SI564 - Final Project - Yujia Gao

From Lawrence Summerset

To: DBA Team

Subject: Our new acquisition

Hello DBA team,

With the FIFA World Cup 2026 qualifiers in full swing lately, we plan to expand our business into the soccer field. Essentially, we're seeking your assistance in researching which players from which countries demonstrate higher qualifications and possess stronger overall capabilities. It would be fantastic if you could also make predictions regarding which national team stands the best chance of clinching the next World Cup trophy. Just so you know, I'm personally rooting for Argentina! Go Messi!

Please use the `soccer_stat` database, which randomly selected 48 players from the original dataset containing all registered FIFA 2024 players, to answer the following questions.

1. What's the average and maximum market values of players in each national team? Rank the results in terms of average market values.
2. Who has the highest score in terms of vision?
3. Which club has the highest average score in shooting power?
4. How many clubs does each country have?
5. Show the name and their market values of the top 10 players in terms of market values.
6. Describe the player who has the highest market value in this dataset.
7. What's the average age of players in each country?

Best,

Lawrence

Dear Lawrence,

I'm a big soccer fan, too! I'm more than happy to help you with your requests. Below are my answers to your questions.

1. I used the command `select c.country, round(avg(s.value)), max(s.value) from players p join country c on p.country_id = c.id join skill_evaluation s on p.id = s.player_id group by c.country order by round(avg(s.value)) desc;` . Results are shown in the screenshot below. I noticed that since entries in this dataset were randomly selected, there were countries whose "average value" and "maximum value" were the same, indicating only one player was in this country group. Therefore, the result may not reflect the true order.

```
mysql> select c.country, round(avg(s.value)), max(s.value) from players p join country c
on p.country_id = c.id join skill_evaluation s on p.id = s.player_id group by c.country o
rder by round(avg(s.value)) desc;
+---------------+---------------------+--------------+
| country       | round(avg(s.value)) | max(s.value) |
+---------------+---------------------+--------------+
| Netherlands   |           153500000 |    153500000 |
| Poland        |           123000000 |    123000000 |
| United States |            55500000 |     72500000 |
| Egypt         |            52500000 |     52500000 |
| Argentina     |            43588750 |     99500000 |
| Portugal      |            30250000 |     31000000 |
| France        |            28725000 |     99500000 |
| Spain         |            27791250 |     55500000 |
| Brazil        |            24266667 |     54000000 |
| Belgium       |            21000000 |     21000000 |
| China         |            12906875 |     36000000 |
| England       |            12566227 |     45000000 |
| Italy         |            11760000 |     23500000 |
| Norway        |             6500000 |      6500000 |
| Uruguay       |             2400000 |      2400000 |
| Germany       |             1600000 |      1600000 |
| Finland       |             1400000 |      1400000 |
| Scotland      |               27500 |        27500 |
| Albania       |               27500 |        27500 |
+---------------+---------------------+--------------+
19 rows in set (0.04 sec)
```

2. I used the command `select concat (p.first_name, " ", p.last_name) as name from players p join skill_evaluation s on p.id = s.player_id order by s.vision desc limit 1;` and found that **Neymar Jr** is the player who has the highest score in terms of vision.

```
mysql> select concat(p.first_name, " ", p.last_name) as name from players p join skill_ev
aluation s on p.id = s.player_id order by s.vision desc limit 1;
+-----------+
| name      |
+-----------+
| Neymar Jr |
+-----------+
1 row in set (0.04 sec)
```

3. **Al Nassr** has the highest average score in shooting power. I used the command `select cl.club, avg(s.shot_power) from players p join club cl on p.club_id = cl.id join skill_evaluation s on p.id = s.player_id group by cl.club order by avg(s.shot_power) desc limit 1;` . I obtained the result by joining three tables together.

```
mysql> select cl.club, avg(s.shot_power) from players p join club cl on p.club_id = cl.id
 join skill_evaluation s on p.id = s.player_id group by cl.club order by avg(s.shot_power
) desc limit 1;
+----------+------------------+
| club     | avg(s.shot_power) |
+----------+------------------+
| Al Nassr |          93.0000 |
+----------+------------------+
1 row in set (0.05 sec)
```

4. I used the command `select c.country, count(1) from country c join club cl on c.id = cl.country_id group by c.country order by count(1) desc;` and found that England has the most number of clubs.

```
mysql> select c.country, count(1)  from country c join club cl on c.id = cl.country_id gr
oup by c.country order by count(1) desc;
+---------------+----------+
| country       | count(1) |
+---------------+----------+
| England       |        5 |
| China         |        2 |
| Italy         |        2 |
| Albania       |        1 |
| France        |        1 |
| Spain         |        1 |
| United States |        1 |
+---------------+----------+
7 rows in set (0.04 sec)
```

5. I used the command `select concat(p.first_name, " ", p.last_name) as name, s.value from players p join skill_evaluation s on p.id = s.player_id order by value desc limit 10;` . The player who has the highest market value is **Joel Ideho**, with a value of **$153,500,000**.

```
mysql> select concat(p.first_name, " ", p.last_name) as name, s.value from players p join
 skill_evaluation s on p.id = s.player_id order by value desc limit 10;
+-------------------+-----------+
| name              | value     |
+-------------------+-----------+
| Joel Ideho        | 153500000 |
| Nicola Zalewski   | 123000000 |
| Lionel Messi      |  99500000 |
| Anthony Martial   |  99500000 |
| DeAndre Yedlin    |  72500000 |
| Jake LaCava       |  64000000 |
| Nicolas Stefanelli|  63500000 |
| Thiago Alcantara  |  55500000 |
| Neymar Jr         |  54000000 |
| Mohamed Salah     |  52500000 |
+-------------------+-----------+
10 rows in set (0.04 sec)
```

6. I used the command `select concat(p.first_name, " ", p.last_name) as name, c.country as country, cl.club as club, p.height as height, p.weight as weight, p.age as age from players p join country c on p.country_id = c.id join club cl on p.club_id = cl.id where p.id = (select p.id from players p join skill_evaluation s on p.id = s.player_id order by value desc limit 1);` . The player that has the highest market value is **Joel Ideho, who comes from Netherlands and plays for Arsenal. He is in height 175cm, weight 70kg and age 20.** I used the code in question #5 as a sub-query to solve this problem.

```
mysql> select concat(p.first_name, " ", p.last_name) as name, c.country as country, cl.cl
ub as club, p.height as height, p.weight as weight, p.age as age from players p join coun
try c on p.country_id = c.id join club cl on p.club_id = cl.id where p.id = (select p.id
from players p join skill_evaluation s on p.id = s.player_id order by value desc limit 1)
;
+------------+-------------+---------+--------+--------+-----+
| name       | country     | club    | height | weight | age |
+------------+-------------+---------+--------+--------+-----+
| Joel Ideho | Netherlands | Arsenal |    175 |     70 |  20 |
+------------+-------------+---------+--------+--------+-----+
1 row in set (0.05 sec)
```

7. I used the command `select c.country, round(avg(p.age)) as avg_age from players p join country c on p.country_id = c.id group by c.country order by avg_age;` . The average age of players in each country is summarized in the screenshot below.

```
mysql> select c.country, round(avg(p.age)) as avg_age from players p join country c on p.
country_id = c.id group by c.country order by avg_age;
+---------------+---------+
| country       | avg_age |
+---------------+---------+
| Scotland      |      20 |
| Netherlands   |      20 |
| Albania       |      21 |
| Poland        |      21 |
| Uruguay       |      23 |
| Norway        |      23 |
| Brazil        |      25 |
| United States |      25 |
| England       |      25 |
| Argentina     |      27 |
| Spain         |      27 |
| Finland       |      28 |
| Italy         |      29 |
| France        |      29 |
| China         |      29 |
| Egypt         |      31 |
| Belgium       |      32 |
| Portugal      |      33 |
| Germany       |      38 |
+---------------+---------+
19 rows in set (0.05 sec)
```

If there are any further questions or concerns regarding my answers, please don't hesitate to reach out to me.

Sincerely,

Yujia

In this database, the "players" table is the primary table as it connects all the other three tables together. This decision aligns with data normalization principles, where "country" and "club" fields are prone to repetition across entries. As shown in question 3 above, even when I aim to calculate players' average shooting power grouped by their clubs, I have to join both the "players" and the "club" tables; this is due to the absence of direct connections between the "skill_evaluation" table and the "club" table.

I incorporated country information in the "club" table, since players' performance level can vary across different national leagues. Making comparison among clubs from the same national league can sometimes be more meaningful than comparing all clubs together.

Database: soccer_stat

Table: skill_evaluation

Field Name	Data Type	Values	Notes
id	unsigned int	ID for each evaluation form	Primary key
player_id	unsigned int	ID for the player	Foreign key to players (id)
ball_control	tinyint	On a scale of 1-100, the score for this player's ball control ability.	
slide_tackle	tinyint	On a scale of 1-100, the score for this player's slide tackle ability.	
stand_tackle	tinyint	On a scale of 1-100, the score for this player's stand tackle ability.	
aggression	tinyint	On a scale of 1-100, the score for this player's aggression.	
reactions	tinyint	On a scale of 1-100, the score for this player's fast reaction ability.	
vision	tinyint	On a scale of 1-100, the score for this player's awareness in	
short_pass	tinyint	On a scale of 1-100, the score for this player's short pass ability.	
long_pass	tinyint	On a scale of 1-100, the score for this player's long pass ability.	
strength	tinyint	On a scale of 1-100, the score for this player's strength in general.	
balance	tinyint	On a scale of 1-100, the score for this player's ability to keep	
heading	tinyint	On a scale of 1-100, the score for this player's heading ability.	
shot_power	tinyint	On a scale of 1-100, the score for this player's shooting ability.	
value	int	The player's market value in US dollars.	

Table: players

Field Name	Data Type	Values	Notes
id	unsigned int	ID for each player	Primary key
first_name	varchar(255)	Player's first name	
last_name	varchar(255)	Player's last name	
country_id	unsigned int	Country the player comes from	Foreign key to country (id)
club_id	unsigned int	Club the player plays for	Foreign key to club (id)
height	smallint	Player's height in cm	
weight	tinyint	Player's weight in kg	
age	tinyint	Player's age in 2023	

Table: country

Field Name	Data Type	Values	Notes
id	unsigned int	ID for each country	Primary key
country	varchar(255)	Country name	

Table: club

Field Name	Data Type	Values	Notes
id	unsigned int	ID for each club	Primary key
country_id	unsigned int	ID for the country that this	Foreign key to country (id)
club	varchar(255)	Name of the club	

Codes used when creating database

```
create database soccer_stat;
```

Codes used when creating tables

`club_id` in table "players" is set to be able to being Null is because at some point of time, the player may not belong to any club, typically during players trading seasons.

`value` in table "skill_evaluation" may be null, because when no club is offering anything for a player, then his market value is zero.

```
create table players
(
    id         int unsigned auto_increment,
    first_name varchar(255) not null,
    last_name  varchar(255) not null,
    country_id int unsigned not null,
    club_id    int unsigned null,
    height     smallint     not null,
    weight     tinyint      not null,
    age        tinyint      not null,
    constraint players_pk
        primary key (id)
);
```

```
create table country
(
    id         int unsigned auto_increment,
    country    varchar(255) not null,
    continent varchar(255) not null,
    constraint country_pk
        primary key (id)
);
```

```
create table skill_evaluation
(
    id           int unsigned auto_increment,
    player_id    int unsigned not null,
    ball_control tinyint      not null,
    slide_tackle tinyint      not null,
    stand_tackle tinyint      not null,
    aggression   tinyint      not null,
    reactions    tinyint      not null,
    vision       tinyint      not null,
    short_pass   tinyint      not null,
    long_pass    tinyint      not null,
    strength     tinyint      not null,
    balance      tinyint      not null,
    heading      tinyint      not null,
    shot_power   tinyint      not null,
    value        tinyint      null,
    constraint skill_evaluation_pk
        primary key (id)
```

```
);
```

```
create table club
(
    id          int unsigned auto_increment,
    country_id int unsigned not null,
    club        varchar(255) not null,
    constraint club_pk
        primary key (id)
);
```

Insert data in tables

"players" Table:

```
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Alex', 'Oxlade-Chamberlain', 7, 7, 175, 70, 30)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Federico', 'Pereira', 19, 7, 187, 81, 23)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Thiago', 'Alcantara', 17, 7, 174, 70, 32)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Chirs', 'Smalling', 7, 12, 194, 81, 33)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Anthony', 'Martial', 9, 9, 184, 76, 27)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Edoardo', 'Bove', 11, 12, 176, 65, 21)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Stefan', 'Ortega', 10, 8, 185, 88, 38)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Alejandro', 'Garnacho', 2, 9, 180, 72, 19)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Erling', 'Haaland', 13, 8, 195, 94, 23)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Christian', 'Pulisic', 18, 4, 177, 69, 24)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Tammy', 'Abraham', 7, 12, 195, 86, 25)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Jake', 'LaCava', 18, 5, 185, 82, 22)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Julian', 'Alvarez', 2, 8, 170, 71, 23)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Xizhe', 'Zhang', 5, 3, 180, 69, 32)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Mason', 'Mount', 7, 4, 181, 74, 24)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Nicolas', 'Stefanelli', 2, 5, 166, 71, 28)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Eden', 'Hazard', 3, 11, 175, 74, 32)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Nicola', 'Zalewski', 14, 12, 175, 70, 21)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Yuning', 'Zhang', 5, 3, 185, 80, 26)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Antony', 'Santos', 4, 9, 172, 63, 23)
```

```sql
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Yangyang', 'Jin', 5, 13, 189, 91, 30)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Rodrygo', 'Goes', 4, 11, 174, 64, 22)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Phil', 'Foden', 7, 8, 171, 69, 23)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Calvin', 'Ramsay', 16, 7, 177, 68, 20)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('DeAndre', 'Yedlin', 18, 5, 171, 75, 30)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Kalvin', 'Phillips', 7, 8, 178, 72, 27)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Bruno', 'Fernandes', 15, 9, 179, 69, 28)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Leandro', 'Paredes', 2, 6, 180, 75, 29)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Kobbie', 'Mainoo', 7, 9, 175, 80, 18)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Ben', 'Knight', 7, 8, 170, 59, 21)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Leonardo', 'Bonucci', 11, 6, 190, 85, 36)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Carney', 'Chukwuemeka', 7, 4, 187, 70, 19)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Raphael', 'Varane', 9, 9, 191, 81, 30)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Robert', 'Taylor', 8, 5, 182, 78, 28)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Santiago', 'Canizares', 17, 11, 186, 81, 21)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Cong', 'Zhen', 5, 13, 180, 75, 26)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Armando', 'Broja', 1, 4, 191, 75, 21)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Harry', 'Maguire', 7, 9, 193, 100, 30)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Mohamed', 'Salah', 6, 7, 175, 71, 31)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Karim', 'Benzema', 9, 11, 185, 81, 35)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Braian', 'Rivero', 2, 2, 178, 74, 27)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Kylian', 'Mbappe', 9, 10, 182, 73, 24)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Reiss', 'Nelson', 7, 2, 175, 71, 23)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Paul', 'Pogba', 9, 6, 191, 84, 30)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Joel', 'Ideho', 12, 2, 175, 70, 20)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Lionel', 'Messi', 2, 10, 169, 67, 36)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Neymar', 'Jr', 4, 10, 175, 68, 31)
INSERT INTO soccer_stat.players (first_name, last_name, country_id, club_id,
height, weight, age) VALUES ('Cristiano', 'Ronaldo', 15, 1, 187, 83, 38)
```

```
select * from players
```

"country" table:

```
INSERT INTO soccer_stat.country (country) VALUES ('Albania')
select * from country
INSERT INTO soccer_stat.country (country) VALUES ('Argentina')
INSERT INTO soccer_stat.country (country) VALUES ('Belgium')
INSERT INTO soccer_stat.country (country) VALUES ('Brazil')
INSERT INTO soccer_stat.country (country) VALUES ('China')
INSERT INTO soccer_stat.country (country) VALUES ('Egypt')
INSERT INTO soccer_stat.country (country) VALUES ('England')
INSERT INTO soccer_stat.country (country) VALUES ('Finland')
INSERT INTO soccer_stat.country (country) VALUES ('France')
INSERT INTO soccer_stat.country (country) VALUES ('Germany')
INSERT INTO soccer_stat.country (country) VALUES ('Italy')
INSERT INTO soccer_stat.country (country) VALUES ('Netherlands')
INSERT INTO soccer_stat.country (country) VALUES ('Norway')
INSERT INTO soccer_stat.country (country) VALUES ('Poland')
INSERT INTO soccer_stat.country (country) VALUES ('Portugal')
INSERT INTO soccer_stat.country (country) VALUES ('Scotland')
INSERT INTO soccer_stat.country (country) VALUES ('Spain')
INSERT INTO soccer_stat.country (country) VALUES ('United States')
INSERT INTO soccer_stat.country (country) VALUES ('Uruguay')
```

"club" table:

```
INSERT INTO soccer_stat.club (country_id, club) VALUES (1, 'Al Nassr')
INSERT INTO soccer_stat.club (country_id, club) VALUES (7, 'Arsenal ')
INSERT INTO soccer_stat.club (country_id, club) VALUES (5, 'Beijing Guoan ')
INSERT INTO soccer_stat.club (country_id, club) VALUES (7, 'Chelsea ')
INSERT INTO soccer_stat.club (country_id, club) VALUES (18, 'Inter Miami CF ')
INSERT INTO soccer_stat.club (country_id, club) VALUES (11, 'Juventus ')
INSERT INTO soccer_stat.club (country_id, club) VALUES (7, 'Liverpool ')
INSERT INTO soccer_stat.club (country_id, club) VALUES (7, 'Manchester City ')
INSERT INTO soccer_stat.club (country_id, club) VALUES (7, 'Manchester Utd ')
INSERT INTO soccer_stat.club (country_id, club) VALUES (9, 'Paris SG')
INSERT INTO soccer_stat.club (country_id, club) VALUES (17, 'Real Madrid')
INSERT INTO soccer_stat.club (country_id, club) VALUES (11, 'Roma ')
INSERT INTO soccer_stat.club (country_id, club) VALUES (5, 'Shanghai Shenhua ')
```

"skill_evaluation" table:

```
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (1, 81, 68, 72, 77, 77, 77, 78, 74,
70, 87, 39, 83, 10500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (20, 63, 24, 35, 46, 66, 63, 61, 47,
50, 86, 44, 58, 1300000)
```

```sql
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (26, 84, 31, 33, 54, 78, 77, 78, 60,
74, 79, 70, 83, 23500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (21, 89, 31, 45, 79, 79, 78, 74, 62,
62, 85, 45, 75, 36000000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (29, 76, 23, 33, 67, 73, 58, 65, 47,
83, 63, 69, 80, 6500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (14, 65, 30, 29, 37, 43, 58, 53, 41,
46, 89, 41, 64, 27500000)
UPDATE soccer_stat.skill_evaluation t SET t.value = 27500 WHERE t.id = 6
select * from skill_evaluation
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (43, 68, 64, 66, 71, 64, 66, 72, 65,
67, 69, 57, 56, 97500)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (25, 84, 65, 73, 82, 91, 90, 89, 87,
66, 79, 64, 88, 72500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (4, 67, 57, 59, 64, 55, 60, 58, 55,
65, 66, 50, 66, 55000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (30, 72, 54, 50, 58, 55, 69, 71, 67,
61, 75, 46, 56, 60000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (6, 65, 85, 86, 84, 83, 56, 65, 64,
85, 43, 86, 42, 23500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (27, 85, 47, 32, 45, 78, 79, 77, 59,
54, 87, 50, 77, 29500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (38, 57, 50, 56, 63, 61, 55, 54, 54,
70, 70, 48, 63, 16000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (48, 87, 24, 32, 62, 90, 76, 78, 70,
75, 67, 89, 93, 31000000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (34, 60, 65, 66, 73, 65, 57, 62, 52,
67, 83, 55, 73, 1400000)
```

```sql
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (10, 86, 22, 27, 54, 77, 84, 83, 81,
61, 89, 61, 82, 30000000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (7, 72, 64, 67, 77, 69, 65, 74, 72,
50, 80, 60, 73, 1600000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (18, 82, 29, 53, 87, 89, 74, 74, 53,
93, 74, 80, 94, 123000000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (2, 56, 65, 77, 59, 70, 38, 64, 54,
77, 70, 71, 54, 2400000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (22, 73, 73, 80, 84, 77, 68, 78, 79,
90, 33, 85, 82, 17500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (31, 60, 31, 35, 58, 53, 49, 52, 45,
60, 55, 55, 56, 20000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (37, 40, 60, 61, 59, 51, 34, 45, 39,
85, 45, 63, 37, 27500)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (44, 63, 46, 36, 43, 49, 62, 57, 43,
48, 68, 46, 66, 35000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (17, 84, 46, 53, 84, 78, 78, 76, 74,
70, 87, 68, 84, 21000000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (15, 79, 79, 81, 85, 77, 75, 81, 80,
76, 73, 66, 75, 20500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (12, 91, 18, 24, 63, 92, 89, 89, 76,
82, 72, 90, 87, 64000000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (24, 60, 56, 59, 65, 59, 61, 62, 60,
68, 82, 61, 64, 27500)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (45, 91, 32, 34, 64, 93, 83, 85, 71,
76, 81, 72, 88, 153500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (41, 85, 79, 77, 87, 76, 86, 85, 85,
77, 75, 56, 86, 21000000)
```

```sql
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (40, 79, 81, 83, 81, 80, 71, 80, 85,
81, 53, 82, 74, 8000000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (47, 93, 24, 35, 44, 92, 94, 91, 90,
68, 95, 70, 86, 54000000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (28, 83, 42, 59, 68, 85, 82, 85, 84,
58, 76, 59, 81, 42000000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (5, 86, 41, 43, 63, 92, 84, 84, 77,
76, 91, 59, 82, 99500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (46, 94, 29, 32, 63, 88, 90, 85, 81,
52, 82, 63, 79, 99500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (9, 76, 52, 57, 57, 68, 69, 75, 63,
45, 75, 45, 72, 6500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (32, 70, 27, 16, 64, 65, 67, 61, 50,
64, 92, 64, 67, 1500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (39, 87, 63, 67, 79, 76, 90, 87, 92,
88, 65, 74, 90, 52500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (16, 90, 47, 59, 64, 82, 84, 85, 83,
47, 91, 47, 82, 63500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (23, 75, 83, 86, 78, 85, 59, 78, 77,
87, 39, 85, 52, 45000000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (42, 77, 37, 37, 42, 65, 71, 72, 58,
53, 80, 39, 67, 36000000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (33, 66, 52, 51, 68, 59, 60, 63, 59,
63, 62, 40, 72, 90000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (11, 83, 32, 36, 54, 78, 73, 77, 64,
52, 85, 62, 73, 30500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (13, 28, 12, 14, 26, 58, 22, 60, 49,
54, 37, 11, 50, 32500)
```

```sql
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (19, 38, 15, 12, 29, 80, 66, 40, 55,
73, 54, 20, 65, 14500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (8, 82, 20, 29, 68, 84, 77, 77, 53,
85, 53, 86, 80, 35500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (3, 92, 75, 76, 80, 82, 87, 90, 88,
60, 90, 54, 75, 55500000)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (35, 74, 39, 49, 59, 69, 70, 70, 67,
57, 71, 58, 66, 82500)
INSERT INTO soccer_stat.skill_evaluation (player_id, ball_control, slide_tackle,
stand_tackle, aggression, reactions, vision, short_pass, long_pass, strength,
balance, heading, shot_power, value) VALUES (36, 64, 28, 32, 63, 60, 62, 67, 54,
81, 71, 67, 76, 1100000)
```

Update foreign keys in tables

```sql
alter table players
    add constraint players_country_id_fk
        foreign key (country_id) references country (id),
    add constraint players_club_id_fk
        foreign key (club_id) references club (id);
```

```sql
alter table skill_evaluation
    add constraint skill_evaluation_player_id_fk
        foreign key (player_id) references players (id);
```

```sql
alter table club
    add constraint club_country_id_fk
        foreign key (country_id) references country (id);
```

Export database

```
mysqldump -h 34.71.12.223 --port 10960 -u gaoyujia-rw -p soccer_stat >
soccer_stat.sql
```
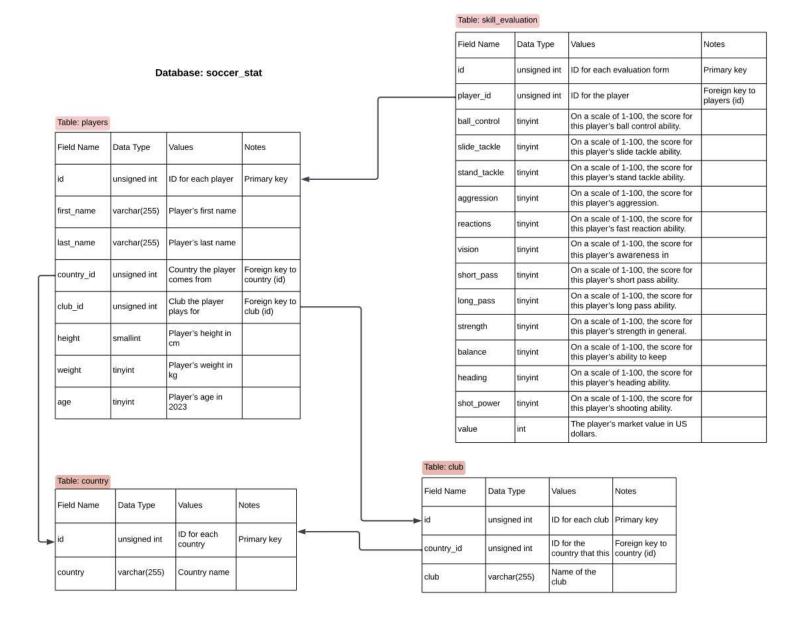
UNIQUE NAME: gaoyujia

- My data comes from Kaggle.
  - FIFA 2024 Football Player Dataset

- The most interesting part of my data is it evaluates a player in multiple dimensions.
  - Ball control
  - Slide tackle
  - Stand tackle
  - Vision
  - Aggression
  - Pass
  - Heading
  - Shot power
  - ….

UNIQUE NAME: gaoyujia

Database: soccer_stat

- The most complex thing in creating this database is joining tables
  - "Country" and "Club" fields are made into different tables to normalize the data

- Special design
  - "club_id" could be NULL, because during a player's transfer season, he doesn't belong to any club.

Table: players

Field Name	Data Type	Values	Notes
id	unsigned int	ID for each player	Primary key
first_name	varchar(255)	Player's first name	
last_name	varchar(255)	Player's last name	
country_id	unsigned int	Country the player comes from	Foreign key to country (id)
club_id	unsigned int	Club the player plays for	Foreign key to club (id)
height	smallint	Player's height in cm	
weight	tinyint	Player's weight in kg	
age	tinyint	Player's age in 2023	

Table: skill_evaluation

Field Name	Data Type	Values	Notes
id	unsigned int	ID for each evaluation form	Primary key
player_id	unsigned int	ID for the player	Foreign key to players (id)
ball_control	tinyint	On a scale of 1-100, the score for this player's ball control ability.	
slide_tackle	tinyint	On a scale of 1-100, the score for this player's slide tackle ability.	
stand_tackle	tinyint	On a scale of 1-100, the score for this player's stand tackle ability.	
aggression	tinyint	On a scale of 1-100, the score for this player's aggression.	
reactions	tinyint	On a scale of 1-100, the score for this player's fast reaction ability.	
vision	tinyint	On a scale of 1-100, the score for this player's awareness in	
short_pass	tinyint	On a scale of 1-100, the score for this player's short pass ability.	
long_pass	tinyint	On a scale of 1-100, the score for this player's long pass ability.	
strength	tinyint	On a scale of 1-100, the score for this player's strength in general.	
balance	tinyint	On a scale of 1-100, the score for this player's ability to keep	
heading	tinyint	On a scale of 1-100, the score for this player's heading ability.	
shot_power	tinyint	On a scale of 1-100, the score for this player's shooting ability.	
value	int	The player's market value in US dollars.	

Table: country

Field Name	Data Type	Values	Notes
id	unsigned int	ID for each country	Primary key
country	varchar(255)	Country name	

Table: club

Field Name	Data Type	Values	Notes
id	unsigned int	ID for each club	Primary key
country_id	unsigned int	ID for the country that this	Foreign key to country (id)
club	varchar(255)	Name of the club	

UNIQUE NAME: gaoyujia

- My favorite question is: "Describe the player who has the highest market value in this dataset."

- Answer: **Joel Ideho ($153, 500,000)**
  - Sub-query: finding the id for the player who has the highest market value: `select p.id from players p join skill_evaluation s on p.id = s.player_id order by value desc limit 1;`
  - Query: `select concat(p.first_name, " ", p.last_name) as name, c.country as country, cl.club as club, p.height as height, p.weight as weight, p.age as age from players p join country c on p.country_id = c.id join club cl on p.club_id = cl.id where p.id = (sub-query);`

- Further action
  - Analyze the whole original dataset on Kaggle that contains 5,657 entries.

Picture is obtained from YouTube