

Advanced SQL: Player Streak Analysis

Demonstrating complex SQL skills with player login streaks

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The Data Structure

Player Table

Contains player ID, session ID, date, wins, losses, draws, matches

Goal

Calculate consecutive login days as streaks

Ranking

Order players by highest to lowest streaks



Window Function Utilization

1

ROW_NUMBER()

Assign unique numbers to each player's login day

2

LAG()

Compare current date with previous login date

3

SUM()

Calculate running total of consecutive days

SQL Code: Part 1

```
WITH login_streaks AS (  
  SELECT player_id, date,  
         ROW_NUMBER() OVER (PARTITION BY player_id ORDER BY date) AS login_num,  
         date - LAG(date, 1) OVER (PARTITION BY player_id ORDER BY date) AS date_diff  
  FROM player_sessions  
)
```


SQL Code: Part 2

```
, streak_calc AS (  
    SELECT player_id, date,  
           SUM(CASE WHEN date_diff = 1 OR date_diff IS NULL  
THEN 0 ELSE 1 END)  
           OVER (PARTITION BY player_id ORDER BY date) AS  
streak_id  
    FROM login_streaks  
)
```



SQL Code: Part 3

```
SELECT player_id,  
       MAX(streak_length) AS max_streak,  
       COUNT(DISTINCT streak_id) AS num_streaks,  
       CASE  
         WHEN AVG(matches_played) BETWEEN 0 AND 2 THEN 'Light'  
         WHEN AVG(matches_played) BETWEEN 3 AND 5 THEN 'Casual'  
         WHEN AVG(matches_played) BETWEEN 6 AND 7 THEN 'Medium'  
         ELSE 'Core'  
       END AS player_category  
FROM (  
  SELECT player_id, streak_id, COUNT(*) AS streak_length,  
         AVG(matches_played) AS matches_played  
  FROM streak_calc  
  JOIN player_sessions USING (player_id, date)  
  GROUP BY player_id, streak_id  
) streaks  
GROUP BY player_id
```


Player Categories



Casual

3-5 matches played on average



Core

7+ matches played on average



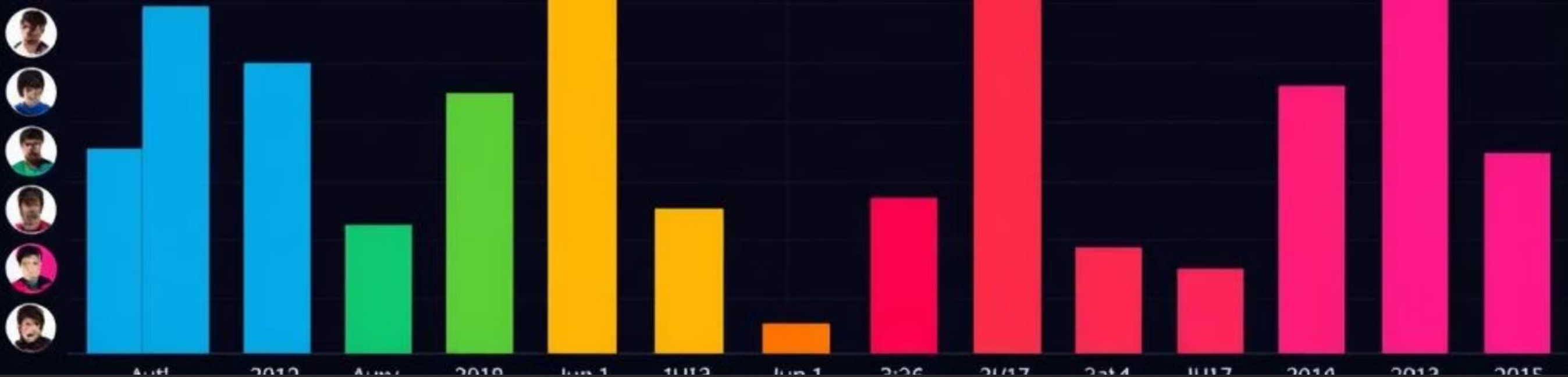
Medium

6-7 matches played on average



Light

0-2 matches played on average



Final Ranking Query

```
SELECT *,  
  RANK() OVER (PARTITION BY player_category  
                ORDER BY max_streak DESC, num_streaks DESC) AS rank  
FROM player_streaks  
ORDER BY player_category, rank
```