

SQL Coding Challenge – 4

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

Ans.

UPDATE Vehicle

SET dailyRate = 68.00

WHERE make = 'Mercedes' AND model = 'C-Class';

```
Command Prompt - mysql -u root -p

mysql> select * from vehicle;
+-----+-----+-----+-----+-----+-----+-----+-----+
| vehicleID | make   | model | year | dailyRate | status   | passengerCapacity | engineCapacity |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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           |
| 5         | Chevrolet | Malibu | 2022 | 47.00     | available | 4                 | 1800           |
| 6         | Hyundai | Sonata | 2023 | 49.00     | notAvailable | 7                 | 1400           |
| 7         | 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           |
+-----+-----+-----+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)

mysql> -- Update daily rate for a Mercedes car
mysql> UPDATE Vehicle
--> SET dailyRate = 68.00
--> WHERE make = 'Mercedes';
Query OK, 1 row affected (0.03 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> select * from vehicle;
+-----+-----+-----+-----+-----+-----+-----+-----+
| vehicleID | make   | model | year | dailyRate | status   | passengerCapacity | engineCapacity |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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           |
| 5         | Chevrolet | Malibu | 2022 | 47.00     | available | 4                 | 1800           |
| 6         | Hyundai | Sonata | 2023 | 49.00     | notAvailable | 7                 | 1400           |
| 7         | BMW    | 3 Series | 2023 | 60.00     | available | 7                 | 2499           |
| 8         | Mercedes | C-Class | 2022 | 68.00     | available | 8                 | 2599           |
| 9         | Audi   | A4     | 2022 | 55.00     | notAvailable | 4                 | 2500           |
| 10        | Lexus  | ES     | 2023 | 54.00     | available | 4                 | 2500           |
+-----+-----+-----+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)

mysql>
```

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

Ans. -- Delete from Payment table

DELETE FROM Payment

WHERE leaseID IN (SELECT leaseID FROM Lease WHERE customerID = 4);

-- Delete from Lease table

DELETE FROM Lease

WHERE customerID = 4;

-- Delete from Customer table

DELETE FROM Customer

WHERE customerID = 4;

```
Command Prompt - mysql -u root -p
mysql> -- Delete from Payment table
mysql> DELETE FROM Payment
-> WHERE leaseID IN (SELECT leaseID FROM Lease WHERE customerID = 4);
Query OK, 1 row affected (0.03 sec)

mysql>
mysql> -- Delete from Lease table
mysql> DELETE FROM Lease
-> WHERE customerID = 4;
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> -- Delete from Customer table
mysql> DELETE FROM Customer
-> WHERE customerID = 4;
Query OK, 1 row affected (0.01 sec)

mysql>
```

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

Ans.

ALTER TABLE Payment

CHANGE COLUMN paymentDate transactionDate DATE;

```
Command Prompt - mysql -u root -p
Query OK, 1 row affected (0.01 sec)

mysql> select * from payment;
+-----+-----+-----+-----+
| paymentID | leaseID | paymentDate | amount |
+-----+-----+-----+-----+
| 1 | 1 | 2023-01-03 | 200.00 |
| 2 | 2 | 2023-02-20 | 1000.00 |
| 3 | 3 | 2023-03-12 | 75.00 |
| 5 | 5 | 2023-05-07 | 60.00 |
| 6 | 6 | 2023-06-18 | 1200.00 |
| 7 | 7 | 2023-07-03 | 40.00 |
| 8 | 8 | 2023-08-14 | 1100.00 |
| 9 | 9 | 2023-09-09 | 80.00 |
| 10 | 10 | 2023-10-25 | 1500.00 |
+-----+-----+-----+-----+
9 rows in set (0.03 sec)

mysql> -- Rename the "paymentDate" column to "transactionDate"
mysql> ALTER TABLE Payment
-> CHANGE COLUMN paymentDate transactionDate DATE;
Query OK, 0 rows affected (0.07 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> select * from payment;
+-----+-----+-----+-----+
| paymentID | leaseID | transactionDate | amount |
+-----+-----+-----+-----+
| 1 | 1 | 2023-01-03 | 200.00 |
| 2 | 2 | 2023-02-20 | 1000.00 |
| 3 | 3 | 2023-03-12 | 75.00 |
| 5 | 5 | 2023-05-07 | 60.00 |
| 6 | 6 | 2023-06-18 | 1200.00 |
| 7 | 7 | 2023-07-03 | 40.00 |
| 8 | 8 | 2023-08-14 | 1100.00 |
| 9 | 9 | 2023-09-09 | 80.00 |
| 10 | 10 | 2023-10-25 | 1500.00 |
+-----+-----+-----+-----+
9 rows in set (0.00 sec)

mysql>
```

4. Find a specific customer by email.

Ans.

SELECT *

FROM Customer

WHERE email = 'johndoe@example.com';

```
Command Prompt - mysql -u root -p

mysql> -- Find a customer by email
mysql> SELECT *
  -> FROM Customer
  -> WHERE email = 'johndoe@example.com';
+-----+-----+-----+-----+-----+
| customerID | firstName | lastName | email                | phoneNumber |
+-----+-----+-----+-----+-----+
|          1 | John      | Doe      | johndoe@example.com  | 555-123-4567 |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

5. Get active leases for a specific customer.

Ans.

SELECT *

FROM Lease

WHERE customerID = 2 AND endDate >= CURDATE();

```
Command Prompt - mysql -u root -p

1 row in set (0.00 sec)

mysql> -- Get active leases for a specific customer
mysql> SELECT *
  -> FROM Lease
  -> WHERE customerID = 2 AND endDate >= CURDATE();
Empty set (0.00 sec)

mysql>
```

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

Ans.

SELECT Payment.*

FROM Payment

JOIN Lease ON Payment.leaseID = Lease.leaseID

JOIN Customer ON Lease.customerID = Customer.customerID

WHERE Customer.phoneNumber = '555-987-6543';

```
Command Prompt - mysql -u root -p
mysql> -- Find all payments made by a customer with a specific phone number
mysql> SELECT Payment.*
      -> FROM Payment
      -> JOIN Lease ON Payment.leaseID = Lease.leaseID
      -> JOIN Customer ON Lease.customerID = Customer.customerID
      -> WHERE Customer.phoneNumber = '555-987-6543';
+-----+-----+-----+-----+
| paymentID | leaseID | transactionDate | amount |
+-----+-----+-----+-----+
|          5 |          5 | 2023-05-07      | 60.00  |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

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

Ans.

SELECT AVG(dailyRate) AS averageDailyRate

FROM Vehicle

WHERE status = 'available';

```
Command Prompt - mysql -u root -p
mysql> -- Calculate the average daily rate of all available cars
mysql> SELECT AVG(dailyRate) AS averageDailyRate
      -> FROM Vehicle
      -> WHERE status = 'available';
+-----+
| averageDailyRate |
+-----+
|          53.714286 |
+-----+
1 row in set (0.00 sec)

mysql> _
```

8. Find the car with the highest daily rate.

Ans.

SELECT *

FROM Vehicle

ORDER BY dailyRate DESC

LIMIT 1;

```

C:\ Command Prompt - mysql -u root -p
mysql> -- 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 |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 8         | Mercedes | C-Class | 2022 | 68.00    | available | 8                 | 2599           |
+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>

```

9. Retrieve all cars leased by a specific customer.

Ans.

SELECT Vehicle.*

FROM Vehicle

JOIN Lease ON Vehicle.vehicleID = Lease.vehicleID

WHERE Lease.customerID = 3;

```

C:\ Command Prompt - mysql -u root -p
mysql> -- Retrieve all cars leased by a specific customer
mysql> SELECT Vehicle.*
    -> FROM Vehicle
    -> JOIN Lease ON Vehicle.vehicleID = Lease.vehicleID
    -> WHERE Lease.customerID = 3;
+-----+-----+-----+-----+-----+-----+-----+-----+
| vehicleID | make   | model | year | dailyRate | status   | passengerCapacity | engineCapacity |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 3         | Ford   | Focus | 2022 | 48.00    | notAvailable | 4                 | 1400           |
| 4         | Nissan | Altima | 2023 | 52.00    | available   | 7                 | 1200           |
| 3         | Ford   | Focus | 2022 | 48.00    | notAvailable | 4                 | 1400           |
+-----+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> _

```

10. Find the details of the most recent lease.

Ans.

SELECT *

FROM Lease

ORDER BY endDate DESC

LIMIT 1;

```

c:\ Command Prompt - mysql -u root -p
3 rows in set (0.00 sec)

mysql> -- Find the details of the most recent lease
mysql> SELECT *
  -> FROM Lease
  -> ORDER BY endDate DESC
  -> LIMIT 1;
+-----+-----+-----+-----+-----+-----+
| leaseID | vehicleID | customerID | startDate | endDate | type |
+-----+-----+-----+-----+-----+-----+
|      10 |         10 |          10 | 2023-10-10 | 2023-10-31 | Monthly |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>

```

11. List all payments made in the year 2023.

Ans.

SELECT *

FROM Payment

WHERE YEAR(paymentDate) = 2023;

```

c:\ Command Prompt - mysql -u root -p
mysql> -- List all payments made in the year 2023
mysql> SELECT *
  -> FROM Payment
  -> WHERE YEAR(transactionDate) = 2023;
+-----+-----+-----+-----+
| paymentID | leaseID | transactionDate | amount |
+-----+-----+-----+-----+
|          1 |         1 | 2023-01-03 | 200.00 |
|          2 |         2 | 2023-02-20 | 1000.00 |
|          3 |         3 | 2023-03-12 | 75.00 |
|          5 |         5 | 2023-05-07 | 60.00 |
|          6 |         6 | 2023-06-18 | 1200.00 |
|          7 |         7 | 2023-07-03 | 40.00 |
|          8 |         8 | 2023-08-14 | 1100.00 |
|          9 |         9 | 2023-09-09 | 80.00 |
|         10 |        10 | 2023-10-25 | 1500.00 |
+-----+-----+-----+-----+
9 rows in set (0.00 sec)

mysql>

```

12. Retrieve customers who have not made any payments.

Ans. -- Retrieve customers who have not made any payments

SELECT Customer.*

FROM Customer

LEFT JOIN Lease ON Customer.customerID = Lease.customerID

WHERE Lease.customerID IS NULL;

Command Prompt - mysql -u root -p

```
mysql> -- Retrieve customers who have not made any payments
mysql> SELECT Customer.*
-> FROM Customer
-> LEFT JOIN Lease ON Customer.customerID = Lease.customerID
-> WHERE Lease.customerID 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>
```

13. Retrieve Car Details and Their Total Payments.

Ans.

SELECT Vehicle.*, COALESCE(SUM(Payment.amount), 0) AS totalPayments

FROM Vehicle

LEFT JOIN Lease ON Vehicle.vehicleID = Lease.vehicleID

LEFT JOIN Payment ON Lease.leaseID = Payment.leaseID

GROUP BY Vehicle.vehicleID;

Command Prompt - mysql -u root -p

2 rows in set (0.00 sec)

```
mysql> -- Retrieve Car Details and Their Total Payments
mysql> SELECT Vehicle.*, COALESCE(SUM(Payment.amount), 0) AS totalPayments
-> FROM Vehicle
-> LEFT JOIN Lease ON Vehicle.vehicleID = Lease.vehicleID
-> LEFT JOIN Payment ON Lease.leaseID = Payment.leaseID
-> GROUP BY Vehicle.vehicleID;
```

vehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity	totalPayments
1	Toyota	Camry	2022	50.00	available	4	1450	200.00
2	Honda	Civic	2023	45.00	available	7	1500	1000.00
3	Ford	Focus	2022	48.00	notAvailable	4	1400	155.00
4	Nissan	Altima	2023	52.00	available	7	1200	1200.00
5	Chevrolet	Malibu	2022	47.00	available	4	1800	60.00
6	Hyundai	Sonata	2023	49.00	notAvailable	7	1400	0.00
7	BMW	3 Series	2023	60.00	available	7	2499	40.00
8	Mercedes	C-Class	2022	68.00	available	8	2599	1100.00
9	Audi	A4	2022	55.00	notAvailable	4	2500	0.00
10	Lexus	ES	2023	54.00	available	4	2500	1500.00

10 rows in set (0.00 sec)

mysql>

14. Calculate Total Payments for Each Customer.

Ans.

SELECT Customer.*, COALESCE(SUM(Payment.amount), 0) AS totalPayments

FROM Customer

LEFT JOIN Lease ON Customer.customerID = Lease.customerID

LEFT JOIN Payment ON Lease.leaseID = Payment.leaseID

GROUP BY Customer.customerID;

```
Command Prompt - mysql -u root -p
mysql> -- Calculate Total Payments for Each Customer
mysql> SELECT Customer.*, COALESCE(SUM(Payment.amount), 0) AS totalPayments
  -> FROM Customer
  -> LEFT JOIN Lease ON Customer.customerID = Lease.customerID
  -> LEFT JOIN Payment ON Lease.leaseID = Payment.leaseID
  -> GROUP BY Customer.customerID;
```

customerID	firstName	lastName	email	phoneNumber	totalPayments
1	John	Doe	johndoe@example.com	555-123-4567	200.00
2	Jane	Smith	janesmith@example.com	555-789-1234	1000.00
3	Robert	Johnson	robert@example.com	555-789-1234	1355.00
5	David	Lee	david@example.com	555-987-6543	60.00
6	Laura	Hall	laura@example.com	555-234-5678	0.00
7	Michael	Davis	michael@example.com	555-876-5432	40.00
8	Emma	Wilson	emma@example.com	555-432-1098	1100.00
9	William	Taylor	william@example.com	555-321-6547	0.00
10	Olivia	Adams	olivia@example.com	555-765-4321	1500.00

```
mysql>
```

15. List Car Details for Each Lease.

Ans

SELECT Lease.*, Vehicle.*

FROM Lease

JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID;

```
Command Prompt - mysql -u root -p
mysql> -- List Car Details for Each Lease
mysql> 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	2023-01-01	2023-01-05	Daily	1	Toyota	Camry	2022	50.00	available	4	1450
2	2	2	2023-02-15	2023-02-28	Monthly	2	Honda	Civic	2023	45.00	available	7	1500
3	3	3	2023-03-10	2023-03-15	Daily	3	Ford	Focus	2022	48.00	notAvailable	4	1400
5	5	5	2023-05-05	2023-05-10	Daily	5	Chevrolet	Malibu	2022	47.00	available	4	1800
6	4	3	2023-06-15	2023-06-30	Monthly	4	Nissan	Altima	2023	52.00	available	7	1200
7	7	7	2023-07-01	2023-07-10	Daily	7	BMW	2 Series	2023	60.00	available	7	2499
8	8	8	2023-08-12	2023-08-15	Monthly	8	Mercedes	C-Class	2022	68.00	available	8	2599
9	3	3	2023-09-07	2023-09-10	Daily	3	Ford	Focus	2022	48.00	notAvailable	4	1400
10	10	10	2023-10-10	2023-10-31	Monthly	10	Lexus	ES	2023	54.00	available	4	2500

```
mysql>
```

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

Ans.

SELECT Lease.*, Customer.*, Vehicle.*

FROM Lease

JOIN Customer ON Lease.customerID = Customer.customerID

JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID

WHERE endDate >= CURDATE();

Command Prompt - mysql -u root -p

```
mysql> -- Retrieve Details of Active Leases with Customer and Car Information
mysql> SELECT Lease.*, Customer.*, Vehicle.*
    -> FROM Lease
    -> JOIN Customer ON Lease.customerID = Customer.customerID
    -> JOIN Vehicle ON Lease.vehicleID = Vehicle.vehicleID
    -> WHERE endDate >= CURDATE();
Empty set (0.00 sec)

mysql> _
```

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

Ans.

SELECT Customer.customerID, Customer.firstName, Customer.lastName,
COALESCE(SUM(Payment.amount), 0) AS totalPayments

FROM Customer

LEFT JOIN Lease ON Customer.customerID = Lease.customerID

LEFT JOIN Payment ON Lease.leaseID = Payment.leaseID

GROUP BY Customer.customerID

ORDER BY totalPayments DESC

LIMIT 1;

```
Command Prompt - mysql -u root -p
mysql> -- Find the Customer Who Has Spent the Most on Leases
mysql> SELECT Customer.customerID, Customer.firstName, Customer.lastName, COALESCE(SUM(Payment.amount), 0) AS totalPayments
    -> FROM Customer
    -> LEFT JOIN Lease ON Customer.customerID = Lease.customerID
    -> LEFT JOIN Payment ON Lease.leaseID = Payment.leaseID
    -> GROUP BY Customer.customerID
    -> ORDER BY totalPayments DESC
    -> LIMIT 1;
+-----+-----+-----+-----+
| customerID | firstName | lastName | totalPayments |
+-----+-----+-----+-----+
| 10 | Olivia | Adams | 1500.00 |
+-----+-----+-----+-----+
1 row in set (0.03 sec)

mysql> _
```

18. List All Cars with Their Current Lease Information.

Ans.

SELECT Vehicle.*, Lease.*

FROM Vehicle

LEFT JOIN Lease ON Vehicle.vehicleID = Lease.vehicleID;

```
Command Prompt - mysql -u root -p
mysql> -- List All Cars with Their Current Lease Information
mysql> 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	Toyota	Camry	2022	50.00	available	4	1450	1	1	1	2023-01-01	2023-01-05	Daily
2	Honda	Civic	2023	45.00	available	7	1500	2	2	2	2023-02-15	2023-02-28	Monthly
3	Ford	Focus	2022	48.00	notAvailable	4	1400	3	3	3	2023-03-10	2023-03-15	Daily
3	Ford	Focus	2022	48.00	notAvailable	4	1400	9	3	3	2023-09-07	2023-09-10	Daily
4	Nissan	Altima	2023	52.00	available	7	1200	6	4	3	2023-06-15	2023-06-30	Monthly
5	Chevrolet	Malibu	2022	47.00	available	4	1800	5	5	5	2023-05-05	2023-05-10	Daily
6	Hyundai	Sonata	2023	49.00	notAvailable	7	1400	NULL	NULL	NULL	NULL	NULL	NULL
7	BMW	3 Series	2023	60.00	available	7	2499	7	7	7	2023-07-01	2023-07-10	Daily
8	Mercedes	C-Class	2022	68.00	available	8	2599	8	8	8	2023-08-12	2023-08-15	Monthly
9	Audi	A4	2022	55.00	notAvailable	4	2500	NULL	NULL	NULL	NULL	NULL	NULL
10	Lexus	ES	2023	54.00	available	4	2500	10	10	10	2023-10-10	2023-10-31	Monthly

11 rows in set (0.00 sec)

```
mysql>
```