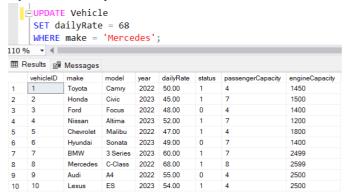# HEXAWARE CODING CHALLENGE

Car Rental System

NAME: Eswara Venkata Sai Raja

CODING CHALLENGE: Car Rental System

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

```
UPDATE Vehicle
SET dailyRate = 68
WHERE make = 'Mercedes';
```

110 %

Results | Messages

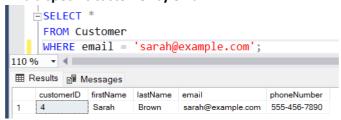|	vehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity
1	1	Toyota	Camry	2022	50.00	1	4	1450
2	2	Honda	Civic	2023	45.00	1	7	1500
3	3	Ford	Focus	2022	48.00	0	4	1400
4	4	Nissan	Altima	2023	52.00	1	7	1200
5	5	Chevrolet	Malibu	2022	47.00	1	4	1800
6	6	Hyundai	Sonata	2023	49.00	0	7	1400
7	7	BMW	3 Series	2023	60.00	1	7	2499
8	8	Mercedes	C-Class	2022	68.00	1	8	2599
9	9	Audi	A4	2022	55.00	0	4	2500
10	10	Lexus	ES	2023	54.00	1	4	2500

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

```
DELETE FROM Payment
WHERE leaseID IN (SELECT leaseID FROM Lease WHERE customerID = 1);
Select * from Payment;
```

110 %

Results | Messages

	paymentID	leaseID	paymentDate	amount
1	2	2	2023-02-20	1000.00
2	3	3	2023-03-12	75.00
3	4	4	2023-04-25	900.00
4	5	5	2023-05-07	60.00
5	6	6	2023-06-18	1200.00
6	7	7	2023-07-03	40.00
7	8	8	2023-08-14	1100.00
8	9	9	2023-09-09	80.00
9	10	10	2023-10-25	1500.00

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

```
EXEC sp_rename 'Payment.paymentDate', 'transactionDate', 'COLUMN';
Select * from Payment;
```

110 %

Results | Messages

	paymentID	leaseID	transactionDate	amount
1	2	2	2023-02-20	1000.00
2	3	3	2023-03-12	75.00
3	4	4	2023-04-25	900.00
4	5	5	2023-05-07	60.00
5	6	6	2023-06-18	1200.00
6	7	7	2023-07-03	40.00
7	8	8	2023-08-14	1100.00
8	9	9	2023-09-09	80.00
9	10	10	2023-10-25	1500.00

4. **Find a specific customer by email.**

```
SELECT *
FROM Customer
WHERE email = 'sarah@example.com';
```

110 %

Results | Messages

	customerID	firstName	lastName	email	phoneNumber
1	4	Sarah	Brown	sarah@example.com	555-456-7890

5. Get active leases for a specific customer.

```sql
SELECT *
FROM Lease
WHERE customerID = 2
AND endDate > GETDATE();
```

110 %

Results **Messages**

	leaseID	vehicleID	customerID	startDate	endDate	type
1	2	2	2	2023-02-15	2025-03-23	Monthly

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

```sql
SELECT Payment.*
FROM Payment
JOIN Lease ON Payment.leaseID = Lease.leaseID
JOIN Customer ON Lease.customerID = Customer.customerID
WHERE Customer.phoneNumber = '555-789-1234';
```

110 %

Results **Messages**

	paymentID	leaseID	transactionDate	amount
1	3	3	2023-03-12	75.00
2	6	6	2023-06-18	1200.00
3	9	9	2023-09-09	80.00

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

```sql
SELECT AVG(dailyRate) AS AverageDailyRate
FROM Vehicle
WHERE status = 1;
```

10 %

Results **Messages**

	AverageDailyRate
1	53.714285

8. Find the car with the highest daily rate.

```sql
SELECT TOP 1 *
FROM Vehicle
ORDER BY dailyRate DESC;
```

110 %

Results **Messages**

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

9. Retrieve all cars leased by a specific customer.

```sql
SELECT Vehicle.*
FROM Vehicle
JOIN Lease ON Vehicle.vehicleID = Lease.vehicleID
WHERE Lease.customerID = 3;
```

10 %

Results **Messages**

	vehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity
1	3	Ford	Focus	2022	48.00	0	4	1400
2	4	Nissan	Altima	2023	52.00	1	7	1200
3	3	Ford	Focus	2022	48.00	0	4	1400

10. Find the details of the most recent lease.

```sql
SELECT TOP 1 *
FROM Lease
ORDER BY startDate DESC;
```

110 %

Results | Messages

	leaseID	vehicleID	customerID	startDate	endDate	type
1	10	10	10	2023-10-10	2025-03-23	Monthly

11. List all payments made in the year 2023.

```sql
SELECT *
FROM Payment
WHERE YEAR(transactionDate) = 2023;
```

110 %

Results | Messages

	paymentID	leaseID	transactionDate	amount
1	2	2	2023-02-20	1000.00
2	3	3	2023-03-12	75.00
3	4	4	2023-04-25	900.00
4	5	5	2023-05-07	60.00
5	6	6	2023-06-18	1200.00
6	7	7	2023-07-03	40.00
7	8	8	2023-08-14	1100.00
8	9	9	2023-09-09	80.00
9	10	10	2023-10-25	1500.00

12. Retrieve customers who have not made any payments.

```sql
SELECT *
FROM Customer
WHERE customerID NOT IN (
    SELECT DISTINCT customerID
    FROM Lease
    JOIN Payment ON Lease.leaseID = Payment.leaseID
);
```

110 %

Results | Messages

	customerID	firstName	lastName	email	phoneNumber
1	1	John	Doe	johndoe@example.com	555-555-5555
2	6	Laura	Hall	laura@example.com	555-234-5678
3	9	William	Taylor	william@example.com	555-321-6547

13. Retrieve Car Details and Their Total Payments.

```sql
SELECT Vehicle.vehicleID, Vehicle.make, Vehicle.model, Vehicle.year, Vehicle.dailyRate, Vehicle.status,
Vehicle.passengerCapacity, Vehicle.engineCapacity,
    SUM(Payment.amount) AS TotalPayments
FROM Vehicle
LEFT JOIN Lease ON Vehicle.vehicleID = Lease.vehicleID
LEFT JOIN Payment ON Lease.leaseID = Payment.leaseID
GROUP BY Vehicle.vehicleID, Vehicle.make, Vehicle.model, Vehicle.year, Vehicle.dailyRate,
Vehicle.status, Vehicle.passengerCapacity, Vehicle.engineCapacity;
```

110 %

Results | Messages

	vehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity	TotalPayments
1	1	Toyota	Camry	2022	50.00	1	4	1450	NULL
2	2	Honda	Civic	2023	45.00	1	7	1500	1000.00
3	3	Ford	Focus	2022	48.00	0	4	1400	155.00
4	4	Nissan	Altima	2023	52.00	1	7	1200	2100.00
5	5	Chevrolet	Malibu	2022	47.00	1	4	1800	60.00
6	6	Hyundai	Sonata	2023	49.00	0	7	1400	NULL
7	7	BMW	3 Series	2023	60.00	1	7	2499	40.00
8	8	Mercedes	C-Class	2022	68.00	1	8	2599	1100.00
9	9	Audi	A4	2022	55.00	0	4	2500	NULL
10	10	Lexus	ES	2023	54.00	1	4	2500	1500.00

14. Calculate Total Payments for Each Customer.

```sql
SELECT Customer.customerID, Customer.firstName, Customer.lastName, Customer.email, Customer.phoneNumber,
       SUM(Payment.amount) AS TotalPayments
FROM Customer
LEFT JOIN Lease ON Customer.customerID = Lease.customerID
LEFT JOIN Payment ON Lease.leaseID = Payment.leaseID
GROUP BY Customer.customerID, Customer.firstName, Customer.lastName, Customer.email, Customer.phoneNumber;
```

	customerID	firstName	lastName	email	phoneNumber	TotalPayments
1	1	John	Doe	johndoe@example.com	555-555-5555	NULL
2	2	Jane	Smith	janesmith@example.com	555-123-4567	1000.00
3	3	Robert	Johnson	robert@example.com	555-789-1234	1355.00
4	4	Sarah	Brown	sarah@example.com	555-456-7890	900.00
5	5	David	Lee	david@example.com	555-987-6543	60.00
6	6	Laura	Hall	laura@example.com	555-234-5678	NULL
7	7	Michael	Davis	michael@example.com	555-876-5432	40.00
8	8	Emma	Wilson	emma@example.com	555-432-1098	1100.00
9	9	William	Taylor	william@example.com	555-321-6547	NULL
10	10	Olivia	Adams	olivia@example.com	555-765-4321	1500.00

15. List Car Details for Each Lease.

```sql
SELECT Lease.*, Vehicle.*
FROM Lease
JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID;
```

	leaseID	vehicleID	customerID	startDate	endDate	type	vehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity
1	1	1	1	2023-01-01	2025-03-23	Daily	1	Toyota	Camry	2022	50.00	1	4	1450
2	2	2	2	2023-02-15	2025-03-23	Monthly	2	Honda	Civic	2023	45.00	1	7	1500
3	3	3	3	2023-03-10	2025-03-23	Daily	3	Ford	Focus	2022	48.00	0	4	1400
4	4	4	4	2023-04-20	2025-03-23	Monthly	4	Nissan	Altima	2023	52.00	1	7	1200
5	5	5	5	2023-05-05	2025-03-23	Daily	5	Chevrolet	Malibu	2022	47.00	1	4	1800
6	6	4	3	2023-06-15	2025-03-23	Monthly	4	Nissan	Altima	2023	52.00	1	7	1200
7	7	7	7	2023-07-01	2025-03-23	Daily	7	BMW	3 Series	2023	60.00	1	7	2499
8	8	8	8	2023-08-12	2025-03-23	Monthly	8	Mercedes	C-Class	2022	68.00	1	8	2599
9	9	3	3	2023-09-07	2025-03-23	Daily	3	Ford	Focus	2022	48.00	0	4	1400
10	10	10	10	2023-10-10	2025-03-23	Monthly	10	Lexus	ES	2023	54.00	1	4	2500

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

```sql
SELECT Lease.*, Customer.*, Vehicle.*
FROM Lease
JOIN Customer ON Lease.customerID = Customer.customerID
JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID
WHERE Lease.endDate > GETDATE();
```

	leaseID	vehicleID	customerID	startDate	endDate	type	customerID	firstName	lastName	email	phoneNumber	vehicleID	make	model	year	dailyRate	status
1	1	1	1	2023-01-01	2025-03-23	Daily	1	John	Doe	johndoe@example.com	555-555-5555	1	Toyota	Camry	2022	50.00	1
2	2	2	2	2023-02-15	2025-03-23	Monthly	2	Jane	Smith	janesmith@example.com	555-123-4567	2	Honda	Civic	2023	45.00	1
3	3	3	3	2023-03-10	2025-03-23	Daily	3	Robert	Johnson	robert@example.com	555-789-1234	3	Ford	Focus	2022	48.00	0
4	4	4	4	2023-04-20	2025-03-23	Monthly	4	Sarah	Brown	sarah@example.com	555-456-7890	4	Nissan	Altima	2023	52.00	1
5	5	5	5	2023-05-05	2025-03-23	Daily	5	David	Lee	david@example.com	555-987-6543	5	Chevrolet	Malibu	2022	47.00	1
6	6	4	3	2023-06-15	2025-03-23	Monthly	3	Robert	Johnson	robert@example.com	555-789-1234	4	Nissan	Altima	2023	52.00	1
7	7	7	7	2023-07-01	2025-03-23	Daily	7	Michael	Davis	michael@example.com	555-876-5432	7	BMW	3 Series	2023	60.00	1
8	8	8	8	2023-08-12	2025-03-23	Monthly	8	Emma	Wilson	emma@example.com	555-432-1098	8	Mercedes	C-Class	2022	68.00	1
9	9	3	3	2023-09-07	2025-03-23	Daily	3	Robert	Johnson	robert@example.com	555-789-1234	3	Ford	Focus	2022	48.00	0
10	10	10	10	2023-10-10	2025-03-23	Monthly	10	Olivia	Adams	olivia@example.com	555-765-4321	10	Lexus	ES	2023	54.00	1

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

```sql
SELECT TOP 1 Customer.*, SUM(Payment.amount) AS TotalSpent
FROM Customer
JOIN Lease ON Customer.customerID = Lease.customerID
JOIN Payment ON Lease.leaseID = Payment.leaseID
GROUP BY Customer.customerID, Customer.firstName, Customer.lastName, Customer.email, Customer.phoneNumber
ORDER BY TotalSpent DESC;
```

	customerID	firstName	lastName	email	phoneNumber	TotalSpent
1	10	Olivia	Adams	olivia@example.com	555-765-4321	1500.00

18. List All Cars with Their Current Lease Information.

```sql
SELECT Vehicle.*, Lease.*
FROM Vehicle
LEFT JOIN Lease ON Vehicle.vehicleID = Lease.vehicleID;
```

	vehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity	leaseID	vehicleID	customerID	startDate	endDate	type
1	1	Toyota	Camry	2022	50.00	1	4	1450	1	1	1	2023-01-01	2025-03-23	Daily
2	2	Honda	Civic	2023	45.00	1	7	1500	2	2	2	2023-02-15	2025-03-23	Monthly
3	3	Ford	Focus	2022	48.00	0	4	1400	3	3	3	2023-03-10	2025-03-23	Daily
4	3	Ford	Focus	2022	48.00	0	4	1400	9	3	3	2023-09-07	2025-03-23	Daily
5	4	Nissan	Altima	2023	52.00	1	7	1200	4	4	4	2023-04-20	2025-03-23	Monthly
6	4	Nissan	Altima	2023	52.00	1	7	1200	6	4	3	2023-06-15	2025-03-23	Monthly
7	5	Chevrolet	Malibu	2022	47.00	1	4	1800	5	5	5	2023-05-05	2025-03-23	Daily
8	6	Hyundai	Sonata	2023	49.00	0	7	1400	NULL	NULL	NULL	NULL	NULL	NULL
9	7	BMW	3 Series	2023	60.00	1	7	2499	7	7	7	2023-07-01	2025-03-23	Daily
10	8	Mercedes	C-Class	2022	68.00	1	8	2599	8	8	8	2023-08-12	2025-03-23	Monthly
11	9	Audi	A4	2022	55.00	0	4	2500	NULL	NULL	NULL	NULL	NULL	NULL
12	10	Lexus	ES	2023	54.00	1	4	2500	10	10	10	2023-10-10	2025-03-23	Monthly