Problem 2854: Rolling Average Steps

Problem Information

Difficulty: Medium
Acceptance Rate: 68.97%
Paid Only: Yes
Tags: Database

Problem Description

Table: `Steps`

+-------------+------+ | Column Name | Type | +-------------+------+ | user_id | int | | steps_count | int | | steps_date | date | +-------------+------+ (user_id, steps_date) is the primary key for this table. Each row of this table contains user_id, steps_count, and steps_date.

Write a solution to calculate `3-day` **rolling averages** of steps for each user.

We calculate the `n-day` **rolling average** this way:

* For each day, we calculate the average of `n` consecutive days of step counts ending on that day if available, otherwise, `n-day` rolling average is not defined for it.

Output the `user_id`, `steps_date`, and rolling average. Round the rolling average to **two decimal places**.

Return _the result table ordered by_`user_id` _,_`steps_date` _in_**ascending** order._

The result format is in the following example.

Example 1:

Input: Steps table: +---------+-------------+------------+ | user_id | steps_count | steps_date | +---------+-------------+------------+ | 1 | 687 | 2021-09-02 | | 1 | 395 | 2021-09-04 | | 1 | 499 | 2021-09-05 | | 1 | 712 | 2021-09-06 | | 1 | 576 | 2021-09-07 | | 2 | 153 | 2021-09-06 | | 2 | 171 | 2021-09-07 | | 2 | 530 | 2021-09-08 | | 3 | 945 | 2021-09-04 | | 3 | 120 | 2021-09-07 | | 3 | 557 |

2021-09-08 | | 3 | 840 | 2021-09-09 | | 3 | 627 | 2021-09-10 | | 5 | 382 | 2021-09-05 | | 6 | 480 | 2021-09-01 | | 6 | 191 | 2021-09-02 | | 6 | 303 | 2021-09-05 | +---------+------------+------------+

Output: +---------+------------+------------------+ | user_id | steps_date | rolling_average | +---------+------------+------------------+ | 1 | 2021-09-06 | 535.33 | | 1 | 2021-09-07 | 595.67 | | 2 | 2021-09-08 | 284.67 | | 3 | 2021-09-09 | 505.67 | | 3 | 2021-09-10 | 674.67 | +---------+------------+------------------+ **Explanation:** - For user id 1, the step counts for the three consecutive days up to 2021-09-06 are available. Consequently, the rolling average for this particular date is computed as (395 + 499 + 712) / 3 = 535.33. - For user id 1, the step counts for the three consecutive days up to 2021-09-07 are available. Consequently, the rolling average for this particular date is computed as (499 + 712 + 576) / 3 = 595.67. - For user id 2, the step counts for the three consecutive days up to 2021-09-08 are available. Consequently, the rolling average for this particular date is computed as (153 + 171 + 530) / 3 = 284.67. - For user id 3, the step counts for the three consecutive days up to 2021-09-09 are available. Consequently, the rolling average for this particular date is computed as (120 + 557 + 840) / 3 = 505.67. - For user id 3, the step counts for the three consecutive days up to 2021-09-10 are available. Consequently, the rolling average for this particular date is computed as (557 + 840 + 627) / 3 = 674.67. - For user id 4 and 5, the calculation of the rolling average is not viable as there is insufficient data for the consecutive three days. Output table ordered by user_id and steps_date 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
```