

QUESTION

Third Unique Song Play Date

Hard

10 Points

Given a table of song_plays and a table of users, write a query to extract the earliest date each user played their third unique song and order by date played.

Output Schema:

Column	Type
username	STRING
song_id	INT
created_at	DATETIME

TABLE SCHEMA

```
1 CREATE TABLE users (  
2   id INTEGER PRIMARY KEY,  
3   username VARCHAR(50)  
4 );  
5  
6 INSERT INTO users (id, username) VALUES  
7 (1, 'john_doe'),  
8 (2, 'jane_smith'),  
9 (3, 'bob_wilson');  
10  
11 CREATE TABLE song_plays (  
12   id INTEGER PRIMARY KEY,  
13   played_at DATETIME,  
14   user_id INTEGER,  
15   song_id INTEGER  
16 );  
17  
18 INSERT INTO song_plays (id, played_at, user_id, song_id) VALUES  
19 (1, '2024-01-01 10:00:00', 1, 101),  
20 (2, '2024-01-01 14:00:00', 1, 101),  
21 (3, '2024-01-02 09:00:00', 1, 102),  
22 (4, '2024-01-03 16:00:00', 1, 103),  
23 (5, '2024-01-04 11:00:00', 1, 104),  
24 (6, '2024-01-01 09:00:00', 2, 201),  
25 (7, '2024-01-01 15:00:00', 2, 202),  
26 (8, '2024-01-02 10:00:00', 2, 203),  
27 (9, '2024-01-02 14:00:00', 2, 203),  
28 (10, '2024-01-01 12:00:00', 3, 301),  
29 (11, '2024-01-02 13:00:00', 3, 302);  
30
```

SOLUTION

```
DAY-1 TABLE SCHEMA

WITH unique_song_plays AS (
  SELECT
    user_id,
    song_id,
    MIN(played_at) AS first_play
  FROM song_plays
  GROUP BY user_id, song_id
),
ordered_rankings AS (
  SELECT
    user_id,
    song_id,
    first_play,
    ROW_NUMBER() OVER (PARTITION BY user_id ORDER BY first_play) AS ranking
  FROM unique_song_plays
),
third_unique_song AS (
  SELECT *
  FROM ordered_rankings
  WHERE ranking = 3
)
SELECT
  u.username,
  t.song_id,
  t.first_play AS played_at
FROM third_unique_song t
JOIN users u ON t.user_id = u.id
ORDER BY t.first_play;
```

OUTPUT

▼ Tables

username	song_id	played_at
jane_smith	203	2024-01-02 10:00:00
john_doe	103	2024-01-03 16:00:00

My Thought Process:

To solve this, I first grouped each user's unique song plays and picked the earliest time they played each song. Then, I used the ROW_NUMBER() function to rank the songs by play time for each user. Finally, I selected the entry where the rank was 3 representing the user's third unique song and joined it back with the users table for the final output.