



Name of the School: School of Computer Science Engineering
Course Code: RIUC201C **Course Name:** JAVA PROGRAMMING

Car Rental System

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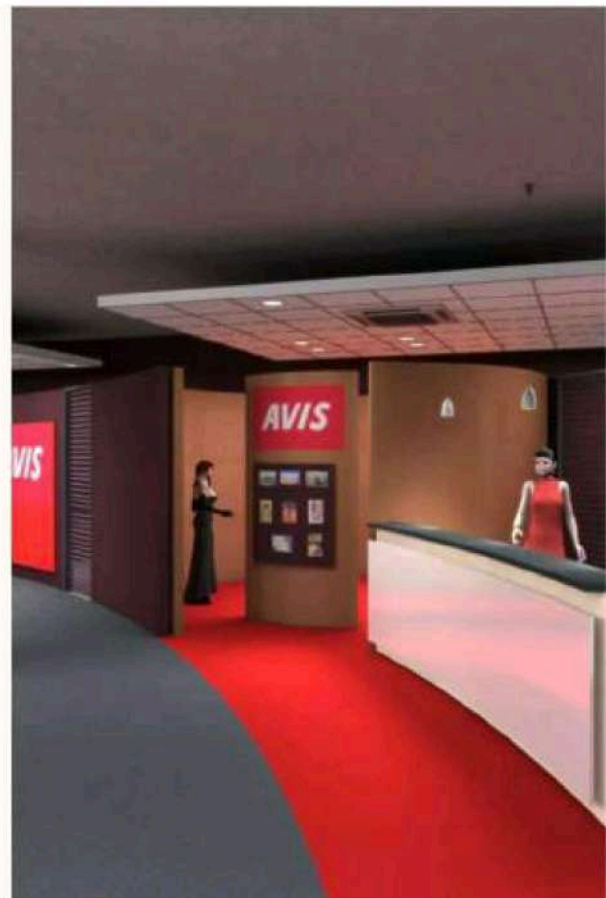
Programme Name: B.Tech (CSE)

Car Rental System: Project Overview

This college project builds a simple yet functional car rental system.

Technologies used are Java, GUI, and MySQL database integration.

The system supports distinct Admin and User roles for management and rental.



```
CarRentalSystem/  
├── src/  
│   ├── model/  
│   │   ├── User.java  
│   │   ├── Car.java  
│   │   └── Rental.java  
│   ├── dao/  
│   │   ├── UserDAO.java  
│   │   ├── CarDAO.java  
│   │   ├── RentalDAO.java  
│   │   └── DBConnection.java  
│   └── view/  
│       ├── LoginFrame.java  
│       ├── AdminDashboard.java  
│       ├── UserDashboard.java  
│       ├── CarManagementFrame.java  
│       ├── UserManagementFrame.java  
│       ├── RentalManagementFrame.java  
│       └── AvailableCarsFrame.java  
└── Main.java
```

System Architecture



View Layer

GUI interface for user interaction using Java Swing/FX.



Model Layer

Classes like Car, Customer, and Rental represent core entities.



Data Access Layer

DAO classes handle database operations via MySQL connections.

Database Design (MySQL)

Car Table

- car_id (INT, PK)
- model, make (VARCHAR)
- year (INT)
- price_per_day (DECIMAL)
- availability (BOOLEAN)

Customer Table

- customer_id (INT, PK)
- first_name, last_name (VARCHAR)
- email, phone (VARCHAR)

Rental Table

- rental_id (INT, PK)
- car_id, customer_id (INT, FK)
- start_date, end_date (DATE)
- total_price (DECIMAL)

Admin Module: Add Car

- Car Details Form

Admins input Model, Make, Year, Price, and Availability.
- DAO Method

``addCar(Car car)`` in CarDAO saves new cars to database.

- Example Entry

2023 Toyota Camry rented at \$45 per day.

Manage Cars

carid	brand	model	status	costperday	custid	lastrentdate	Renter's Name
1	Toyota	Avalon	booked	450	4	2021-06-11T14:...	Wally Bayota
2	Lamborghini	Urus	booked	500	2	2021-06-11T14:...	Mia Malkova
3	Nissan	GT-R	booked	550	10	2021-06-11T22:...	John Cena
4	Chevrolet	Corvette	booked	550	1	2021-06-11T14:...	Piero Pascual
5	Audi	TT RS	available	530			
6	Jasper	Jean	available	839			
8	Ford	Raptor	available	381		2021-06-11T22:...	
9	Jeep	Gladiator	available	400		2021-06-11T22:...	

Car Information

Brand

Model

Search

Car ID

Cost Per Day

Status

Save

Delete

Update

Back

Mark As Available

Admin Module: Manage Customers

- ### Customer List

View, add, update, or delete customer records easily.
- ### DAO Operations

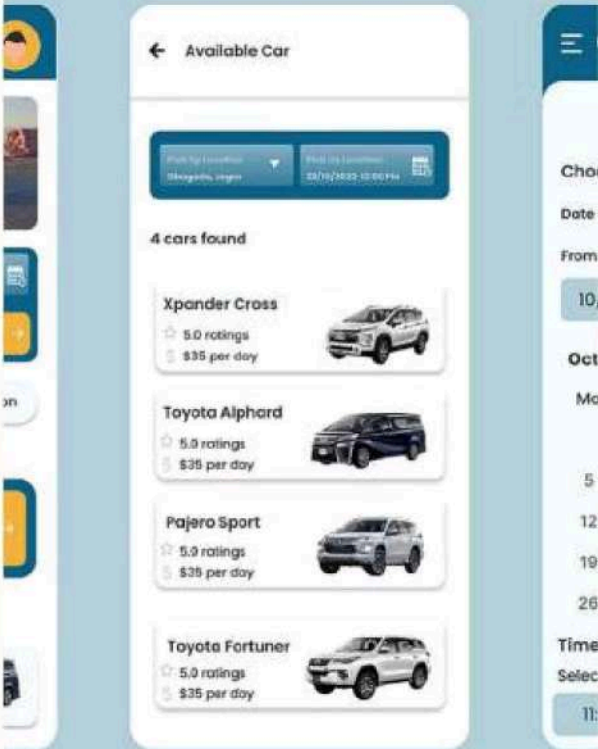
CRUD methods in CustomerDAO manage customer data efficiently.
- ### Key Methods

``addCustomer``, ``updateCustomer``, and ``deleteCustomer`` used.



User Module: Car Rental

- Car Search
Users filter cars by model, make, or rental dates.
- Availability Display
GUI table shows only cars free during chosen dates.



Registered Customers

custid	name	contact	address
1	Pablo Pascual	09873645367	Kanto street 1
2	Mia Markova	09947645367	BDSG homes
3	Riley Reid	09888736367	Couch Chaz.
4	Wally Bayla	09888739384	GM+ road 95
5	Wden Richards	09837839384	Kaliya St. 313
6	Lara Rhoades	09384756123	Backlan stre.
8	Ash Ketchup	09878354637	Kanto Region
9	Hayden Kho	09383838383	Hall St 469
10	John Cena	09384718289	YouCantSteal.
12	Thomas Tuq...	09384728392	Andromeda G.
13	Donal Trump	09384728474	White House
14	Kyle Ivemp	0938473849	Brooklyn st. 234

Available Cars

Car_ID	brand	model	status	costperday
5	Audi	TT RS	available	530
6	Jasper	Jeon	available	839
8	Ford	Raptor	available	381
9	Jeep	Gladiator	available	400

Rent A Car

Car ID

Customer ID

User Module: Booking Process

- Car Selection**
 Choose a car and input rental start and end dates.
- Price Calculation**
 Total price computed based on rental duration and daily rate.
- Confirmation**
 Booking confirmation and payment processing on the spot.

DAO Classes Implementation

CarDAO

- getAllCars()
- getAvailableCars(Date start, Date end)
- addCar(Car car)
- updateCar(Car car)
- deleteCar(int carId)

CustomerDAO

- getCustomer(int id)
- addCustomer(Customer customer)
- updateCustomer(Customer customer)
- deleteCustomer(int id)

RentalDAO

- createRental(Rental rental)
- getRental(int rentalId)

GUI Implementation (Java Swing/FX)



Technology Choice

Built with Java Swing or JavaFX for responsive GUI.



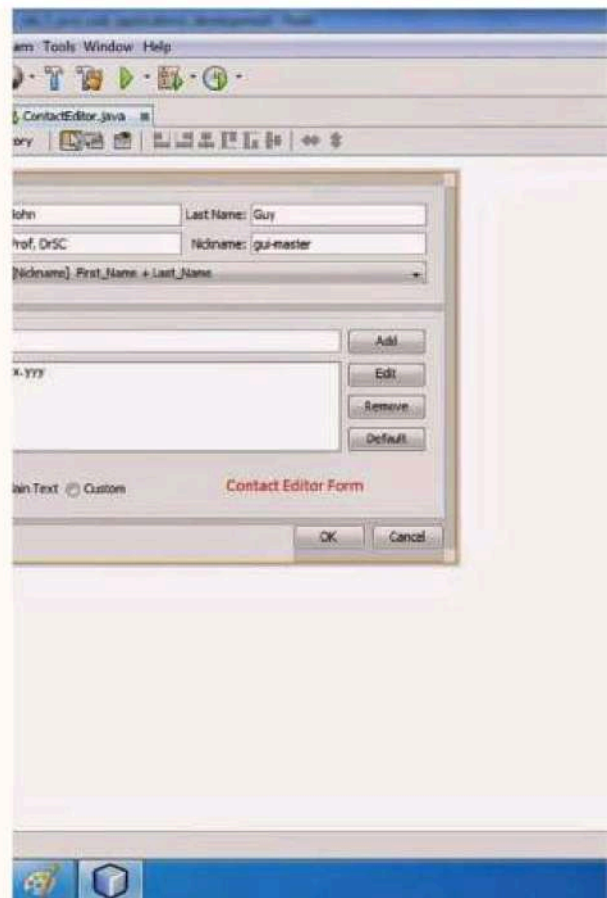
Separate Panels

Distinct views for admin and user modules improve usability.



Event Handling

Buttons and forms wired with event listeners for actions.





Conclusion & Future Enhancements



Project Outcome

Core functionality demonstrates Java, GUI, and database skills.



Next Steps

Add online payments, user accounts, and better UI.