

Car Rental System

Database final project

Project By:

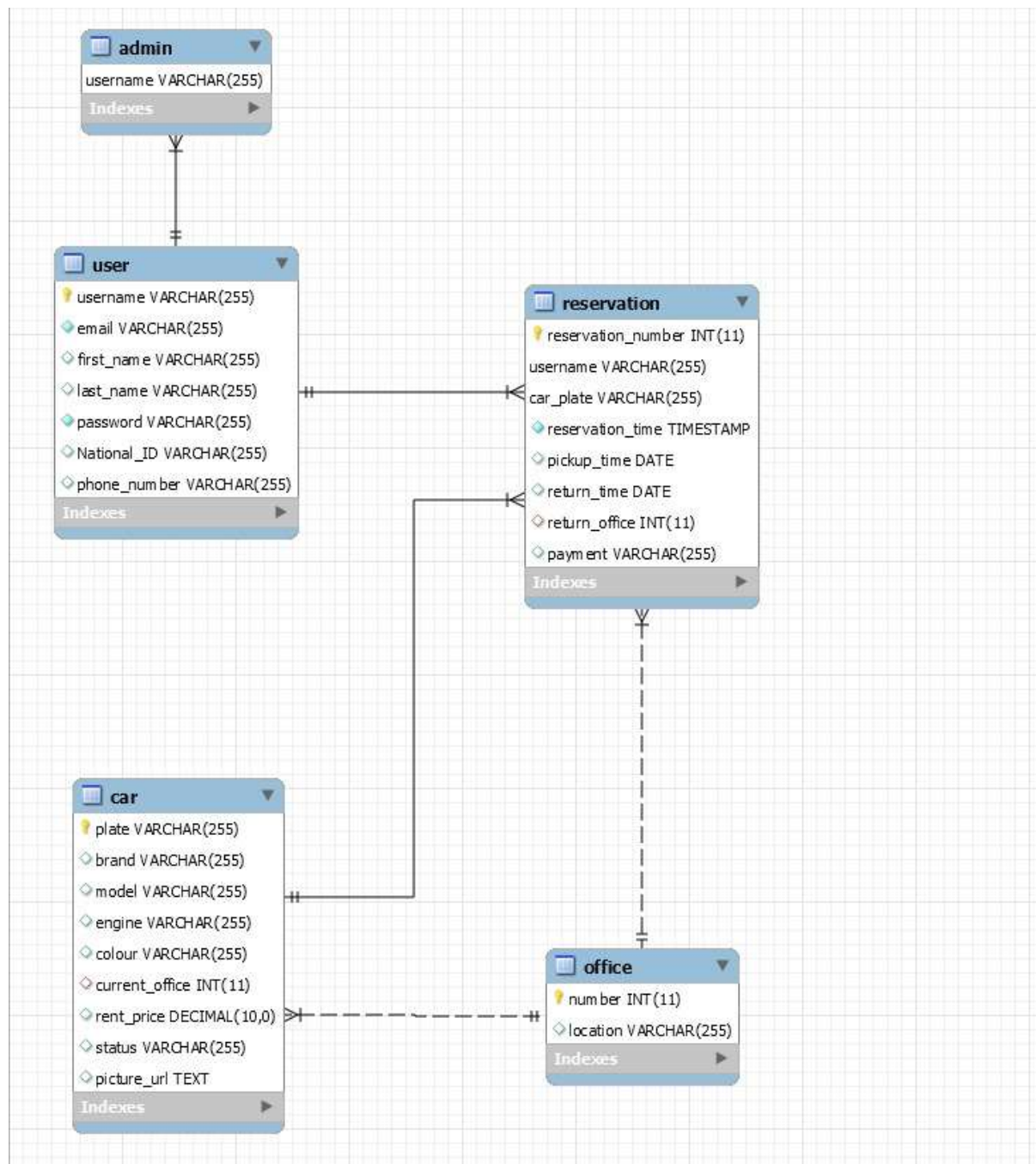
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ER Diagram



DDL

```
CREATE DATABASE car_rental_db;
```

```
CREATE TABLE USER
```

```
(
    username VARCHAR(255) PRIMARY KEY,
    email VARCHAR(255) UNIQUE NOT NULL,
    first_name VARCHAR(255),
    last_name VARCHAR(255),
    password VARCHAR(255) NOT NULL,
    National_ID VARCHAR(255),
    phone_number VARCHAR(255)
);
```

```
CREATE TABLE ADMIN
```

```
(
    username VARCHAR(255),
    PRIMARY KEY (username),
    FOREIGN KEY (username) REFERENCES USER(username)
);
```

```
CREATE TABLE OFFICE
```

```
(
    number INT PRIMARY KEY,
    location VARCHAR(255) UNIQUE
);
```

```
CREATE TABLE CAR
```

```
(
    plate VARCHAR(255) PRIMARY KEY,
    brand VARCHAR(255), #Tesla, BMW, Mercedes, ...etc.
    model VARCHAR(255),
    engine VARCHAR(255), #Gasoline, Diesel, Hybrid, Electric
    colour VARCHAR(255),
    current_office INT, #changed according to return_location in reservation
    rent_price DECIMAL,
    status VARCHAR(255),
    picture_url TEXT,
    FOREIGN KEY (current_office) REFERENCES OFFICE(number)
);
```

```
CREATE TABLE RESERVATION
```

```
(
    reservation_number INT UNIQUE AUTO_INCREMENT,
    username VARCHAR(255),
    car_plate VARCHAR(255),
    reservation_time TIMESTAMP,
    pickup_time DATE,
    return_time DATE,
    return_office INT, #pick_up location is redundant as it can be accessed by the car_plate
    payment VARCHAR(255),
    FOREIGN KEY(username) REFERENCES USER(username),
    FOREIGN KEY (car_plate) REFERENCES CAR(plate),
    FOREIGN KEY (return_office) REFERENCES OFFICE(number),
    PRIMARY KEY (reservation_number, username, car_plate)
);
```

WEBSITE

The website starts at the Welcome page, where the user has the choice to log in or sign up.

Noting that one cannot sign up as an admin – the admin credentials are directly added to the database for security. And so 'sign up' is automatically assumed to be a customer.

Welcome To Car Rental System



This is the sign up page once the button is selected. The user must fill in all inputs in order to complete a successful account sign-up.

Extra attributes (ex: national ID) were added for a realistic touch.

Sign Up

First Name	Last Name	Email	Password	Phone Number	National ID	Username
------------	-----------	-------	----------	--------------	-------------	----------

Sign Up

This is the page the website redirects to if the login button was pressed instead. In this case, only the email/username is required along with the password.

Verifications are made to ensure both fields are entered, and then the credentials are checked against the database.

Login

Please enter email or username (1000000000) Password *****

After a successful login, the user is redirected to the page shown in the following screenshot.

The customer chooses the pickup and return locations from the dropdown lists, as well as the pick up and return dates, with only the available locations and dates shown as options.

New Reservation

Pickup Location Return Location

Pick up date

01/10/2022

Return Date

01/10/2022

New Reservation

Spells Spells

Pick up date

01/11/2022

Return Date

01/04/2022

February 2022

Su	Mo	Tu	We	Th	Fr	Sa
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

The customer then selects a car from the ones available, listed below. The customer can also search amongst the available cars for the desired car using any of the (sensible) attributes available.

Select Car

Brand:


Model:

Engine:

Color:

Max Price:

Search



Tesla

Model S

Color: Red

Engine: Electric

Status: active

Price: 400\$/day

☐ Select Car

Continue to Payment

In case the customer continues to payment (after selecting the desired car), the following page is displayed, as a receipt. The reservation details are displayed, with the total cost displayed at the end. The customer then gets to choose the method of payment, whether at the moment or on pickup. Once the customer clicks on 'reserve', the reservation is considered complete and the reservation details are saved.

Reservation Receipt

Pickup Location: Spain

Pickup Date: Mon Jan 10 2022

Return Location: Spain

Return Date: Tue Jan 11 2022

Brand: Tesla

Model: Model S

Engine: Electric

Color: Red

Total Cost: 400

Payment Method

☐ Pay On-Pickup

☐ Pay Now

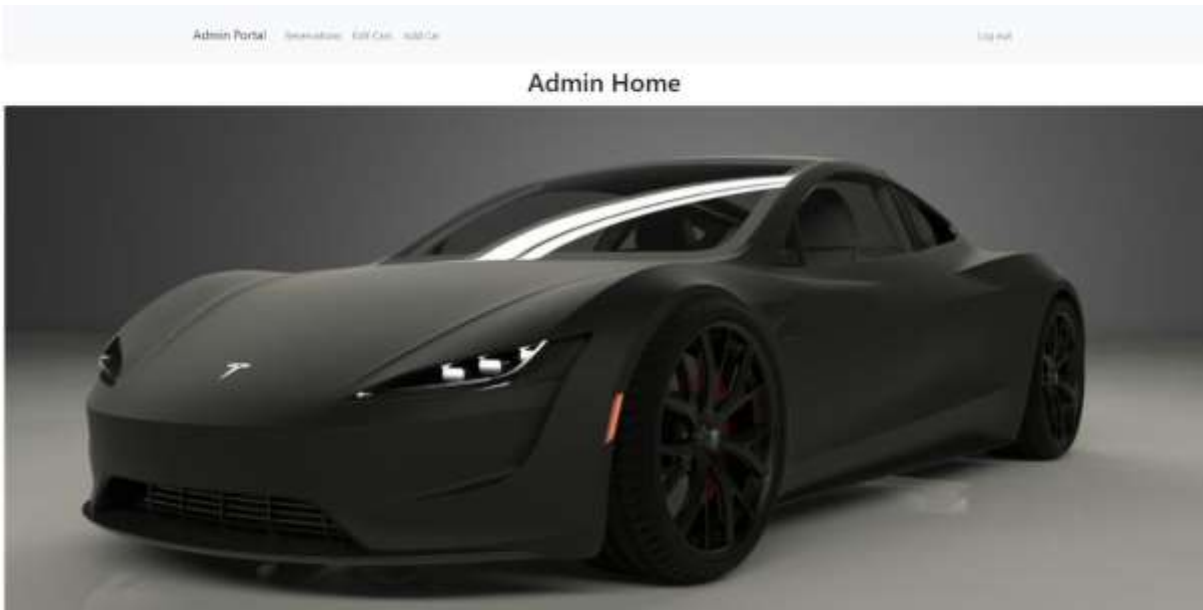
Reserve

Once successfully saved, a confirmation message is finally displayed. The customer can then choose to make another reservation (and go through the entire process again), or logout, and in this case the user will be redirected to the very first 'Welcome' page.

Reserved car Tesla Model S for 2022-01-11 successfully

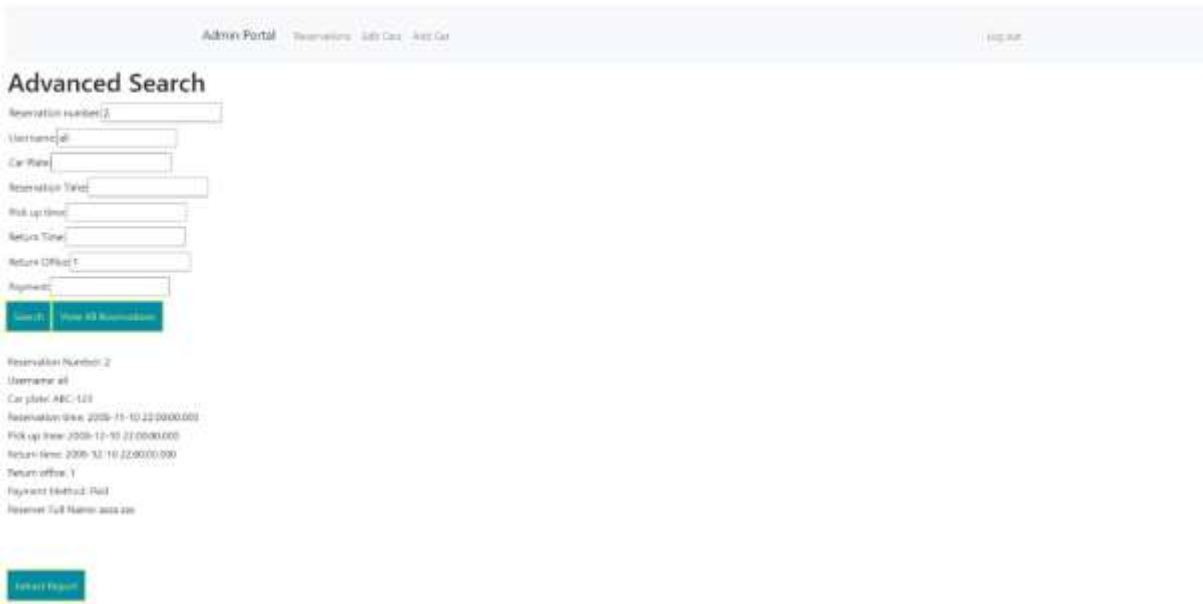
[New Reservation](#) [Logout](#)

In contrast to the customer portal, this is the start of the admin portal, another welcome page.



Firstly, the admin gets to make an advanced search over the reservations. In this case, the admin gets to search by any desired (sensible) attribute (and any specification left empty will be ignored in the search).

The admin could also view all reservations if he wishes to do so.



The results of the search – or the selection – will be displayed below the form, and the admin will have the option to ‘Extract report’. In this case, a .csv file will automatically start downloading.

The report will include all attributes, and only the fields that match the admins’ search/preference. The excel sheet makes it very easy for the admin to edit through, selecting whichever attributes he would like displayed and leaving out the others, in addition to sorting, etc.

Admin Portal | Reservations | Edit Cars | Add Car

Advanced Search

Reservation number:

Username:

Car Plate:

Reservation Time:

Pick up time:

Return Time:

Return Office:

Payment:

Reservation Number: 2
Username: all
Car plate: ABC-123
Reservation time: 2020-11-10 22:00:00.000
Pick up time: 2020-12-15 22:00:00.000
Return time: 2020-12-10 22:00:00.000
Return office: 1
Payment Method: Full
Reserver Full Name: John Doe

The admin also has the authority to update any car details, excluding the car plate and other obvious attributes as such. The admin chooses the car by the car number plate from the first dropdown list, and then proceeds to choose the attribute he/she wishes to change from the second dropdown list. The user admin then types in the desired change, and clicks on update once done. However, there are verification checks on the changed data (for example, a car’s office number can only be changed if the new office number exists).

Admin Portal | Reservations | Edit Cars | Add Car

ABC-123

Status

Out of service ☐

Successfully updated status for car ABC-123 with value Out of service

The admin can also add cars to the system using the 'Add car' option in the navigation bar. In this case, the admin has to input all details of the car (all specs), and the car is added to the system once the admin clicks on the 'Add car' button.

Admin Portal

PermissionsAdd CarsAdd Car

Logout

Add Car

Make

1212121

Brand

Toyota

Model

Yaris

Engine

Gas

Colour

Blue

Current Office

Best Price

20000

Manual

Active

Image URL

https://unsplash.it/640x480

Add Car