Problem 3252: Premier League Table Ranking II

Problem Information

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

Problem Description

Table:

TeamStats

+------------------+---------+ | Column Name | Type | +------------------+---------+ | team_id | int | | team_name | varchar | | matches_played | int | | wins | int | | draws | int | | losses | int | +------------------+---------+ team_id is the unique key for this table. This table contains team id, team name, matches_played, wins, draws, and losses.

Write a solution to calculate the

points

,

position

, and

tier

for each team in the league. Points are calculated as follows:

3

points for a

win

1

point for a

draw

0

points for a

loss

Note:

Teams with the same points must be assigned the same position.

Tier ranking:

Divide the league into

3

tiers based on points:

Tier 1: Top

33%

of teams

Tier 2: Middle

33%

of teams

Tier 3: Bottom

34%

of teams

In case of

ties

at

tier boundaries

, place tied teams in the

higher tier

.

Return

the result table

ordered by

points

in

descending

,

and then by

team_name

in

ascending

order.

The query result format is in the following example.

Example:

Input:

TeamStats

table:

```
+---------+-------------------+----------------+------+-------+--------+
| team_id | team_name         | matches_played | wins | draws | losses |
+---------+-------------------+----------------+------+-------+--------+
| 1       | Chelsea           | 22             | 13   | 2     | 7      |
| 2       | Nottingham Forest | 27             | 6    | 6     | 15     |
| 3       | Liverpool         | 17             | 1    | 8     | 8      |
| 4       | Aston Villa       | 20             | 1    | 6     | 13     |
| 5       | Fulham            | 31             | 18   | 1     | 12     |
| 6       | Burnley           | 26             | 6    | 9     | 11     |
| 7       | Newcastle United  | 33             | 11   | 10    | 12     |
| 8       | Sheffield United  | 20             | 18   | 2     | 0      |
| 9       | Luton Town        | 5              | 4    | 0     | 1      |
| 10      | Everton           | 14             | 2    | 6     | 6      |
+---------+-------------------+----------------+------+-------+--------+
```

Output:

```
+-------------------+--------+----------+---------+
| team_name         | points | position | tier    |
+-------------------+--------+----------+---------+
| Sheffield United  | 56     | 1        | Tier 1  |
| Fulham            | 55     | 2        | Tier 1  |
| Newcastle United  | 43     | 3        | Tier 1  |
| Chelsea           | 41     | 4        | Tier 1  |
| Burnley           | 27     | 5        | Tier 2  |
| Nottingham Forest | 24     | 6        | Tier 2  |
| Everton           | 12     | 7        | Tier 2  |
| Luton Town        | 12     | 7        | Tier 2  |
| Liverpool         | 11     | 9        | Tier 3  |
| Aston Villa       | 9      | 10       | Tier 3  |
+-------------------+--------+----------+---------+
```

Explanation:

Sheffield United has 56 points (18 wins * 3 points + 2 draws * 1 point) and is in position 1.

Fulham has 55 points (18 wins * 3 points + 1 draw * 1 point) and is in position 2.

Newcastle United has 43 points (11 wins * 3 points + 10 draws * 1 point) and is in position 3.

Chelsea has 41 points (13 wins * 3 points + 2 draws * 1 point) and is in position 4.

Burnley has 27 points (6 wins * 3 points + 9 draws * 1 point) and is in position 5.

Nottingham Forest has 24 points (6 wins * 3 points + 6 draws * 1 point) and is in position 6.

Everton and Luton Town both have 12 points, with Everton having 2 wins * 3 points + 6 draws * 1 point, and Luton Town having 4 wins * 3 points. Both teams share position 7.

Liverpool has 11 points (1 win * 3 points + 8 draws * 1 point) and is in position 9.

Aston Villa has 9 points (1 win * 3 points + 6 draws * 1 point) and is in position 10.

Tier Calculation:

Tier 1:

The top 33% of teams based on points. Sheffield United, Fulham, Newcastle United, and Chelsea fall into Tier 1.

Tier 2:

The middle 33% of teams. Burnley, Nottingham Forest, Everton, and Luton Town fall into Tier 2.

Tier 3:

The bottom 34% of teams. Liverpool and Aston Villa fall into Tier 3.

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 calculate_team_tiers(team_stats: pd.DataFrame) -> pd.DataFrame:
```

Solutions

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