

# Database Assignment No#3

## Part A “Design”

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## Section G

### 1. Entities/Tables:

- players (pid, first\_name, last\_name, nationality, dob)
- player\_stats (pid, team\_id, jy\_num, position, height, weight, foot)
- teams (team\_id, team\_name, country, stadium)
- managers (mid, first\_name, last\_name, nationality, dob, team)
- stadiums (sid, name, city, country, capacity)
- tournaments (tour\_id, tour\_name, season, location)
- matches (match\_id, tour, date\_time, home\_team, away\_team, stadium)
- match\_report (match\_id, pso, ht\_score, at\_score, attendance)
- goals (goal\_id, match\_id, pid, duration, assist, goal\_desc)

### 2. Constraints:

- players: pid (Primary Key)
- player\_stats: pid (Foreign Key to players), team\_id (Foreign Key to teams)
- teams: team\_id (Primary Key), stadium (Foreign Key to stadiums)
- managers: mid (Primary Key), team (Foreign Key to teams)
- stadiums: sid (Primary Key)
- tournaments: tour\_id (Primary Key)
- matches: match\_id (Primary Key), tour (Foreign Key to tournaments), home\_team (Foreign Key to teams), away\_team (Foreign Key to teams), stadium (Foreign Key to stadiums)
- match\_report: match\_id (Foreign Key to matches)
- goals: goal\_id (Primary Key), match\_id (Foreign Key to matches), pid (Foreign Key to players), assist (Foreign Key to players)

### 3. Functional Dependencies:

- players: pid -> first\_name, last\_name, nationality, dob
- player\_stats: (pid, team\_id) -> jy\_num, position, height, weight, foot

- teams: team\_id -> team\_name, country, stadium
- managers: mid -> first\_name, last\_name, nationality, dob, team
- stadiums: sid -> name, city, country, capacity
- tournaments: tour\_id -> tour\_name, season, location
- matches: match\_id -> tour, date\_time, home\_team, away\_team, stadium
- match\_report: match\_id -> pso, ht\_score, at\_score, attendance
- goals: goal\_id -> match\_id, pid, duration, assist, goal\_desc

#### **4. Normalization:**

- players (3NF) - All attributes are dependent on the primary key, and there are no transitive dependencies.
- player\_stats (3NF) - All attributes are dependent on the composite primary key (pid, team\_id), and there are no transitive dependencies.
- teams (3NF) - All attributes are dependent on the primary key, and there are no transitive dependencies.
- managers (3NF) - All attributes are dependent on the primary key, and there are no transitive dependencies.
- stadiums (3NF) - All attributes are dependent on the primary key, and there are no transitive dependencies.
- tournaments (3NF) - All attributes are dependent on the primary key, and there are no transitive dependencies.
- matches (3NF) - All attributes are dependent on the primary key, and there are no transitive dependencies.
- match\_report (3NF) - All attributes are dependent on the foreign key (match\_id), and there are no transitive dependencies.
- goals (3NF) - All attributes are dependent on the primary key, and there are no transitive dependencies.

## Outputs

### Q1.

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Results Messages

|    | pid    | first_name | last_name      | nationality | dob        |
|----|--------|------------|----------------|-------------|------------|
| 1  | ply639 | Scott      | Carson         | England     | 1985-09-03 |
| 2  | ply640 |            | Ederson        | Brazil      | 1993-08-17 |
| 3  | ply641 | Stefan     | Ortega         | Germany     | 1992-11-06 |
| 4  | ply642 | Manuel     | Akanji         | Switzerland | 1995-07-19 |
| 5  | ply643 | Nathan     | Alk            | Netherlands | 1995-02-18 |
| 6  | ply644 | Jo o       | Cancelo        | Portugal    | 1994-05-27 |
| 7  | ply645 | Aymeric    | Laporte        | Spain       | 1994-05-27 |
| 8  | ply647 | Benjamin   | Mendy          | France      | 1994-07-17 |
| 9  | ply648 | R ben      | Dias           | Portugal    | 1997-05-14 |
| 10 | ply649 | John       | Stones         | England     | 1994-05-28 |
| 11 | ply650 | Kyle       | Walker         | England     | 1990-05-28 |
| 12 | ply651 | Josh       | Wilson-Esbrand | England     | 2002-12-26 |
| 13 | ply652 | Bernardo   | Silva          | Portugal    | 1994-08-10 |

Query executed successfully. LAP-MY\SQLEXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 30 rows

### Q2.

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Results Messages

|    | match_id | tour  | date_time               | home_team | away_team | stadium |
|----|----------|-------|-------------------------|-----------|-----------|---------|
| 1  | mt102    | uefa1 | 2022-02-22 20:00:00.000 | tm31      | tm16      | st30    |
| 2  | mt104    | uefa1 | 2022-02-23 20:00:00.000 | tm4       | tm21      | st4     |
| 3  | mt108    | uefa1 | 2022-03-09 20:00:00.000 | tm25      | tm22      | st24    |
| 4  | mt116    | uefa1 | 2022-04-06 20:00:00.000 | tm31      | tm5       | st30    |
| 5  | mt117    | uefa1 | 2022-04-12 20:00:00.000 | tm25      | tm9       | st24    |
| 6  | mt119    | uefa1 | 2022-04-13 20:00:00.000 | tm4       | tm20      | st4     |
| 7  | mt123    | uefa1 | 2022-05-03 20:00:00.000 | tm31      | tm18      | st30    |
| 8  | mt124    | uefa1 | 2022-05-04 20:00:00.000 | tm25      | tm20      | st24    |
| 9  | mt129    | uefa2 | 2020-10-27 20:00:00.000 | tm4       | tm24      | st4     |
| 10 | mt13     | uefa1 | 2021-09-15 20:00:00.000 | tm4       | tm13      | st4     |
| 11 | mt132    | uefa2 | 2020-11-25 20:00:00.000 | tm4       | tm39      | st4     |
| 12 | mt135    | uefa2 | 2020-12-01 20:00:00.000 | tm4       | tm5       | st4     |
| 13 | mt138    | uefa2 | 2020-10-21 17:55:00.000 | tm25      | tm27      | st43    |

Query executed successfully. LAP-MY\SQLEXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 116 rows

### Q3.

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Results Messages

|    | team_id | team_name           | country     | stadium | home_wins |
|----|---------|---------------------|-------------|---------|-----------|
| 1  | tm12    | FC Barcelona        | Spain       | st12    | 20        |
| 2  | tm13    | FC Porto            | Portugal    | st13    | 12        |
| 3  | tm15    | Inter               | Italy       | st1     | 4         |
| 4  | tm16    | Juventus            | Italy       | st15    | 19        |
| 5  | tm18    | Liverpool FC        | England     | st17    | 18        |
| 6  | tm2     | AFC Ajax            | Netherlands | st2     | 7         |
| 7  | tm20    | Manchester City     | England     | st19    | 24        |
| 8  | tm21    | Manchester United   | England     | st20    | 8         |
| 9  | tm22    | Paris Saint-Germain | France      | st21    | 17        |
| 10 | tm23    | RB Leipzig          | Germany     | st22    | 8         |
| 11 | tm24    | RB Salzburg         | Austria     | st23    | 4         |
| 12 | tm25    | Real Madrid         | Spain       | st24    | 20        |
| 13 | tm26    | Sevilla FC          | Spain       | st25    | 8         |

Query executed successfully. LAP-MY\SQLEXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 25 rows

## Q4.

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Results Messages

|   | team_id | team_name         | country | stadium | manager_first_name | manager_last_name |
|---|---------|-------------------|---------|---------|--------------------|-------------------|
| 1 | tm18    | Liverpool FC      | England | st17    | Jürgen             | Klopp             |
| 2 | tm20    | Manchester City   | England | st19    | Pep                | Guardiola         |
| 3 | tm21    | Manchester United | England | st20    | Erik ten           | Hag               |
| 4 | tm51    | Tottenham Hotspur | England | st54    | Antonio            | Conte             |
| 5 | tm69    | Arsenal FC        | England | st76    | Mikel              | Arteta            |
| 6 | tm73    | Leicester City    | England | st80    | Brendan            | Rodgers           |

Query executed successfully. LAP-MY\SQL EXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 6 rows

## Q5.

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Results Messages

|    | match_id | tour  | date_time               | home_team | away_team | stadium | stadium_capacity |
|----|----------|-------|-------------------------|-----------|-----------|---------|------------------|
| 1  | mt100    | uefa1 | 2022-02-16 20:00:00.000 | tm15      | tm18      | st1     | 75923            |
| 2  | mt103    | uefa1 | 2022-02-23 20:00:00.000 | tm28      | tm2       | st27    | 65272            |
| 3  | mt104    | uefa1 | 2022-02-23 20:00:00.000 | tm4       | tm21      | st4     | 68000            |
| 4  | mt105    | uefa1 | 2022-03-08 20:00:00.000 | tm5       | tm24      | st5     | 75024            |
| 5  | mt108    | uefa1 | 2022-03-09 20:00:00.000 | tm25      | tm22      | st24    | 81044            |
| 6  | mt110    | uefa1 | 2022-03-15 20:00:00.000 | tm21      | tm4       | st20    | 74140            |
| 7  | mt114    | uefa1 | 2022-04-05 20:00:00.000 | tm28      | tm18      | st27    | 65272            |
| 8  | mt117    | uefa1 | 2022-04-12 20:00:00.000 | tm25      | tm9       | st24    | 81044            |
| 9  | mt118    | uefa1 | 2022-04-12 20:00:00.000 | tm5       | tm31      | st5     | 75024            |
| 10 | mt119    | uefa1 | 2022-04-13 20:00:00.000 | tm4       | tm20      | st4     | 68000            |
| 11 | mt124    | uefa1 | 2022-05-04 20:00:00.000 | tm25      | tm20      | st24    | 81044            |
| 12 | mt125    | uefa1 | 2022-05-28 20:35:00.000 | tm18      | tm25      | st32    | 81338            |
| 13 | mt127    | uefa2 | 2020-10-21 20:00:00.000 | tm5       | tm4       | st5     | 75024            |

Query executed successfully. LAP-MY\SQL EXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 288 rows

## Q6.

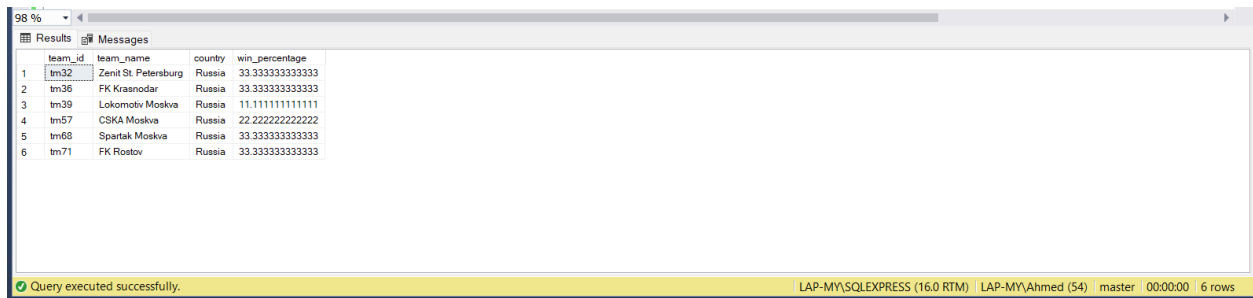
98 %

Results Messages

|    | goal_id | pid    | height | duration | goal_desc         |
|----|---------|--------|--------|----------|-------------------|
| 1  | gl575   | ply21  | 192    | 33       | left-footed shot  |
| 2  | gl543   | ply26  | 193    | 83       | penalty           |
| 3  | gl394   | ply94  | 190    | 47       | own goal          |
| 4  | gl392   | ply112 | 184    | 29       | left-footed shot  |
| 5  | gl1058  | ply113 | 184    | 4        | right-footed shot |
| 6  | gl585   | ply118 | 187    | 46       | left-footed shot  |
| 7  | gl406   | ply127 | 184    | 90       | left-footed shot  |
| 8  | gl576   | ply322 | 195    | 58       | penalty           |
| 9  | gl407   | ply398 | 185    | 43       | left-footed shot  |
| 10 | gl477   | ply413 | 182    | 39       | left-footed shot  |
| 11 | gl663   | ply568 | 194    | 82       | own goal          |
| 12 | gl1087  | ply589 | 181    | 94       | right-footed shot |
| 13 | gl1055  | ply662 | 194    | 69       | right-footed shot |

Query executed successfully. LAP-MY\SQL EXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 47 rows

## Q7.



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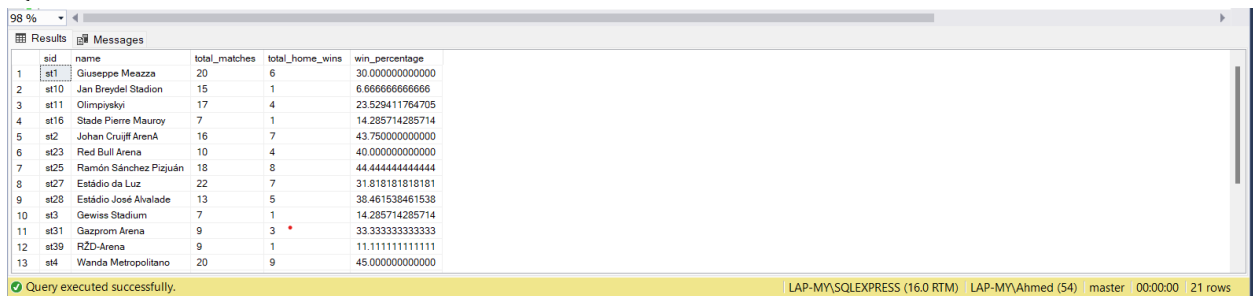
Results Messages

|   | team_id | team_name            | country | win_percentage  |
|---|---------|----------------------|---------|-----------------|
| 1 | tm32    | Zenit St. Petersburg | Russia  | 33.333333333333 |
| 2 | tm36    | FK Krasnodar         | Russia  | 33.333333333333 |
| 3 | tm39    | Lokomotiv Moskva     | Russia  | 11.111111111111 |
| 4 | tm57    | CSKA Moskva          | Russia  | 22.222222222222 |
| 5 | tm68    | Spartak Moskva       | Russia  | 33.333333333333 |
| 6 | tm71    | FK Rostov            | Russia  | 33.333333333333 |

Query executed successfully.

LAP-MY\SQL EXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 6 rows

## Q8.



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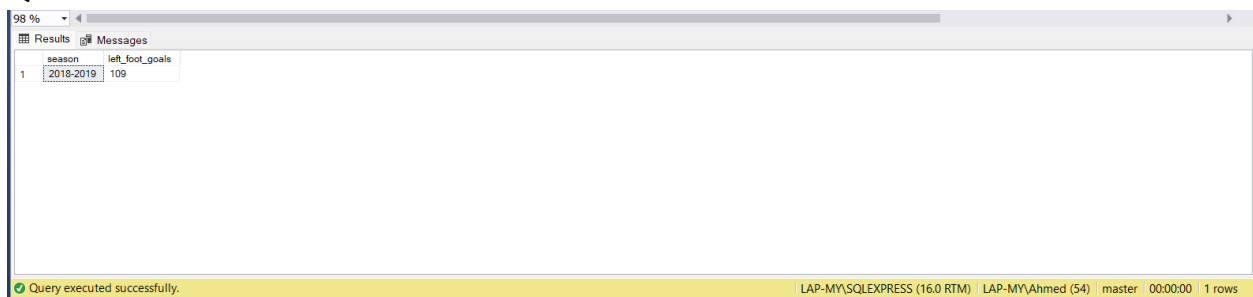
Results Messages

|    | stid | name                  | total_matches | total_home_wins | win_percentage  |
|----|------|-----------------------|---------------|-----------------|-----------------|
| 1  | st1  | Giuseppe Meazza       | 20            | 6               | 30.000000000000 |
| 2  | st10 | Jan Breydel Stadion   | 15            | 1               | 6.6666666666666 |
| 3  | st11 | Olimpiyskiy           | 17            | 4               | 23.529411764705 |
| 4  | st16 | Stade Pierre Mauroy   | 7             | 1               | 14.285714285714 |
| 5  | st2  | Johan Cruyff Arena    | 16            | 7               | 43.750000000000 |
| 6  | st23 | Red Bull Arena        | 10            | 4               | 40.000000000000 |
| 7  | st25 | Ramón Sánchez Pizjuán | 18            | 8               | 44.444444444444 |
| 8  | st27 | Estádio da Luz        | 22            | 7               | 31.818181818181 |
| 9  | st28 | Estádio José Alvalade | 13            | 5               | 38.461538461538 |
| 10 | st3  | Gewiss Stadium        | 7             | 1               | 14.285714285714 |
| 11 | st31 | Gazprom Arena         | 9             | 3               | 33.333333333333 |
| 12 | st39 | RZD-Arena             | 9             | 1               | 11.111111111111 |
| 13 | st4  | Wanda Metropolitano   | 20            | 9               | 45.000000000000 |

Query executed successfully.

LAP-MY\SQL EXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 21 rows

## Q9.



98 %

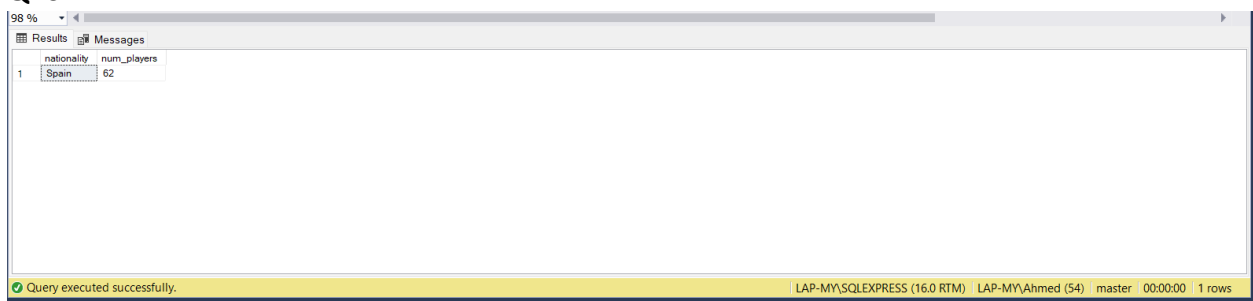
Results Messages

|   | season    | left_foot_goals |
|---|-----------|-----------------|
| 1 | 2018-2019 | 109             |

Query executed successfully.

LAP-MY\SQL EXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 1 rows

## Q10.



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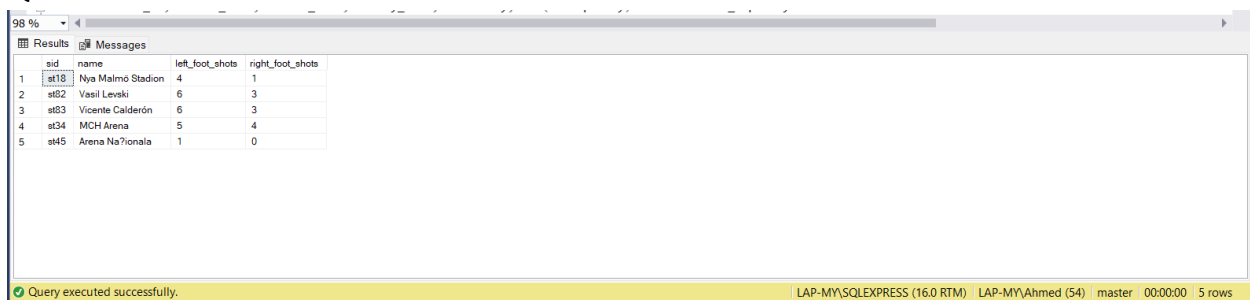
Results Messages

|   | nationality | num_players |
|---|-------------|-------------|
| 1 | Spain       | 62          |

Query executed successfully.

LAP-MY\SQL EXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 1 rows

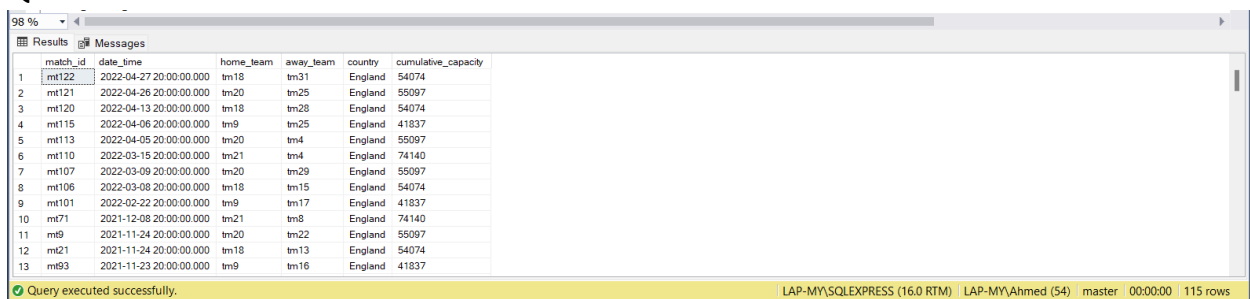
Q11.



|   | sid  | name              | left_foot_shots | right_foot_shots |
|---|------|-------------------|-----------------|------------------|
| 1 | st18 | Nya Malmö Stadion | 4               | 1                |
| 2 | st82 | Vasil Levski      | 6               | 3                |
| 3 | st83 | Vicente Calderón  | 6               | 3                |
| 4 | st34 | MCH Arena         | 5               | 4                |
| 5 | st45 | Arena Națională   | 1               | 0                |

Query executed successfully. LAP-MY\SQL EXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 5 rows

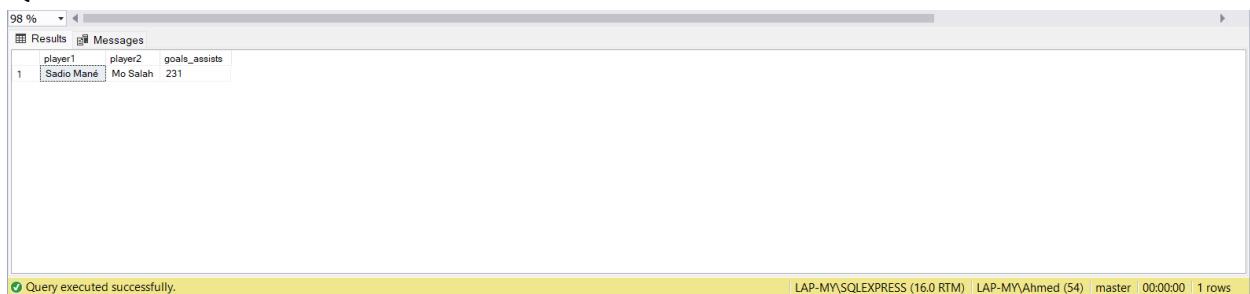
Q12.



|    | match_id | date_time               | home_team | away_team | country | cumulative_capacity |
|----|----------|-------------------------|-----------|-----------|---------|---------------------|
| 1  | mt122    | 2022-04-27 20:00:00.000 | tm18      | tm31      | England | 54074               |
| 2  | mt121    | 2022-04-26 20:00:00.000 | tm20      | tm25      | England | 55097               |
| 3  | mt120    | 2022-04-13 20:00:00.000 | tm18      | tm28      | England | 54074               |
| 4  | mt115    | 2022-04-06 20:00:00.000 | tm9       | tm25      | England | 41837               |
| 5  | mt113    | 2022-04-05 20:00:00.000 | tm20      | tm4       | England | 55097               |
| 6  | mt110    | 2022-03-15 20:00:00.000 | tm21      | tm4       | England | 74140               |
| 7  | mt107    | 2022-03-09 20:00:00.000 | tm20      | tm29      | England | 55097               |
| 8  | mt106    | 2022-03-08 20:00:00.000 | tm18      | tm15      | England | 54074               |
| 9  | mt101    | 2022-02-22 20:00:00.000 | tm9       | tm17      | England | 41837               |
| 10 | mt71     | 2021-12-08 20:00:00.000 | tm21      | tm8       | England | 74140               |
| 11 | mt9      | 2021-11-24 20:00:00.000 | tm20      | tm22      | England | 55097               |
| 12 | mt21     | 2021-11-24 20:00:00.000 | tm18      | tm13      | England | 54074               |
| 13 | mt93     | 2021-11-23 20:00:00.000 | tm9       | tm16      | England | 41837               |

Query executed successfully. LAP-MY\SQL EXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 115 rows

Q13.



|   | player1    | player2  | goals_assists |
|---|------------|----------|---------------|
| 1 | Sadio Mané | Mo Salah | 231           |

Query executed successfully. LAP-MY\SQL EXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 1 rows

## Q14.

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Results Messages

|   | team_id | team_name      | country | max_header_goal_percentage |
|---|---------|----------------|---------|----------------------------|
| 1 | tm10    | Club Brugge KV | Belgium | 0.000000                   |

Query executed successfully. LAP-MY\SQL EXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 1 rows

## Q15.

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Results Messages

|    | full_name            | win_count |
|----|----------------------|-----------|
| 1  | Julian Nagelsmann    | 44        |
| 2  | Carlo Ancelotti      | 41        |
| 3  | Pep Guardiola        | 40        |
| 4  | Massimiliano Allegri | 36        |
| 5  | Jürgen Klopp         | 35        |
| 6  | Xavi                 | 32        |
| 7  | Christophe Galtier   | 31        |
| 8  | Diego Simeone        | 24        |
| 9  | Graham Potter        | 22        |
| 10 | Edin Terzic          | 21        |
| 11 | Sérgio Conceição     | 19        |
| 12 | Alfred Schreuder     | 17        |
| 13 | Antonio Conte        | 16        |

Query executed successfully. LAP-MY\SQL EXPRESS (16.0 RTM) LAP-MY\Ahmed (54) master 00:00:00 61 rows