Problem List

Description | Accepted | Editorial | Solutions | Submissions

# 3252. Premier League Table Ranking II

Solved

Premium

Medium | Topics

SQL Schema | Pandas Schema

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 | l |
| --- | --- | --- | --- | --- | --- |
| 1 | Chelsea | 22 | 13 | 2 | 7 |
| 2 | Nottingham Forest | 27 | 6 | 6 | 1 |
| 3 | Liverpool | 17 | 1 | 8 | 8 |
| 4 | Aston Villa | 20 | 1 | 6 | 1 |
| 5 | Fulham | 31 | 18 | 1 | 1 |
| 6 | Burnley | 26 | 6 | 9 | 1 |
| 7 | Newcastle United | 33 | 11 | 10 | 1 |
| 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

Pandas • Auto

```python
import pandas as pd


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

                    # Function used in 3) below
    def find_tier(percentile):
        if percentile <= ceil(team_stats.position.quantile(.33)):
            return 'Tier 1'
        if percentile <= ceil(team_stats.position.quantile(.66)):
            return 'Tier 2'
        return 'Tier 3'

                    # 1) Determine team points
    team_stats['points'] = 3 * team_stats.wins + team_stats.draws

                    # 2) Determine team position
    team_stats['position'] = team_stats.points.rank(
                        method = 'min', ascending = 0)

                    # 3) Determine tier using function above
    team_stats['Tier'] = team_stats.position.apply(find_tier)

                    # 4) Sort rows and reorder columns
```

Saved

Ln 4, Col 68

Testcase | Test Result

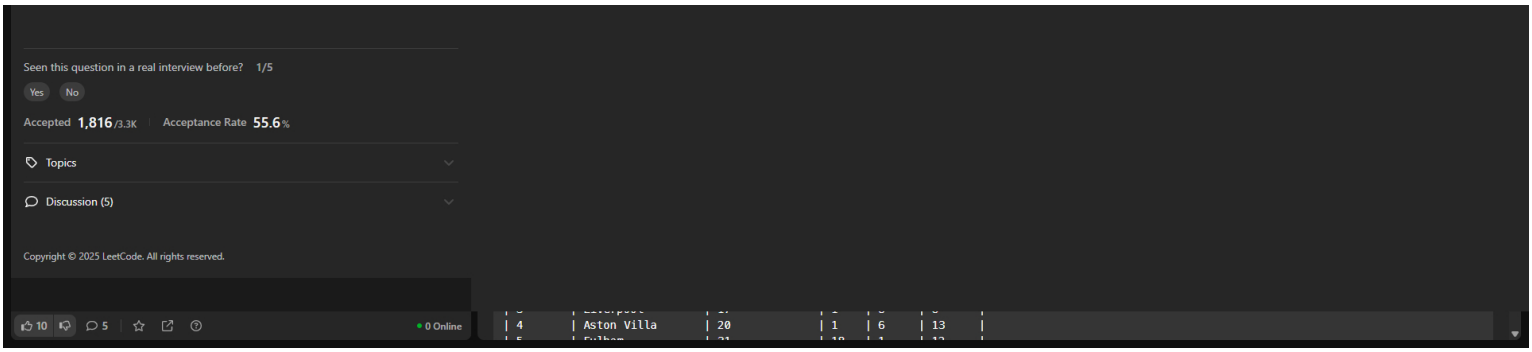
Accepted Runtime: 229 ms

Case 1

Input

TeamStats =

| 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 |


Seen this question in a real interview before? 1/5
Yes
No
Accepted 1,816/3.3K
Acceptance Rate 55.6%
Topics
Discussion (5)
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10
5
0 Online
| 4 | Aston Villa | 20 | 1 | 6 | 13 |