

1841. League Statistics

Problem Explanation

In this problem, we are given information about football teams and their performance in various matches. We need to generate a statistics table containing information about the teams' performance, such as the number of matches played, points earned, goals scored, goals conceded, and goal difference.

We have two tables:

- 1. **Teams**: This table contains the team_id and the respective team_name.
- 2. **Matches**: This table contains information about the matches, such as the home_team_id, away_team_id, home_team_goals, and away_team_goals.

Our goal is to write an SQL query to generate a statistics table with team_name, matches_played, points, goal_for, goal_against, and goal_diff columns.

Let's walk through an example:

Example

Teams:

team_id	team_name
1	Ajax
4	Dortmund
6	Arsenal

Matches:

home_team_id	away_team_id	home_team_goals	away_team_goals
1	4	0	1
1	6	3	3
4	1	5	2
6	1	0	0

Result:

team_name	matches_played	points	goal_for	goal_against	goal_diff
Dortmund	2	6	6	2	4
Arsenal	2	2	3	3	0
Ajax	4	2	5	9	-4

Approach

To generate the required statistics table, we can use the following approach:

- 1. Calculate matches played, goals scored, and goals conceded for each team in the home and away matches.
- 2. Combine the home and away statistics for each team.
- 3. Calculate total points and goal difference for each team.
- 4. Order the teams by total points, goal difference, and team_name.

Solution

SQL

```
WITH home_stats AS (  
    SELECT  
        home_team_id AS team_id,  
        COUNT(*) AS matches_played,  
        SUM(home_team_goals) AS goal_for,  
        SUM(away_team_goals) AS goal_against,  
        SUM(CASE  
            WHEN home_team_goals > away_team_goals THEN 3  
            WHEN home_team_goals = away_team_goals THEN 1  
            ELSE 0  
        END) AS points  
    FROM  
        Matches  
    GROUP BY  
        home_team_id  
,  
away_stats AS (  
    SELECT  
        away_team_id AS team_id,  
        COUNT(*) AS matches_played,  
        SUM(away_team_goals) AS goal_for,  
        SUM(home_team_goals) AS goal_against,  
        SUM(CASE  
            WHEN away_team_goals > home_team_goals THEN 3  
            WHEN away_team_goals = home_team_goals THEN 1  
            ELSE 0  
        END) AS points  
    FROM  
        Matches  
    GROUP BY  
        away_team_id  
,  
combined_stats AS (  
    SELECT  
        T.team_id,  
        T.team_name,  
        COALESCE(H.matches_played, 0) + COALESCE(A.matches_played, 0) AS matches_played,  
        COALESCE(H.goal_for, 0) + COALESCE(A.goal_for, 0) AS goal_for,  
        COALESCE(H.goal_against, 0) + COALESCE(A.goal_against, 0) AS goal_against,  
        COALESCE(H.points, 0) + COALESCE(A.points, 0) AS points  
    FROM  
        Teams T  
        LEFT JOIN home_stats H ON T.team_id = H.team_id  
        LEFT JOIN away_stats A ON T.team_id = A.team_id  
)  
SELECT  
    team_name,  
    matches_played,  
    points,  
    goal_for,  
    goal_against,  
    goal_for - goal_against AS goal_diff  
FROM  
    combined_stats  
ORDER BY  
    points DESC,  
    goal_diff DESC,  
    team_name ASC;
```