Car Rental System

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

Home Page

When user first logs in, the display appears as in Figure 1.

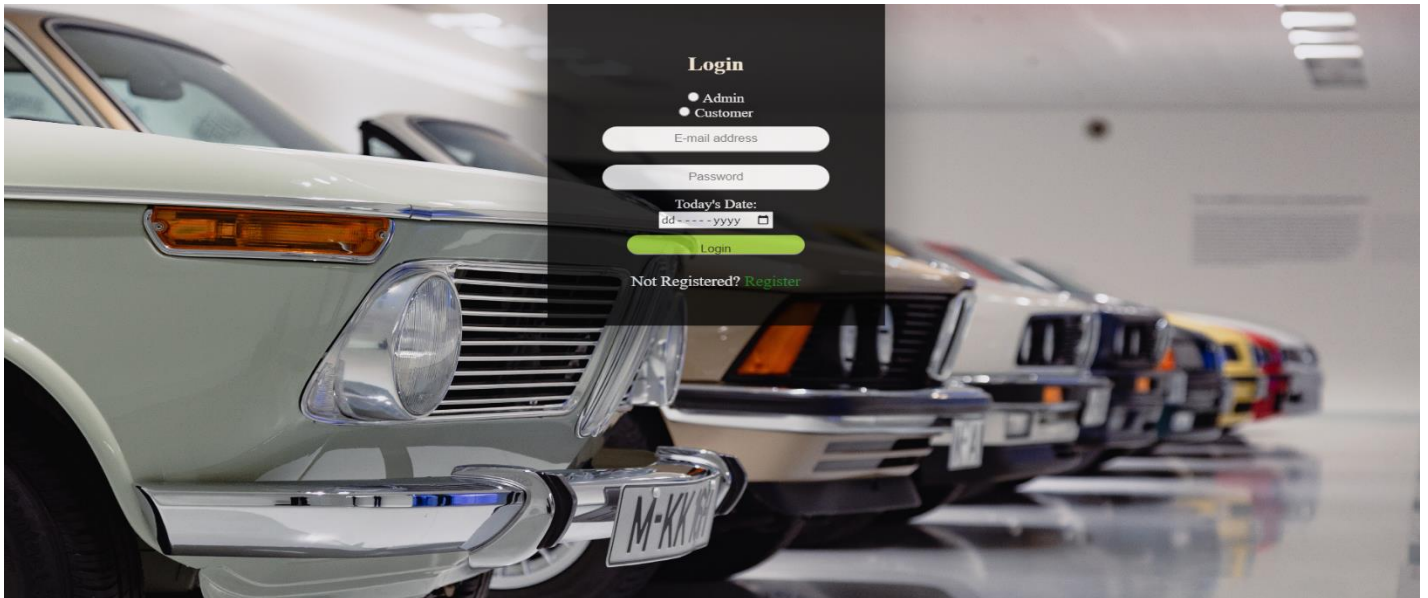Then the user gets to choose whether to log in as customer or as an admin.

If an admin wishes to log in, email and password are entered, then verified, accompanied with current date as in Figure 2.
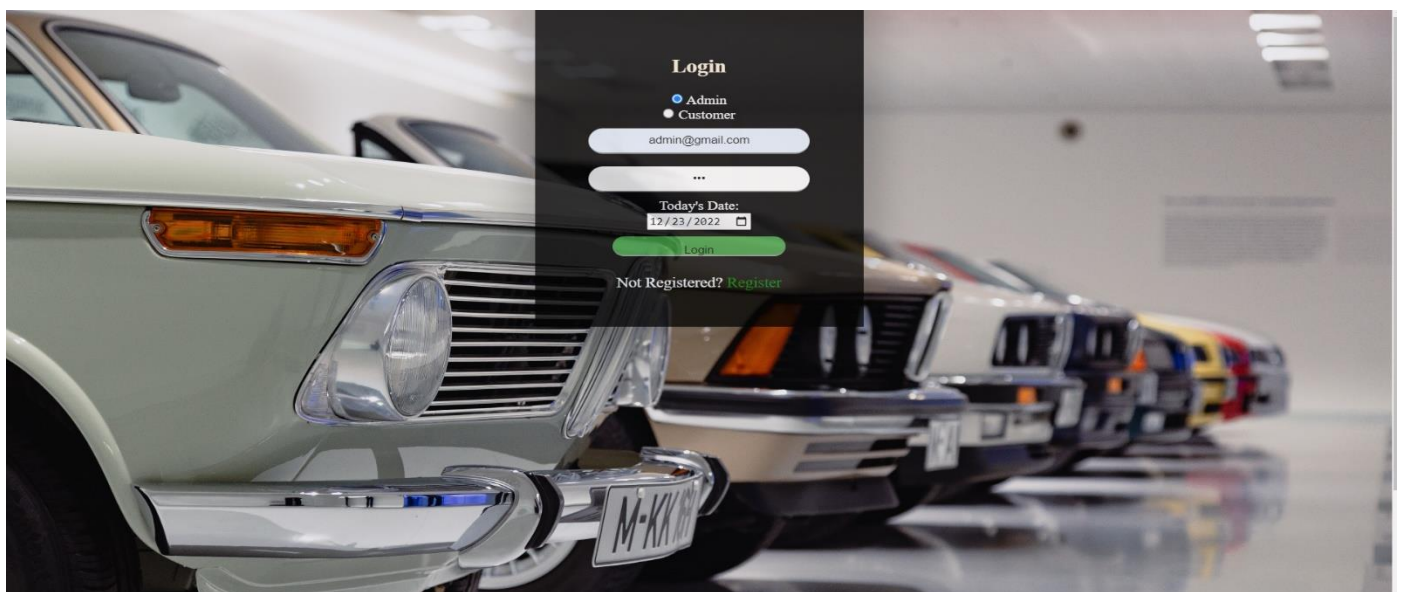
Admin Main

When Admin Logs in, the page appears as in Fig.3.

The admin has the following options:

- Register an office.
- Register a car.
- Update a status of a car to out of service.
- Make advanced search for either customer, car, or reservation day.
- Display reports for different queries.

FIGURE3

For the following Figure4, the admin chooses to add an office. For this a tuple is added in table 'Office'.
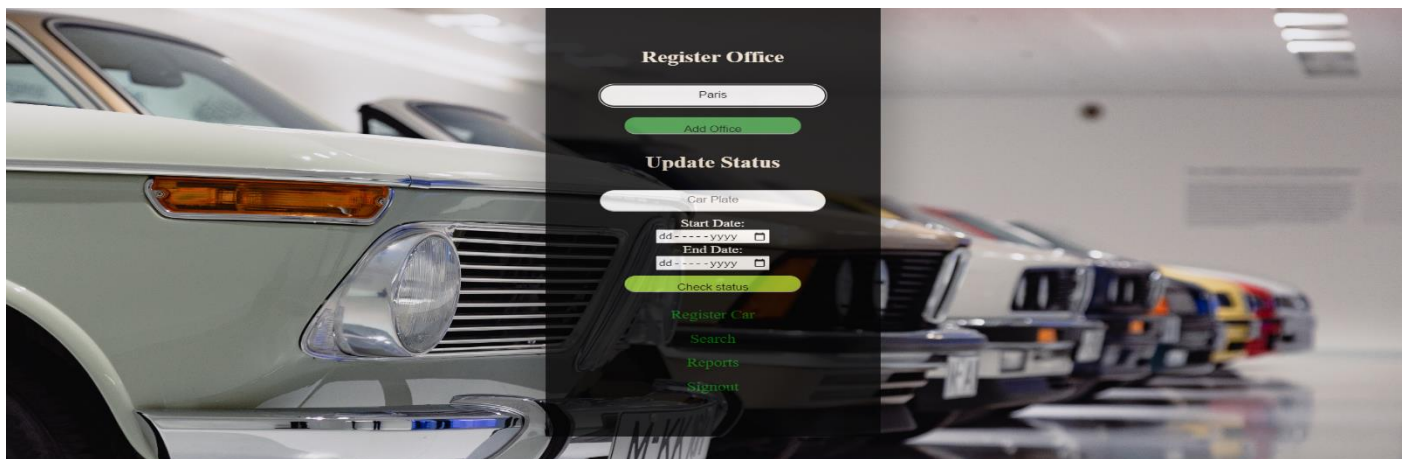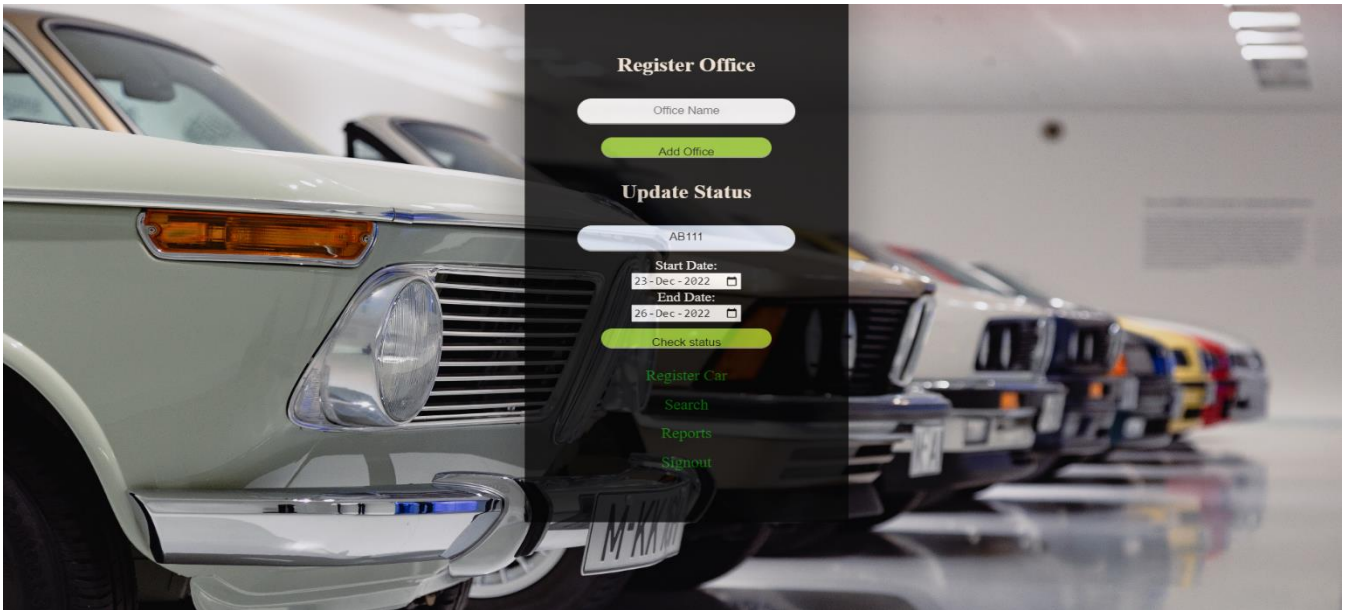

FIGURE4

Making a car out of service

For a car to be out of service, the admin provides the car plate, and the period for the car to be out of service in as in Figure5.

When clicking check status button, the system searches in "car_status" table if this interval of time fits in an available slot or not, and either allows the car to be out of service, or not in case it is not finding a slot for this interval as in Figure 6.

On the contrary, if another car is chosen for a suitable period of time as in Figure7, a button appears for the confirmation as in Figure 8, and when confirmed, the available slots of this car are updated, and another entry for its status in this period 'out of service', is added to the car_status table.
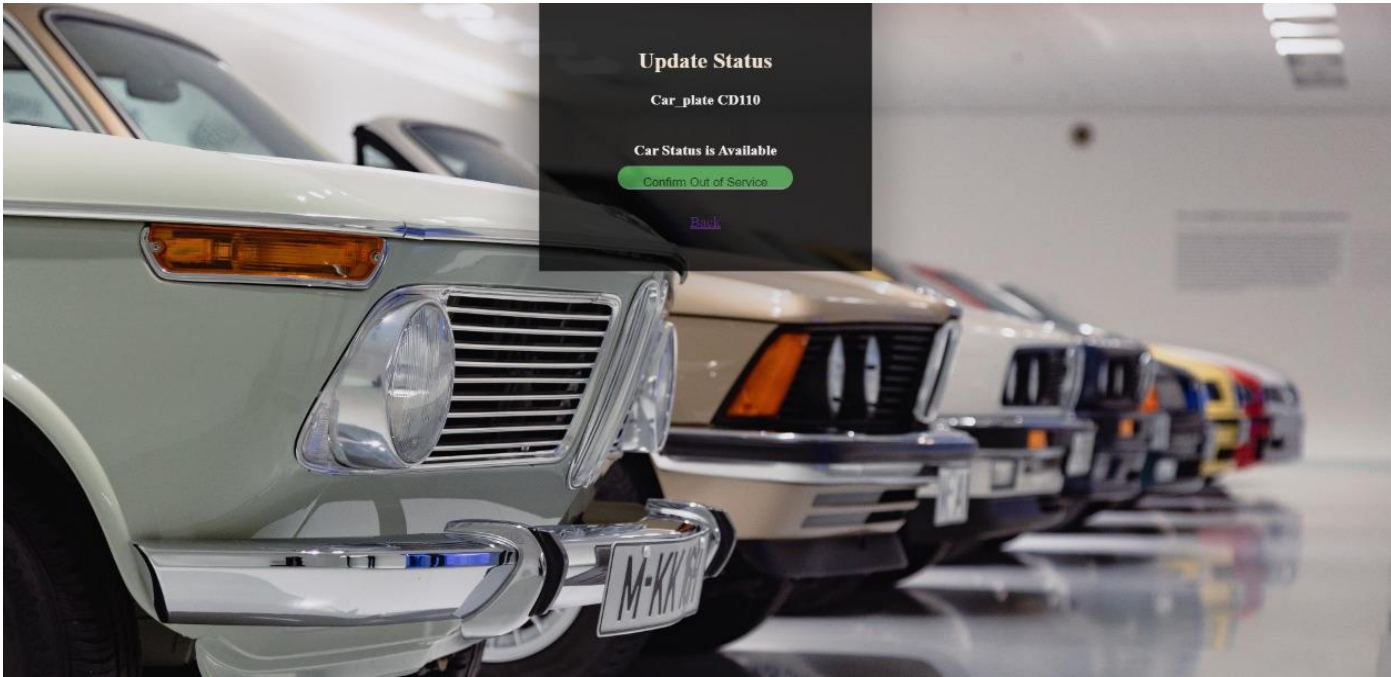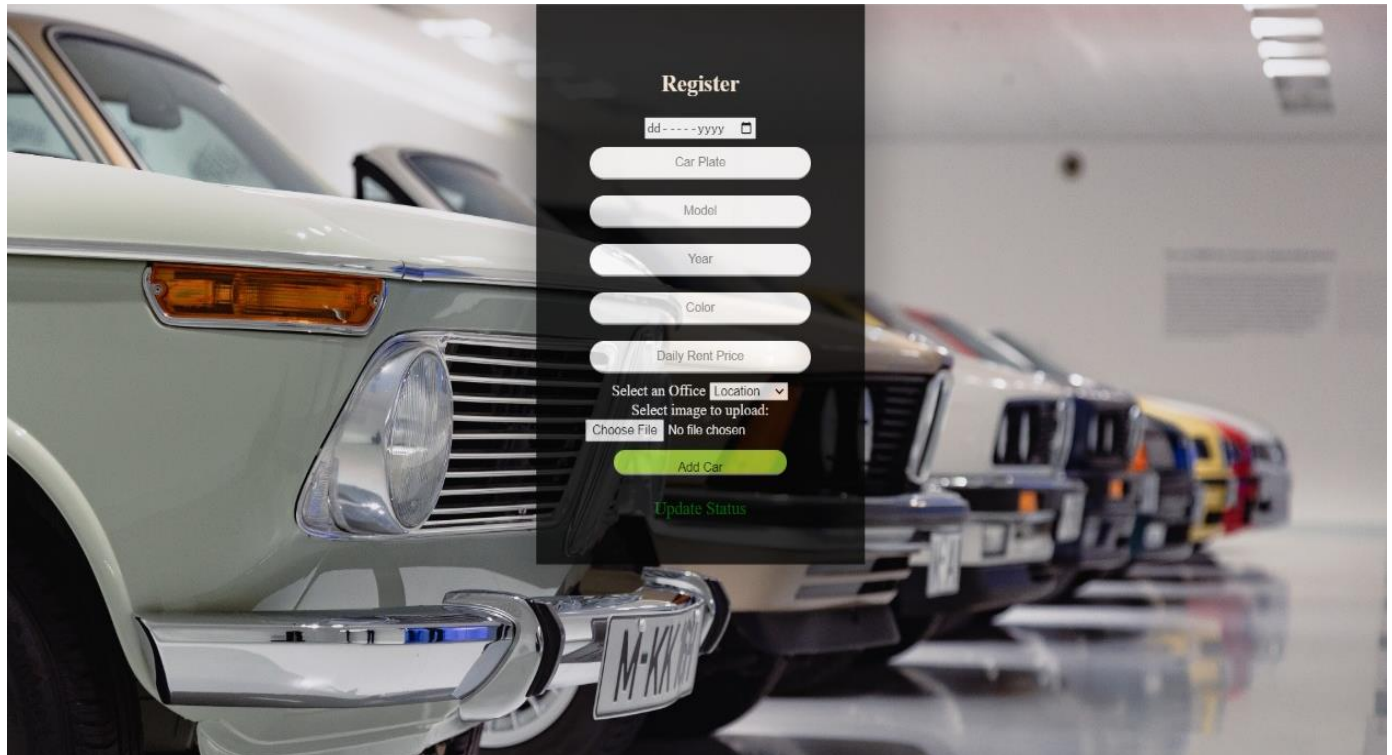

FIGURE7

FIGURE8

Registering A Car

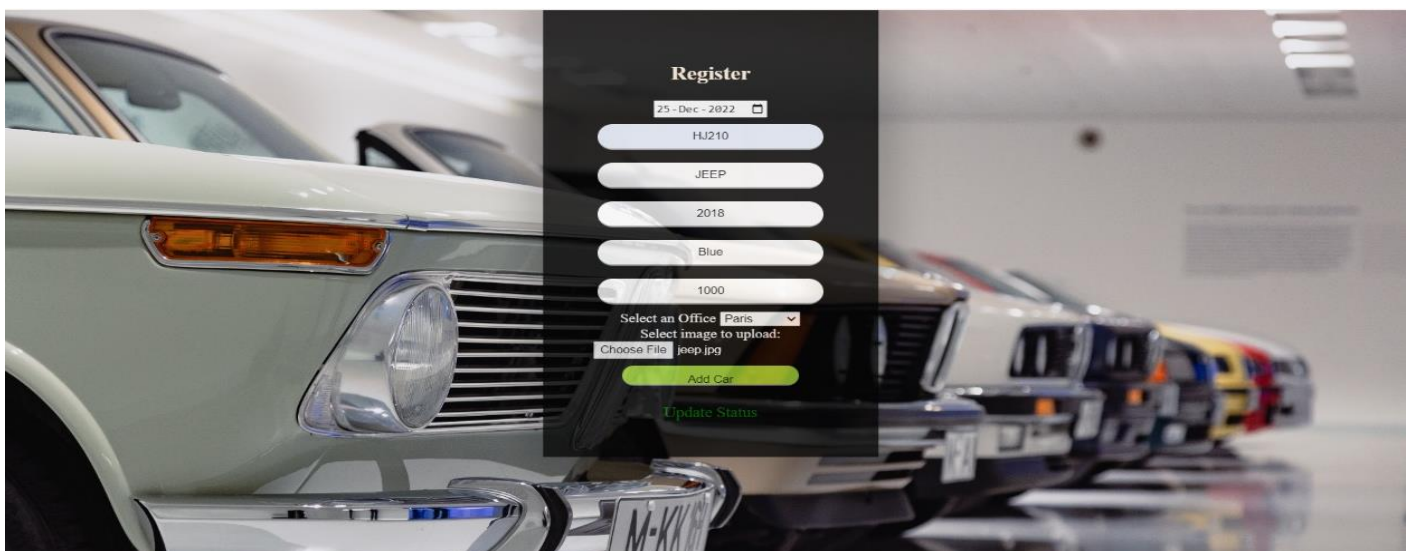If the admin wants to Add a new car to the system, 'Register a car' is clicked and the window appears as in Figure 9.

When the admin fills in the car's information, a new tuple is inserted in 'Car' table as in Figure 10, checking that no other car has the same car plate.

FIGURE10

Customer Registration

When a customer wishes to rent a car, if he/she doesn't have an account, registration must be done first as shown in Figure11. Some validations are checked before the account created Figures 12-14.
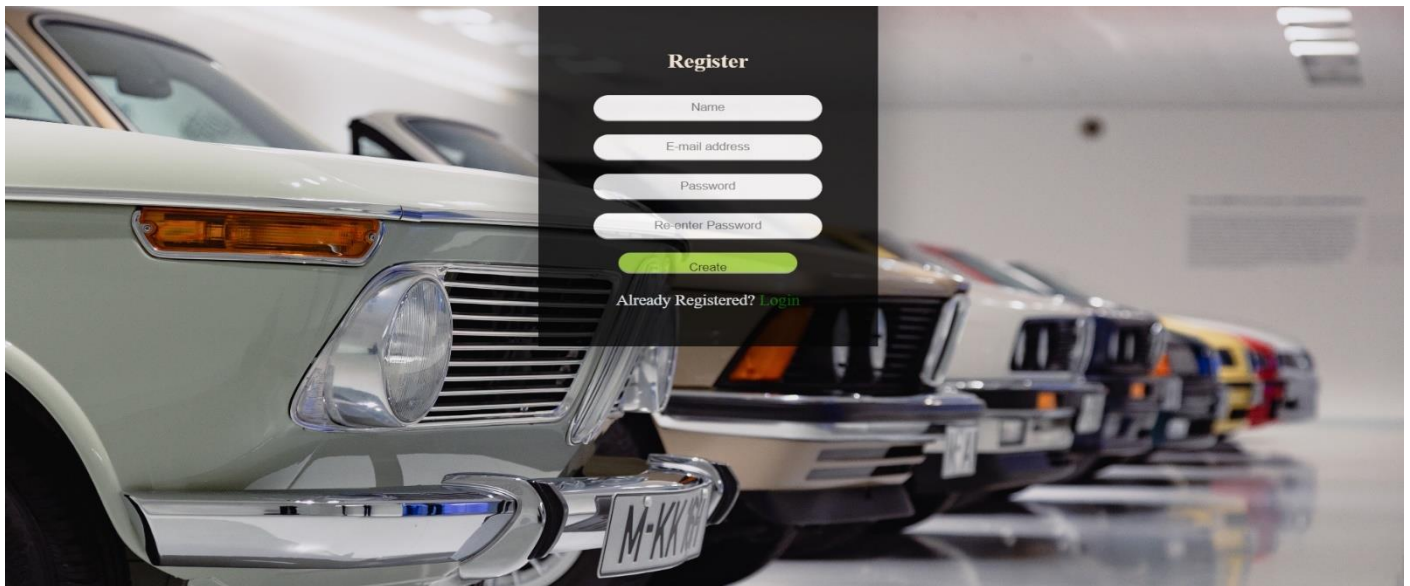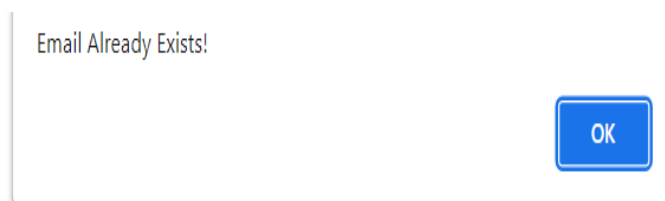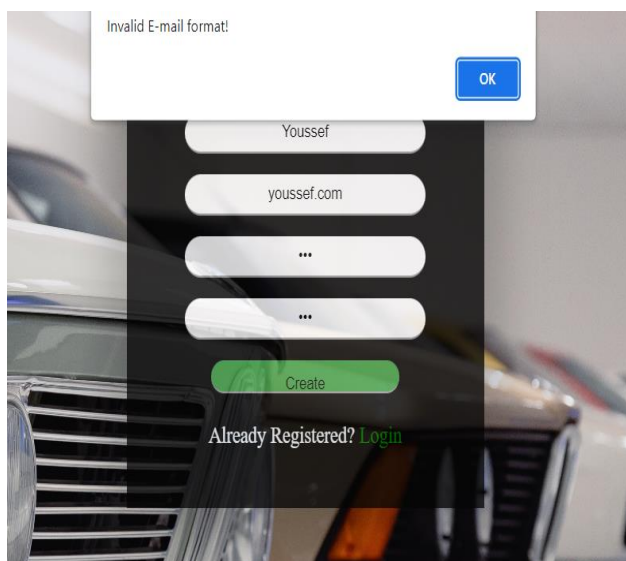

FIGURE 11

FIGURE12
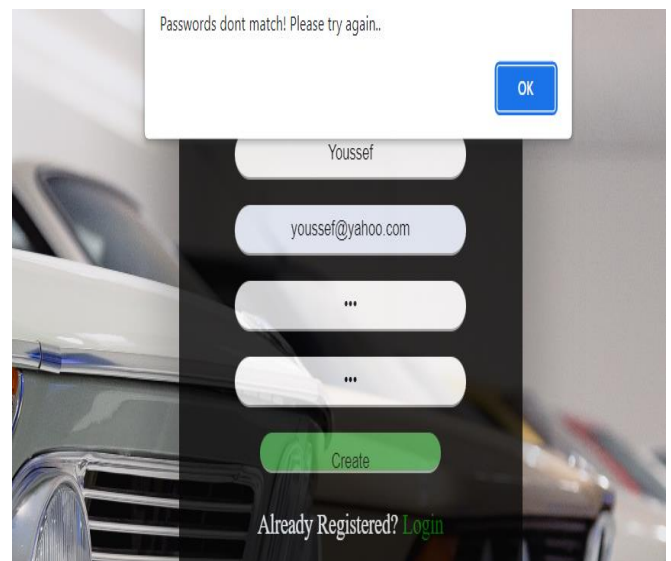

FIGURE13

FIGURE14

Costumer Login and Main

After registration, the costumer logs in with the current date as in Figure15, and the system gets the status of each car on this day by checking in which interval this day lies for each car in 'car_status' table and displays them as in Figure16.
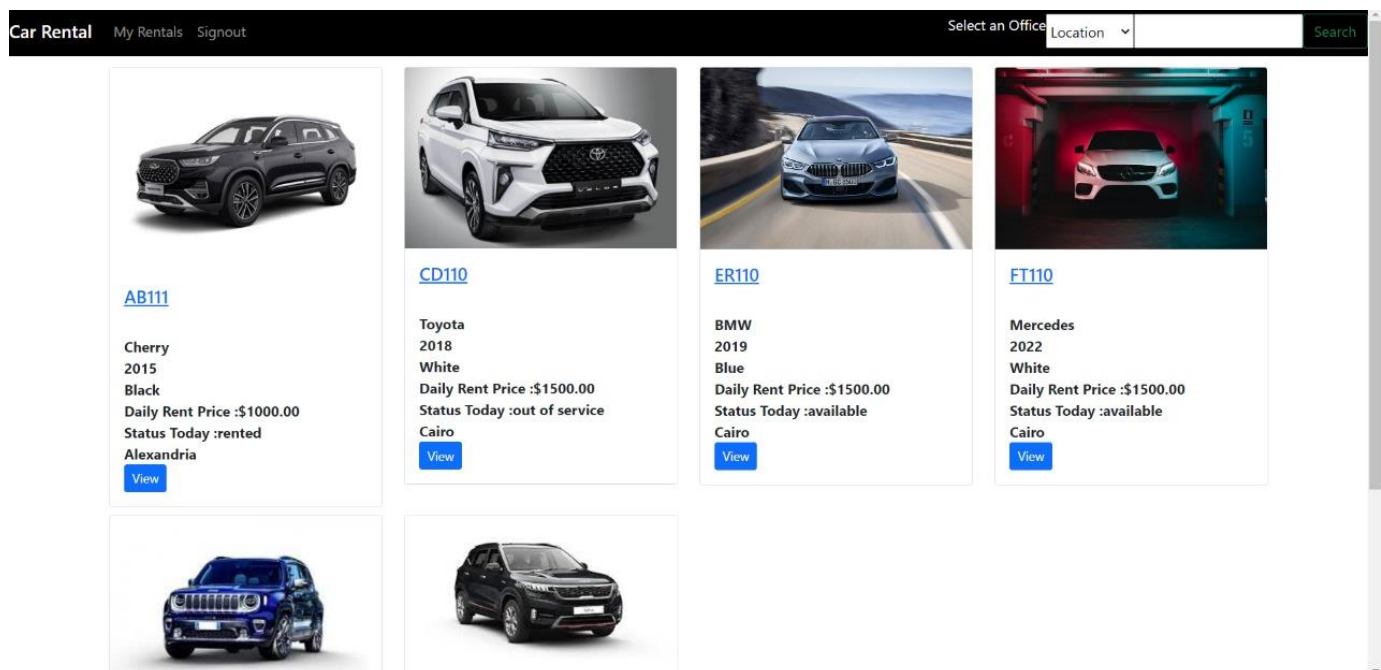

FIGURE15

FIGURE16

Searching In Costumer

Costumer has the option to choose the location he prefers to rent the car in as in Figure17. In addition, the costumer has the option to specify any aspect he/she prefers to be present in the car that will be rented as in Figure18.
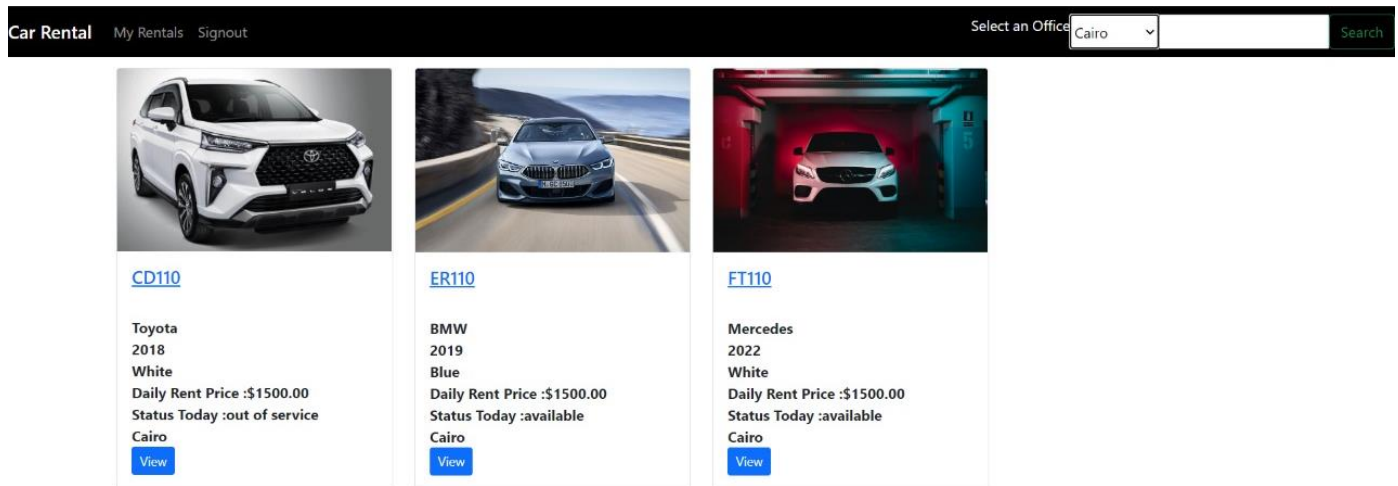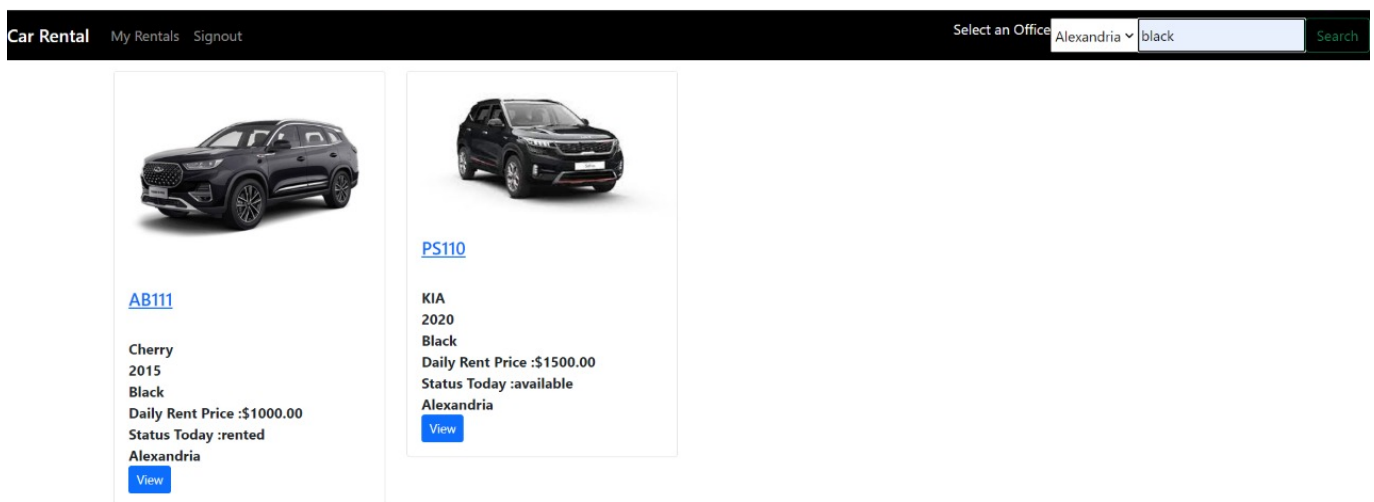
My Rentals

By clicking on 'My Rentals' in nav bar, the costumer is redirected to a page containing the reservations previously made by him as in figure 19,and there is an option to return it back either on time, before specified time, or after specified time but in this case a penalty is paid.

FIGURE19

Then, the customer returns back and chooses the car he/she wishes to rent and provides the interval. The system checks if this period overlaps with any other previously registered reservations, or overlaps with a period during which the car is out of service by looping on the 'car_status' table, and checking for contradicting intervals.

In Figure20, the customer chooses to rent the car with the car plate that was chosen previously at the same interval it was chosen to be out of service on, so the system doesn't allow the costumer to reserve the car in this period.
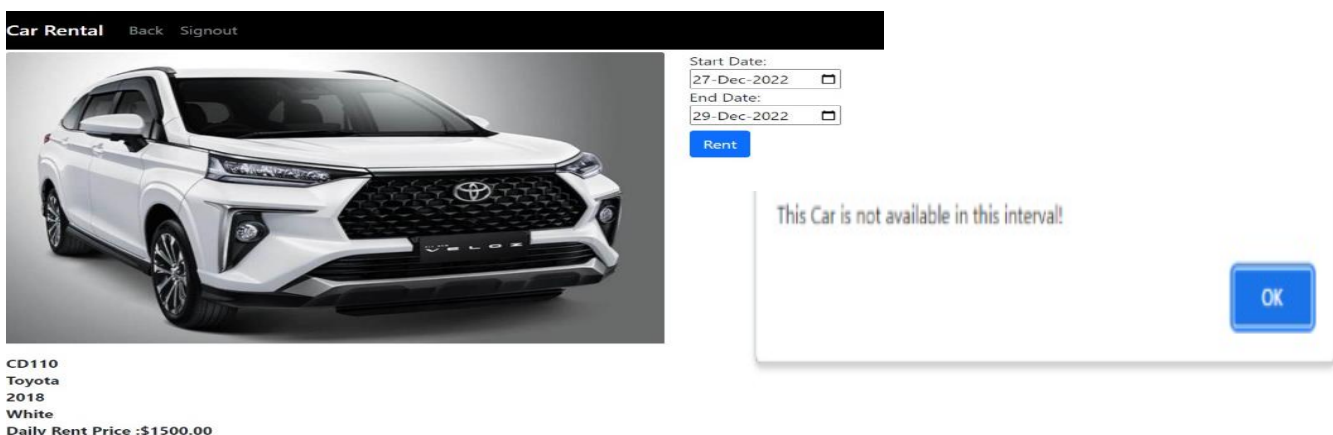

FIGURE20

Reservations

If the costumer chooses a period that doesn't conflict with other reservations or out of service periods for this specific car as in Figure21, the car reservation occurs successfully, and the system displays the full payment,(duration * daily price), updates the previous and following available slots end and start days, and adds a period in the timeline where the car status would be reserved, and the costumer will be redirected to 'my rentals' as in Figure22.

Returning

When the costumer wishes to return a car, he/she enters the date of returning. The system checks whether this return day is after the previously end date, and if so a penalty is paid from the costumer and calculated according to the number of late days multiplied by the daily rental price of the car. This process is shown in figures 21 and 22.

FIGURE23

FIGURE24

Admin Advanced Searches

The admin can make advanced search for each of either the car, costumer, or reservation day.

For each, the admin can either search using one aspect, multiple ones, or all.

Figures 25 and 26 show if multiple aspects or all are chosen.
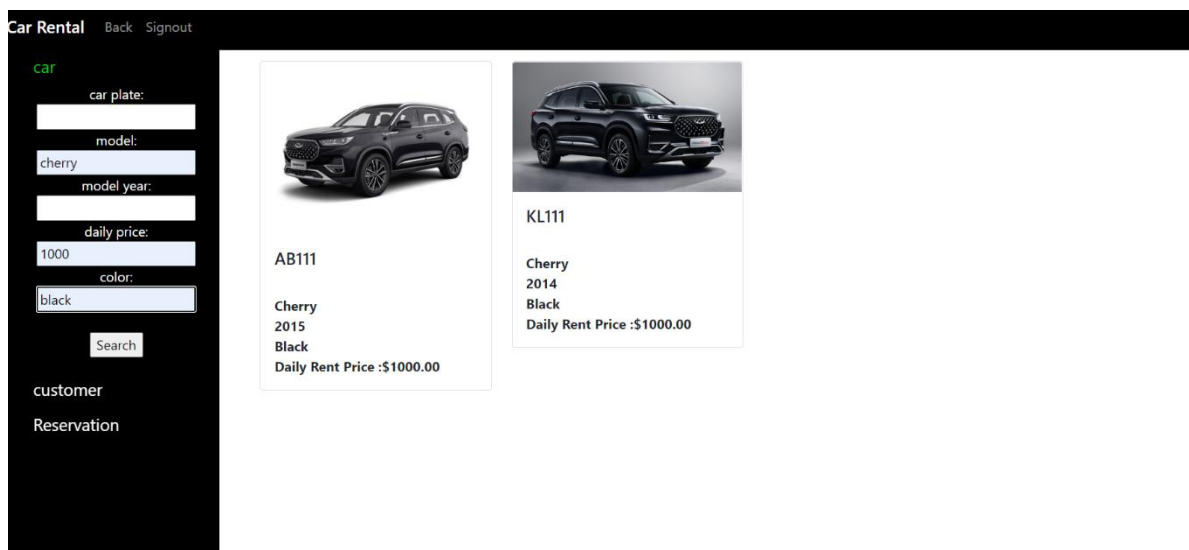
FIGURE 25
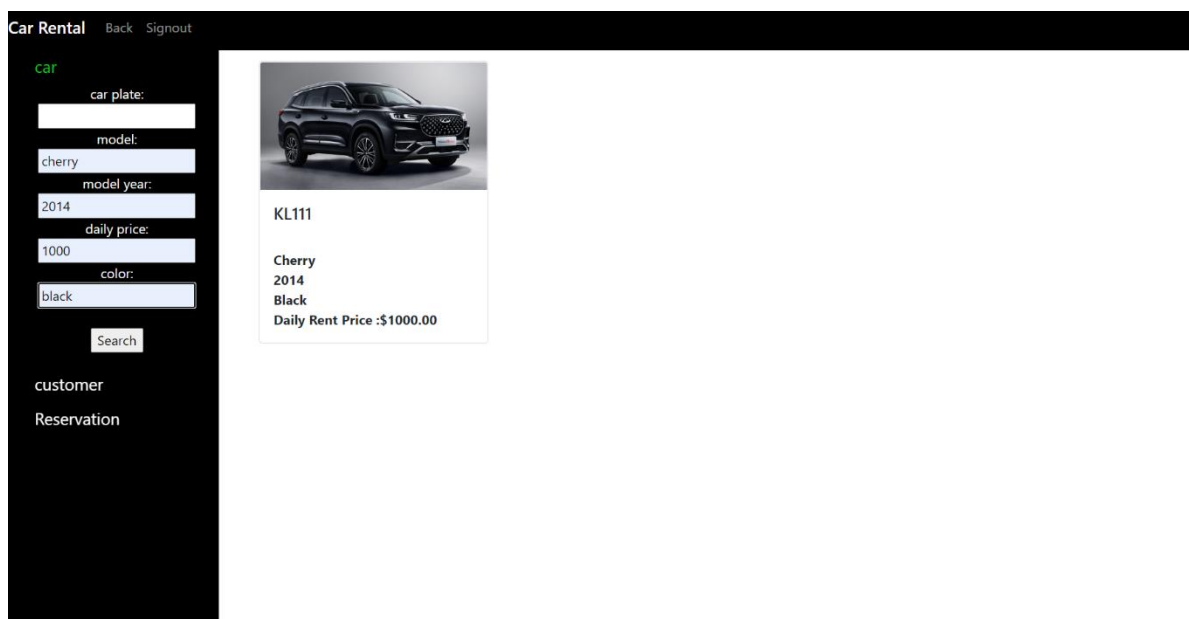
FIGURE 26

Figures 27 and 28 show searching for costumer and reservation day.

Car Rental   Back   Signout

car
customer
customer name:
Asala
email:

Search

Reservation

Asala
asala@gmail.com

Asala
sola@gmail.com

FIGURE27

Car Rental   Back   Signout

car
customer
Reservation
Reservation Day:
12/25/2022

Search

AB111

Cherry
2015
Black
Daily Rent Price :$1000.00

FT110

Mercedes
2022
White
Daily Rent Price :$1500.00

FIGURE28

Admin Reports

System provides reports to admin.

1) All reservations within a specified period including all car and customer information as in Figure29 and Figure30.
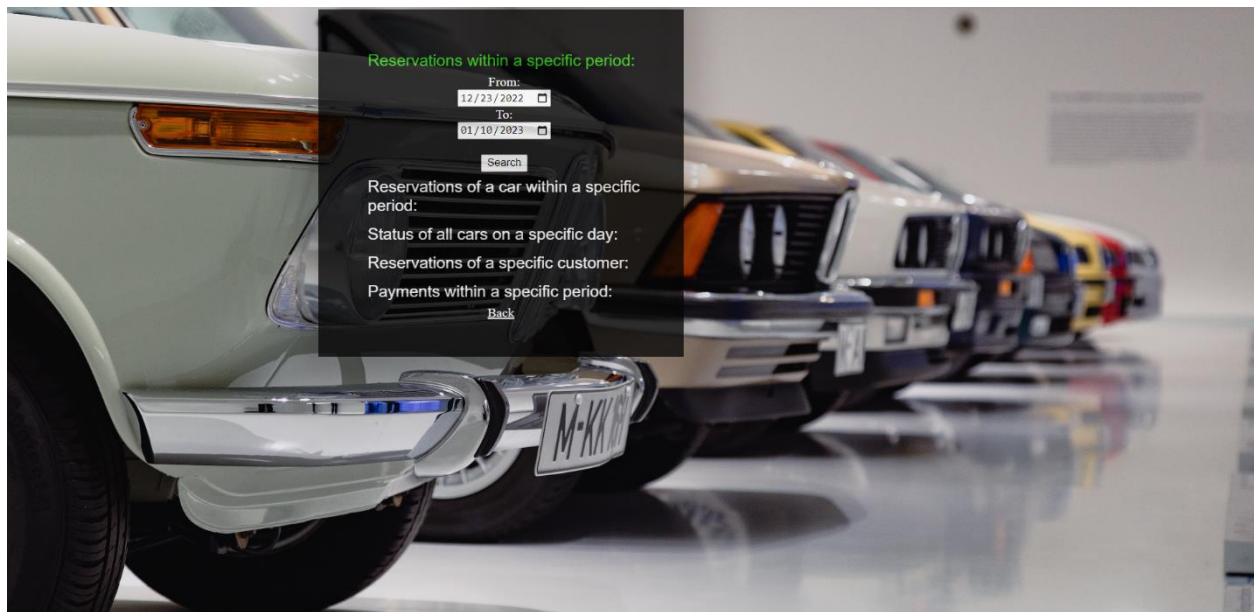
Reservations

Start Date	End Date	Return Date	Reservation Number	Is Returned?	Customer ID	Name	Email	Car Plate	Model	Model Year	Color	Daily Payment	Office ID	Image
2022-12-25	2022-12-30	2022-12-30	3	No	2	Zahraa	zahraa@gmail.com	FT110	Mercedes	2022	White	1500.00	2	
2022-12-25	2022-12-28	2022-12-30	1	Yes	2	Zahraa	zahraa@gmail.com	AB111	Cherry	2015	Black	1000.00	1	
2022-12-28	2022-12-30	2023-01-01	5	Yes	3	Farah	farah@gmail.com	ER110	BMW	2019	Blue	1500.00	2	
2023-01-02	2023-01-18	2023-01-18	6	No	1	Asala	asala@gmail.com	HJ210	JEEP	2018	Blue	1000.00	3	
2023-01-04	2023-01-07	2023-01-07	4	No	2	Zahraa	zahraa@gmail.com	FT110	Mercedes	2022	White	1500.00	2	

2) All reservations of any car within a specified period including all car information as in Figure31 and Figure32.

Image	Start Date	Return Date	Car Plate	Model	Model Year	Color	Payment	Office ID	Reservation Number	Is Returned?	Customer ID	Name	Email
	2022-12-25	2022-12-30	FT110	Mercedes	2022	White	7500.00	2	3	No	2	Zahraa	zahraa@gmail.com
	2023-01-04	2023-01-07	FT110	Mercedes	2022	White	4500.00	2	4	No	2	Zahraa	zahraa@gmail.com

FIGURE32

3)The status of all cars on a specific day as in Figure33 and Figure34.

FIGURE33

FIGURE34

4) All reservations of specific customer including customer information, car model and plate id such as in Figure35 and Figure36.

FIGURE35

Reservations

Customer ID	Name	Email	Car Plate	Model	Model Year	Color	Payment	Office ID	Reservation Number	Start Date	End Date	Return Date	Is Returned?	Image
2	Zahraa	zahraa@gmail.com	AB111	Cherry	2015	Black	3000.00	1	1	2022-12-25	2022-12-28	2022-12-30	Yes	
2	Zahraa	zahraa@gmail.com	FT110	Mercedes	2022	White	7500.00	2	3	2022-12-25	2022-12-30	2022-12-30	No	
2	Zahraa	zahraa@gmail.com	FT110	Mercedes	2022	White	4500.00	2	4	2023-01-04	2023-01-07	2023-01-07	No	

FIGURE36

5) Daily payments within specific period as in Figure 37 and Figure 38.

FIGURE37

FIGURE38

Entity Relationship (ER) Diagram