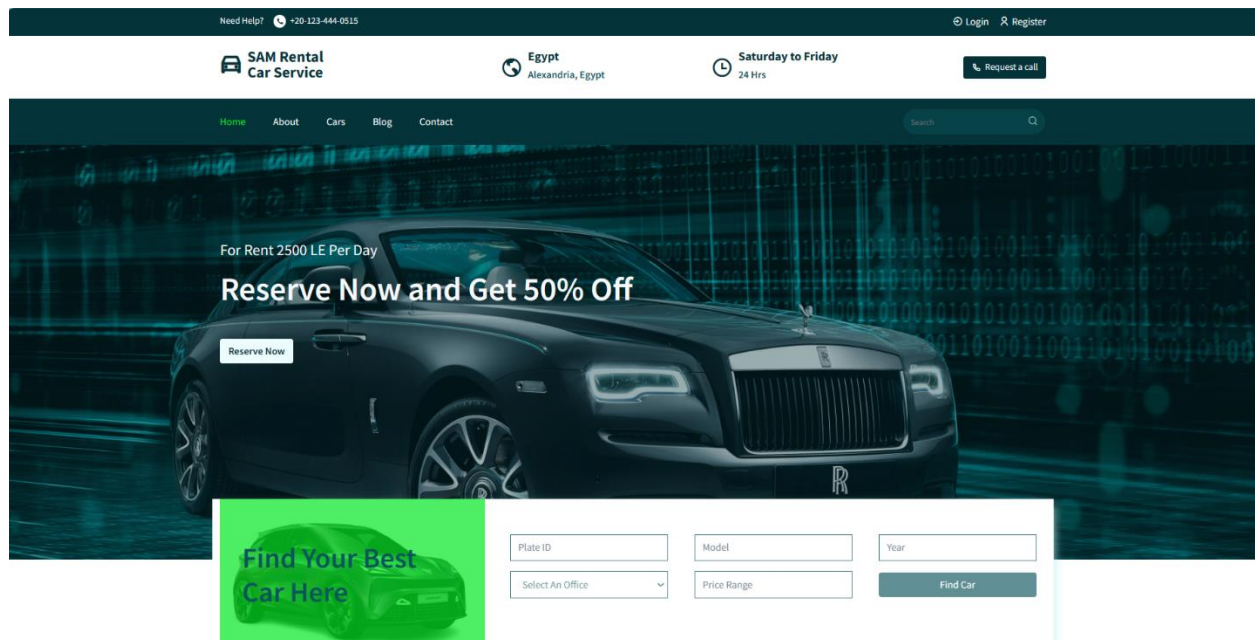


Database Systems

Project: “SAM” Car Rental System



Under the supervision of:

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Car Rental System

Car rental systems are **essential components** of the modern **transportation industry**, providing individuals and businesses with **convenient access to vehicles** on a **short-term** basis.

These systems are designed to **streamline the process of renting a car**, offering users a **seamless experience from booking to returning** the vehicle. Key features of car rental systems include **online reservation** platforms, vehicle tracking, customer management, and billing integration. By leveraging advanced technology and efficient management tools, car rental systems **enhance operational efficiency** for rental companies while offering customers **flexibility** and **convenience** in accessing transportation services.

Need Help? +20-123-444-0515

Welcome, saadeldine4600@gmail.com

SAM Rental Car Service

Egypt Alexandria, Egypt

Saturday to Friday 24 Hrs

Request a call

Home About Cars Blog Contact

Search

Car Listing

CLEAR FILTERS

Search By:

Plate ID


Model

Year

Select An Office

Price Range

Find Car




3008

750000LE / Day

2024 Active 2525

Rent Car




508

249997LE / Day

2022 Active 3684

Rent Car



508

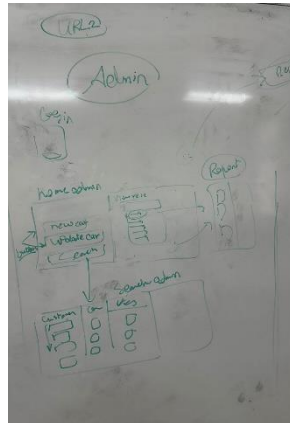
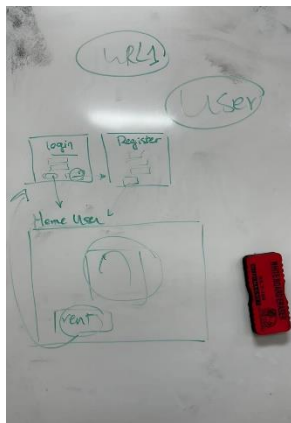
1500000LE / Day

2021 Out Of Service 36840

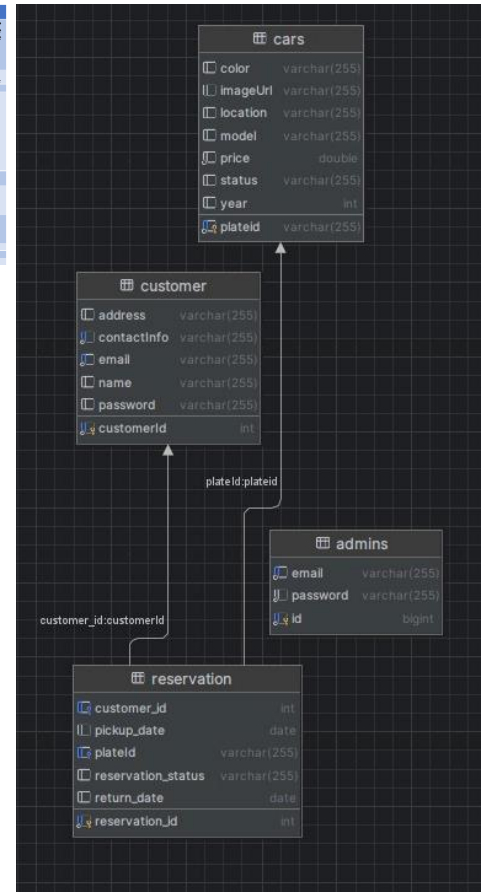
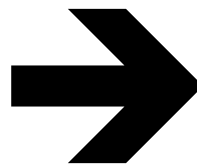
Rent Car

Development:

- ➔ This report documents the development of a Car Rental System for a company aiming to automate their reservation process and provide a user-friendly interface for both customers and administrators.
- ➔ The system utilizes:
 - Spring Boot:** for the backend.
 - React:** for the frontend.
 Offering seamless interaction and robust functionality.
- ➔ How it started:



Page /	Description	Done
1. Login Page	<ul style="list-style-type: none"> Validation for user "Username" & "Password" + validation If logged in, redirect to "Home" Set the password + change password Forgot password (Email) If not logged in, redirect to "Login" If not logged in, redirect to "Forgot Password" If not logged in, redirect to "Forgot Password" 	Done
2. Register Page	<ul style="list-style-type: none"> Check Email if already registered. If not, register user Set the password + change password Forgot password (Email) If not logged in, redirect to "Login" If not logged in, redirect to "Forgot Password" If not logged in, redirect to "Forgot Password" 	Done
3. Admin Login	<ul style="list-style-type: none"> Check Email if already registered. If not, register user Set the password + change password Forgot password (Email) If not logged in, redirect to "Login" If not logged in, redirect to "Forgot Password" If not logged in, redirect to "Forgot Password" 	Done
4. Admin Home	<ul style="list-style-type: none"> Check Email if already registered. If not, register user Set the password + change password Forgot password (Email) If not logged in, redirect to "Login" If not logged in, redirect to "Forgot Password" If not logged in, redirect to "Forgot Password" 	Done

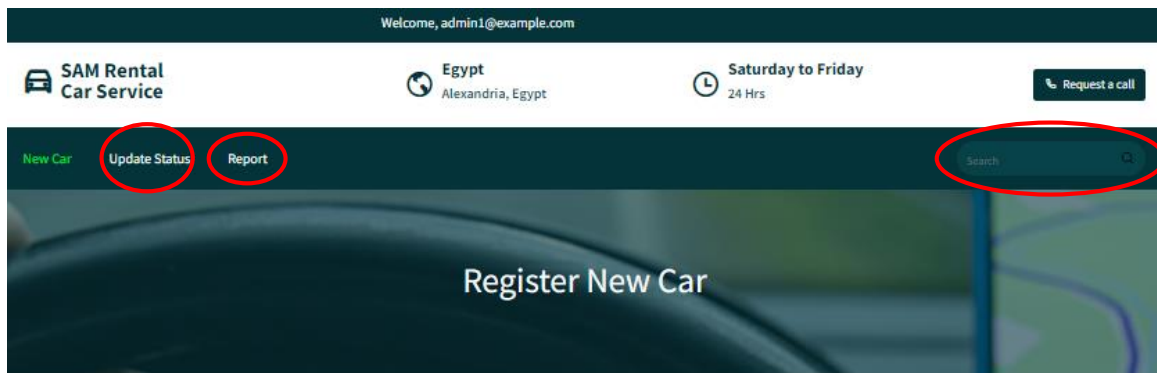


System Features:

1- Car Management:

Our system enables the **registration of new cars** with details like **model, year, plate ID, color...**, the **update of car status** (active, out of service, rented, etc.).

In addition to a **Search for available cars** based on various specifications.



Add New Car

Plate ID:

Color:

Image URL:

Office:

Model:

Status:

Price:

Year:

2- Customer Management:

Customers can easily create their new accounts with personal information.

By creating an account or signing into their existing accounts, they can **reserve cars** from any location through **multiple offices**, as well as viewing and managing existing reservations.

Need Help? +20-123-444-0515

Login Register

SAM Rental
Car Service

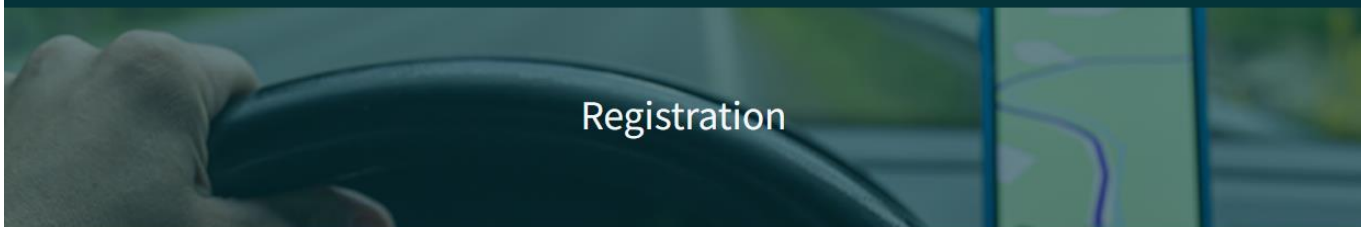
Egypt
Alexandria, Egypt

Saturday to Friday
24 Hrs

Request a call

Home About Cars Blog Contact

Search



Registration

Registration

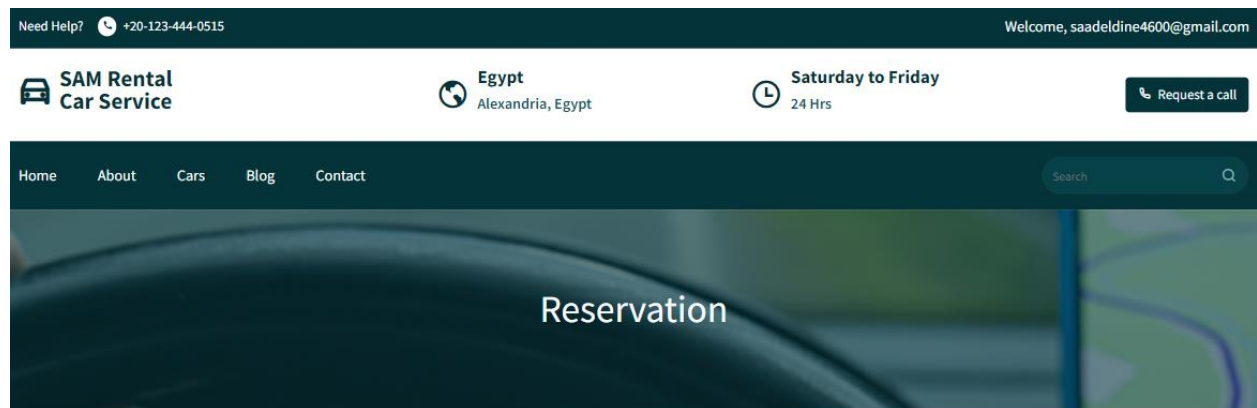
[Already Have An Account?](#)

Register

3- Reservation Management:

Through a well-organized reservation process, after our customer **chooses a car** of his favor, **tracks its reservation status** (confirmed, picked up or returned) and get a **visual glimpse** of it, he can now secure his **online reservation**, adding the plate ID of the car he chose, his ID, the pickup and return dates he likes.

Finally, make payments securely through the system.



Enter Your Reservation Data:

Customer ID:

Plate ID:

Pickup Date:



Return Date:



Reserve

4- Advanced Search:

The advanced Search is a feature provided by our system to **serve the admin**, as the admin can **search** for cars, customers, or reservations based on various criteria and once he presses the button “**show table**” this will return a combined table of **any record in the database** containing the **word** the admin has searched for.

This enables the admin to **view detailed information** about cars, customers, and reservations.

The screenshot displays the SAM Rental Car Service admin interface. At the top, a navigation bar includes links for 'New Car', 'Update Status', and 'Report'. A search bar on the right contains the text 'red'. Below the navigation bar is a large banner with the text 'Admin Login'. Underneath the banner is a login form with fields for 'Email' and 'Password', a 'Forgot Password?' link, and a 'Login' button. A modal dialog box is open in the center, displaying the message 'localhost:3000 says You're Not Logged In' with an 'OK' button. Below the login form is a banner with the text 'Searching...'. At the bottom, a table displays search results with columns: Car PlateID, Model, Color, Location, Price/Day, Status, Year, Customer Name, Customer SSN, Email, Phone Number, Address, Reservation ID, Pickup Date, Return Date, and Reservation Status. A 'Show Result' button is located below the table.

localhost:3000/admin/table

localhost:3000 says
You're Not Logged In

OK

Request a call

New Car Update Status Report

red

Admin Login

Admin Login

Email

Password

[Forgot Password?](#) We will contact you via email to handle this issue.

Login

Searching...

Car PlateID	Model	Color	Location	Price/Day	Status	Year	Customer Name	Customer SSN	Email	Phone Number	Address	Reservation ID	Pickup Date	Return Date	Reservation Status
-------------	-------	-------	----------	-----------	--------	------	---------------	--------------	-------	--------------	---------	----------------	-------------	-------------	--------------------

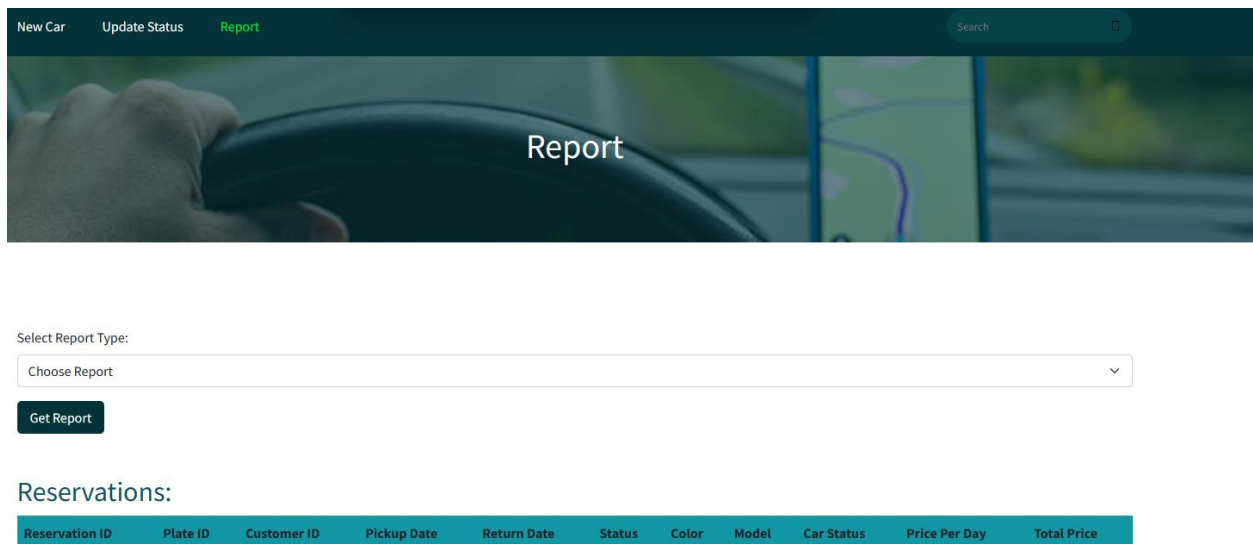
Show Result

No one can access the admin functionalities unless he signs in as an admin

5- Reporting:

Another feature added for the **admin**, which is the **generation of reports** based on various aspects of the system, **including:**

- o **All reservations** within a **specified period** including **all car** and **customer information**.
- o **All reservations** of **any car** within a **specified period** including **all car information**.
- o The **status** of all **cars** on a **specific day**.
- o **All reservations** of **specific customer** including **customer information, car model and plate id**.
- o **Daily payments** within a **timeframe**.



Select Report Type:

Choose Report

Get Report

Reservations:

Reservation ID	Plate ID	Customer ID	Pickup Date	Return Date	Status	Color	Model	Car Status	Price Per Day	Total Price
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6- Additional Features:

User-friendly interface for both customer and admin roles.
Secure data storage and access control.

DDL:

⇒ The system utilizes three tables to store car, customer, and reservation data:

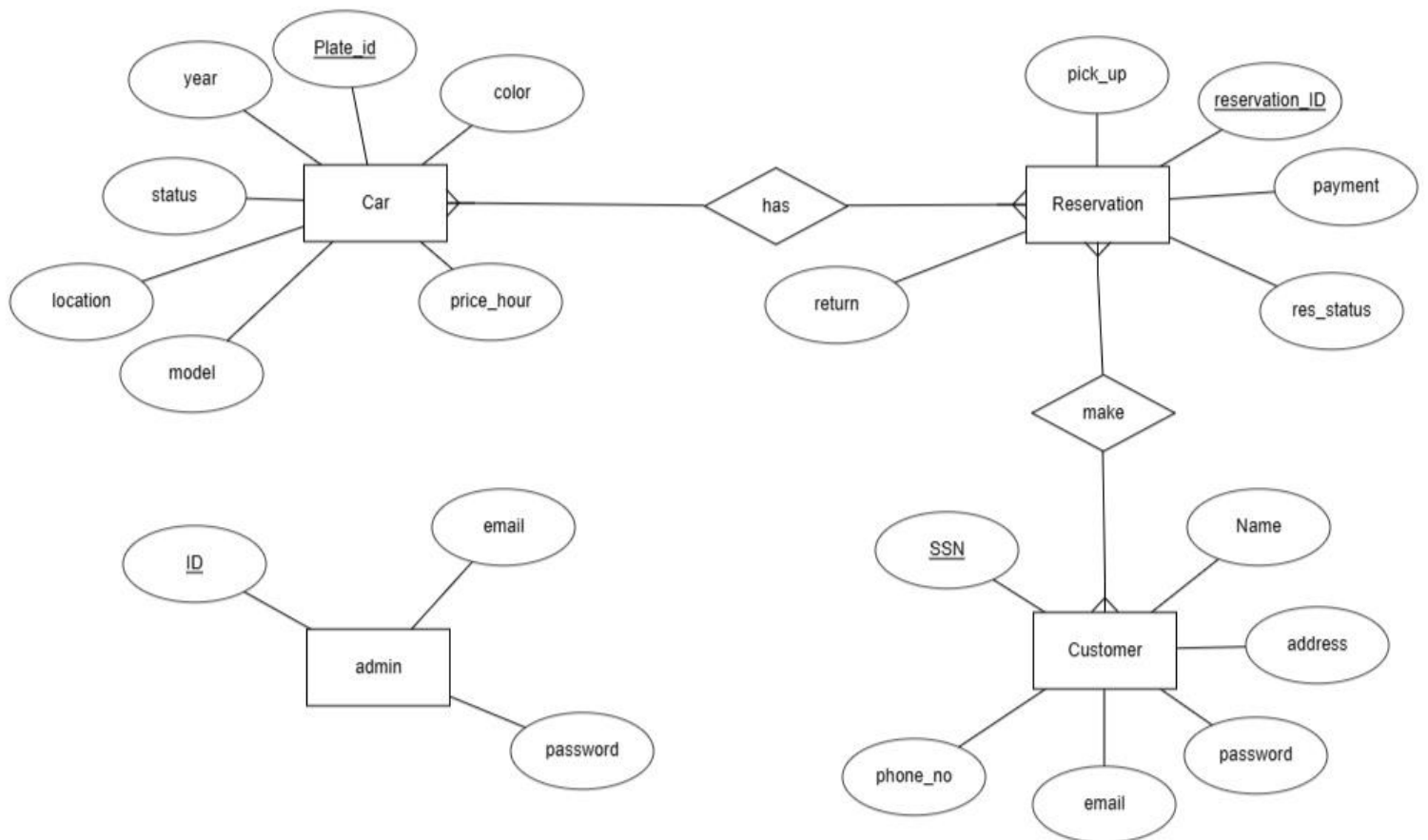
- **Cars:** Stores car details like model, year, plate ID, color, price, status, and location.
- **Customer:** Stores customer information like name, email, address, contact info, and password.
- **Reservation:** Stores reservation details like customer ID, car plate ID, pickup and return dates, and reservation status
- **Admin:** Stores the admin login information adminID, email and password.

```
create table Cars
(
    plateid varchar(255) not null
        primary key,
    color    varchar(255) null,
    imageUrl varchar(255) null,
    location varchar(255) null,
    model    varchar(255) null,
    price    double        not null,
    status   varchar(255) null,
    year     int            null
);
```

```
create table Customer
(
    customerId int auto_increment
    | primary key,
    address varchar(255) null,
    contactInfo varchar(255) not null,
    email varchar(255) not null,
    name varchar(255) null,
    password varchar(255) null,
    constraint contactInfo
    | unique (contactInfo),
    constraint email
    | unique (email)
);
```

```
create table Reservation
(
    reservation_id int auto_increment
    | primary key,
    customer_id int null,
    pickup_date date null,
    plate_id varchar(255) null,
    reservation_status varchar(255) null,
    return_date date null,
    constraint fk_car
    | foreign key (plate_id) references Cars (plateid),
    constraint fk_customer_id
    | foreign key (customer_id) references Customer (customerId)
);
```

ERD:



Conclusion:

“SAM” Car Rental System successfully meets the requirements by providing a **comprehensive** and **user-friendly** platform for managing car rentals.

The **Spring Boot-powered backend** ensures efficient data handling and secure operations, while the **React-based frontend** offers an intuitive interface for both customers and administrators.

We have successfully implemented all requested features and functionalities, ensuring a robust and scalable system for future growth.