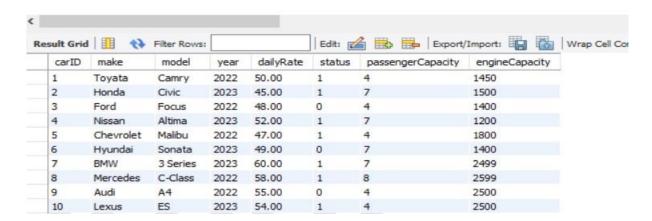
Coding Challenge

Topic: Car Rental System – SQL

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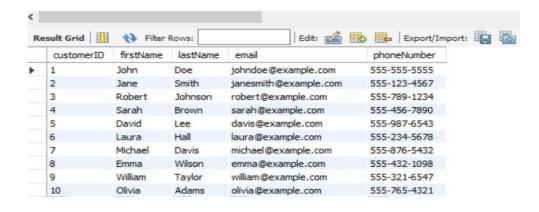
1. Vehicle Table:

- vehicleID (Primary Key)
- make
- model
- year
- dailyRate
- status (available, notAvailable)
- passengerCapacity
- engineCapacity
 - 2 select * from vehicle;



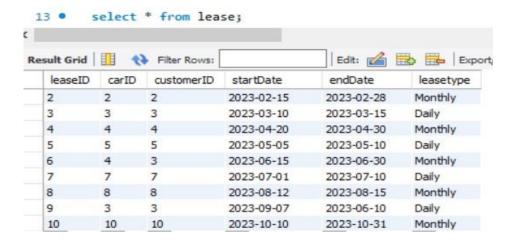
2. Customer Table:

- customerID (Primary Key)
- firstName
- lastName
- email
- phoneNumber
 - 2 select * from customer;



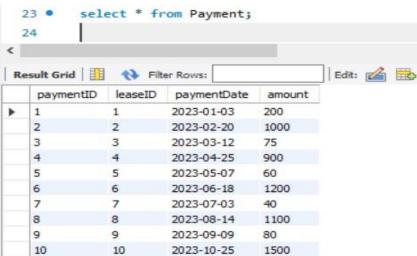
3. Lease Table:

- leaseID (Primary Key)
- vehicleID (Foreign Key referencing Vehicle Table)
- customerID (Foreign Key referencing Customer Table)
- startDate
- endDate
- type (to distinguish between DailyLease and MonthlyLease)

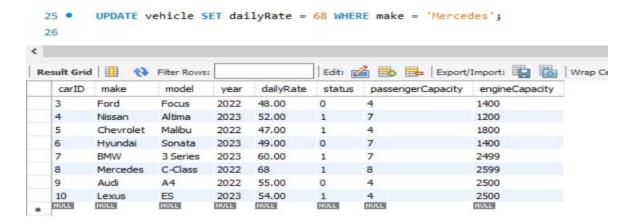


4. Payment Table:

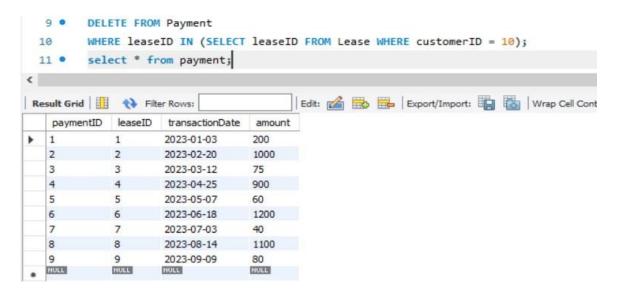
- paymentID (Primary Key)
- leaseID (Foreign Key referencing Lease Table)
- paymentDate
- amount



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

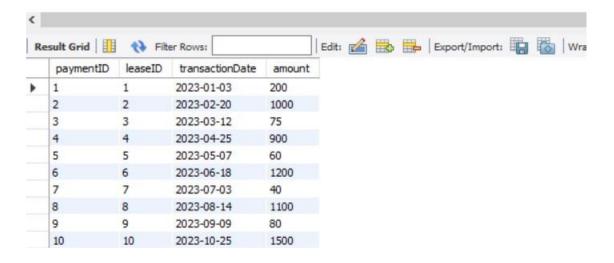


2. Delete a specific customer and all associated leases and payments.

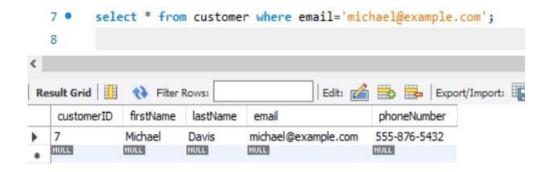


3. Rename the "paymentDate" column in the Payment table to "transactionDate".

```
6 • alter table payment rename column paymentDate to transactionDate;
7 • select * from payment;
```



4. Find a specific customer by email.



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.

```
17 • SELECT AVG(dailyRate) AS avg_daily_rate, COUNT(*) AS active_cars

18 FROM Vehicle

19 WHERE status = 1;

20

Result Grid  Filter Rows: Export: Wrap Cell Content: A

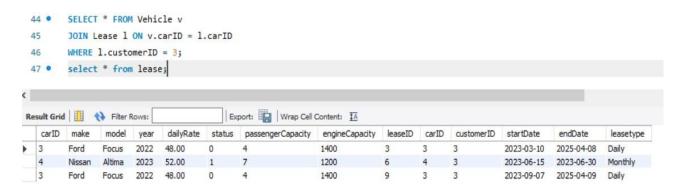
avg_daily_rate active_cars

53.714285714285715 7
```

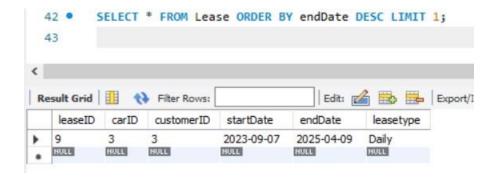
8. Find the car with the highest daily rate.

```
SELECT * FROM Vehicle ORDER BY dailyRate DESC LIMIT 1;
 25
        select * from vehicle;
 26 •
                                        Edit: 🚄 🐯 📙 Export/Import: 📳 🚡
make
                  model
                               dailyRate
                                        status
                                               passengerCapacity engineCapacity
                          year
        Mercedes
                 C-Class
                         2022
                                                               2599
                 HULL
                         HULL
                               HULL
                                        NULL
                                              NULL
                                                              NULL
  NULL
        NULL
```

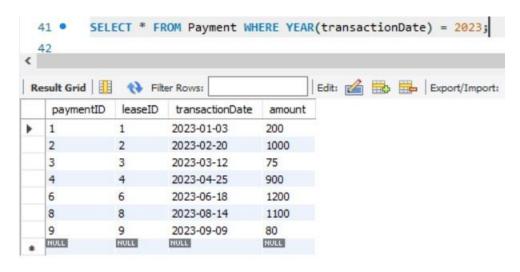
9. Retrieve all cars leased by a specific customer.



10. Find the details of the most recent lease.



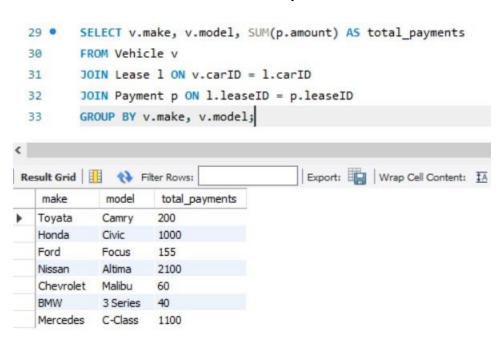
11. List all payments made in the year 2023.



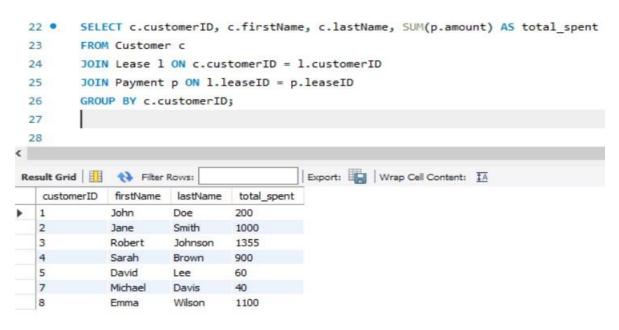
12. Retrieve customers who have not made any payments.

```
35 • SELECT * FROM Customer c
36
        LEFT JOIN Lease 1 ON c.customerID = 1.customerID
        LEFT JOIN Payment p ON l.leaseID = p.leaseID
37
 38
        WHERE p.paymentID IS NULL;
                                        Export: Wrap Cell Content: IA
customerID firstName lastName email
                                                phoneNumber leaseID carID customerID startDate
                                                                                              endDate
                                                                                                        leasetype paymentID leaseID transactionDate amount
                                               555-234-5678 NULL
                                                                  NULL
                                                                         NULL
                                                                                   NULL
                                                                                             NULL
                                                                                                        NULL
                                                                                                                 NULL
                                                                                                                           NULL
                                                                                                                                   NULL
                                                                                                                                                MULL
            Laura
                     Hall
                              laura@example.com
                              william@example.com 555-321-6547
                                                                                             NULL
                                                                                                        NULL
                                                                                                                                                NULL
                                                                  NULL NULL
                                                                                   NULL
                                                                                                                 NULL
                                                                                                                           NULL
                                                                                                                                  NULL
  9
            William
                   Taylor
                                                                                                                                  RUU
                                                                                                                                                RULU
                                                                                                                           NULL
                              olivia@example.com 555-765-4321 10
                                                                                   2023-10-10 2023-10-31 Monthly
  10
            Olivia
                     Adams
```

13. Retrieve Car Details and Their Total Payments.



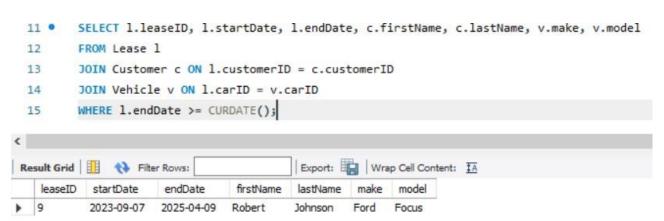
14. Calculate Total Payments for Each Customer.



15. List Car Details for Each Lease.

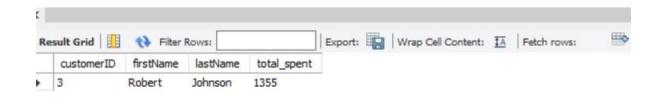
```
SELECT 1.leaseID, 1.startDate, 1.endDate, v.make, v.model, v.year
          FROM Lease 1
  19
          JOIN Vehicle v ON l.carID = v.carID;
  20
<
 Result Grid Filter Rows:
                                           Export: Wrap Cell Content: IA
    leaseID startDate endDate
                                 make
                                            model
                                                   year
           2023-01-01 2023-01-05
                                                    2022
                                 Tovata
                                           Camry
          2023-02-15 2023-02-28 Honda
   2
                                          Civic
                                                   2023
   3
           2023-03-10 2025-04-08 Ford
                                                    2022
                                           Focus
   4
          2023-04-20 2023-04-30 Nissan
                                           Altima
                                                  2023
   5
           2023-05-05 2023-05-10 Chevrolet Malibu
                                                    2022
   6
           2023-06-15 2023-06-30 Nissan
                                          Altima
                                                   2023
   7
           2023-07-01
                      2023-07-10
                                 BMW
                                           3 Series
                                                   2023
                      2023-08-15 Mercedes
   8
           2023-08-12
                                          C-Class
                                                   2022
   9
           2023-09-07
                      2025-04-09 Ford
                                           Focus
                                                    2022
           2023-10-10 2023-10-31 Lexus
   10
                                           ES
                                                   2023
```

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



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

```
SELECT c.customerID, c.firstName, c.lastName, SUM(p.amount) AS total_spent
FROM Customer c
JOIN Lease 1 ON c.customerID = 1.customerID
JOIN Payment p ON 1.leaseID = p.leaseID
GROUP BY c.customerID
ORDER BY total_spent DESC
LIMIT 1;
```



18. List All Cars with Their Current Lease Information.

