Problem 3089: Find Bursty Behavior

Problem Information

Difficulty: Medium
Acceptance Rate: 0.00%
Paid Only: No

Problem Description

Table:

Posts

+-------------+---------+ | Column Name | Type | +-------------+---------+ | post_id | int | | user_id | int | | post_date | date | +-------------+---------+ post_id is the primary key (column with unique values) for this table. Each row of this table contains post_id, user_id, and post_date.

Write a solution to find users who demonstrate

bursty behavior

in their posting patterns during February

2024

.

Bursty behavior

is defined as

any

period of

7

consecutive

days where a user's posting frequency is

at least twice

to their

average

weekly posting frequency for February

2024

.

Note:

Only include the dates from February

1

to February

28

in your analysis, which means you should count February as having exactly

4

weeks.

Return

the result table orderd by

user_id

in

ascending

order.

The result format is in the following example.

Example:

Input:

Posts table:

+---------+---------+------------+ | post_id | user_id | post_date | +---------+---------+------------+ | 1 | 1 | 2024-02-27 | | 2 | 5 | 2024-02-06 | | 3 | 3 | 2024-02-25 | | 4 | 3 | 2024-02-14 | | 5 | 3 | 2024-02-06 | | 6 | 2 | 2024-02-25 | +---------+---------+------------+

Output:

+---------+----------------+------------------+ | user_id | max_7day_posts | avg_weekly_posts | +---------+----------------+------------------+ | 1 | 1 | 0.2500 | | 2 | 1 | 0.2500 | | 5 | 1 | 0.2500 | +---------+----------------+------------------+

Explanation:

User 1:

Made only 1 post in February, resulting in an average of 0.25 posts per week and a max of 1 post in any 7-day period.

User 2:

Also made just 1 post, with the same average and max 7-day posting frequency as User 1.

User 5:

Like Users 1 and 2, User 5 made only 1 post throughout February, leading to the same average and max 7-day posting metrics.

User 3:

Although User 3 made more posts than the others (3 posts), they did not reach twice the average weekly posts in their consecutive 7-day window, so they are not listed in the output.

Note:

Output table is ordered by user_id in ascending order.

Code Snippets

MySQL:

```
# Write your MySQL query statement below
```

MS SQL Server:

```
/* Write your T-SQL query statement below */
```

PostgreSQL:

```
-- Write your PostgreSQL query statement below
```

Oracle:

```
/* Write your PL/SQL query statement below */
```

Pandas:

```
import pandas as pd

def find_bursty_behavior(posts: pd.DataFrame) -> pd.DataFrame:
```

Solutions

MySQL Solution:

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