

Problem 2205: The Number of Users That Are Eligible for Discount

Problem Information

Difficulty: Easy

Acceptance Rate: 0.00%

Paid Only: No

Problem Description

Table:

Purchases

+-----+-----+ | Column Name | Type | +-----+-----+ | user_id | int | |
time_stamp | datetime | | amount | int | +-----+-----+ (user_id, time_stamp) is the
primary key (combination of columns with unique values) for this table. Each row contains
information about the purchase time and the amount paid for the user with ID user_id.

A user is eligible for a discount if they had a purchase in the inclusive interval of time

[startDate, endDate]

with at least

minAmount

amount. To convert the dates to times, both dates should be considered as the

start

of the day (i.e.,

endDate = 2022-03-05

should be considered as the time

2022-03-05 00:00:00

).

Write a solution to report the number of users that are eligible for a discount.

The result format is in the following example.

Example 1:

Input:

Purchases table: +-----+-----+-----+ | user_id | time_stamp | amount |
+-----+-----+-----+ | 1 | 2022-04-20 09:03:00 | 4416 | | 2 | 2022-03-19 19:24:02
| 678 | | 3 | 2022-03-18 12:03:09 | 4523 | | 3 | 2022-03-30 09:43:42 | 626 |
+-----+-----+-----+ startDate = 2022-03-08, endDate = 2022-03-20,
minAmount = 1000

Output:

+-----+ | user_cnt | +-----+ | 1 | +-----+

Explanation:

Out of the three users, only User 3 is eligible for a discount. - User 1 had one purchase with at least minAmount amount, but not within the time interval. - User 2 had one purchase within the time interval, but with less than minAmount amount. - User 3 is the only user who had a purchase that satisfies both conditions.

Important Note:

This problem is basically the same as

The Users That Are Eligible for Discount

.

Code Snippets

MySQL:

```
CREATE FUNCTION getUserIDs(startDate DATE, endDate DATE, minAmount INT)
RETURNS INT
BEGIN
RETURN (
# Write your MySQL query statement below.

);
END
```

MS SQL Server:

```
CREATE FUNCTION getUserIDs(@startDate DATE, @endDate DATE, @minAmount INT)
RETURNS INT AS
BEGIN
RETURN (
/* Write your T-SQL query statement below. */

);
END
```

PostgreSQL:

```
CREATE OR REPLACE FUNCTION getUserIDs(startDate DATE, endDate DATE, minAmount
INT) RETURNS INT AS $$
BEGIN
RETURN (
-- Write your PostgreSQL query statement below.

);
END;
$$ LANGUAGE plpgsql;
```

Oracle:

```
CREATE FUNCTION getUserIDs(startDate IN DATE, endDate IN DATE, minAmount IN
NUMBER) RETURN NUMBER IS
```

```
result NUMBER;  
BEGIN  
/* Write your PL/SQL query statement below */  
  
RETURN result;  
END;
```

Pandas:

```
import pandas as pd  
from datetime import datetime  
  
def count_valid_users(purchases: pd.DataFrame, start_date: datetime,  
end_date: datetime, min_amount: int) -> pd.DataFrame:
```

Solutions

MySQL Solution:

```
CREATE FUNCTION getUserIDs(startDate DATE, endDate DATE, minAmount INT)  
RETURNS INT  
BEGIN  
RETURN (  
# Write your MySQL query statement below.  
  
);  
END
```

MS SQL Server Solution:

```
CREATE FUNCTION getUserIDs(@startDate DATE, @endDate DATE, @minAmount INT)  
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/* Write your T-SQL query statement below. */  
  
);  
END
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PostgreSQL Solution:

```
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INT) RETURNS INT AS $$
BEGIN
RETURN (
-- Write your PostgreSQL query statement below.

);
END;
$$ LANGUAGE plpgsql;
```

Oracle Solution:

```
CREATE FUNCTION getUserIDs(startDate IN DATE, endDate IN DATE, minAmount IN
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result NUMBER;
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/* Write your PL/SQL query statement below */

RETURN result;
END;
```

Pandas Solution:

```
import pandas as pd
from datetime import datetime

def count_valid_users(purchases: pd.DataFrame, start_date: datetime,
end_date: datetime, min_amount: int) -> pd.DataFrame:
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