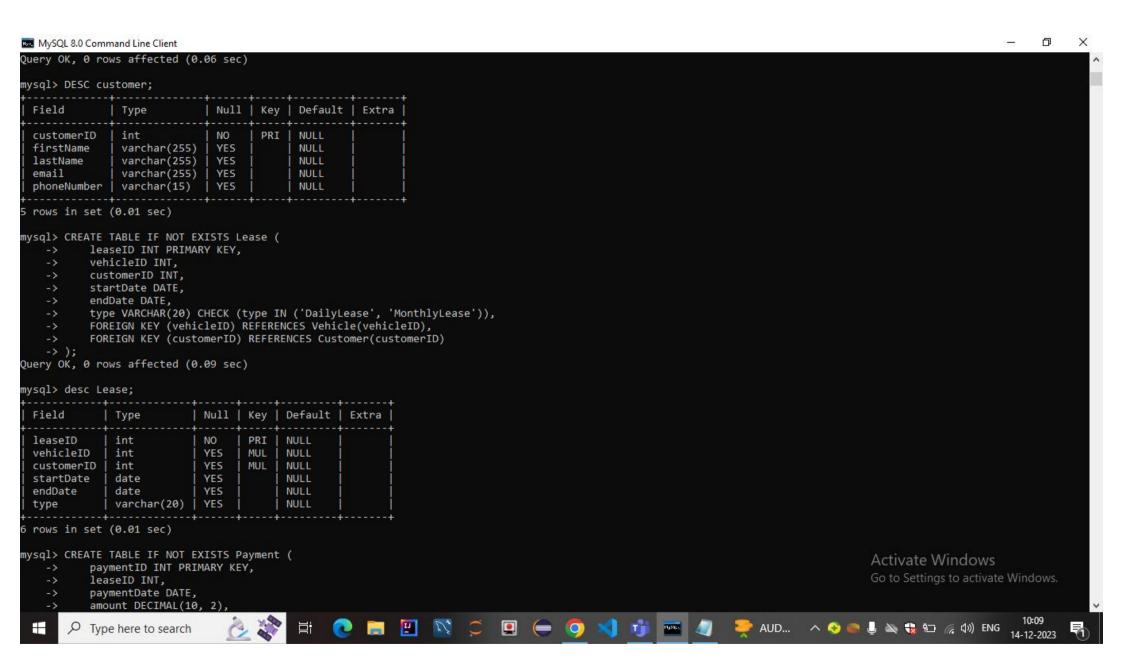
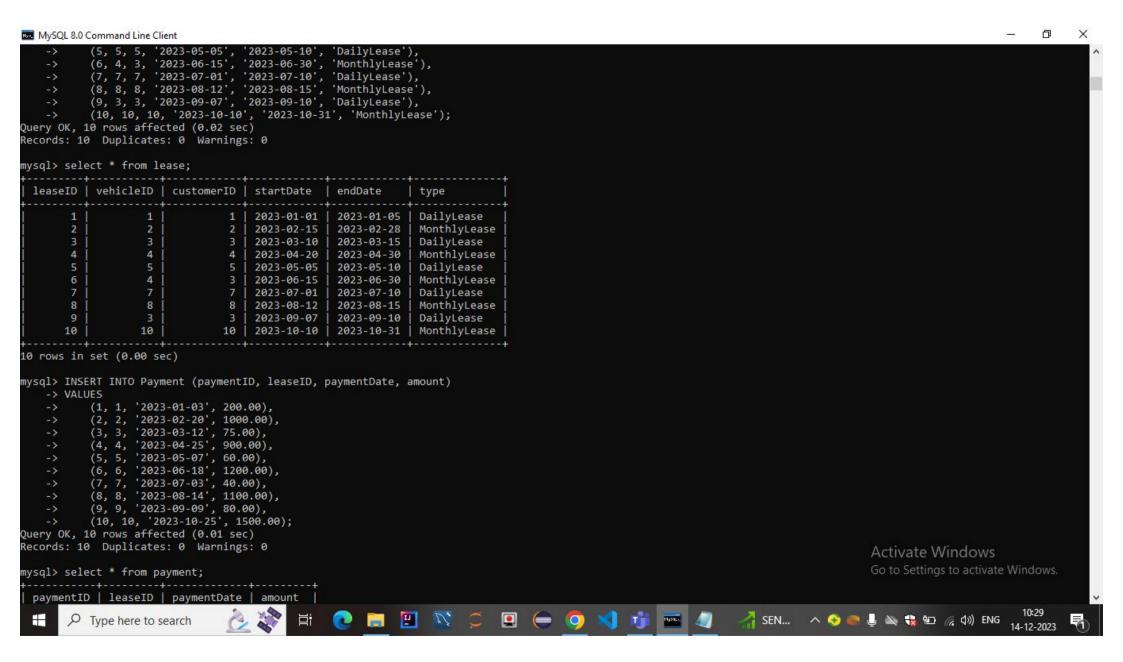
MySQL 8.0 Command Line Client mysql> mysql> /*Coding Challenge - Car Rental System - SOL*/ mysql> mysql> CREATE DATABASE IF NOT EXISTS carrentalsystem; Query OK, 1 row affected (0.01 sec) mysql> use carrentalsystem; Database changed mysql> CREATE TABLE IF NOT EXISTS Vehicle (vehicleID INT PRIMARY KEY, make VARCHAR(255), model VARCHAR(255), year INT, dailyRate DECIMAL(10, 2), status VARCHAR(20) CHECK (status IN ('available', 'notAvailable')), passengerCapacity INT, engineCapacity INT Query OK, 0 rows affected (0.05 sec) mysql> desc vehicle; Field Null | Key | Default | Extra Type vehicleID int NO PRI NULL make varchar(255) YES NULL model YES varchar(255) NULL YES int NULL year dailyRate decimal(10,2) YES NULL varchar(20) status NULL passengerCapacity | int YES NULL engineCapacity int YES NULL rows in set (0.00 sec) mysql> CREATE TABLE IF NOT EXISTS Customer (customerID INT PRIMARY KEY, firstName VARCHAR(255), lastName VARCHAR(255), email VARCHAR(255), **Activate Windows** phoneNumber VARCHAR(15) Go to Settings to activate Windows. Query OK, 0 rows affected (0.06 sec) 計 📵 🔚 🖭 🔯 🤤 🖳 🛑 🕥 刘 妨 📼 🥒 🌅 AUD... ^ 📀 🕒 🔌 🐈 🗁 🌈 Φ) ENG Type here to search



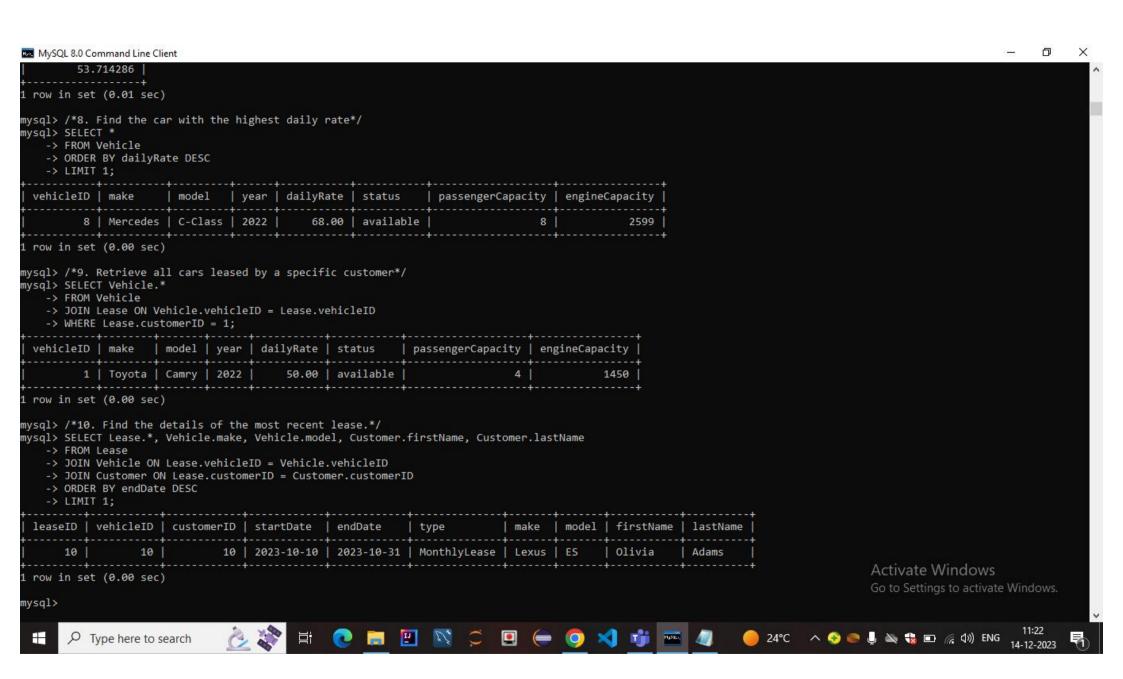
MySQL 8.0 Command Line Client mysql> desc payment; Field Key | Default | Extra Type Null | paymentID int NO PRI NULL leaseID int YES MUL NULL paymentDate date YES NULL decimal(10,2) YES NULL amount rows in set (0.00 sec) mysql> INSERT INTO Vehicle (vehicleID, make, model, year, dailyRate, status, passengerCapacity, engineCapacity) -> VALUES (1, 'Toyota', 'Camry', 2022, 50.00, 'available', 4, 1450), (2, 'Honda', 'Civic', 2023, 45.00, 'available', 7, 1500), (3, 'Ford', 'Focus', 2022, 48.00, 'notAvailable', 4, 1400), (4, 'Nissan', 'Altima', 2023, 52.00, 'available', 7, 1200), 'Chevrolet', 'Malibu', 2022, 47.00, 'available', 4, 1800), (6, 'Hyundai', 'Sonata', 2023, 49.00, 'notAvailable', 7, 1400), 'BMW', '3 Series', 2023, 60.00, 'available', 7, 2499), (8, 'Mercedes', 'C-Class', 2022, 58.00, 'available', 8, 2599), (9, 'Audi', 'A4', 2022, 55.00, 'notAvailable', 4, 2500), (10, 'Lexus', 'ES', 2023, 54.00, 'available', 4, 2500); Query OK, 10 rows affected (0.00 sec) Records: 10 Duplicates: 0 Warnings: 0 mysql> select * from vehicle; vehicleID | make year | dailyRate | status model passengerCapacity | engineCapacity Tovota Camry 2022 50.00 available 4 1450 2 Honda Civic 2023 45.00 available 1500 Ford Focus 2022 48.00 notAvailable 1400 4 Nissan Altima 2023 52.00 available 1200 Chevrolet Malibu 2022 47.00 available 1800 Hyundai Sonata 2023 49.00 notAvailable 1400 3 Series 2023 60.00 available BMW 2499 8 Mercedes C-Class 2022 58.00 available 2599 Audi 2022 notAvailable 2500 A4 55.00 10 Lexus ES 2023 54.00 available 2500 **Activate Windows** Go to Settings to activate Windows. 10 rows in set (0.00 sec) Jupyter Notebook mysql> 24°C ∧ 📀 🕒 🔌 🐈 🖅 🜈 ⑴) ENG Type here to search

MvSOL 8.0 Command Line Client mvsal> -- Insert data into Customer Table mysql> INSERT INTO Customer (customerID, firstName, lastName, email, phoneNumber) -> VALUES (1, 'John', 'Doe', 'johndoe@example.com', '555-555-5555'), (2, 'Jane', 'Smith', 'janesmith@example.com', '555-123-4567'), (3, 'Robert', 'Johnson', 'robert@example.com', '555-789-1234'), (4, 'Sarah', 'Brown', 'sarah@example.com', '555-456-7890'), 'David', 'Lee', 'david@example.com', '555-987-6543'), (6, 'Laura', 'Hall', 'laura@example.com', '555-234-5678'), (7, 'Michael', 'Davis', 'michael@example.com', '555-876-5432'), (8, 'Emma', 'Wilson', 'emma@example.com', '555-432-1098'), (9, 'William', 'Taylor', 'william@example.com', '555-321-6547'), (10, 'Olivia', 'Adams', 'olivia@example.com', '555-765-4321'); Query OK, 10 rows affected (0.02 sec) Records: 10 Duplicates: 0 Warnings: 0 mvsal> select * from customer: customerID | firstName | lastName | email phoneNumber iohndoe@example.com 555-555-5555 1 | John Doe Jane Smith janesmith@example.com | 555-123-4567 robert@example.com Robert Johnson 555-789-1234 Sarah Brown sarah@example.com 555-456-7890 4 david@example.com David 555-987-6543 Lee laura@example.com 6 Laura Hall 555-234-5678 michael@example.com Michael Davis 555-876-5432 emma@example.com 8 Emma Wilson 555-432-1098 william@example.com 9 William Taylor 555-321-6547 10 | Olivia Adams olivia@example.com 555-765-4321 10 rows in set (0.00 sec) mysql> -- Insert data into Lease Table mysql> INSERT INTO Lease (leaseID, vehicleID, customerID, startDate, endDate, type) -> VALUES (1, 1, 1, '2023-01-01', '2023-01-05', 'DailyLease'), (2, 2, 2, '2023-02-15', '2023-02-28', 'MonthlyLease'), (3, 3, 3, '2023-03-10', '2023-03-15', 'DailyLease'), (4, 4, 4, '2023-04-20', '2023-04-30', 'MonthlyLease'), **Activate Windows** (5, 5, 5, '2023-05-05', '2023-05-10', 'DailyLease'), Go to Settings to activate Windows. (6, 4, 3, '2023-06-15', '2023-06-30', 'MonthlyLease'), (7, 7, 7, '2023-07-01', '2023-07-10', 'DailyLease'), (8, 8, 8, '2023-08-12', '2023-08-15', 'MonthlyLease'), 24°C ∧ 🚱 🧓 📐 🐂 🖅 🜈 Φ) ENG Type here to search



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MySQL 8.0 Command Line Client
          (9, 9, '2023-09-09', 80.00),
          (10, 10, '2023-10-25', 1500.00);
Ouery OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
mysql> select * from payment;
 paymentID | leaseID | paymentDate | amount
                  1 | 2023-01-03
                                    200.00
                  2 2023-02-20
                                   1000.00
                  3 | 2023-03-12
                                    75.00
         4
                  4 | 2023-04-25
                                    900.00
                  5 | 2023-05-07
                                    60.00
                  6 | 2023-06-18
                                   1200.00
                  7 | 2023-07-03
                                    40.00
         8
                  8 | 2023-08-14
                                   1100.00
                  9 | 2023-09-09
                                    80.00
        10
                 10 | 2023-10-25
                                 1500.00
10 rows in set (0.00 sec)
mysql> /*1.1. Update the daily rate for a Mercedes car to 68.*/
mysql> UPDATE Vehicle
   -> SET dailyRate = 68.00
   -> WHERE make = 'Mercedes';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0
mysql> /*2. Delete a specific customer and all associated leases and payments*/
mysql> DELETE FROM Payment
   -> WHERE leaseID IN (SELECT leaseID FROM Lease WHERE customerID = 2);
Query OK, 1 row affected (0.01 sec)
mysql> DELETE FROM Lease
   -> WHERE customerID =2;
Query OK, 1 row affected (0.01 sec)
mysql> DELETE FROM Customer
   -> WHERE customerID = 2;
                                                                                                                              Activate Windows
Query OK, 1 row affected (0.00 sec)
                                                                                                                              Go to Settings to activate Windows.
mysql>
                                        🚮 Nift... 🖪 📀 🕒 🔌 👣 🖅 🌈 фາ) ENG
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MySQL 8.0 Command Line Client Records: 0 Duplicates: 0 Warnings: 0 mysql> /*4. Find a specific customer by email.*/ mysql> SELECT * -> FROM Customer -> WHERE email = 'sarah@example.com'; customerID | firstName | lastName | email 4 | Sarah | Brown | sarah@example.com | 555-456-7890 | -----1 row in set (0.00 sec) mysql> /*5. Get active leases for a specific customer*/ mysql> SELECT Lease.*, Vehicle.make, Vehicle.model -> FROM Lease -> JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID -> WHERE Lease.customerID = 1 -> AND Lease.endDate >= CURRENT DATE; Empty set (0.00 sec) mysql> /*6. Find all payments made by a customer with a specific phone number*/ mysql> SELECT Payment.*, Lease.startDate, Lease.endDate, Vehicle.make, Vehicle.model -> FROM Payment -> JOIN Lease ON Payment.leaseID = Lease.leaseID -> JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID -> JOIN Customer ON Lease.customerID = Customer.customerID -> WHERE Customer.phoneNumber = '555-555-5555': paymentID | leaseID | transactionDate | amount | startDate | endDate | make | model | 1 | 2023-01-03 | 200.00 | 2023-01-01 | 2023-01-05 | Toyota | Camry | 1 row in set (0.00 sec) mysql> /*7. Calculate the average daily rate of all available cars.*/ mysql> SELECT AVG(dailyRate) AS averageDailyRate -> FROM Vehicle -> WHERE status = 'available'; -----+ **Activate Windows** averageDailyRate | Go to Settings to activate Windows. 53.714286 O Type here to search



MySQL 8.0 Command Line Client

mysql> /*11. List all payments made in the year 2023.*/

mysql> SELECT Payment.*, Lease.startDate, Lease.endDate, Vehicle.make, Vehicle.model, Customer.firstName, Customer.lastName

- -> FROM Payment
- -> JOIN Lease ON Payment.leaseID = Lease.leaseID
- -> JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID
- -> JOIN Customer ON Lease.customerID = Customer.customerID
- -> WHERE YEAR(Payment.transactionDate) = 2023;

paymentID	leaseID	transactionDate	amount	startDate	endDate	make	model	firstName	lastName
1	1	2023-01-03	200.00	2023-01-01	2023-01-05	Toyota	Camry	John	Doe
3	3	2023-03-12	75.00	2023-03-10	2023-03-15	Ford	Focus	Robert	Johnson
4	4	2023-04-25	900.00	2023-04-20	2023-04-30	Nissan	Altima	Sarah	Brown
5	5	2023-05-07	60.00	2023-05-05	2023-05-10	Chevrolet	Malibu	David	Lee
6	6	2023-06-18	1200.00	2023-06-15	2023-06-30	Nissan	Altima	Robert	Johnson
7	7	2023-07-03	40.00	2023-07-01	2023-07-10	BMW	3 Series	Michael	Davis
8	8	2023-08-14	1100.00	2023-08-12	2023-08-15	Mercedes	C-Class	Emma	Wilson
9	9	2023-09-09	80.00	2023-09-07	2023-09-10	Ford	Focus	Robert	Johnson
10	10	2023-10-25	1500.00	2023-10-10	2023-10-31	Lexus	ES	Olivia	Adams

9 rows in set (0.00 sec)

mysql> /*12. Retrieve customers who have not made any payments.

/*> */

mysql> SELECT Customer.*

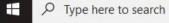
- -> FROM Customer
- -> LEFT JOIN Lease ON Customer.customerID = Lease.customerID
- -> LEFT JOIN Payment ON Lease.leaseID = Payment.leaseID
- -> WHERE Payment paymentID IS NULL:

customerID	firstName	lastName	email	phoneNumber
6	Laura	Hall	laura@example.com	555-234-5678
9	William	Taylor	william@example.com	555-321-6547

2 rows in set (0.00 sec)

mysql> _

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MvSOL 8.0 Command Line Client mysql> /*13. Retrieve Car Details and Their Total Payments.*/ mysal> SELECT Vehicle.vehicleID, Vehicle.make, Vehicle.model, SUM(Payment.amount) AS totalPayments -> FROM Vehicle -> JOIN Lease ON Vehicle.vehicleID = Lease.vehicleID -> JOIN Payment ON Lease.leaseID = Payment.leaseID -> GROUP BY Vehicle.vehicleID, Vehicle.make, Vehicle.model; vehicleID | make model totalPayments Toyota Camry 200.00 Ford Focus 155.00 4 Nissan Altima 2100.00 5 | Chevrolet Malibu 60.00 BMW 3 Series 40.00 8 C-Class 1100.00 Mercedes 10 | Lexus ES 1500.00 rows in set (0.00 sec) mysql> /*14. Calculate Total Payments for Each Customer.*/ mysql> SELECT Customer.customerID, Customer.firstName, Customer.lastName, SUM(Payment.amount) AS totalPayments -> FROM Customer -> JOIN Lease ON Customer.customerID = Lease.customerID -> JOIN Payment ON Lease.leaseID = Payment.leaseID -> GROUP BY Customer.customerID, Customer.firstName, Customer.lastName; customerID | firstName | lastName | totalPayments 1 | John Doe 200.00 Robert Johnson 1355.00 Sarah Brown 900.00 4 David Lee 60.00 **Activate Windows** Michael Davis 40.00 Go to Settings to activate Windows. 8 1 Emma Wilson 1100.00 Olivia Adams 10 1500.00 Type here to search

MySQL 8.0 Command Line Client mysql> /*15. List Car Details for Each Lease. /*> */ mysql> SELECT Lease.leaseID, Vehicle.make, Vehicle.model, Lease.startDate, Lease, endDate -> FROM Lease -> JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID: leaseID | make model startDate | endDate 1 | Camry 2023-01-01 | 2023-01-05 Toyota Ford Focus 2023-03-10 2023-03-15 Altima 2023-04-20 2023-04-30 Nissan Chevrolet | Malibu 2023-05-05 2023-05-10 Nissan Altima 2023-06-15 2023-06-30 3 Series BMW 2023-07-01 | 2023-07-10 Mercedes 8 C-Class 2023-08-12 2023-08-15 Ford Focus 2023-09-07 | 2023-09-10 ES Lexus 2023-10-10 | 2023-10-31 9 rows in set (0.00 sec) mysql> /*16. Retrieve Details of Active Leases with Customer and Car Information*/ mysql> SELECT Lease.leaseID, Customer.firstName, Customer.lastName. Vehicle.make, Vehicle.model, Lease.startDate, Lease.endDate -> FROM Lease -> JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID -> JOIN Customer ON Lease.customerID = Customer.customerID -> WHERE Lease.endDate >= CURRENT DATE; Empty set (0.00 sec) **Activate Windows** Go to Settings to activate Windows. mysql> _ P Type here to search

mysql> /*17. Find the Customer Who Has Spent the Most on Leases. /*> */ mysql> SELECT Customer.customerID, Customer.firstName. Customer.lastName, SUM(Payment.amount) AS totalLeaseSpending -> FROM Customer -> JOIN Lease ON Customer.customerID = Lease.customerID -> JOIN Payment ON Lease.leaseID = Payment.leaseID -> GROUP BY Customer.customerID, Customer.firstName, Customer.lastName -> ORDER BY totalLeaseSpending DESC -> LIMIT 1: customerID | firstName | lastName | totalLeaseSpending 10 | Olivia row in set (0.00 sec) mysql> /*18. List All Cars with Their Current Lease Information.*/ mysql> SELECT Vehicle.vehicleID, Vehicle.make, Vehicle.model. Lease.leaseID, Lease.startDate, Lease.endDate, Customer.firstName, Customer.lastName -> FROM Vehicle -> LEFT JOIN Lease ON Vehicle.vehicleID = Lease.vehicleID -> LEFT JOIN Customer ON Lease.customerID = Customer.customerID -> WHERE Lease.endDate >= CURRENT DATE OR Lease.endDate IS NULL; vehicleID | make | model | leaseID | startDate | endDate | firstName | lastName 2 | Honda Civic NULL I NULL NULL NULL NULL 6 | Hyundai | Sonata NULL | NULL NULL NULL NULL 9 | Audi A4 NULL | NULL NULL NULL NULL **Activate Windows** Go to Settings to activate Windows. 3 rows in set (0.00 sec) mysql> . O Type here to search

MySQL 8.0 Command Line Client