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Monthly Merchant Balance [Visa SQL Interview Question]

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Say you have access to all the transactions for a given merchant account. Write a query to print the cumulative balance of the merchant account at the end of each day, with the total balance reset back to zero at the end of the month. Output the transaction date and cumulative balance.

`transactions` Table:

Column Name	Type
transaction_id	integer
type	string ('deposit', 'withdrawal')
amount	decimal
transaction_date	timestamp

`transactions` Example Input:

transaction_id	type	amount	transaction_date
19153	deposit	65.90	07/10/2022 10:00:00
53151	deposit	178.55	07/08/2022 10:00:00
29776	withdrawal	25.90	07/08/2022 10:00:00
16461	withdrawal	45.99	07/08/2022 10:00:00
77134	deposit	32.60	07/10/2022 10:00:00

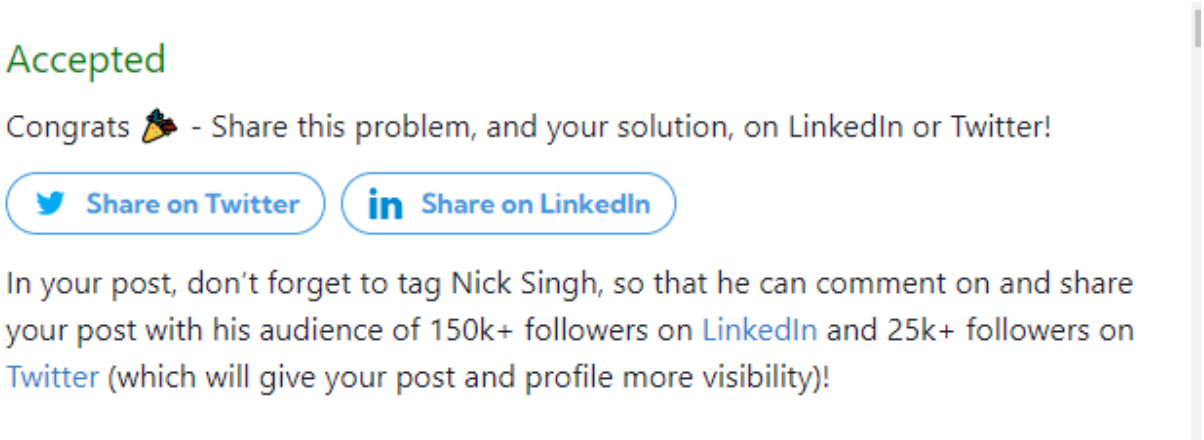
Example Output:

transaction_date	balance
07/08/2022 12:00:00	106.66
07/10/2022 12:00:00	205.16

To get cumulative balance of 106.66 on 07/08/2022 12:00:00, we take the deposit of 178.55 and minus against two withdrawals 25.90 and 45.99.

The dataset you are querying against may have different input & output - **this is just an example**!

```sql
with Datewise_DW as (
Select
cast(transaction_date as Date) as T_Date
,sum(case when type = 'deposit' then amount else 0 end) as deposit_amount
,sum(case when type = 'withdrawal' then amount else 0 end) as withdrawal_amount
from transactions
group by
cast(transaction_date as Date)
), cte2 as (
Select *
,sum(deposit_Amount) over( partition by extract(month from t_date) order by t_date) as r_deposit
,sum(withdrawal_amount) over( partition by extract(month from t_date) order by t_date) as r_withdraw
from datewise_DW
)
Select t_date, r_deposit - r_withdraw as balance
from cte2
order by t_date
```



CREATE TABLE transactions (

transaction_id INT PRIMARY KEY,

type VARCHAR(10),

amount DECIMAL(10, 2),

transaction_date TIMESTAMP

```
);

INSERT INTO transactions (transaction_id, type, amount, transaction_date) VALUES
(19153, 'deposit', 65.90, '2022-07-10 10:00:00'),
(53151, 'deposit', 178.55, '2022-07-08 10:00:00'),
(29776, 'withdrawal', 25.90, '2022-07-08 10:00:00'),
(16461, 'withdrawal', 45.99, '2022-07-08 13:00:00'),
(77134, 'deposit', 32.60, '2022-07-10 10:00:00'),
(41515, 'withdrawal', 16.31, '2022-06-01 10:00:00'),
(624804, 'deposit', 165.00, '2022-06-17 10:00:00'),
(757995, 'deposit', 7.50, '2022-06-30 10:00:00'),
(112465, 'withdrawal', 295.95, '2022-06-28 10:00:00'),
(996414, 'withdrawal', 67.00, '2022-06-05 10:00:00'),
(946461, 'deposit', 815.00, '2022-06-01 10:00:00'),
(125614, 'withdrawal', 300.00, '2022-07-02 10:00:00'),
(146641, 'withdrawal', 100.00, '2022-07-13 10:00:00'),
(136414, 'deposit', 599.30, '2022-07-02 10:00:00');
```