A

PROJECT REPORT ON

CAR SELL/RENT APPLICATION

By

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Subject : System Design Practice – CE625

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CERTIFICATE

This is to certify that the practical / term work carried out in the subject of **System Design Practice** and recorded in this Report is the bonafide work of

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1. ABSTRACT

-> The car rental and sales application is a platform that allows users to easily rent or purchase Cars. The application provides a user-friendly interface, where users can browse a wide variety of cars, including hatchbacks, Small Sedan , luxury, and sports cars. Users can search for cars based on their preferred City, date, etc, for rental. The application also allows users to filter results based on car type, price range, and other preferences.

-> For car sales, the application offers a platform where users can list their cars for sale. The application provides a secure platform for sellers to connect with potential buyers and complete transactions online. The application offers a transparent and streamlined process, where buyers can browse through a range of cars and also can inquire directly to the owner of their preferred vehicles.

-> Overall, Car Rental And Sales Application Offers A Comprehensive Platform For Users To Easily Rent or Purchase Car, With Features That Enhance Overall Experience.

2. INTRODUCTION

2.1 Brief Introduction:-

-> Our Aim Is to Design , Implement And Test A Car Rent And Sell System. This Enables User To List A Vehicle Of His Own For Rent. Which Can Be used By Another Customer. This System Also Allow User To Sell Their Car. Which Can Be Buy By Other Customer. This Web Application Has A Very User Friendly Interface. Thus The Users Will Feel Very Easy To Work On It. By Using This System Admin Can Manage Customer and Car details. The Car Information Can Be Added To The System By User. And Existed Car Information Can Be Edited Or Deleted Too By Admin Or Respective Car Owner.

-> We Try To Develop Application So That There Is No Much Delay In The Availability Of Any Car Information, Whenever Needed, Car Information Can Be Captured Very Quickly And Easily. The Customers Can Also Use The System To Get Car On Rent Or Purchase The Car. The Customer Should Create A New Account For The First Time To Register Him/ Her Into The System ,Later On He/She Can Log Into The System With His/ Her Created Account. Then He/She Can Book The Available Cars For Rent Or Can Buy Available car .This System Will Helpful To The Admin As Well As To The Customer Also.

2.2 Technology, Tools and Platform :-

Technology : -

- **NodeJS**

Node.JS (Node) is an open source development platform for executing JavaScript code server-side. Node is useful for developing applications that require a persistent connection from the browser to the server and is often used for real-time applications such as chat, news feeds and web push notifications.

- **ExpressJS**

Express is a node JS web application framework that provides broad features for building web and mobile applications. It is used to build a single page, multipage, and hybrid web application. It's a layer built

on the top of the Node JS that helps manage servers and routes.

- **ReactJs**

React (also known as React.js or ReactJS) is a free and open source front-end JavaScript library for building user interfaces based on UI components. It is maintained by Meta (formerly Facebook) and a community of individual developers and companies.

- **MongoDB**

MongoDB is a non-relational document database that provides support for JSON-like storage. The MongoDB database has a flexible data model that enables you to store unstructured data, and it provides full indexing support, and replication with rich and intuitive APIs.

Platform :-

- VS Code

Visual Studio Code

Visual Studio Code is a code editor redefined and optimized for building and debugging modern web and cloud applications

Tools :-

- Postman

POSTMAN

Postman is an API Platform for developers to design, build, test and iterate their APIs.

3. SOFTWARE REQUIREMENTS SPECIFICATIONS

3.1 Product Scope

-> It Is Proposed To Develop A Application That Would Be Used By Users Who Register In System To Buy/Sell/Rent Him/Her Car And Manage Their Car Data. The Following Is An Informal Description Of The Requirements Of This Application As Worked Out By The Team Members To Develop The Functional And Non-Functional Requirements For The Software.

-> A Normal User Can Manage His Or Her Car, They Can Buy/Sell Or Rent The Car Or The Can Give The Review About Their Experience With Application. They Can Edit Their Personal Information. Admin Has All The Access Of Application He Can Edit All The Data Of User Or Data Of Car.

3.2 Types Of User

-> Here, There Are Two Type Of User Admin And Customer (End-User).

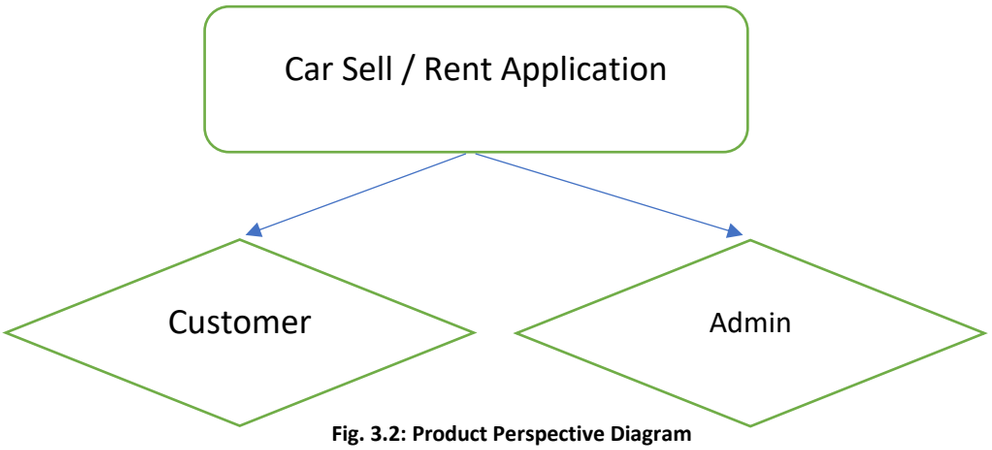


Fig. 3.2: Product Perspective Diagram

i) FUNCTIONAL REQUIREMENTS

1) Mange_Registration :

R.1.1 : New_User_Registration:

->

Description : Using This User Can Register His/Her Self In System.

Input : All Necessary Details.

Output : Confirmation Message For User Successfully Registered Or Error Response By Server In Case Of Error.

R.1.2 : Forget_Password :

->

Description : Using This User Can Know His Password .

Input : Enter your email id.

Output : E-mail Has Been sent By Server to email id, Containing Link Where User Can Update Password

2) Login :

->

Description : This Process Allow Authorized Users To Access The System.

Input : Username and Password.

Output : Successfully Logged In / Invalid Username Or Password.

3) Manage_Buy/Sell_Car:

R.3.1 : By User :

R.3.1.1 : Buy_Car :

->

Description : Using This Functionality User Can Buy A Particular Car.

Input : User Selection.

Output : Redirect to Detail Car Page For Particular Car.

R.3.1.2 : Show_Availablity_of_Car_for_Sell :

->

Description : Using this functionality User can see all available car For Sell.

Input : User Selection

Output : List of Car Available.

R.3.1.3 : Search Car :

->

Description : Using this functionality User can search car based on his/her requirement.

Input : User Selection

Output : List of Car Based on User's Selection.

R.3.1.4 : Sort Car :

->

Description : Using this functionality User can sort car based on price of car.

Input : User Selection

Output : List of Car Based on User's Selection.

R.3.1.5 : Add_Car_Details :

->

Description : Using this functionality User can Add Car Data.

Input : User Selection

Output : Appropriate Success Or Unsuccess Response From

The Server.

R.3.1.6 : Update_Car_Details :

->

Description : Using this functionality User can Update Car Data Which he/she added for Sell/Rent.

Input : New Details Of Car.

Output : Appropriate Success Or Unsuccess Response From The Server.

R.3.1.7 : Delete_Car_Details :

->

Description : Using this functionality User can Delete Car Details.

Input : User Selection.

Output : Appropriate Response From The Server.

R.3.2 : By Admin :

R.3.2.1 : Show_Availablity_of_Car_for_Sell :

->

Description : Using this functionality Admin can see All Car Listed For Sell Or Rent.

Input : Admin Selection

Output : List of Listed Car For Sell Or Rent.

R.3.2.2 : Update_Car_Details :

->

Description : Using this functionality Admin can Update Car Data added By User for Sell/Rent.

Input : New Data Of Car.

Output : Appropriate Response From The Server.

R.3.2.3 : Delete_Car_Details :

->

Description : Using this functionality Admin can Delete Car Details.

Input : Admin Selection.

Output : Appropriate Response From The Server.

4) Manage_Review:

R.4.1 : For User :

R.4.1.1 : Add_Review :

->

Description : Using This Functionality User Can add Review based on his/her Experience on Application.

Input : Enter user's name, email and some Description .

Output : Review Added Successfully.

R.4.2 : For Admin :

R.4.2.1 : View_Review :

->

Description : Using this functionality Admin can View Review Which is added by user.

Input : Admin Selection.

Output : All Reviews Added By User.

5) Manage_User_Profile

R.5.1 : For User :

R.5.1.1 : Show_User_Data :

->

Description : Using this functionality User can see His / Her Profile

Input : User Selection

Output : Detail Of User.

R.5.1.2 : Update_User_Details :

->

Description : Using this functionality User can Update His/Her Details.

Input : New User Details.

Output : Appropriate Response From The Server.

R.5.1.3 : Delete_User_Details :

->

Description : Using this functionality User can Delete His/Her Account From System.

Input : User selection.

Output : Appropriate Response From The Server.

R.5.2 : For Admin :

R.5.2.1 : Show_User_Data :

->

Description : Using this functionality Admin can see All User Registered In The System.

Input : Admin Selection

Output : List of Registered User Into System.

R.5.2.2 : Update_User_Details :

->

Description : Using this functionality Admin can Update User Data.

Input : New Data Of User.

Output : Appropriate Response From The Server.

R.5.2.3: Delete_User_Details :

->

Description : Using this functionality Admin can Delete Any User From The System.

Input : Admin Selection.

Output : Appropriate Response From The Server.

6) Manage_Payment:

->

Description : Using This Functionality User Can Make Payment Online For Buy Or Rent Car.

Input : Multiple Type Of Payment Option Available For Example UPI/Debit/Credit Card Etc.

Output : Due To Not Having Access Of Real Time Razorpay Key Real Time Transaction Can Not Be Done.

ii) NON - FUNCTIONAL REQUIREMENTS

N.1 Usability : The system should Be a user-friendly , with clear instructions for all actions. Users should be able to Work On Any Functionalities Without Having Much Prior Knowledge About Same.

N.2 Database : A data base management system that is available free of cost in the public domain should be used as Database. In this we are using MongoDB Atlas as Database.

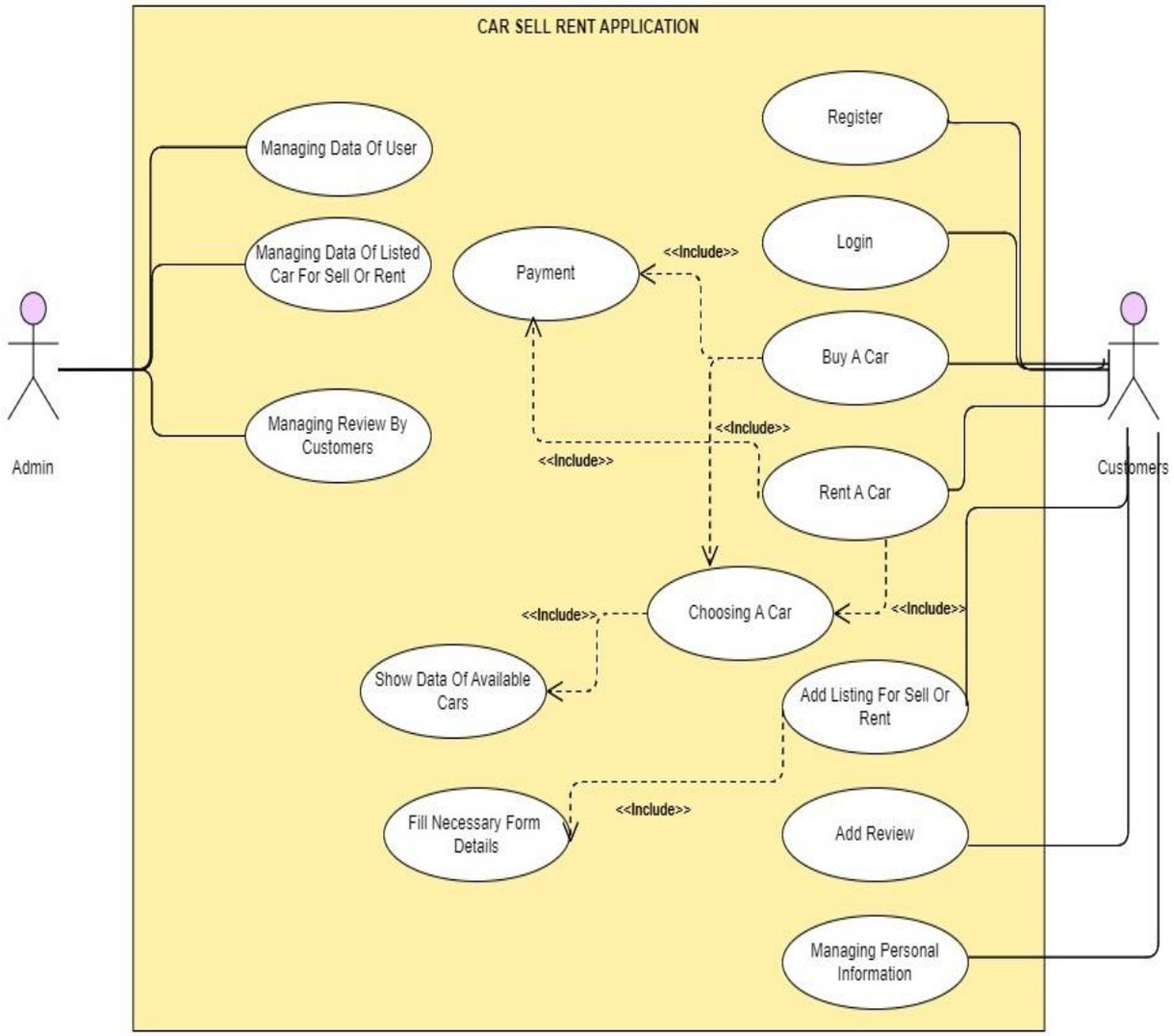
N.3 Reliability : The system should be reliable, There Should Not Be Much Delay For Sending Any Type Of Response By Server.

N.4 Security: The system should be secure, with appropriate measures in place to protect user data from unauthorised access.

4. Design

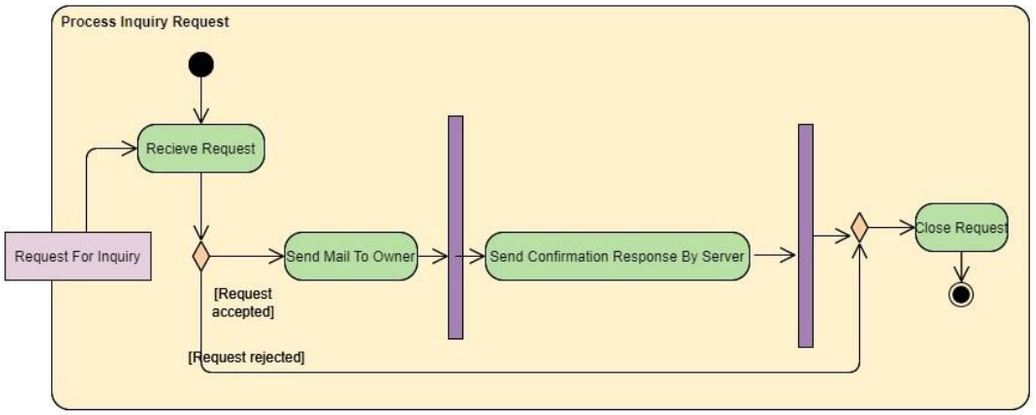
i) Use Case Diagram :

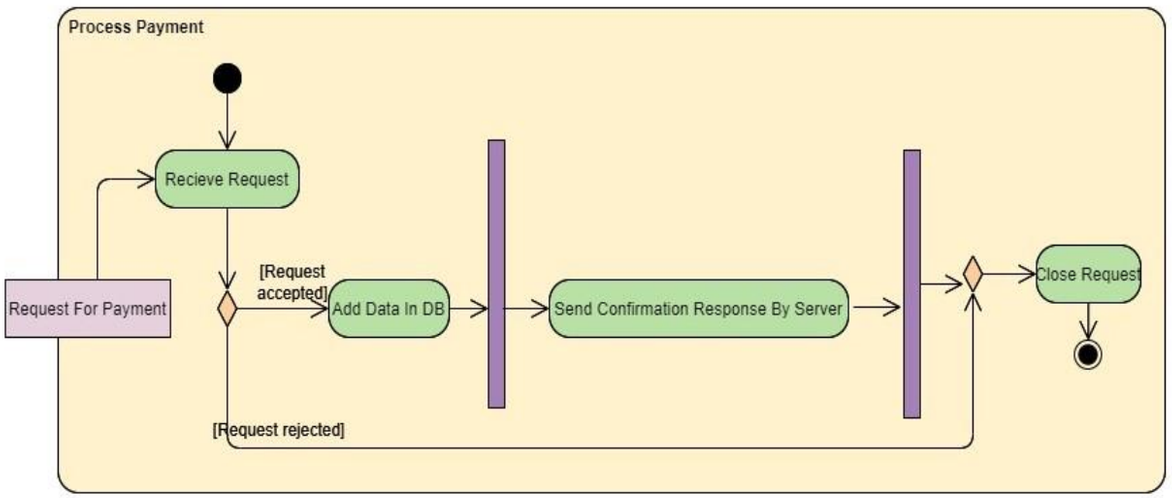
->



ii) Activity Diagram :

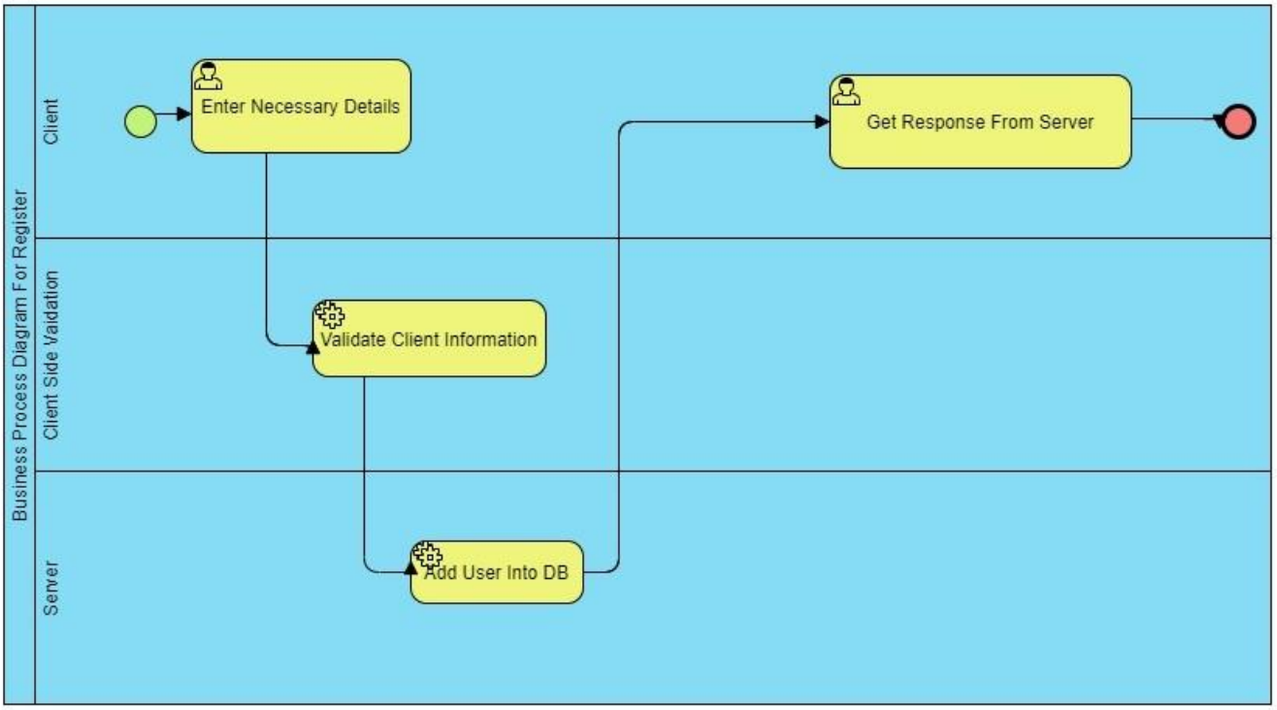
->

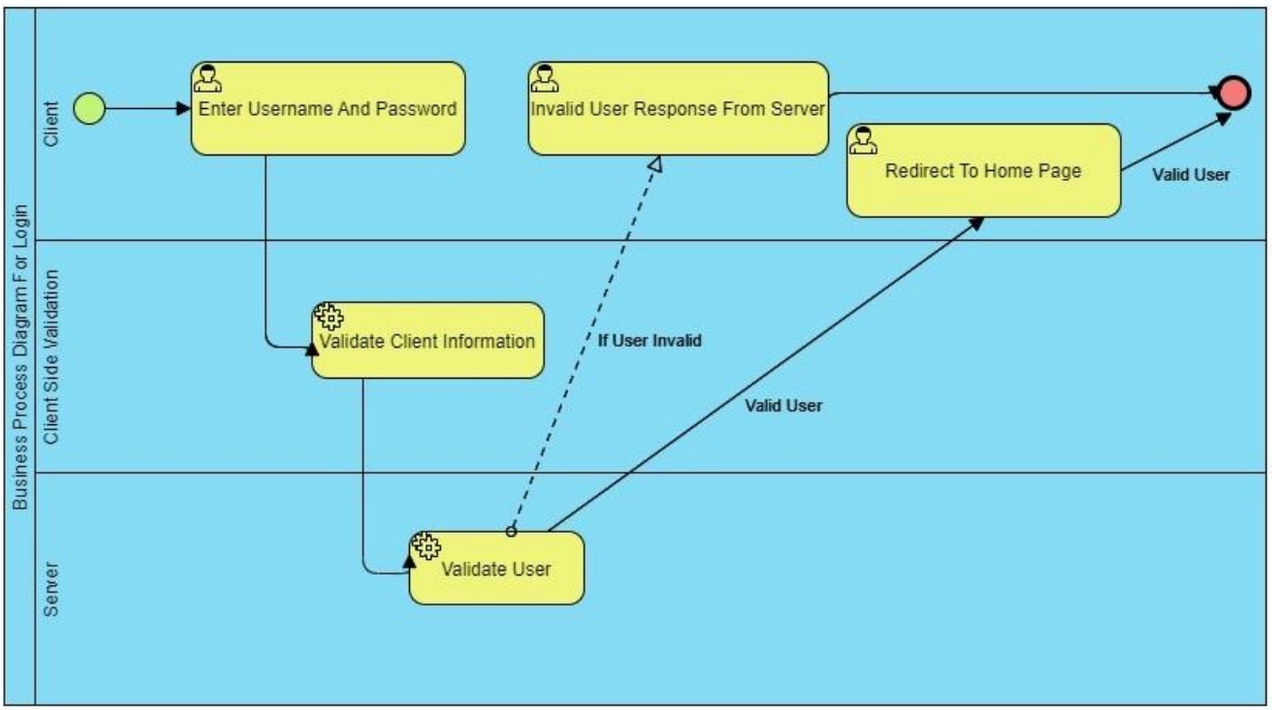


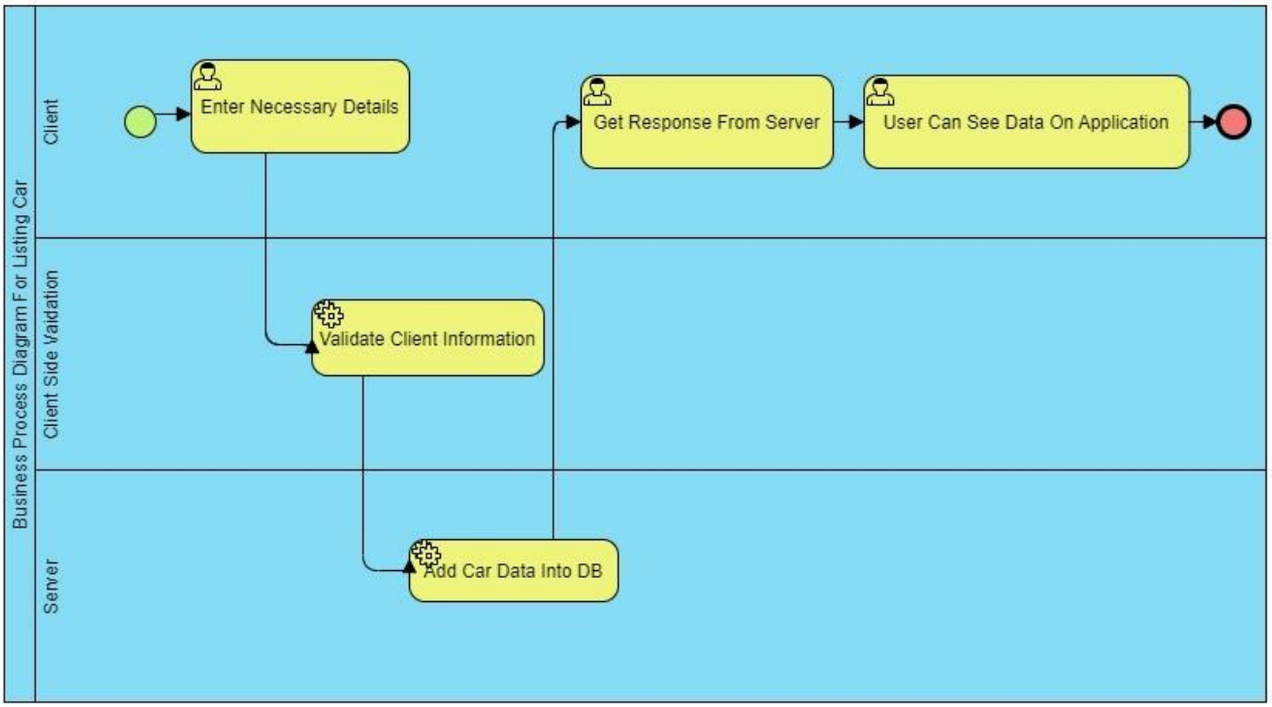


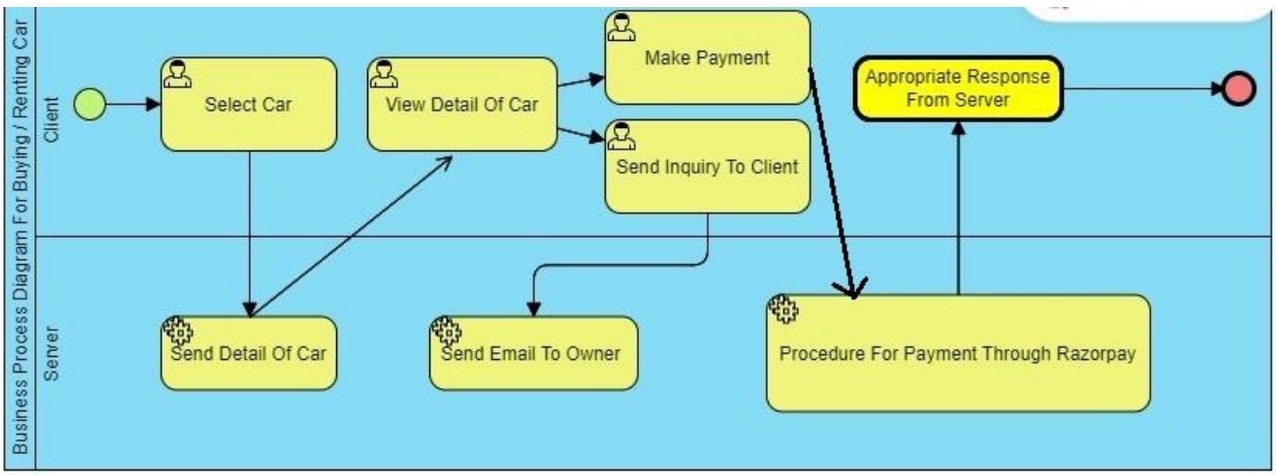
iii) Business Process Diagram :

->






Business Process Diagram For Listing Car
Client
Client Side Validation
Server
Enter Necessary Details
Get Response From Server
User Can See Data On Application
Validate Client Information
Add Car Data Into DB


Business Process Diagram For Buying / Renting Car
Client
Server
Select Car
View Detail Of Car
Make Payment
Send Inquiry To Client
Appropriate Response From Server
Send Detail Of Car
Send Email To Owner
Procedure For Payment Through Razorpay

iv) Data Dictionary :

Customer			
Sr no.	Field Name	Datatype	Required
1	Name	String	Yes
2	Mobile.no	String	Yes
3	Email	String	Yes
4	Address	String	Yes
5	Password	String	Yes
6	Confirm Password	String	Yes

Sell_car			
Sr no.	Field Name	Datatype	Required
1	Customer_Id	String	Yes
2	Customer_Name	String	Yes
3	Mobile.no	String	Yes
4	Email	String	Yes
5	Car_Name	String	Yes

6	Company_Name	String	Yes
7	Model_year	String	No
8	Color	String	Yes
9	Address	String	Yes
10	Category	String	Yes
11	Price	Number	Yes
12	No_of_Seats	Number	Yes
13	Fuel_Type	String	Yes
14	Vehicle_Availability	String	Yes
15	Image1	String	Yes
16	Image2	String	Yes
17	Image3	String	Yes
18	Image4	String	Yes

Rent_car			
Sr no.	Field Name	Datatype	Required
1	Customer_Id	String	Yes
2	Customer_Name	String	Yes

3	Mobile.no	String	Yes
4	Pickup_place	String	Yes
5	Email	String	Yes
6	Car_Name	String	Yes
7	Company_Name	String	Yes
8	Model_year	String	No
9	Color	String	Yes
10	Address	String	Yes
11	Category	String	Yes
12	Price	Number	Yes
13	No_of_Seats	Number	Yes
14	Fuel_Type	String	Yes
15	Vehicle_Availability	String	Yes
16	First_date_availability	Date	Yes
17	Second_date_availability	Date	Yes
18	Image1	String	Yes
19	Image2	String	Yes
20	Image3	String	Yes

21	Image4	String	Yes

Review			
Sr no.	Field Name	Datatype	Required
1	Customer_Id	String	Yes
2	Customer_Name	String	Yes
3	Email	String	Yes
4	Review	String	Yes

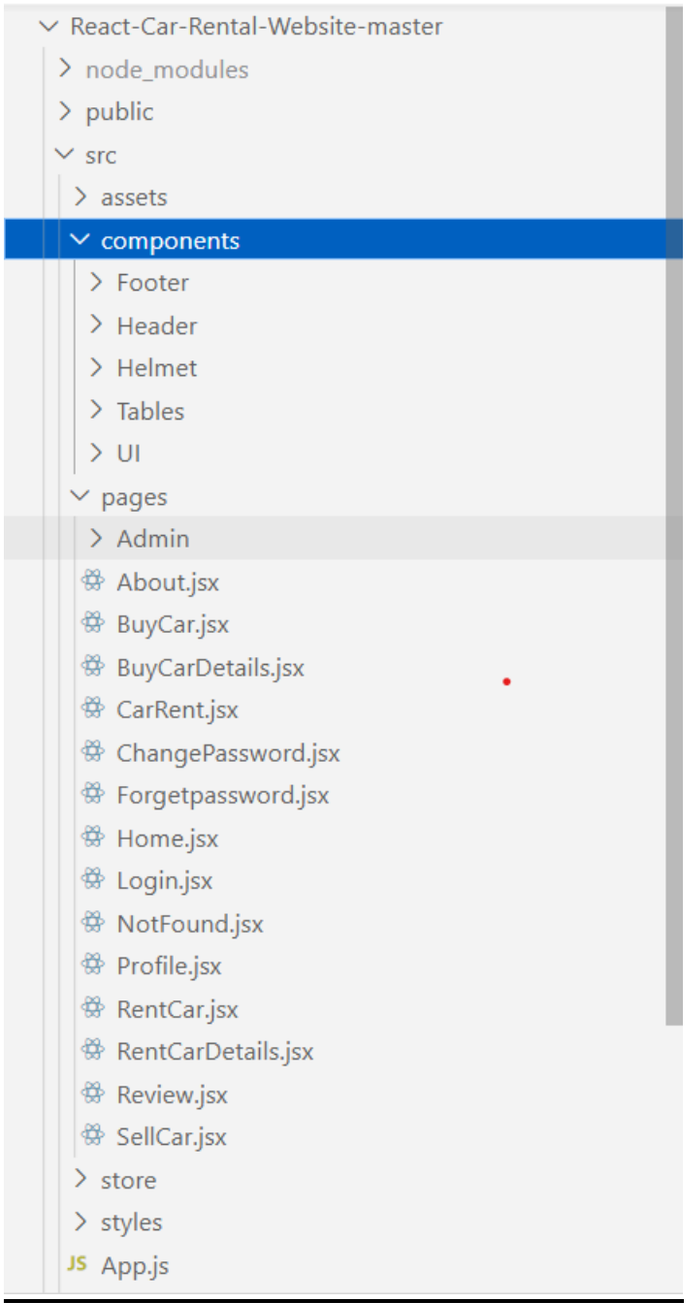
Payment			
Sr no.	Field Name	Datatype	Required
1	Car_Id	String	Yes
2	Buyer_Name	String	Yes
3	B_Mobile_no	String	Yes
4	Seller_Name	String	Yes
5	S_Mobile_no	String	Yes
6	Date	Date	Yes
7	Price	Number	Yes

5. Implementation Details :

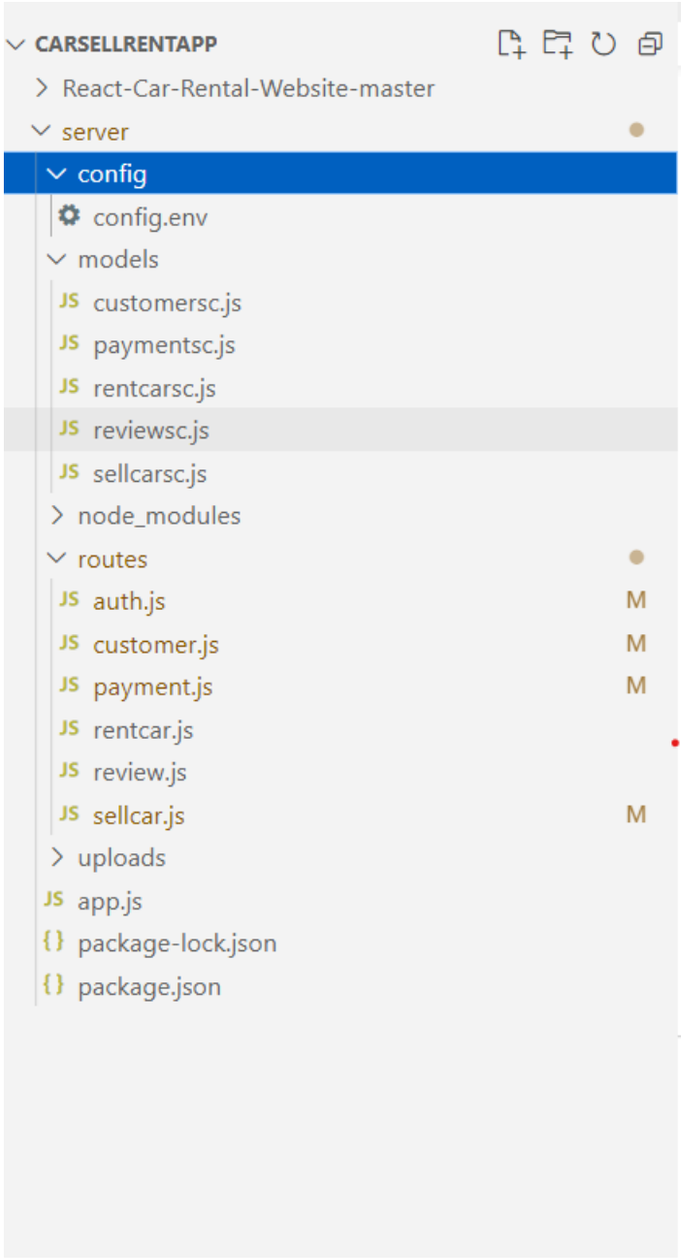
->

Folder Structure :-

1) Client :-



2) Server :-


CARSELLRENTAPP
React-Car-Rental-Website-master
server
config
config.env
models
customersc.js
paymentsc.js
rentcarsc.js
reviewsc.js
sellcarsc.js
node_modules
routes
auth.js M
customer.js M
payment.js M
rentcar.js
review.js
sellcar.js M
uploads
app.js
package-lock.json
package.json

-> **NPM (Package) Dependencies Use In Development :-**

1) bcrypt
2) bcryptjs
3) cors
4) dotenv
5) express
6) jsonwebtoken
7) moment
8) mongodb
9) mongoose
10) multer
11) nodemailer
12) nodemon
13) razorpay
14) Axios
15) bootstrap
16) react
17) react-crud-table
18) react-script
19) styled-component

-> Github Repository Link :-

https://github.com/vatsalvasani/CarSellRent-2023.git

6. Testing :

6.1 Testing Method Used :

-> For testing purpose, we used black box testing method.

For black box testing, we have designed the test cases for each sub project and have tested it in our application. Also, we have observed the output and note down the results in the next section.

6.2) Test Cases :

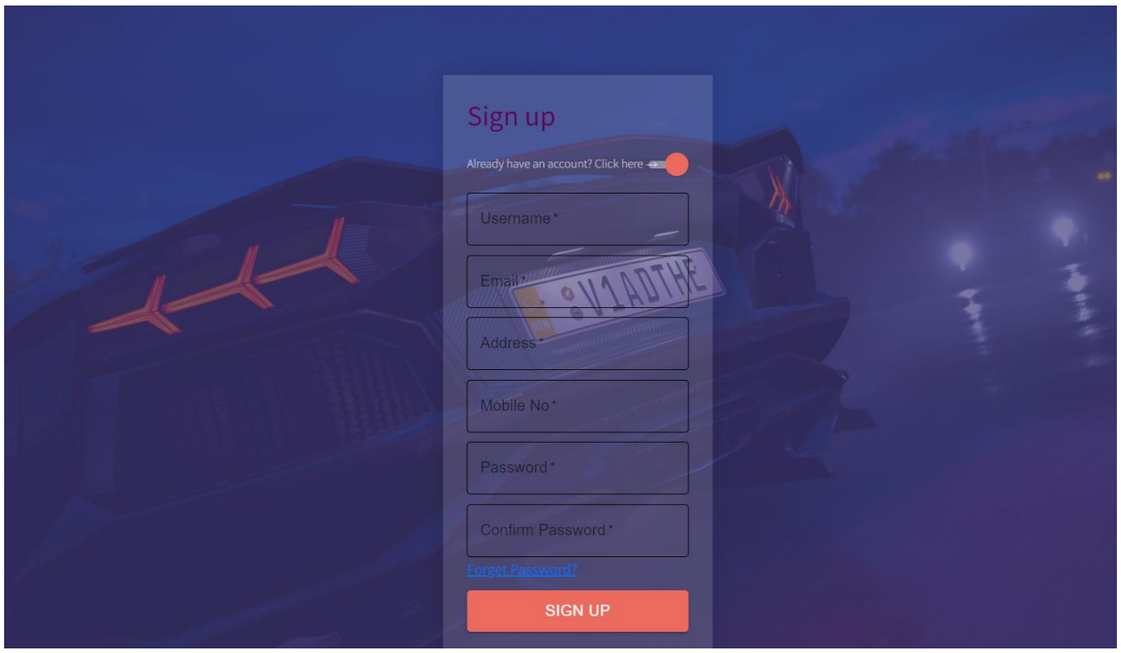
->

Sr No	Test Scenario	Expected Results	Actual Result	Status
1.	Login in with the correct credentials	User should be able to log in.	User is logged in and redirected to home screen	success
2.	Login with incorrect credentials	User should not be able to logged in	System give a message to user and Keep User In same page	success
3.	Register with correct details	User should be able to register in our system.	User is successfully register into system	success
4.	Register with Email Id Which Is Already Registered details	User should not be able to Register in our system	System give a message to user and keep User in Same page	success

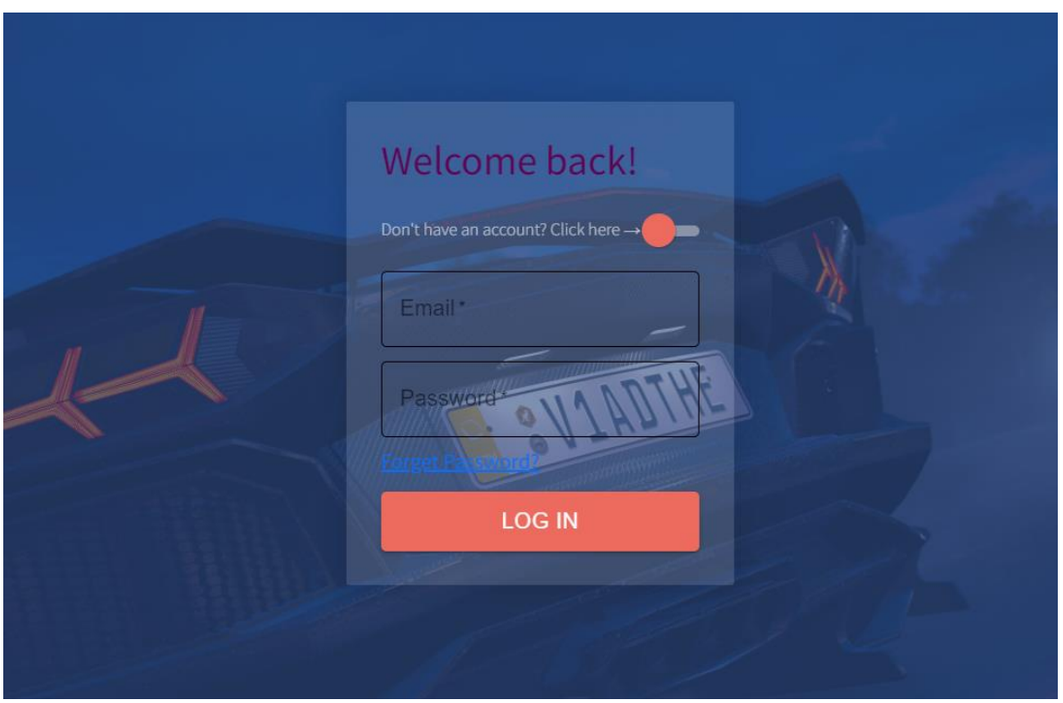
5.	Add Car for rent or sell	Car added successfully	Alert box showing with success message	success
6.	Add Review	All the field should be filled	Review added successfully	success
7.	Update Profile	Profile Updated successfully	Alert box showing with success message	success
8.	Send Enquiry For Client	Owner Should Get Email From Company's Email Id.	Owner Get Email From Correct Email Id	success
9.	Try For Payment By Scanning QR Code	UPI Id Is Invalid	UPI Id Is Invalid In Google Pay	success
10.	Logout	User or Admin will be logged out from the system and restricted To Access Data from the system until next login	User or Admin will successfully logged out from the system And Unable TO Get Data On Backward Button.	Success

7. Screenshots :

1.User Registration



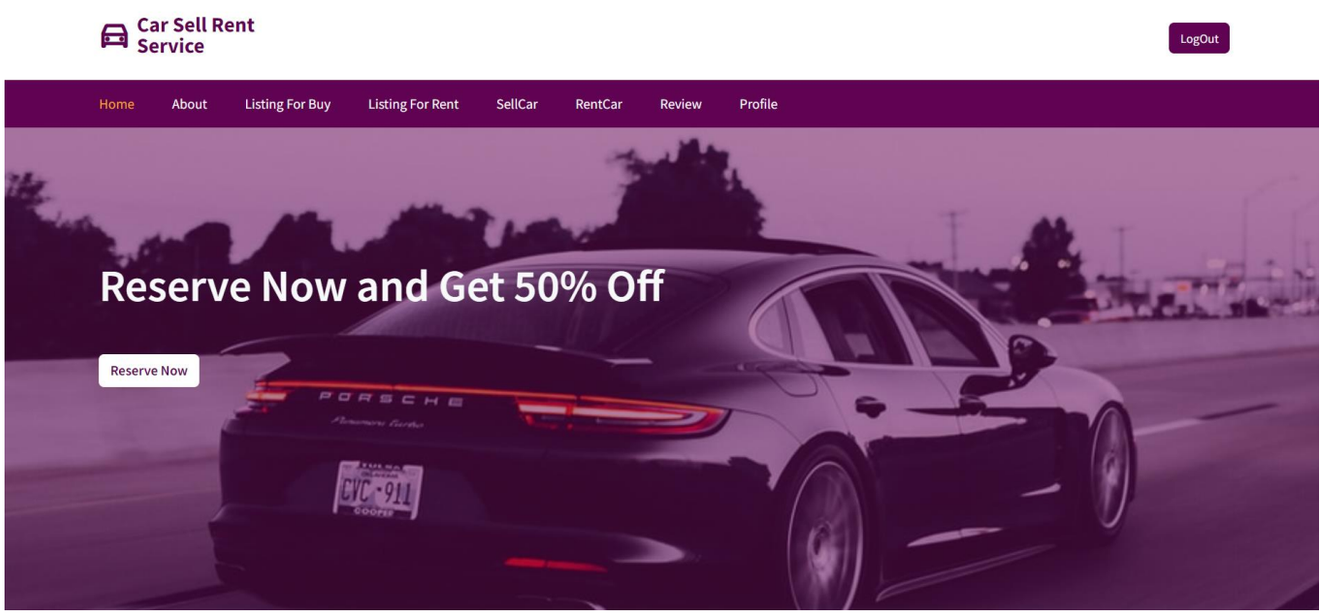
2.User Login

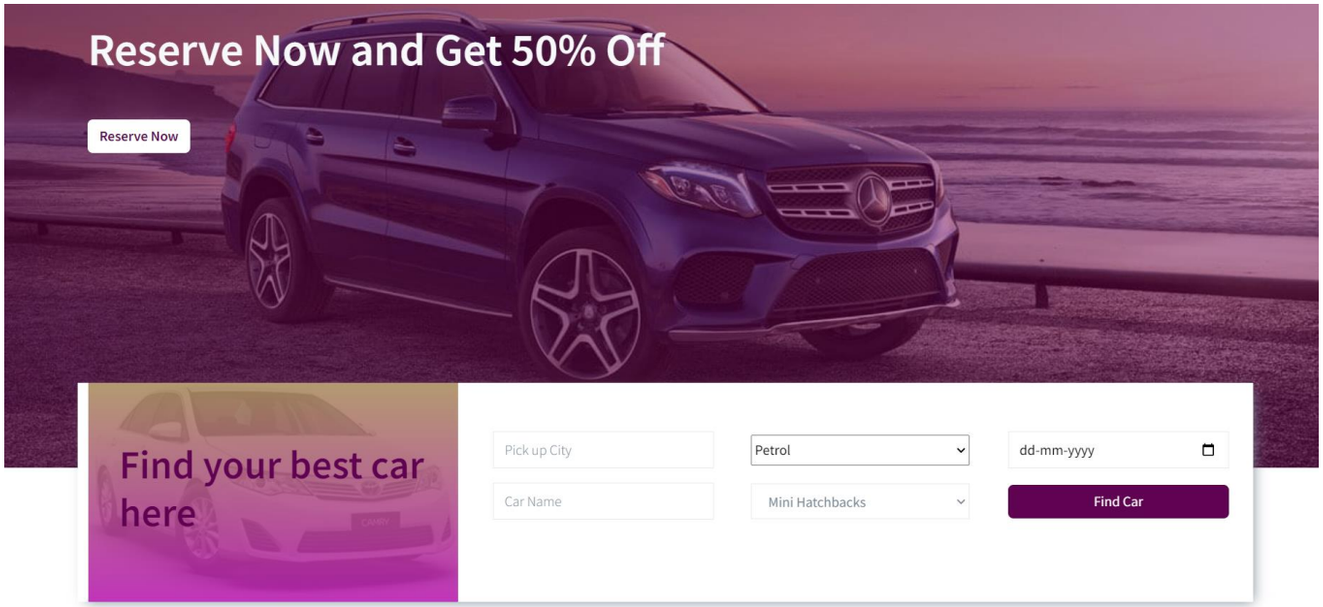


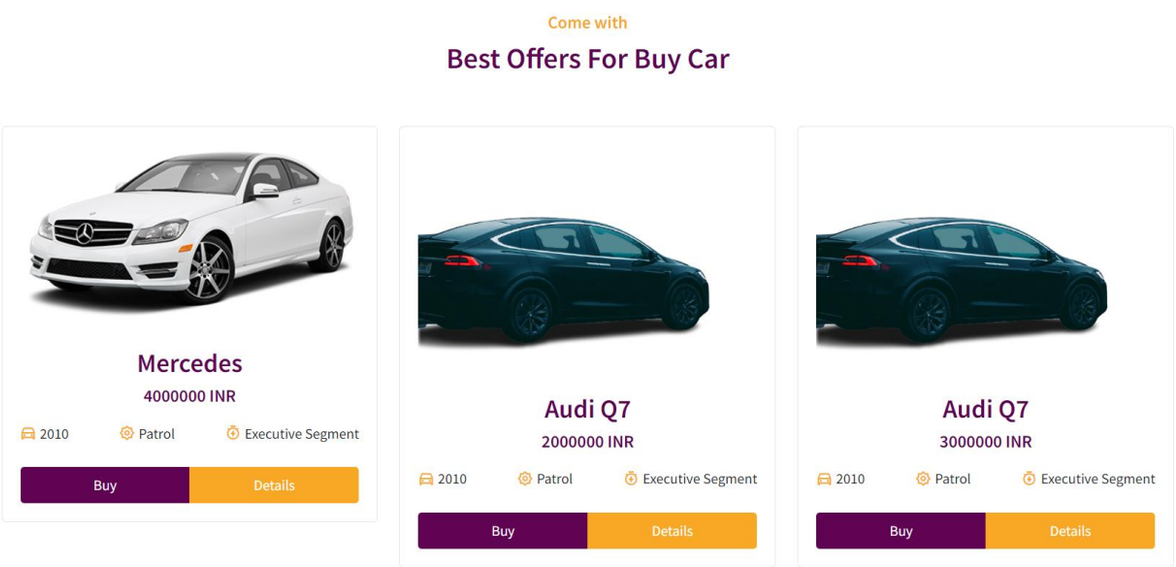
3.Forget Password

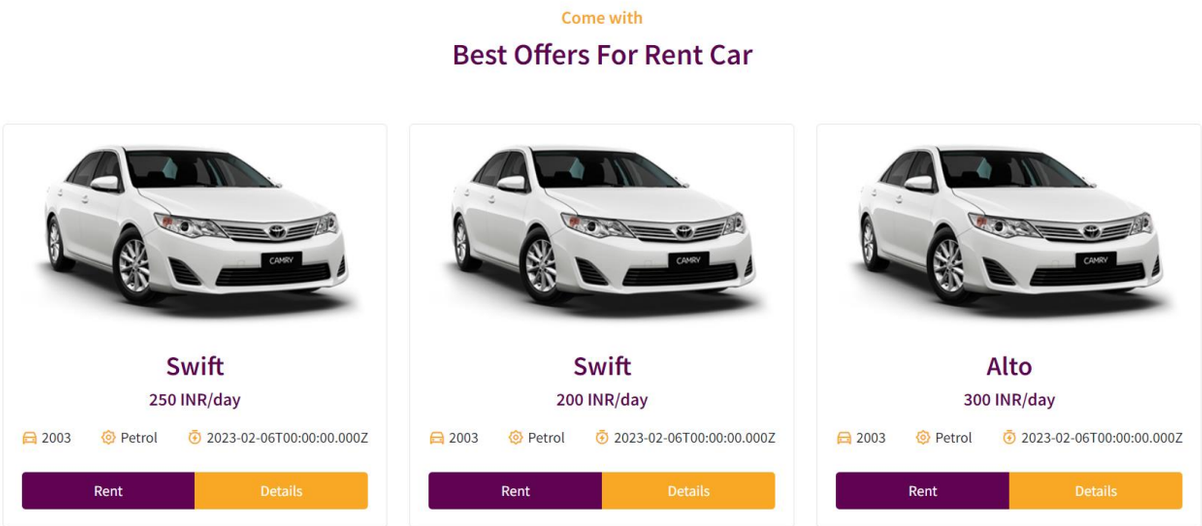
-> User side :

4.Home Page

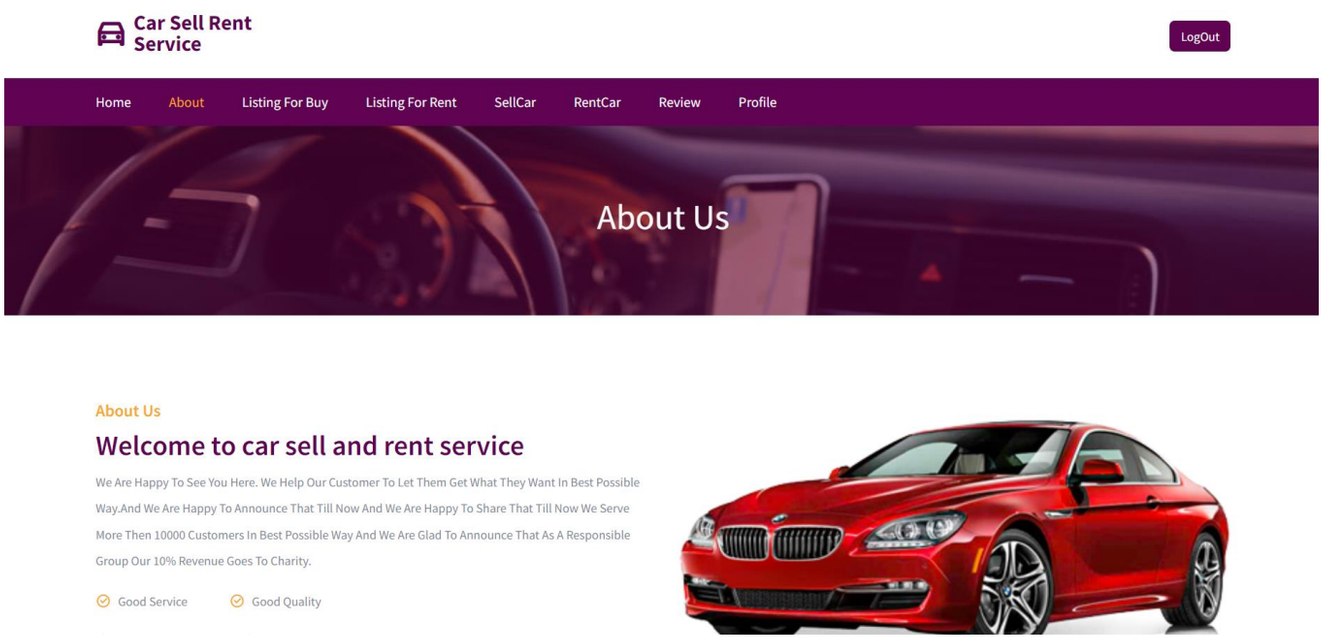



Reserve Now and Get 50% Off
Reserve Now
Find your best car here
Pick up City
Petrol
dd-mm-yyyy
Car Name
Mini Hatchbacks
Find Car

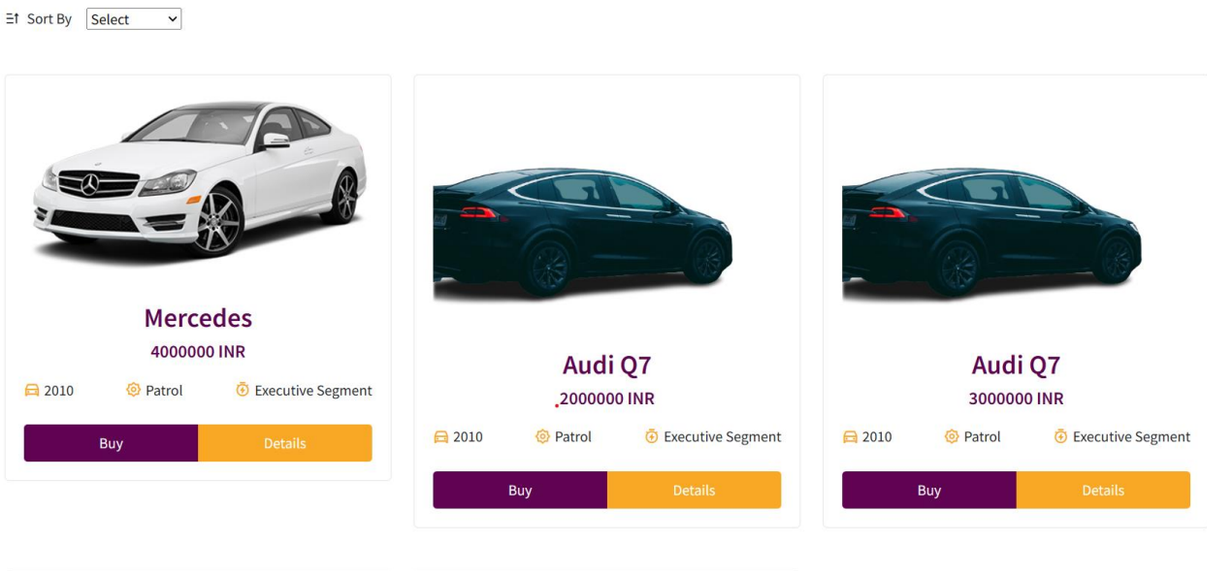

Come with
Best Offers For Buy Car
Mercedes
4000000 INR
2010
Patrol
Executive Segment
Buy
Details
Audi Q7
2000000 INR
2010
Patrol
Executive Segment
Buy
Details
Audi Q7
3000000 INR
2010
Patrol
Executive Segment
Buy
Details


Come with
Best Offers For Rent Car
Swift
250 INR/day
2003
Petrol
2023-02-06T00:00:00.000Z
Rent
Details
Swift
200 INR/day
2003
Petrol
2023-02-06T00:00:00.000Z
Rent
Details
Alto
300 INR/day
2003
Petrol
2023-02-06T00:00:00.000Z
Rent
Details

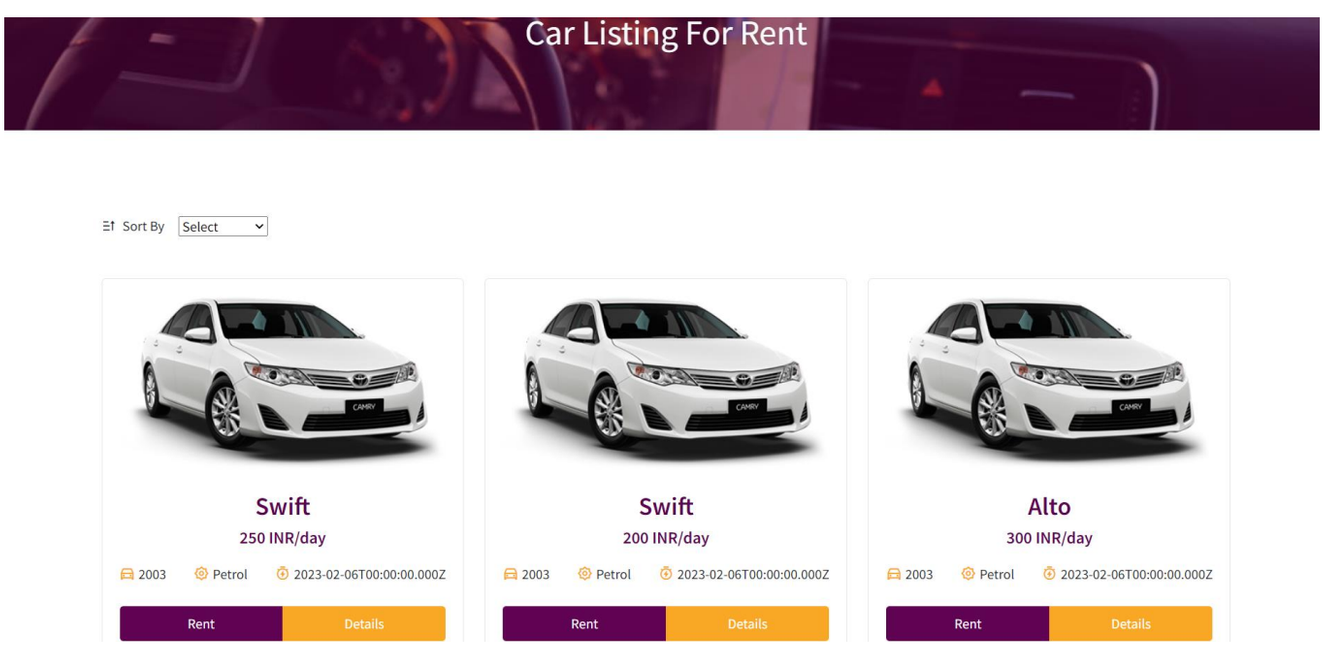
5.About Page


Car Sell Rent Service
LogOut
Home
About
Listing For Buy
Listing For Rent
SellCar
RentCar
Review
Profile
About Us
About Us
Welcome to car sell and rent service
We Are Happy To See You Here. We Help Our Customer To Let Them Get What They Want In Best Possible Way.And We Are Happy To Announce That Till Now And We Are Happy To Share That Till Now We Serve More Then 10000 Customers In Best Possible Way And We Are Glad To Announce That As A Responsible Group Our 10% Revenue Goes To Charity.
Good Service
Good Quality

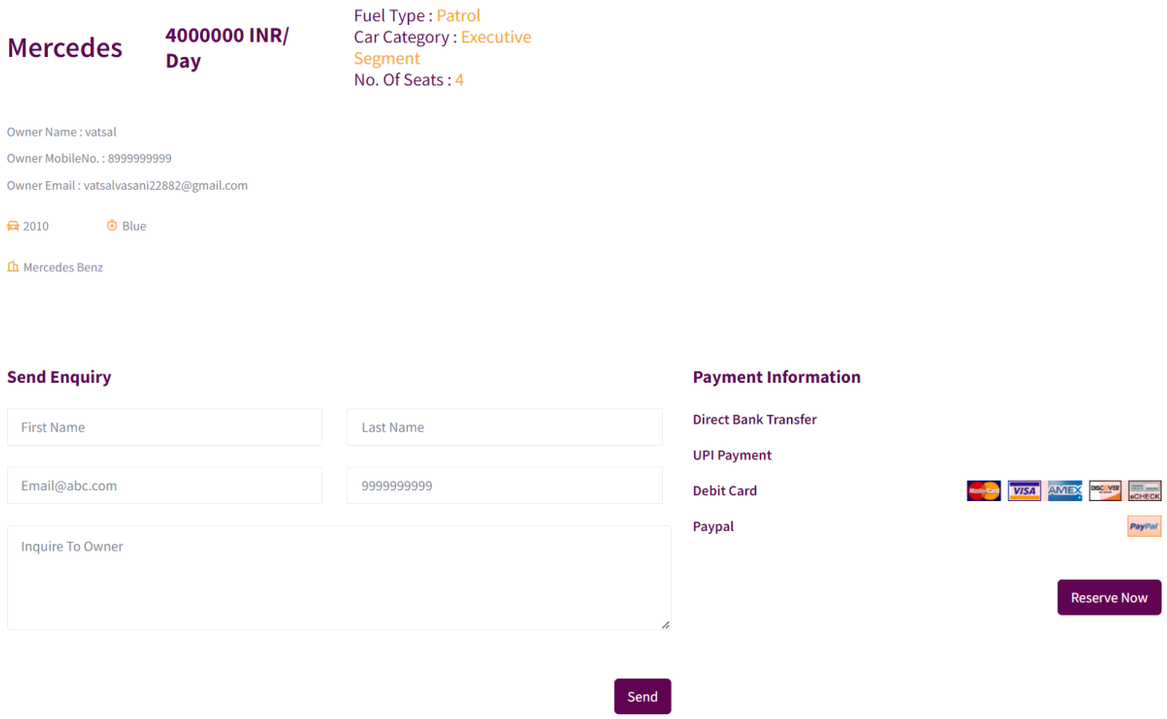
6.List_for_Buy Page



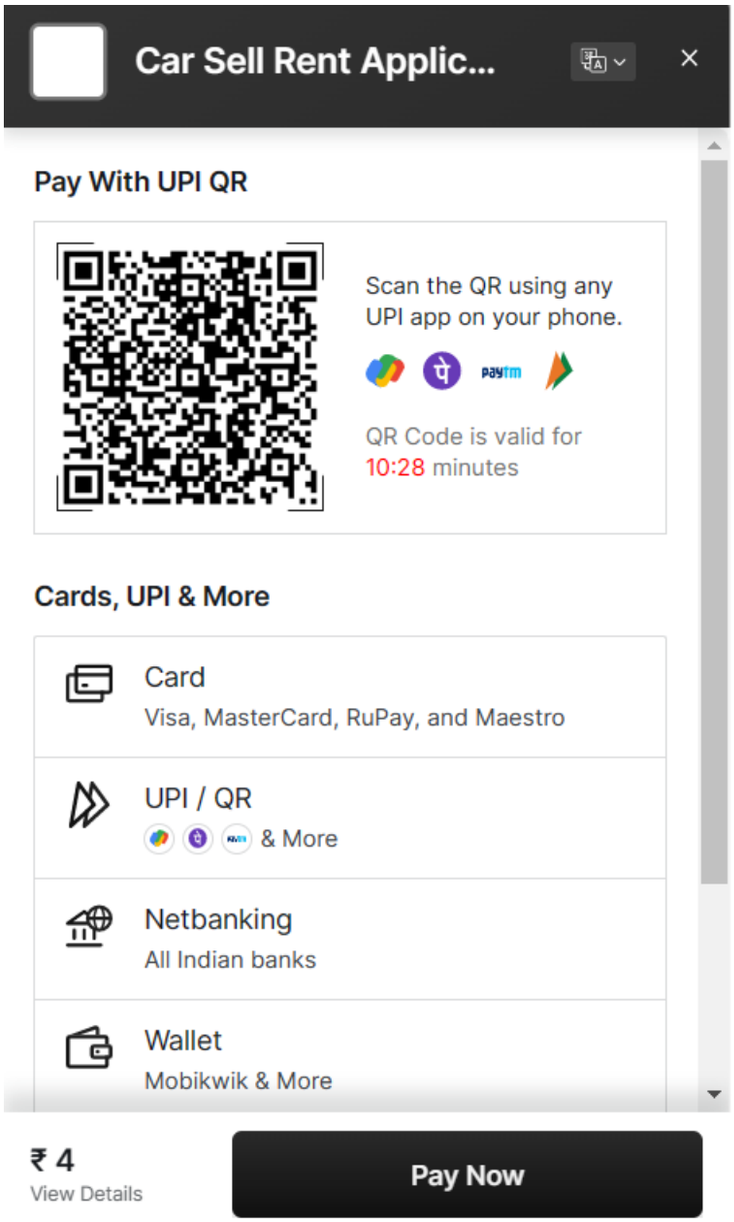
6.List_for_Rent Page



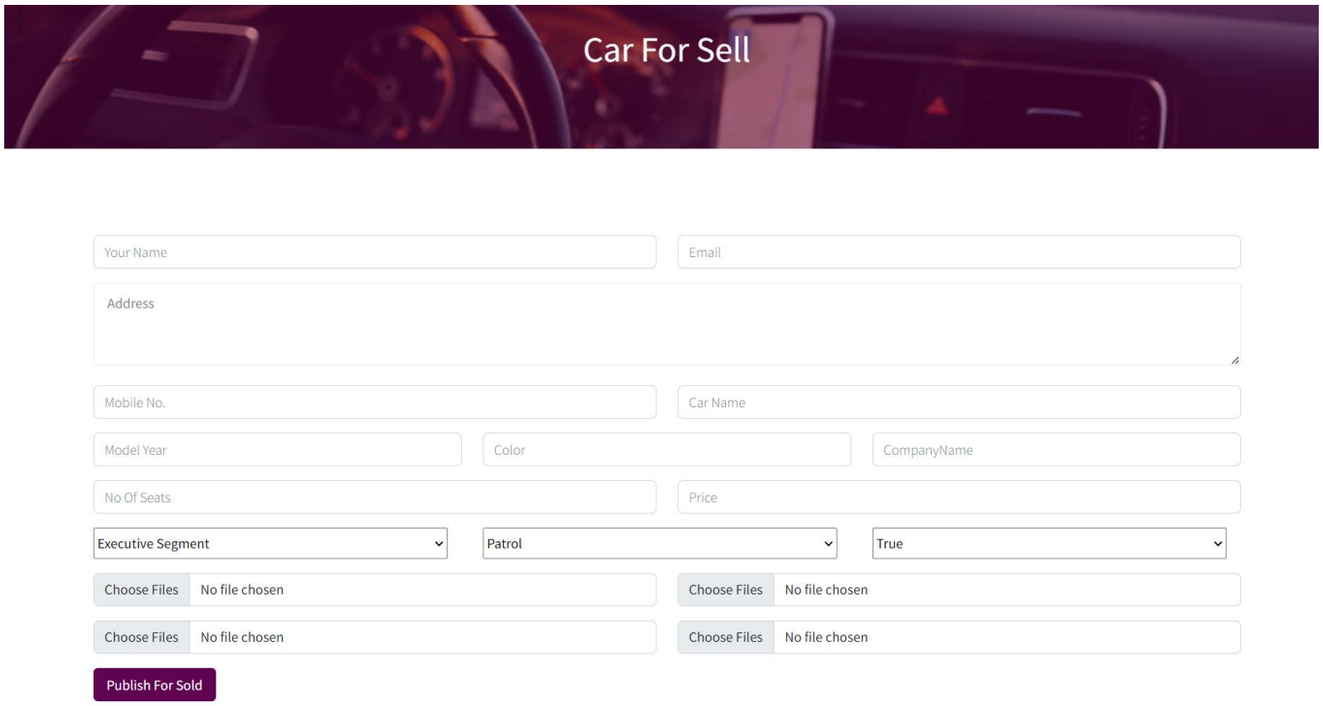
7) Detail_Car_page :



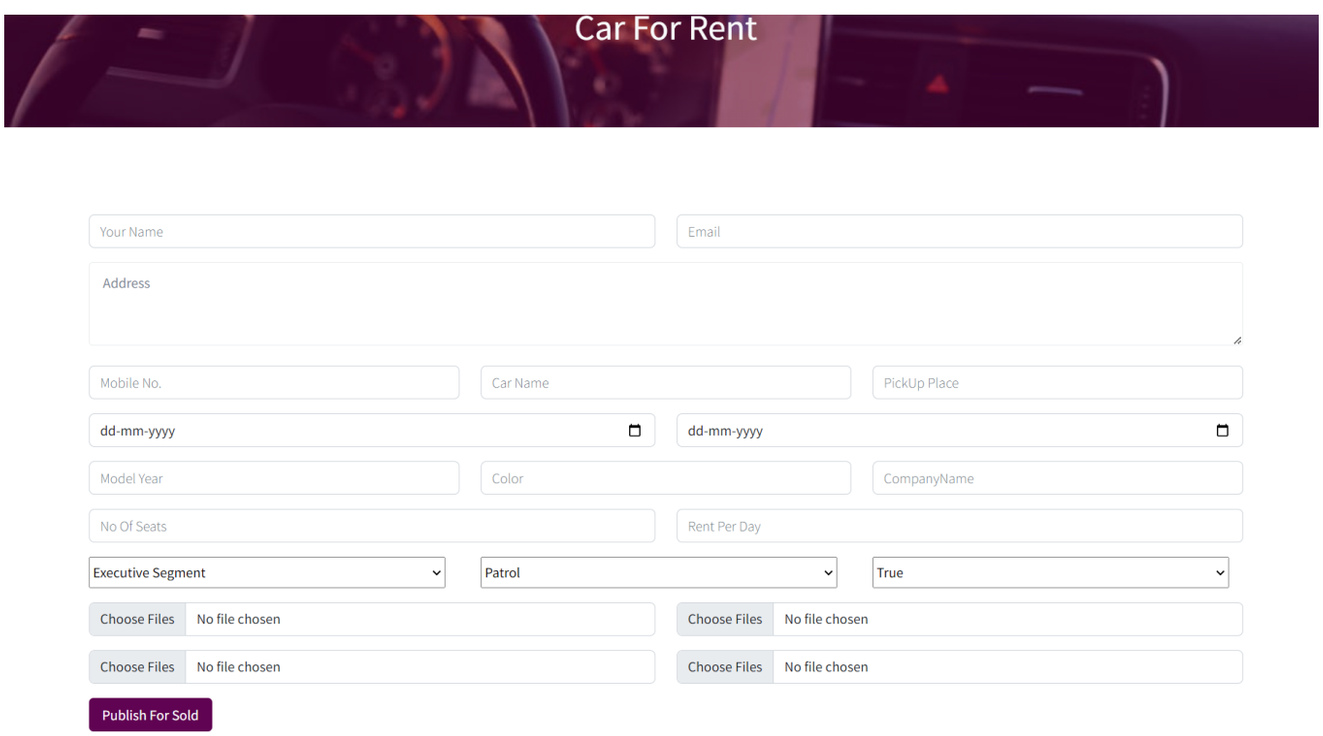
8) Payment_page :



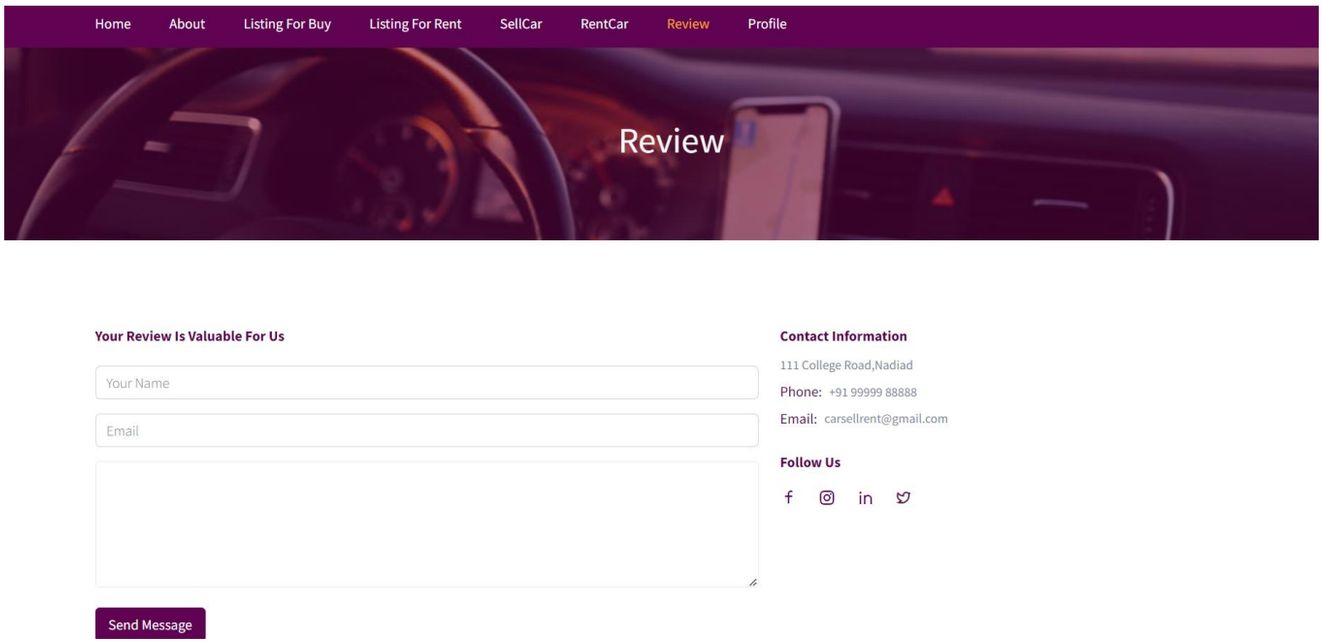
9) Listing Car For Sell :



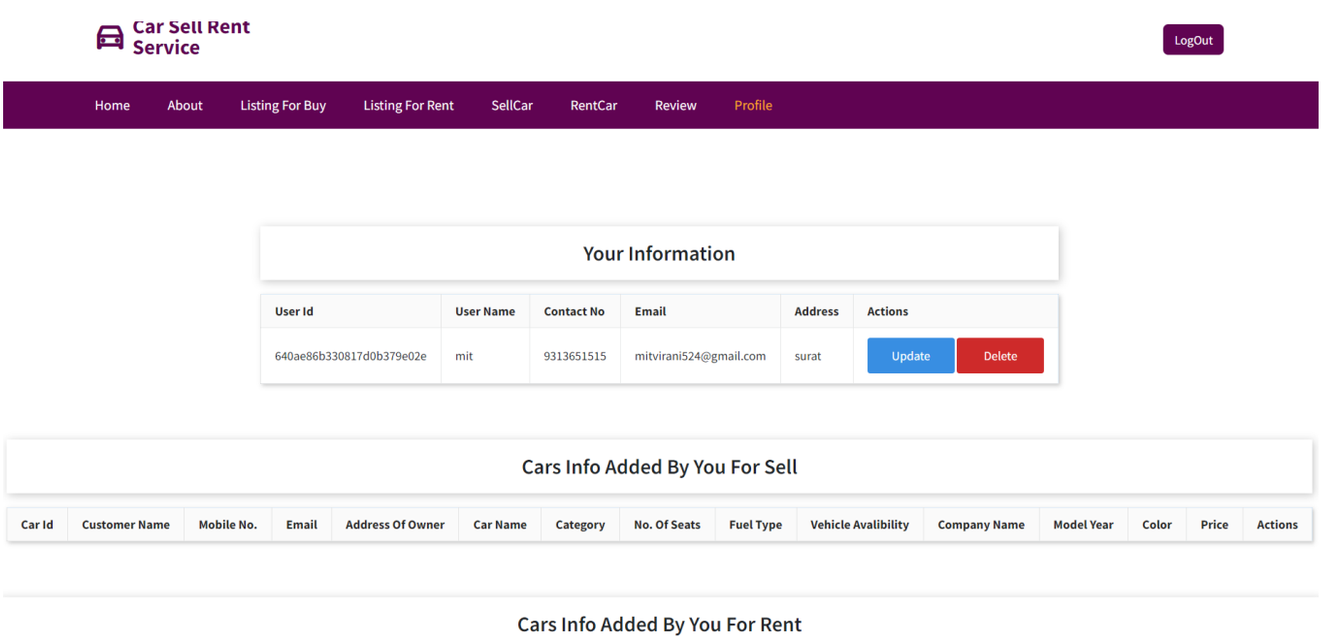
10) Listing Car For Rent :



11) Add Review :

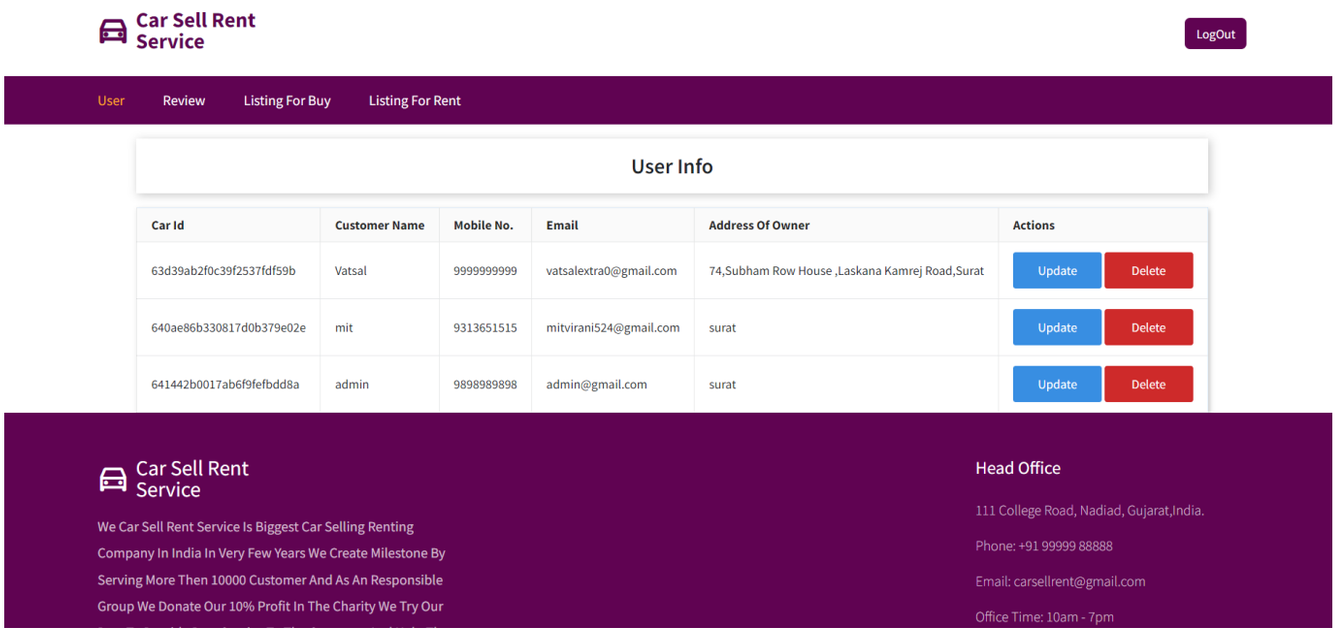


12). Profile Page

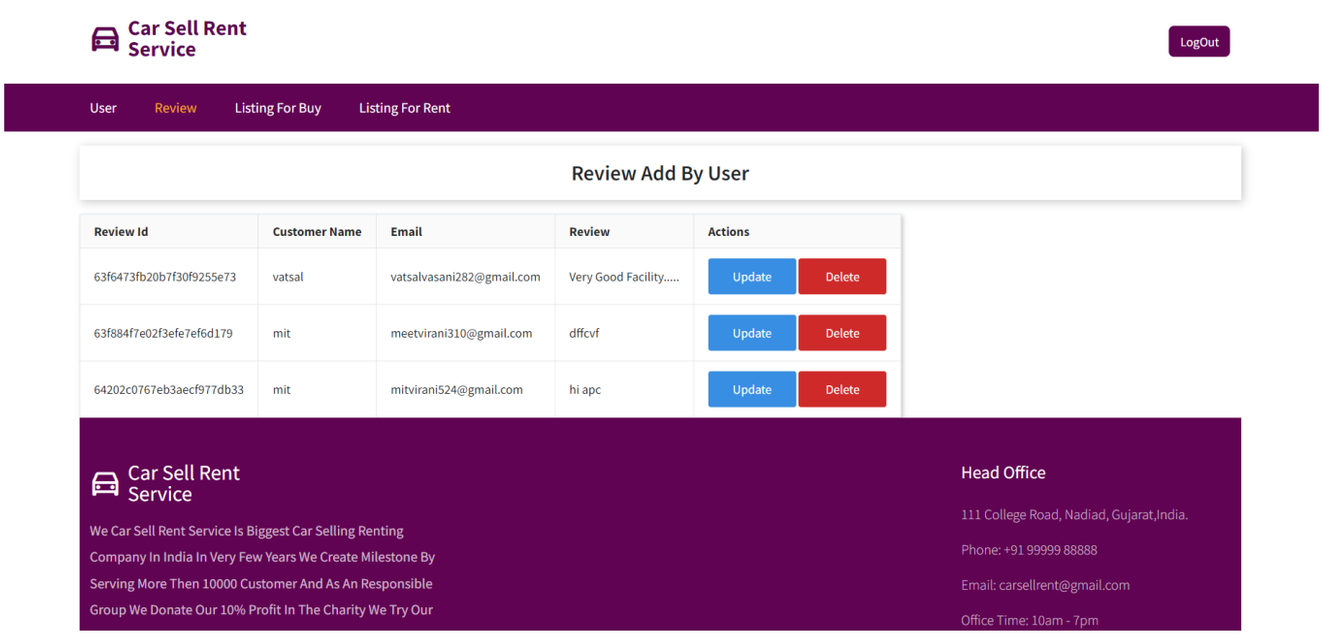


-> Admin Side :

1) Profile Page :



2) Review Page :



3) Listing For Buy :

Service

LogOut

User Review Listing For Buy Listing For Rent

Cars Info Added By User For Sell

Car Id	Customer Name	Mobile No.	Email	Address Of Owner	Car Name	Category	No. Of Seats	Fuel Type	Vehicle Avalibility	Company Name	Model Year	Color	Price	Actions
63f6ee305b4a924d61105a42	vatsal	8999999999	vatsalvasani22882@gmail.com	Surat	Mercedes	Executive Segment	4	Patrol	True	Mercedes Benz	2010	Blue	4000000	Update Delete
63f6ee455b4a924d61105a48	vatsal	09999999999	vatsalvasani282@gmail.com	Surat	Audi Q7	Executive Segment	4	Patrol	True	Mercedes Benz	2010	Green	2000000	Update Delete
63f6ee495b4a924d61105a4a	vatsal	09999999999	vatsalvasani282@gmail.com	Surat	Audi Q7	Executive Segment	4	Patrol	True	Mercedes Benz	2010	Green	3000000	Update Delete
63f6ee4c5b4a924d61105a4c	vatsal	09999999999	vatsalvasani282@gmail.com	Surat	Audi Q7	Executive Segment	4	Patrol	True	Mercedes Benz	2010	Green	2050000	Update Delete
63f6ee4e5b4a924d61105a4e	vatsal	09999999999	vatsalvasani282@gmail.com	Surat	Audi Q7	Executive Segment	4	Patrol	True	Mercedes Benz	2010	Green	2030000	Update Delete

4) Listing For Rent :

Car Sell Rent Service

LogOut

User Review Listing For Buy Listing For Rent

Cars Info Added By User For Rent

Car Id	Customer Name	Mobile No.	PickUp Place	Email	Address Of Owner	Car Name	Category	No. Of Seats	Fuel Type	First Date Of Availability	Second Date Of Availability	Vehicle Avalibility	C N
63f6ef7d5b4a924d61105a74	vatsal	01111111111	Surat	vatsalvasani22882@gmail.com	Surat	Swift	Mini Hatchbacks	5	Petrol	2023-02-06T00:00:00.000Z	2023-02-16T00:00:00.000Z	True	M
63f6ef845b4a924d61105a76	vatsal	01111111111	Surat	vatsalvasani282@gmail.com	Surat	Swift	Small Hatchbacks	5	Petrol	2023-02-06T00:00:00.000Z	2023-02-16T00:00:00.000Z	True	M
63f6ef8e5b4a924d61105a78	vatsal	01111111111	Surat	vatsalvasani282@gmail.com	Surat	Alto	Sedans	4	Petrol	2023-02-06T00:00:00.000Z	2023-02-16T00:00:00.000Z	True	M

8. Conclusion :

-> Our car sell/rent application provides a convenient and user-friendly platform for buyers and renters to search Car for purchase or rent vehicles. The application's features, such as search filters and payment options, make the car buying/renting experience easy and User Friendly. Additionally, the application's seller/owner tools allow individuals to easily list their vehicles for sale or rent, connecting them with interested buyers or renters. Overall, our car sell/rent application is a valuable resource for both buyers and sellers in the automotive market.

-> Car Sell-Rent Service is a easy-to-use With good user interface, and great user experience project which is created With MERN Stack technology . It provides many functionality to the user As Describe In SRS Section. Core Functionalities that are implemented successfully in our system.

- User Registration
- User Login
- Forget password
- Add Car Detail for Sell/Rent
- Add Review
- Sort and Search for Car
- Update Car Details for Sell/Rent
- Update or Delete User Profile

- Delete Car Details
- Delete user Account
- Send Enquiry To Owner Through Mail
- Payment

9. Limitation and future extension of system:

-> Limitations :

1. Here we don't Have More Realistic payment feature Because Of Razorpay's Testing Mode.
2. We Don't Implement Any Kind Of Advance Algorithm So That It Shows Car Base On User Interest Through His Searches.

-> Future Extension :

1. Later On We Can Make Payment Feature More Realistic By using API Of Any Payment Gateway Such As Razorpay.
2. Later On We Can Implement One Advanced Algorithm Which Can Track User's Search Activity And Based On That It Shows Available Option Of Car To Particular User

10. Bibliography :

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- https://www.w3schools.com/REACT/DEFAULT.ASP
- https://expressjs.com/
- Get started with Bootstrap · Bootstrap v5.2 (getbootstrap.com)
- Home v6.9.0 | React Router
- https://stackoverflow.com/questions/