

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

```
mysql> UPDATE Vehicle
      -> SET dailyRate = 68
      -> WHERE make = 'Mercedes';
Query OK, 0 rows affected (0.00 sec)
Rows matched: 1  Changed: 0  Warnings: 0
```

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

```
mysql> -- Delete from Payment table
mysql> DELETE FROM Payment
      -> WHERE leaseID IN (SELECT leaseID FROM Lease WHERE customerID = @customerIDToDelete);
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> -- Delete from Lease table
mysql> DELETE FROM Lease WHERE customerID = @customerIDToDelete;
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> -- Delete from Customer table
mysql> DELETE FROM Customer WHERE customerID = @customerIDToDelete;
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 DATE;
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT* FROM Payment;
+-----+-----+-----+-----+
| paymentID | leaseID | transactionDate | amount |
+-----+-----+-----+-----+
| 1 | 1 | 2022-01-02 | 50.00 |
| 2 | 2 | 2022-02-15 | 200.00 |
| 3 | 3 | 2022-03-02 | 48.00 |
| 4 | 4 | 2022-04-20 | 150.00 |
| 5 | 5 | 2022-05-02 | 52.00 |
| 6 | 6 | 2022-06-15 | 180.00 |
| 7 | 7 | 2022-07-02 | 70.00 |
| 8 | 8 | 2022-08-15 | 160.00 |
| 9 | 9 | 2022-09-02 | 49.00 |
| 10 | 10 | 2022-10-20 | 120.00 |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)
```

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

```
mysql> SELECT *
-> FROM Customer
-> WHERE email = 'michael.brown@email.com';
```

customerID	firstName	lastName	email	phoneNumber
5	Michael	Brown	michael.brown@email.com	234-567-8901

```
1 row in set (0.00 sec)
```

#### 5. Get active leases for a specific customer.

```
mysql> SELECT Lease.*, Vehicle.*
-> FROM Lease
-> JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID
-> WHERE Lease.customerID = 5
-> AND CURDATE() >= Lease.startDate
-> AND CURDATE() <= Lease.endDate;
Empty set (0.00 sec)
```

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

-- Replace '123-456-7890' with the actual phone number you're searching for

SELECT Payment.\*, Lease.\*, Vehicle.\*, Customer.\*

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 = '123-456-7890';

```
mysql> -- Replace '123-456-7890' with the actual phone number you're searching for
mysql> SELECT Payment.*, Lease.*, Vehicle.*, Customer.*
-> 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 = '123-456-7890';
```

paymentID	leaseID	transactionDate	amount	leaseID	vehicleID	customerID	startDate	endDate	type	vehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity	customerID	firstName	lastName	email	phoneNumber
1	1	2022-01-02	50.00	1	1	1	2022-01-01	2022-01-03	DailyLease	1	Toyota	Camry	2022	50.00	available	5	2.5L	1	John	Doe	john.doe@email.com	123-456-7890

```
1 row in set (0.01 sec)
mysql>
```

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

```
mysql> SELECT AVG(dailyRate) AS averageDailyRate
-> FROM Vehicle
-> WHERE status = 'available';
```

averageDailyRate
57.875000

```
1 row in set (0.00 sec)
```

8. Find the car with the highest daily rate.

```
mysql> SELECT *
-> FROM Vehicle
-> ORDER BY dailyRate DESC
-> LIMIT 1;
+-----+-----+-----+-----+-----+-----+-----+-----+
| vehicleID | make | model | year | dailyRate | status | passengerCapacity | engineCapacity |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7 | BMW | 3 Series | 2021 | 70.00 | available | 4 | 2.0L |
+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

9. Retrieve all cars leased by a specific customer.

```
mysql> -- Replace 5 with the actual customer ID you're searching for
mysql> SELECT Vehicle.*
-> FROM Vehicle
-> JOIN Lease ON Vehicle.vehicleID = Lease.vehicleID
-> WHERE Lease.customerID = 5;
+-----+-----+-----+-----+-----+-----+-----+-----+
| vehicleID | make | model | year | dailyRate | status | passengerCapacity | engineCapacity |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 5 | Chevrolet | Malibu | 2021 | 52.00 | available | 5 | 1.5L |
+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

10. Find the details of the most recent lease.

```
SELECT Lease.*, Vehicle.*, Customer.*
FROM Lease
JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID
JOIN Customer ON Lease.customerID = Customer.customerID
ORDER BY Lease.startDate DESC
LIMIT 1;
```

```
mysql> SELECT Lease.*, Vehicle.*, Customer.*
-> FROM Lease
-> JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID
-> JOIN Customer ON Lease.customerID = Customer.customerID
-> ORDER BY Lease.startDate DESC
-> LIMIT 1;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| leaseID | vehicleID | customerID | startDate | endDate | type | vehicleID | make | model | year | dailyRate | status | passengerCapacity | engineCapacity | customerID | firstName | lastName | email | phoneNumber |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 10 | 10 | 10 | 2022-10-01 | 2022-11-01 | MonthlyLease | 10 | Kia | Optima | 2021 | 54.00 | available | 5 | 2.4L | 10 | Emma | Thomas | emma.thomas@email.com | 901-234-5678 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1 row 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;
Empty set (0.00 sec)
```

### 13. Retrieve Car Details and Their Total Payments.

```
mysql> SELECT
->   Vehicle.*,
->   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, Vehicle.year, Vehicle.dailyRate, Vehicle.status, Vehicle.passengerCapacity, Vehicle.engineCapacity;
```

vehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity	totalPayments
1	Toyota	Camry	2022	50.00	available	5	2.5L	50.00
2	Honda	Accord	2021	55.00	available	5	2.0L	200.00
3	Ford	Fusion	2020	48.00	notAvailable	5	1.5L	48.00
4	Mercedes	C-Class	2022	68.00	available	4	2.0L	150.00
5	Chevrolet	Malibu	2021	52.00	available	5	1.5L	52.00
6	Nissan	Altima	2022	56.00	notAvailable	5	2.5L	180.00
7	BMW	3 Series	2021	70.00	available	4	2.0L	70.00
8	Audi	A4	2020	65.00	available	4	2.0L	160.00
9	Hyundai	Sonata	2022	49.00	available	5	2.4L	49.00
10	Kia	Optima	2021	54.00	available	5	2.4L	120.00

10 rows in set (0.00 sec)

### 14. Calculate Total Payments for Each Customer.

```
mysql> SELECT
->   Customer.*,
->   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	John	Doe	john.doe@email.com	123-456-7890	50.00
2	Jane	Smith	jane.smith@email.com	987-654-3210	200.00
3	Robert	Johnson	robert.johnson@email.com	456-789-0123	48.00
4	Emily	Williams	emily.williams@email.com	789-012-3456	150.00
5	Michael	Brown	michael.brown@email.com	234-567-8901	52.00
6	Olivia	Jones	olivia.jones@email.com	567-890-1234	180.00
7	Daniel	Lee	daniel.lee@email.com	890-123-4567	70.00
8	Sophia	Taylor	sophia.taylor@email.com	345-678-9012	160.00
9	David	Anderson	david.anderson@email.com	678-901-2345	49.00
10	Emma	Thomas	emma.thomas@email.com	901-234-5678	120.00

10 rows in set (0.00 sec)

### 15. List Car Details for Each Lease

```
mysql> SELECT
->   Lease.leaseID,
->   Vehicle.*,
->   Lease.startDate,
->   Lease.endDate
-> FROM
->   Lease
-> JOIN
->   Vehicle ON Lease.vehicleID = Vehicle.vehicleID;
```

leaseID	vehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity	startDate	endDate
1	1	Toyota	Camry	2022	50.00	available	5	2.5L	2022-01-01	2022-01-03
2	2	Honda	Accord	2021	55.00	available	5	2.0L	2022-02-01	2022-03-01
3	3	Ford	Fusion	2020	48.00	notAvailable	5	1.5L	2022-03-01	2022-03-03
4	4	Mercedes	C-Class	2022	68.00	available	4	2.0L	2022-04-01	2022-05-01
5	5	Chevrolet	Malibu	2021	52.00	available	5	1.5L	2022-05-01	2022-05-02
6	6	Nissan	Altima	2022	56.00	notAvailable	5	2.5L	2022-06-01	2022-07-01
7	7	BMW	3 Series	2021	70.00	available	4	2.0L	2022-07-01	2022-07-02
8	8	Audi	A4	2020	65.00	available	4	2.0L	2022-08-01	2022-09-01
9	9	Hyundai	Sonata	2022	49.00	available	5	2.4L	2022-09-01	2022-09-02
10	10	Kia	Optima	2021	54.00	available	5	2.4L	2022-10-01	2022-11-01

10 rows in set (0.00 sec)

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

```
mysql> SELECT
->     Lease.leaseID,
->     Customer.*,
->     Vehicle.*,
->     Lease.startDate,
->     Lease.endDate
-> FROM
->     Lease
-> JOIN
->     Customer ON Lease.customerID = Customer.customerID
-> JOIN
->     Vehicle ON Lease.vehicleID = Vehicle.vehicleID
-> WHERE
->     NOW() BETWEEN Lease.startDate AND Lease.endDate;
Empty set (0.01 sec)
```

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

```
mysql> SELECT
->     Customer.*,
->     SUM(Payment.amount) AS totalSpentOnLeases
-> 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
->     totalSpentOnLeases DESC
-> LIMIT 1;
+-----+-----+-----+-----+-----+-----+
| customerID | firstName | lastName | email | phoneNumber | totalSpentOnLeases |
+-----+-----+-----+-----+-----+-----+
| 2 | Jane | Smith | jane.smith@email.com | 987-654-3210 | 200.00 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

18. List All Cars with Their Current Lease Information

```
mysql> SELECT
->     Vehicle.*,
->     Lease.*
-> FROM
->     Vehicle
-> LEFT JOIN
->     Lease ON Vehicle.vehicleID = Lease.vehicleID
-> WHERE
->     NOW() BETWEEN Lease.startDate AND Lease.endDate OR Lease.leaseID IS NULL;
Empty set (0.00 sec)
```