Problem 3060: User Activities within Time Bounds

Problem Information

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

Problem Description

Table:

Sessions

+---------------+----------+ | Column Name | Type | +---------------+----------+ | user_id | int | | session_start | datetime | | session_end | datetime | | session_id | int | | session_type | enum | +---------------+----------+ session_id is column of unique values for this table. session_type is an ENUM (category) type of (Viewer, Streamer). This table contains user id, session start, session end, session id and session type.

Write a solution to find the the

users

who have had

at least two

session

of the

same

type (either '

Viewer

' or '

Streamer

') with a

maximum

gap of

12

hours

between

sessions.

Return

the result table ordered by

user_id

in

ascending

order.

The result format is in the following example.

Example:

Input:

Sessions table: +---------+--------------------+--------------------+------------+--------------+ | user_id | session_start | session_end | session_id | session_type | +---------+--------------------+--------------------+------------+--------------+ | 101 | 2023-11-01 08:00:00 | 2023-11-01 09:00:00 | 1 | Viewer | | 101 | 2023-11-01 10:00:00 | 2023-11-01 11:00:00 | 2 | Streamer | | 102 | 2023-11-01 13:00:00 | 2023-11-01 14:00:00 | 3 | Viewer | | 102 | 2023-11-01 15:00:00 | 2023-11-01 16:00:00 | 4 | Viewer | | 101 | 2023-11-02 09:00:00 | 2023-11-02 10:00:00 | 5 | Viewer | | 102 | 2023-11-02 12:00:00 | 2023-11-02 13:00:00 | 6 | Streamer | | 101 | 2023-11-02 13:00:00 | 2023-11-02 14:00:00 | 7 | Streamer | | 102 | 2023-11-02 16:00:00 | 2023-11-02 17:00:00 | 8 | Viewer | | 103 | 2023-11-01 08:00:00 | 2023-11-01 09:00:00 | 9 | Viewer | | 103 | 2023-11-02 20:00:00 | 2023-11-02 23:00:00 | 10 | Viewer | | 103 | 2023-11-03 09:00:00 | 2023-11-03 10:00:00 | 11 | Viewer | +---------+--------------------+--------------------+------------+--------------+

Output:

+---------+ | user_id | +---------+ | 102 | | 103 | +---------+

Explanation:

- User ID 101 will not be included in the final output as they do not have any two sessions of the same session type. - User ID 102 will be included in the final output as they had two viewer sessions with session IDs 3 and 4, respectively, and the time gap between them was less than 12 hours. - User ID 103 participated in two viewer sessions with a gap of less than 12 hours between them, identified by session IDs 10 and 11. Therefore, user 103 will be included in the final output. Output table is ordered by user_id in increasing 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 user_activities(sessions: pd.DataFrame) -> pd.DataFrame:
```

Solutions

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