Coding Challenge - Car Rental System - SQL

Submitted By-

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Creating Database named Car Rental System:

```
Use Car_Rental_System;

Use Car_Rental_System;

O0 % 

Messages

Commands completed successfully.

Completion time: 2024-09-23T17:17:20.6950307+05:30
```

Creating Tables:

Vehicle Table:

```
☐ Create Table Vehicle(
vehicleID INT Primary Key,
make varchar(255),
model varchar(255),
year Int,
dailyRate Decimal(10,2),
status varchar(20),
passengerCapacity Int,
engineCapacity Int
);
```

Customer Table:

```
☐Create Table Customer(
    customerID Int primary key,
    firstName varchar(255),
    lastName varchar(255),
    email varchar(255),
    phoneNumber varchar(20)
);
```

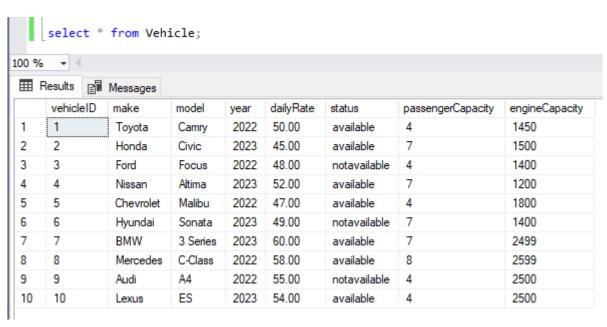
Lease Table:

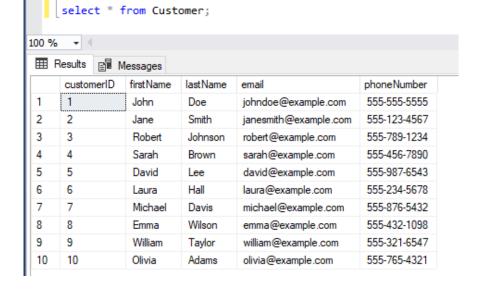
```
☐ Create Table Lease(
    leaseID Int primary key,
    vehicleID Int,
    customerID Int,
    startDate Date,
    endDate Date,
    type varchar(25),
    Foreign Key (vehicleID) References Vehicle (vehicleID),
    Foreign Key (customerID) References Customer (customerID)
```

Payment Table:

```
Messages
Commands completed successfully.
Completion time: 2024-09-23T19:45:54.8315854+05:30
```

Inserting records into each tables Vehicle and Customer Table:

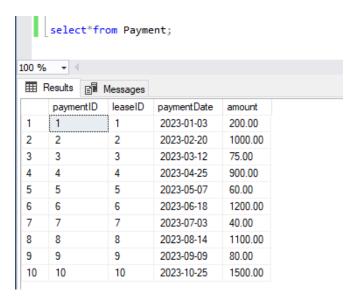




Inserting into Lease table:

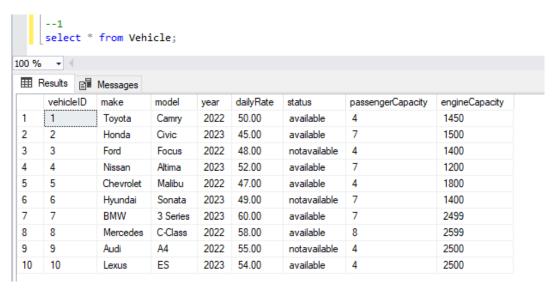
```
∐Insert Into Lease(leaseID, vehicleID, customerID, startDate, endDate, type)
        Values
       Values
(1, 1, 1, '2023-01-01', '2023-01-05', 'Daily'),
(2, 2, 2, '2023-02-15', '2023-02-28', 'Monthly'),
(3, 3, 3, '2023-03-10', '2023-03-15', 'Daily'),
(4, 4, 4, '2023-04-20', '2023-04-30', 'Monthly'),
(5, 5, 5, '2023-05-05', '2023-05-10', 'Daily'),
(6, 4, 3, '2023-06-15', '2023-06-30', 'Monthly'),
(7, 7, 7, '2023-07-01', '2023-07-10', 'Daily'),
(8, 8, 8, '2023-08-12', '2023-08-15', 'Monthly'),
(9, 3, 3, '2023-09-07', '2023-09-10', 'Daily'),
(10, 10, 10, '2023-10-10', '2023-10-31', 'Monthly'),
        (10, 10, 10, '2023-10-10', '2023-10-31', 'Monthly');
100 % -
 Messages
     (10 rows affected)
     Completion time: 2024-09-24T11:08:12.8286712+05:30
                  select * from Lease;
        100 %
          Results Messages
                  leaseID
                                vehicleID customerID
                                                                  startDate endDate
                                                                                                       type
                   1
                                 1
                                                 1
                                                                   2023-01-01 2023-01-05
                                                                                                        Daily
          2
                   2
                                 2
                                                 2
                                                                   2023-02-15 2023-02-28
                                                                                                        Monthly
          3
                   3
                                 3
                                                 3
                                                                   2023-03-10 2023-03-15
                                                                                                        Daily
                                                 4
                                                                   2023-04-20 2023-04-30
           4
                   4
                                 4
                                                                                                        Monthly
                                                 5
          5
                   5
                                 5
                                                                   2023-05-05 2023-05-10
                                                                                                        Daily
          6
                   6
                                 4
                                                 3
                                                                   2023-06-15 2023-06-30
                                                                                                        Monthly
          7
                                                 7
                   7
                                 7
                                                                   2023-07-01 2023-07-10
                                                                                                        Daily
          8
                   8
                                 8
                                                 8
                                                                   2023-08-12 2023-08-15
                                                                                                        Monthly
           9
                   9
                                 3
                                                 3
                                                                   2023-09-07 2023-09-10 Daily
           10
                                                                   2023-10-10 2023-10-31 Monthly
                   10
                                 10
                                                 10
```

Inserting into Payment table:

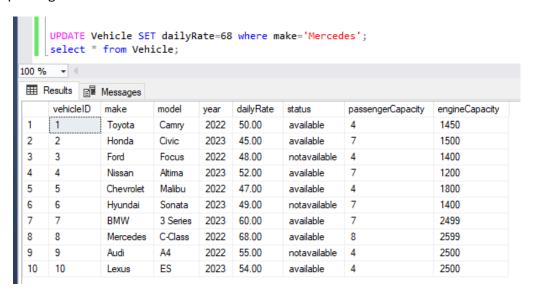


1. Update the daily rate for a Mercedes car to 68.

Before updating:



After updating:



2. Delete a specific customer and all associated leases and payments.

```
DELETE From Payment where leaseID in (Select leaseID from Lease where customerID=3);

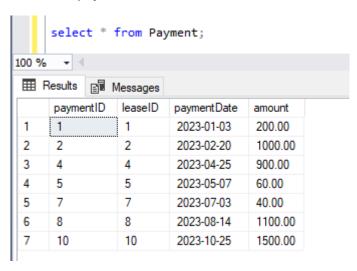
100 % 

Messages

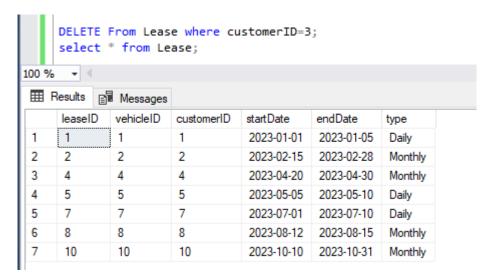
(3 rows affected)

Completion time: 2024-09-24T11:34:50.4179340+05:30
```

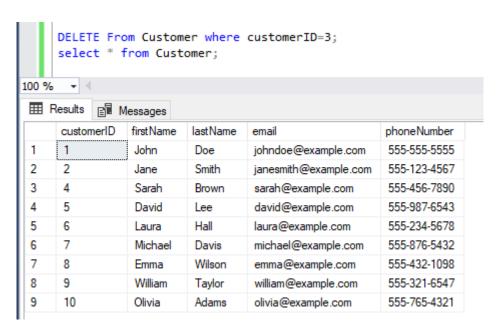
Deleting customer details from payment table based on their customer and lease ID.



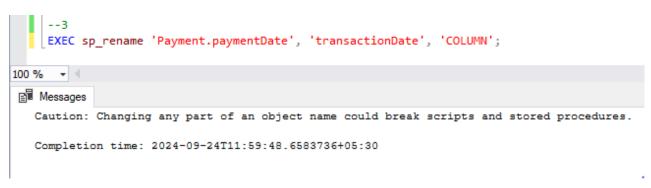
Deleting the customer from the lease table based on a specific customer:

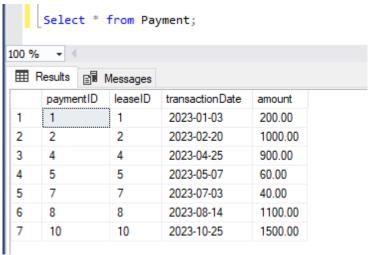


Deleting the customer from the customer table based on customer id:



3. Rename the "paymentDate" column in the Payment table to "transactionDate".





4. Find a specific customer by email.

```
--4
Select * from Customer where email = 'emma@example.com';

100 % 
Results Messages

| CustomerID firstName lastName email phoneNumber | 1 8 Emma Wilson emma@example.com 555-432-1098
```

5. Get active leases for a specific customer.

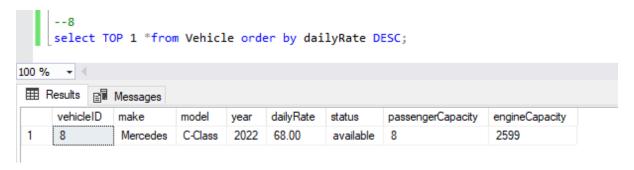
6. Find all payments made by a customer with a specific phone number.

7. Calculate the average daily rate of all available cars.

```
--7
| Select AVG(dailyRate) AS Avg_daily_rate_for_avl_cars
| From Vehicle where status='available';

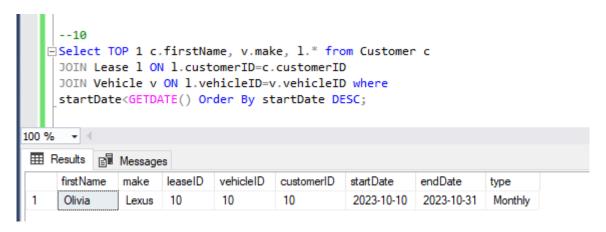
100 % 
| Results | Messages |
| Avg_daily_rate_for_avl_cars |
| 1 | 53.714285
```

8. Find the car with the highest daily rate.

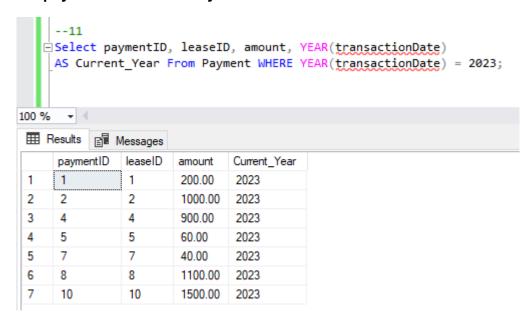


9. Retrieve all cars leased by a specific customer.

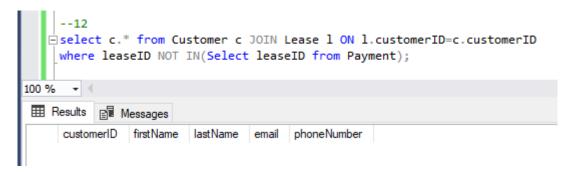
10. Find the details of the most recent lease.



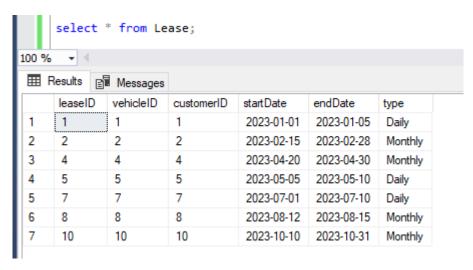
11. List all payments made in the year 2023.

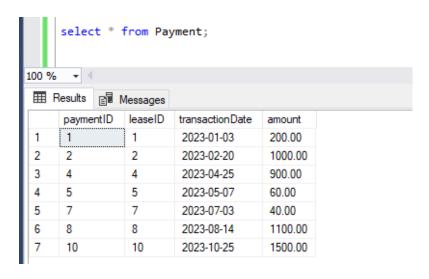


12. Retrieve customers who have not made any payments.

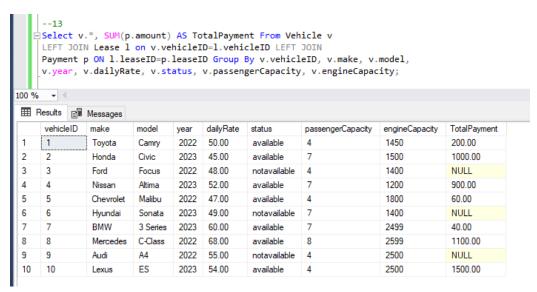


The result is an empty set because every customer had made the payment of their lease, we can see the following tables:

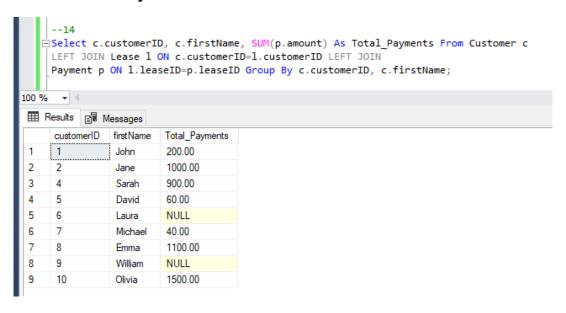




13. Retrieve Car Details and Their Total Payments.



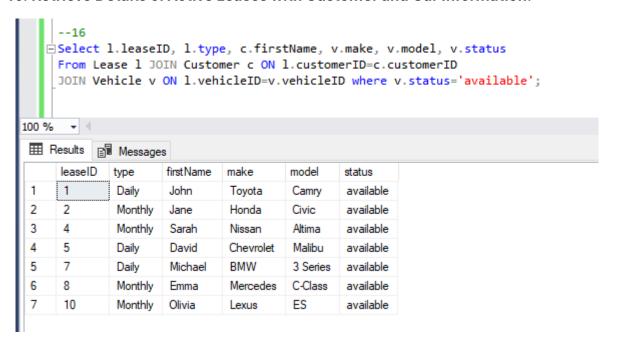
14. Calculate Total Payments for Each Customer.



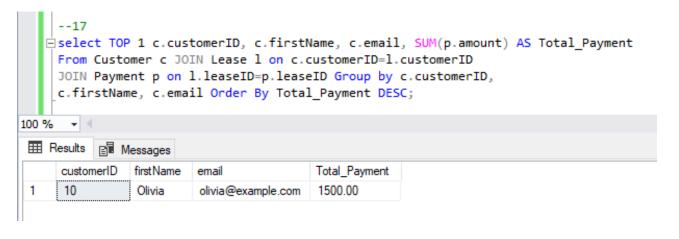
15. List Car Details for Each Lease.

```
--15
   Select v.vehicleID, v.make, v.model, v.dailyRate, v.passengerCapacity,
     1.leaseID, 1.startDate, 1.endDate, 1.Type From Lease 1
     LEFT JOIN Vehicle v ON l.vehicleID=v.vehicleID;
100 % 🕶 🖪
Results Messages
      vehicleID
               make
                          model
                                  dailyRate passengerCapacity
                                                             leaseID startDate
                                                                                 endDate
                                                                                            Type
                                   50.00
                                                                      2023-01-01 2023-01-05
 1
      1
                          Camry
                                                              1
                                                                                            Daily
                Tovota
                                   45.00
                                                              2
 2
                Honda
                          Civic
                                                                      2023-02-15 2023-02-28 Monthly
 3
                Nissan
                          Altima
                                   52.00
                                            7
                                                              4
                                                                      2023-04-20 2023-04-30 Monthly
 4
      5
                Chevrolet
                          Malibu
                                   47.00
                                             4
                                                              5
                                                                      2023-05-05 2023-05-10
                                                                                            Daily
5
      7
                                            7
                                                              7
                BMW
                          3 Series 60.00
                                                                      2023-07-01 2023-07-10
                                                                                            Daily
6
      8
                Mercedes
                          C-Class
                                   68.00
                                            8
                                                              8
                                                                      2023-08-12 2023-08-15 Monthly
 7
      10
                          ES
                                   54.00
                                             4
                                                              10
                                                                      2023-10-10 2023-10-31 Monthly
                Lexus
```

16. Retrieve Details of Active Leases with Customer and Car Information.



17. Find the Customer Who Has Spent the Most on Leases.



18. List All Cars with Their Current Lease Information.

