QUESTION

Duplicate Transaction Hard 10 Points

Using the transactions table, identify any payments made at the same merchant with the same credit card for the same amount within 10 minutes of each other. Count such repeated payments.

Assumption:

The first transaction of such payments should not be counted as a repeated payment. This means that if a merchant performs 2 transactions with the same credit card and for the same amount within 10 minutes, there will only be 1 repeated payment.

Output Schema:

Column	Type
repeated_payment_count	INT

TABLE SCHEMA

```sql
CREATE TABLE transactions (
id INT PRIMARY KEY,
credit_card VARCHAR(20),
merchant VARCHAR(50),
amount DECIMAL(10, 2),
transaction_time DATETIME
);


INSERT INTO transactions (id, credit_card, merchant, amount, transaction_time)
VALUES
(1, '1234-5678-9876', 'Amazon', 50.00, '2025-01-23 10:15:00'),
(2, '1234-5678-9876', 'Amazon', 50.00, '2025-01-23 10:20:00'),
(3, '5678-1234-8765', 'Walmart', 30.00, '2025-01-23 11:00:00'),
(4, '1234-5678-9876', 'Amazon', 50.00, '2025-01-23 10:30:00'),
(5, '5678-1234-8765', 'Walmart', 30.00, '2025-01-23 11:05:00'),
(6, '8765-4321-1234', 'BestBuy', 100.00, '2025-01-23 12:00:00'),
(7, '1234-5678-9876', 'Amazon', 50.00, '2025-01-23 12:10:00');

```

SOLUTION

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```sql
select count(*) as repeated_payment_count from transactions t1 join transactions t2
on
t1.merchant= t2.merchant
and t1.credit_card = t2.credit_card
and t1.amount = t2. amount
and t1.id < t2.id
and t2.transaction_time <= datetime(t1.transaction_time, '+10 minutes')
and t2.transaction_time > t1.transaction_time;
```

OUTPUT

▼ Tables

repeated_payment_count
3

My Thought Process:

I started by joining the transactions table to itself on merchant, credit_card, and amount. Then I filtered the second transaction to be within 10 minutes after the first one using datetime() logic. I made sure to exclude the original transaction by using t1.id < t2.id so only repeated payments are counted.

Business Impact:

This query is helpful for fraud detection or customer experience analysis.