2854. Rolling Average Steps

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.
```