Coding Challenge - Car Rental System – SQL (Satyendra Singh Rathore)

Tasks:

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

```sql
-- 1
update vehicle set dailyRate=68.00 where make='Mercedes';
```

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

```sql
-- 2
DELETE FROM payment
WHERE leaseID IN (
    SELECT leaseID
    FROM lease
    WHERE customerID = 3
);

DELETE FROM lease
WHERE customerID = 3;

DELETE FROM customer
WHERE customerID = 3;
```

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

```sql
-- 3
ALTER TABLE payment
RENAME COLUMN paymentDate TO transactionDate;
```

4.Find a specific customer by email.

```sql
-- 4
select * from customer where email='sarah@example.com';
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

customerID	firstName	lastName	email	phoneNumber
4	Sarah	Brown	sarah@example.com	555-456-7890
NULL	NULL	NULL	NULL	NULL

5. Get active leases for a specific customer.

```
116     -- 5
117 •   SELECT * FROM lease WHERE customerID = 8 AND endDate >= CURDATE();
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

leaseID	vehicleID	customerID	startDate	endDate	type
NULL	NULL	NULL	NULL	NULL	NULL

---

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

```
119     -- 6
120 •   select c.*,p.* from payment p
121     join lease l on l.leaseID=p.leaseID
122     join customer c on l.customerID=c.customerID
123     WHERE c.phoneNumber = '555-123-4567';
```

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

customerID	firstName	lastName	email	phoneNumber	paymentID	leaseID	transactionDate	amount
2	Jane	Smith	janesmith@example.com	555-123-4567	2	2	2023-02-20	1000.00

---

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

```
125     -- 7
126 •   SELECT AVG(dailyRate) AS averageDailyRate
127     FROM vehicle
128     WHERE status = 1;
129
```

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

averageDailyRate
53.714286

---

8. Find the car with the highest daily rate.

```sql
-- 8
select * from vehicle
order by DailyRate desc
limit 1;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Fetch rows:

VehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity
8	Mercedes	C-Class	2022	68.00	1	8	2599
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

---

9. Retrieve all cars leased by a specific customer.

```sql
-- 9
SELECT v.*
FROM vehicle v
JOIN lease l ON v.VehicleID = l.vehicleID
WHERE l.customerID = 8;
```

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

VehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity
8	Mercedes	C-Class	2022	68.00	1	8	2599

---

10. Find the details of the most recent lease.

```sql
-- 10
SELECT *
FROM lease
WHERE endDate = (
    SELECT MAX(endDate)
    FROM lease
);
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

leaseID	vehicleID	customerID	startDate	endDate	type
10	10	10	2023-10-10	2023-10-31	Monthly
NULL	NULL	NULL	NULL	NULL	NULL

---

11. List all payments made in the year 2023.

```
149    -- 11
150 •  SELECT *
151    FROM payment
152    WHERE YEAR(transactionDate) = 2023;
153
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

paymentID	leaseID	transactionDate	amount
1	1	2023-01-03	200.00
2	2	2023-02-20	1000.00
4	4	2023-04-25	900.00
5	5	2023-05-07	60.00
7	7	2023-07-03	40.00
8	8	2023-08-14	1100.00
10	10	2023-10-25	1500.00

---

12. Retrieve customers who have not made any payments.

```
154    -- 12
155 •  SELECT c.*
156    FROM customer c
157    LEFT JOIN lease l ON c.customerID = l.customerID
158    LEFT JOIN payment p ON l.leaseID = p.leaseID
159    WHERE p.paymentID IS NULL;
```

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

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.

```sql
-- 13
SELECT v.*,SUM(p.amount) AS totalPayments
FROM vehicle v
LEFT JOIN lease l ON v.VehicleID = l.vehicleID
LEFT JOIN payment p ON l.leaseID = p.leaseID
GROUP BY v.VehicleID;
```

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

VehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity	totalPayments
1	Toyota	Camry	2022	50.00	1	4	1450	200.00
2	Honda	Civic	2023	45.00	1	7	1500	1000.00
3	Ford	Focus	2022	48.00	0	4	1400	NULL
4	Nissan	Altima	2023	52.00	1	7	1200	900.00
5	Chevrolet	Malibu	2022	47.00	1	4	1800	60.00
6	Hyundai	Sonata	2023	49.00	0	7	1400	NULL
7	BMW	3 Series	2023	60.00	1	7	2499	40.00

Result 33

14. Calculate Total Payments for Each Customer.

```sql
-- 14
SELECT c.customerID, c.firstName, c.lastName,SUM(p.amount) AS totalPayments
FROM customer c
LEFT JOIN lease l ON c.customerID = l.customerID
LEFT JOIN payment p ON l.leaseID = p.leaseID
GROUP BY c.customerID, c.firstName, c.lastName;

```

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

customerID	firstName	lastName	totalPayments
1	John	Doe	200.00
2	Jane	Smith	1000.00
4	Sarah	Brown	900.00
5	David	Lee	60.00
6	Laura	Hall	NULL
7	Michael	Davis	40.00
8	Emma	Wilson	1100.00

Result 34

15. List Car Details for Each Lease.

```
175     -- 15
176 •  SELECT l.*, v.make, v.model, v.year, v.dailyRate
177     FROM lease l
178     JOIN vehicle v ON l.vehicleID = v.VehicleID;
```

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

leaseID	vehicleID	customerID	startDate	endDate	type	make	model	year	dailyRate
1	1	1	2023-01-01	2023-01-05	Daily	Toyota	Camry	2022	50.00
2	2	2	2023-02-15	2023-02-28	Monthly	Honda	Civic	2023	45.00
4	4	4	2023-04-20	2023-04-30	Monthly	Nissan	Altima	2023	52.00
5	5	5	2023-05-05	2023-05-10	Daily	Chevrolet	Malibu	2022	47.00
7	7	7	2023-07-01	2023-07-10	Daily	BMW	3 Series	2023	60.00
8	8	8	2023-08-12	2023-08-15	Monthly	Mercedes	C-Class	2022	68.00
10	10	10	2023-10-10	2023-10-31	Monthly	Lexus	ES	2023	54.00

Result 35 ×

Output

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

```
180     -- 16
181 •  SELECT l.*, c.firstName, c.lastName, c.email, c.phoneNumber, v.make, v.model, v.year, v.dailyRate
182     FROM lease l
183     JOIN customer c ON l.customerID = c.customerID
184     JOIN vehicle v ON l.vehicleID = v.VehicleID
185     WHERE l.endDate >= CURDATE();
```

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

leaseID	vehicleID	customerID	startDate	endDate	type	firstName	lastName	email	phoneNumber	make	model	year	dailyRate

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

```
187     -- 17
188 •  SELECT c.customerID, c.firstName, c.lastName,SUM(p.amount) AS totalAmountSpent
189     FROM customer c
190     LEFT JOIN lease l ON c.customerID = l.customerID
191     LEFT JOIN payment p ON l.leaseID = p.leaseID
192     GROUP BY c.customerID, c.firstName, c.lastName
193     ORDER BY totalAmountSpent DESC
194     LIMIT 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

customerID	firstName	lastName	totalAmountSpent
10	Olivia	Adams	1500.00

18. List All Cars with Their Current Lease Information.

```sql
-- 18
SELECT v.*, l.*
FROM vehicle v
LEFT JOIN lease l ON v.VehicleID = l.vehicleID
WHERE l.endDate >= CURDATE() OR l.endDate IS NULL;
```

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

VehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity	leaseID	vehicleID	customerID	startDate	endDate	type
3	Ford	Focus	2022	48.00	0	4	1400	NULL	NULL	NULL	NULL	NULL	NULL
6	Hyundai	Sonata	2023	49.00	0	7	1400	NULL	NULL	NULL	NULL	NULL	NULL
9	Audi	A4	2022	55.00	0	4	2500	NULL	NULL	NULL	NULL	NULL	NULL