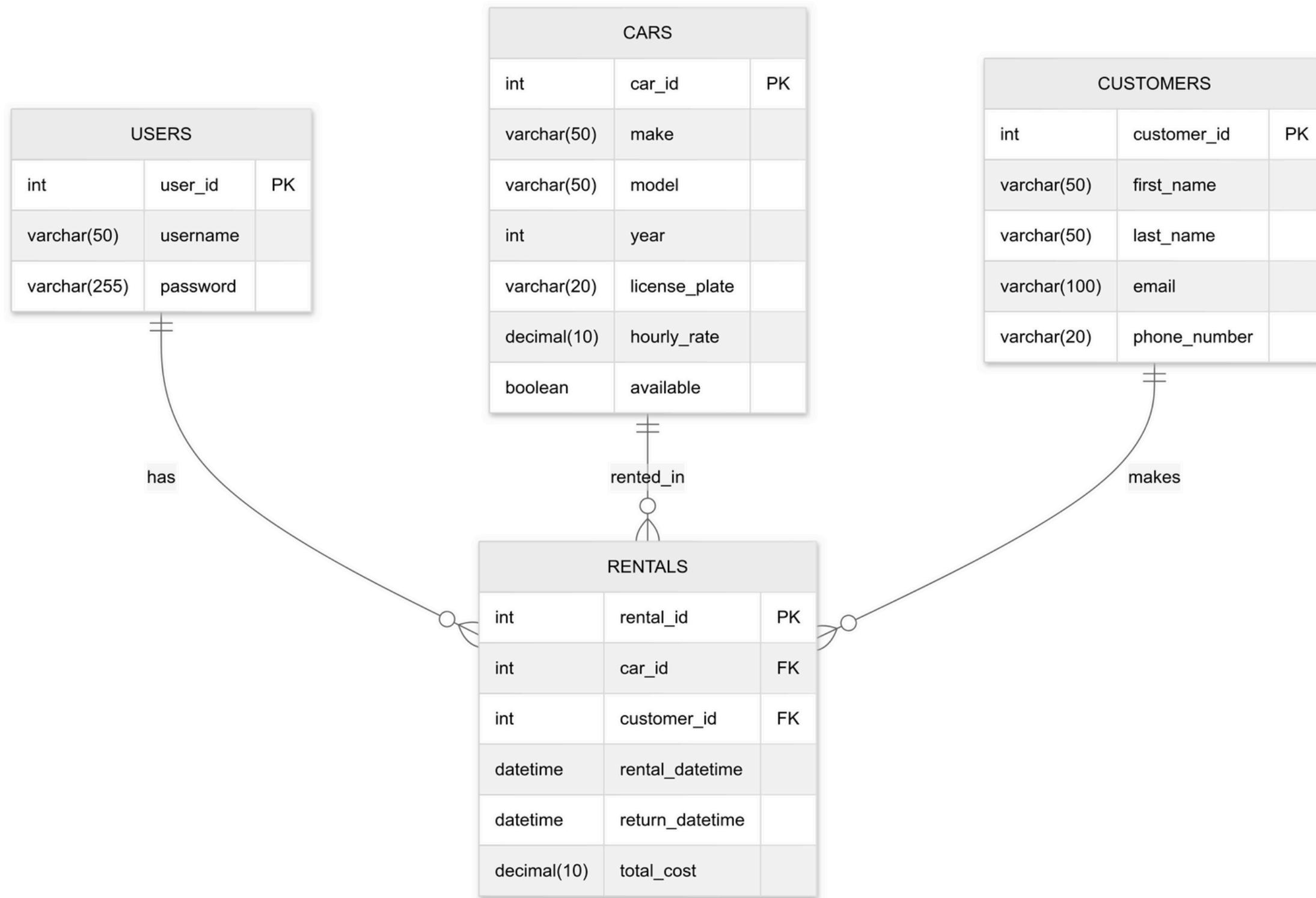
- JFrame & JPanel: Core components for creating window and panel structures.

## 04 **IDE:**

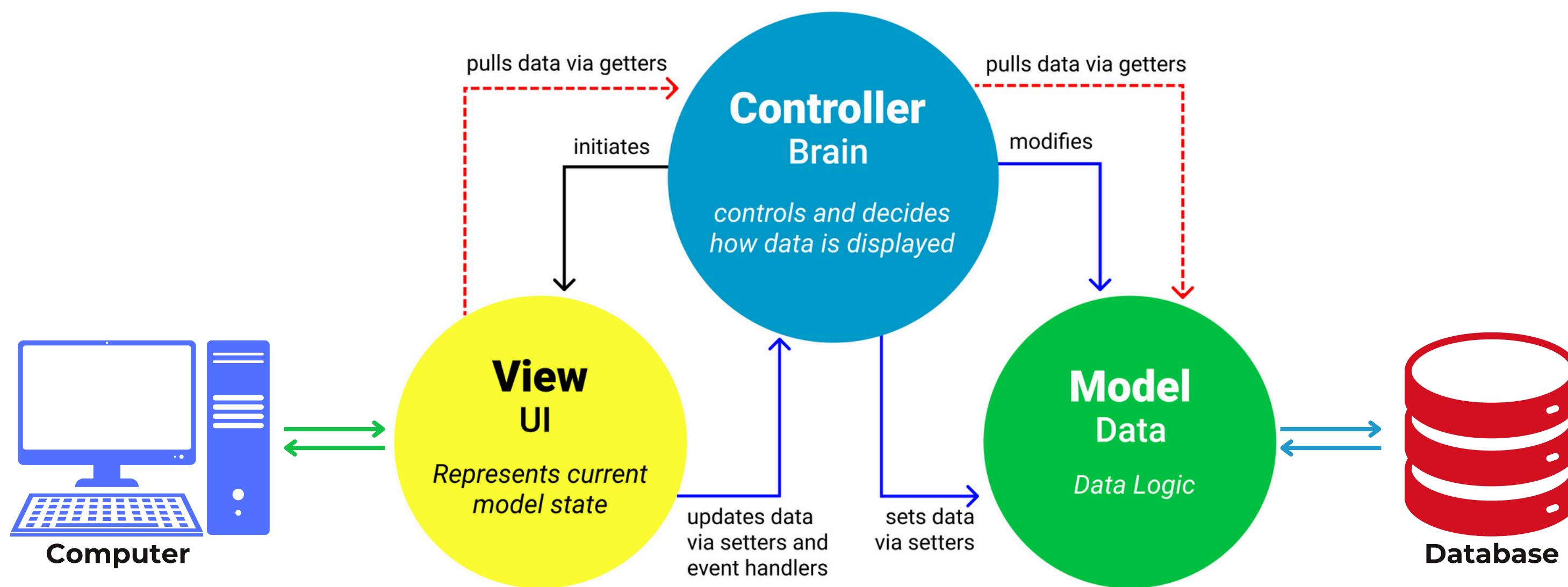
- NetBeans IDE: Integrated Development Environment (IDE) used for coding, debugging, and GUI design.



# ENTITY DIAGRAM RELATIONSHIP



# ARCHITECTURE MODEL VIEW CONTROLLER



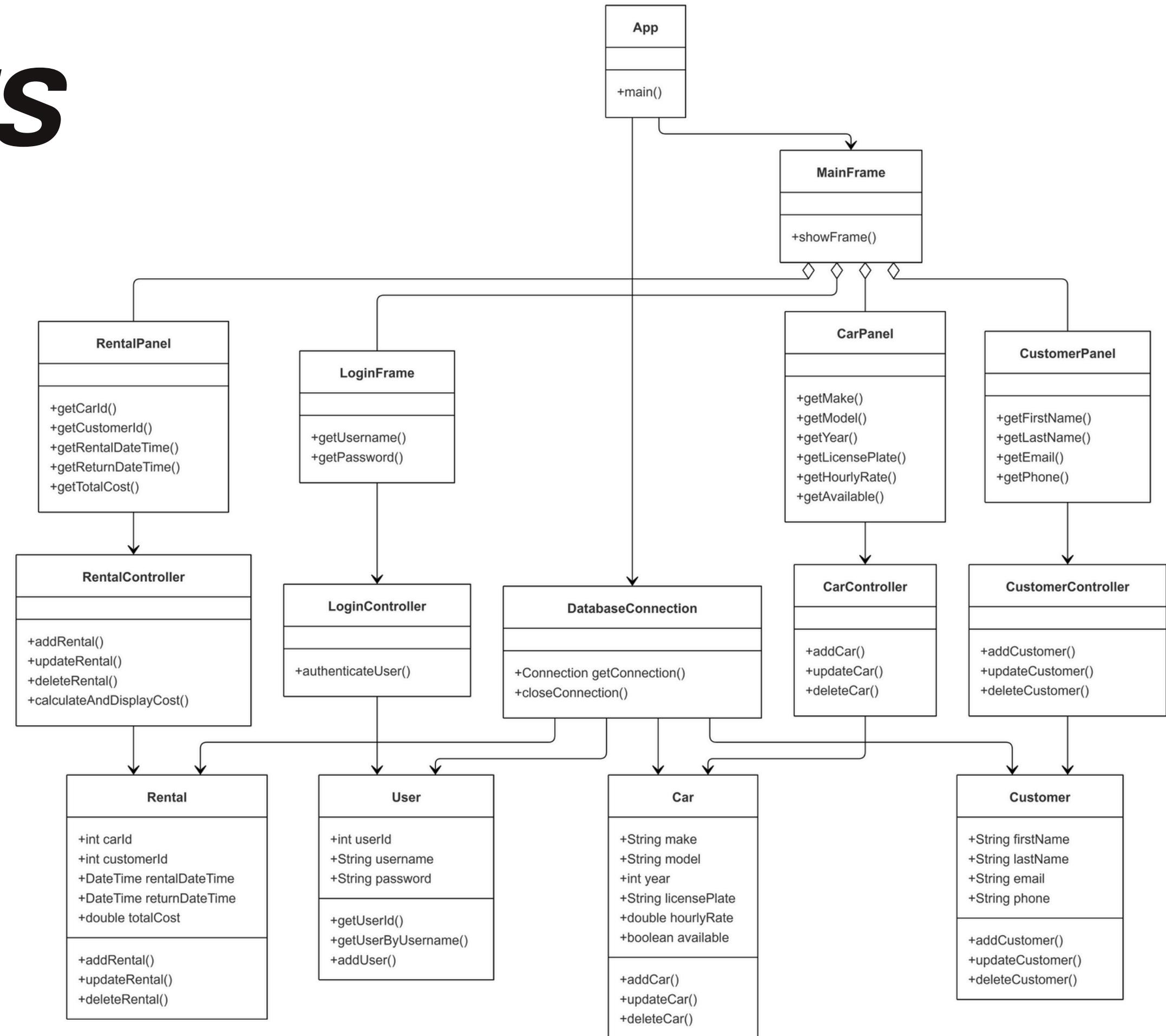
# STRUCTURES

```

car_rental_program/
├── src/
│   └── main/
│       ├── java/
│       └── com/
│           └── currental/
│               ├── controller/ <-- MVC: Controller Layer
│               │   ├── CarController.java
│               │   ├── CustomerController.java
│               │   ├── RentalController.java
│               │   └── LoginController.java
│               ├── model/ <-- MVC: Model Layer
│               │   ├── Car.java (Data structure for cars)
│               │   ├── Customer.java (Data structure for customers)
│               │   ├── DatabaseConnection.java (Handles database interactions - part of model's data access)
│               │   └── Rental.java (Data structure for rentals)
│               └── User.java (Data structure for users/login)
│                   └── view/ <-- MVC: View Layer
│                       ├── CarPanel.java (Displays car-related information)
│                       ├── CustomerPanel.java (Displays customer-related information)
│                       └── MainFrame.java (Main application window, orchestrates other panels)
└── lib/ <-- External Libraries (e.g., JDBC driver, SwingX 1.6.0)
└── db/ <-- Database related files
    └── car_rental_db.sql (Database schema and initial data)

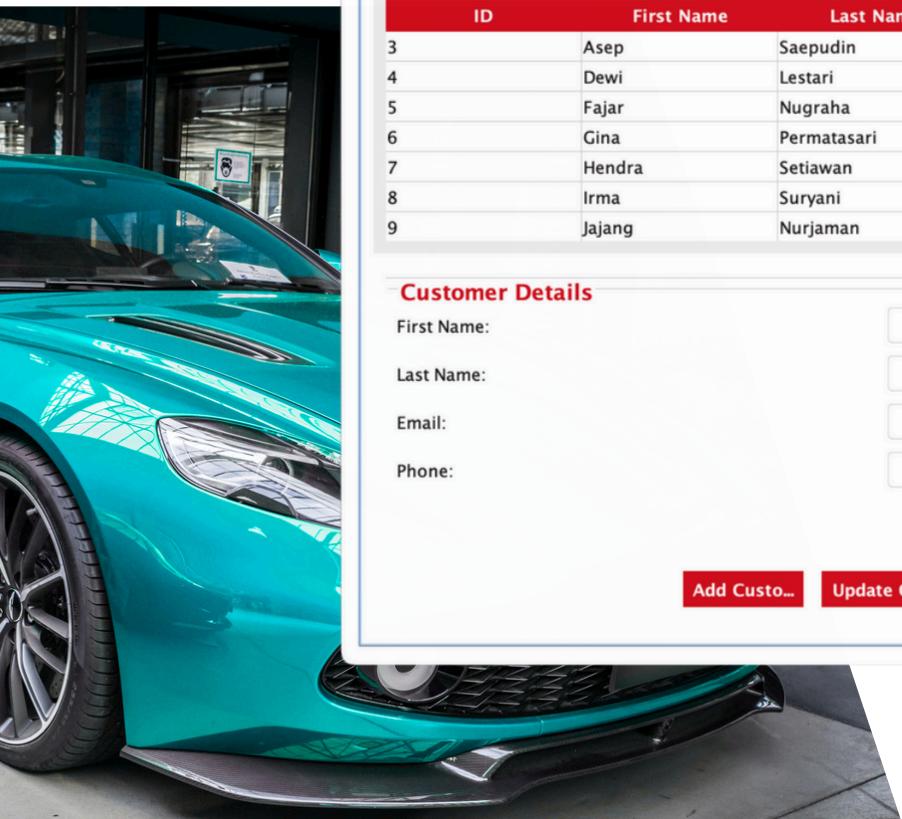
```

README.md <-- Project documentation

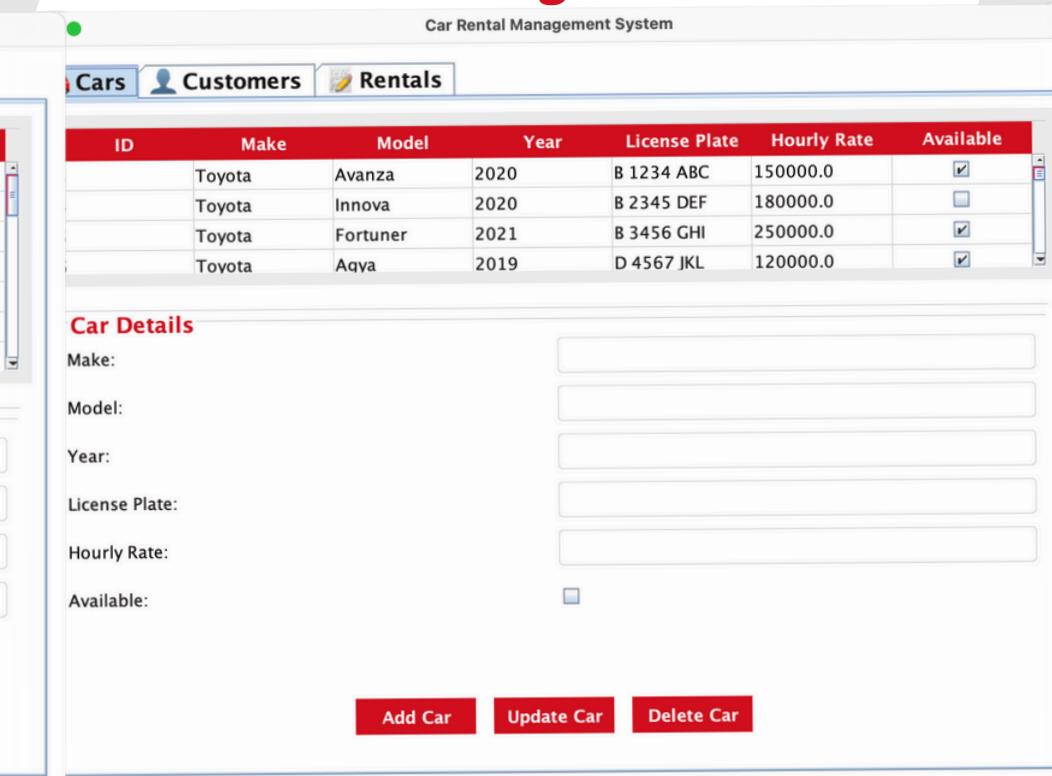


# GRAPHIC USER INTERFACE

02 *Cars Management*

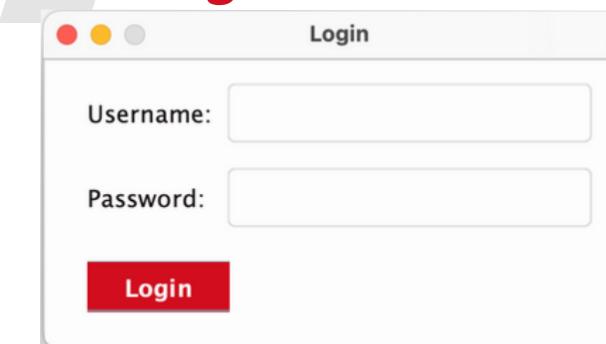


03 *Customers Management*



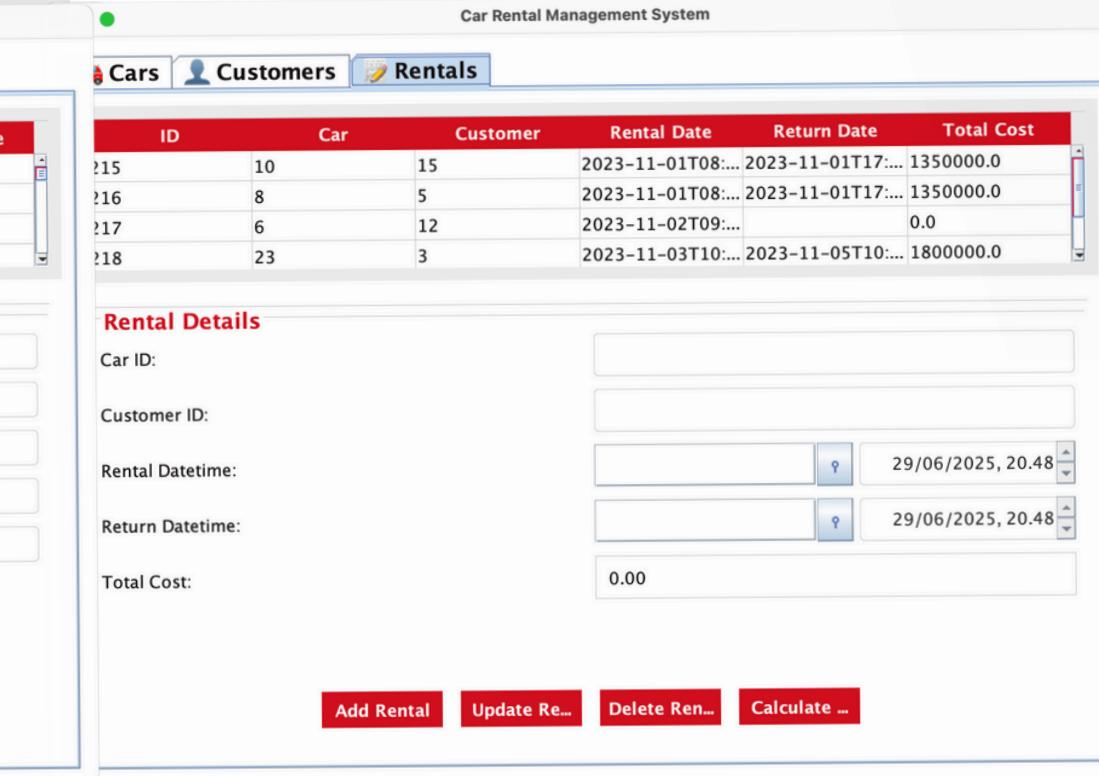
This screenshot shows the 'Customers Management' section. It displays a table of car details including Make, Model, Year, License Plate, Hourly Rate, and Availability status. Below the table is a 'Car Details' form with fields for Make, Model, Year, License Plate, Hourly Rate, and Available status, each with an input field. At the bottom are buttons for 'Add Car', 'Update Car', and 'Delete Car'.

01 *Login*

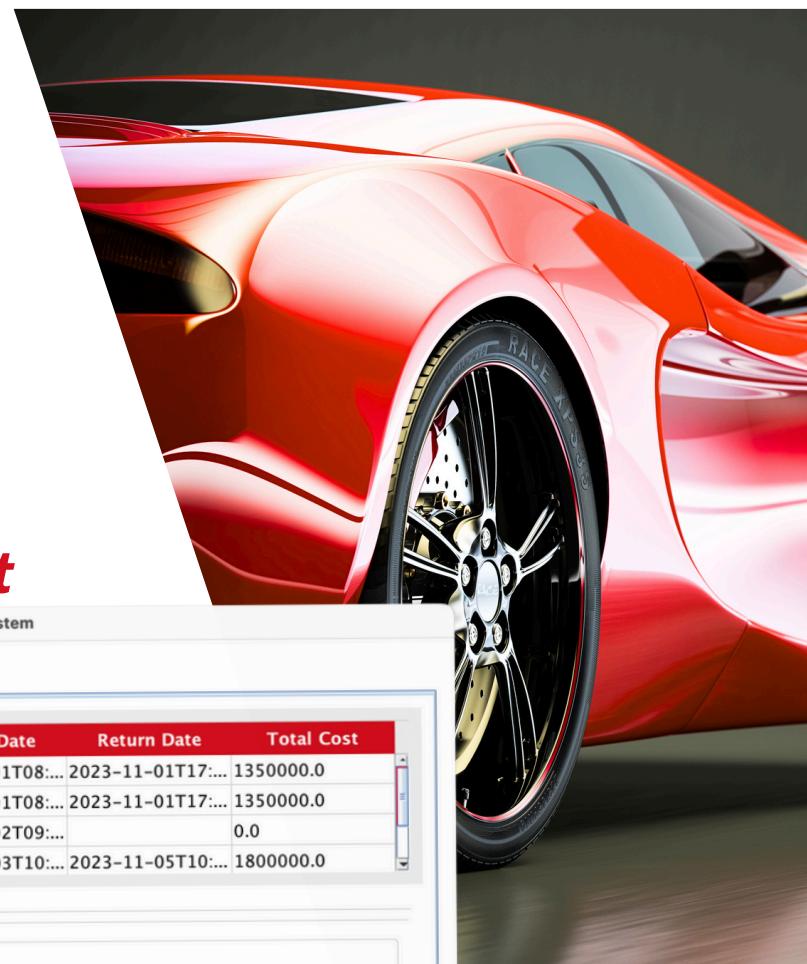


This screenshot shows the 'Login' screen. It has two input fields labeled 'Username:' and 'Password:', and a red 'Login' button at the bottom. The background is a light gray color.

04 *Rentals Management*



This screenshot shows the 'Rentals Management' section. It features a table with columns for ID, Car, Customer, Rental Date, Return Date, and Total Cost. Below the table is a 'Rental Details' form with fields for Car ID, Customer ID, Rental Datetime, Return Datetime, and Total Cost, each with an input field. At the bottom are buttons for 'Add Rental', 'Update Re...', 'Delete Ren...', and 'Calculate ...'.





# LET'S DEMO

Continues...

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# THANK YOU!

ANY QUESTION?

