

Assessments -1

Coding Challenges - Car rental System

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

```
mysql> UPDATE Vehicle
-> SET dailyRate = 68
-> WHERE make = 'Mercedes';
Query OK, 1 row affected (0.03 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

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

```
mysql> DELETE FROM Payment
-> USING Payment
-> JOIN Lease ON Payment.leaseID = Lease.leaseID
-> WHERE Lease.customerID = '123';
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> DELETE FROM Lease
-> WHERE customerID = '123';
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> DELETE FROM Customer
-> WHERE customerID = '123';
Query OK, 0 rows affected (0.00 sec)
```

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

```
mysql> ALTER TABLE Payment
-> CHANGE COLUMN paymentDate transactionDate varchar(233);
Query OK, 10 rows affected (0.20 sec)
Records: 10 Duplicates: 0 Warnings: 0
```

4) Find a specific customer by email.

customerID	firstName	lastName	email	phoneNumber
1	John	Doe	johndoe@example.com	555-555-5555

5) Get active leases for a specific customer.

```
mysql> SELECT *  
-> FROM Lease  
-> WHERE customerID = 1  
-> and startDate <= CURDATE()  
-> AND endDate >= CURDATE()  
-> AND leasertype = 'DailyLease';  
Empty set (0.00 sec)
```

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

amount	firstName	lastname	phoneNumber
200.00000000	John	Doe	555-555-5555
1000.00000000	Jane	Smith	555-123-4567
75.00000000	Robert	Johnson	555-789-1234
1200.00000000	Robert	Johnson	555-789-1234
80.00000000	Robert	Johnson	555-789-1234
900.00000000	Sarah	Brown	555-456-7890
60.00000000	David	Lee	555-987-6543
40.00000000	Michael	Davis	555-876-5432
1100.00000000	Emma	Wilson	555-432-1098
1500.00000000	Olivia	Adams	555-765-4321

7) Calculate the average daily rate of all available car

average_daily_rate
52.800000

8) Find the car with the highest daily rate

vehicleID	make	model	car_Year	dailyrate	status	passengerCapacity	engineCapacity
8	Mercedes	C-Class	2022	68.00	available	8	2599

9) Retrieve all cars leased by a specific customer

vehicleID	make	model	car_Year	dailyrate	status	passengerCapacity	engineCapacity
1	Toyota	Camry	2022	50.00	available	4	1450

10) Find the details of the most recent lease.

leaseID	vehicleID	customerID	startDate	endDate	Leasertype
1	1	1	2021	2017	DailyLease

11) List all payments made in the year 2023.

paymentID	leaseID	transactionDate	amount
1	1	2023-01-01	200.00000000
2	2	2023-02-20	1000.00000000
3	3	2023-03-12	75.00000000
4	4	2023-04-25	900.00000000
5	5	2023-05-07	60.00000000
6	6	2023-06-18	1200.00000000
7	7	2023-07-03	40.00000000
8	8	2023-08-14	1100.00000000
9	9	2023-09-09	80.00000000
10	10	2023-10-25	1500.00000000

12) Retrieve customers who have not made any payments.

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

13) Retrieve Car Details and Their Total Payments

vehicleID	make	model	total_payments
1	Toyota	Camry	200.00000000
2	Honda	Civic	1000.00000000
3	Ford	Focus	155.00000000
4	Nissan	Altima	2100.00000000
5	Chevrolet	Malibu	60.00000000
6	Hyundai	Sonata	NULL
7	BMW	3 Series	40.00000000
8	Mercedes	C-Class	1100.00000000
9	Audi	A4	NULL
10	Lexus	ES	1500.00000000

14) Calculate Total Payments for Each Customer.

customerID	firstName	lastName	total_payments
1	John	Doe	200.00000000
2	Jane	Smith	1000.00000000
3	Robert	Johnson	1355.00000000
4	Sarah	Brown	900.00000000
5	David	Lee	60.00000000
6	Laura	Hall	NULL
7	Michael	Davis	40.00000000
8	Emma	Wilson	1100.00000000
9	William	Taylor	NULL
10	Olivia	Adams	1500.00000000

15) List Car Details for Each Lease.

leaseID	vehicleID	make	model	car_year	dailyrate
1	1	Toyota	Camry	2022	50.00
2	2	Honda	Civic	2023	45.00
3	3	Ford	Focus	2022	48.00
9	3	Ford	Focus	2022	48.00
4	4	Nissan	Altima	2023	52.00
6	4	Nissan	Altima	2023	52.00
5	5	Chevrolet	Malibu	2022	47.00
7	7	BMW	3 Series	2023	60.00
8	8	Mercedes	C-Class	2022	68.00
10	10	Lexus	ES	2023	54.00

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

```
mysql> SELECT Lease.leaseID, Customer.firstName, Customer.lastName, Customer.email, Vehicle.make, Vehicle.model, Vehicle.car_year, Vehicle.dailyrate, Lease.startDate, Lease.endDate FROM Lease JOIN Customer ON Lease.customerID = Customer.customerID JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID WHERE Lease.startDate <= CURDATE() AND Lease.endDate >= CURDATE();
Empty set (0.00 sec)
```

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

customerID	firstName	lastName	total_spent
10	Olivia	Adams	1500.00000000