

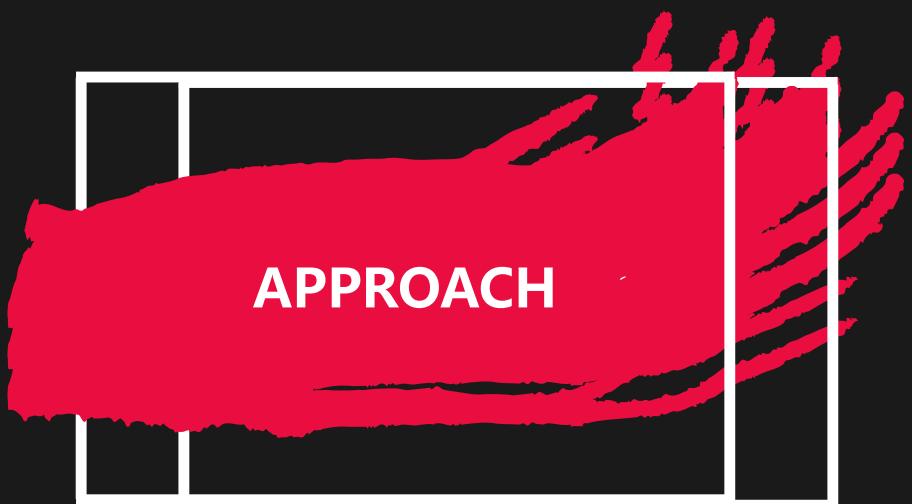
FINAL PROJECT

# SOCCER PLAYER PERFORMANCE ANALYSIS

Learner:

Kanimozhi Mani

BADM - MBE10



## Data Preprocessing

- ❖ **Dataset Cleaning:** Duplicate rows identified with the help of the column ID and the duplicates were removed. (as the ID is an unique identifier and there won't be any identical IDs)

In the original dataset, there were 17982 rows and duplicates were removed. After removing there were 17929 rows.

## Exploratory Data Analysis (EDA)

- ❖ **Analysis:** Utilized Microsoft Power BI to visualize player statistics and trends.

## Feature Engineering

- ❖ **Feature Creation:** Developed new metrics that enhance player evaluation and comparison.

## Visualization and Reporting

- ❖ Created interactive dashboards in Power to showcase insights and recommendations.



1

2

3

## BUSINESS USE CASES

Identifying performance patterns and player potential through data driven insights.

## TASKS

Implemented analytical techniques to evaluate physical and technical attributes.

## SQL

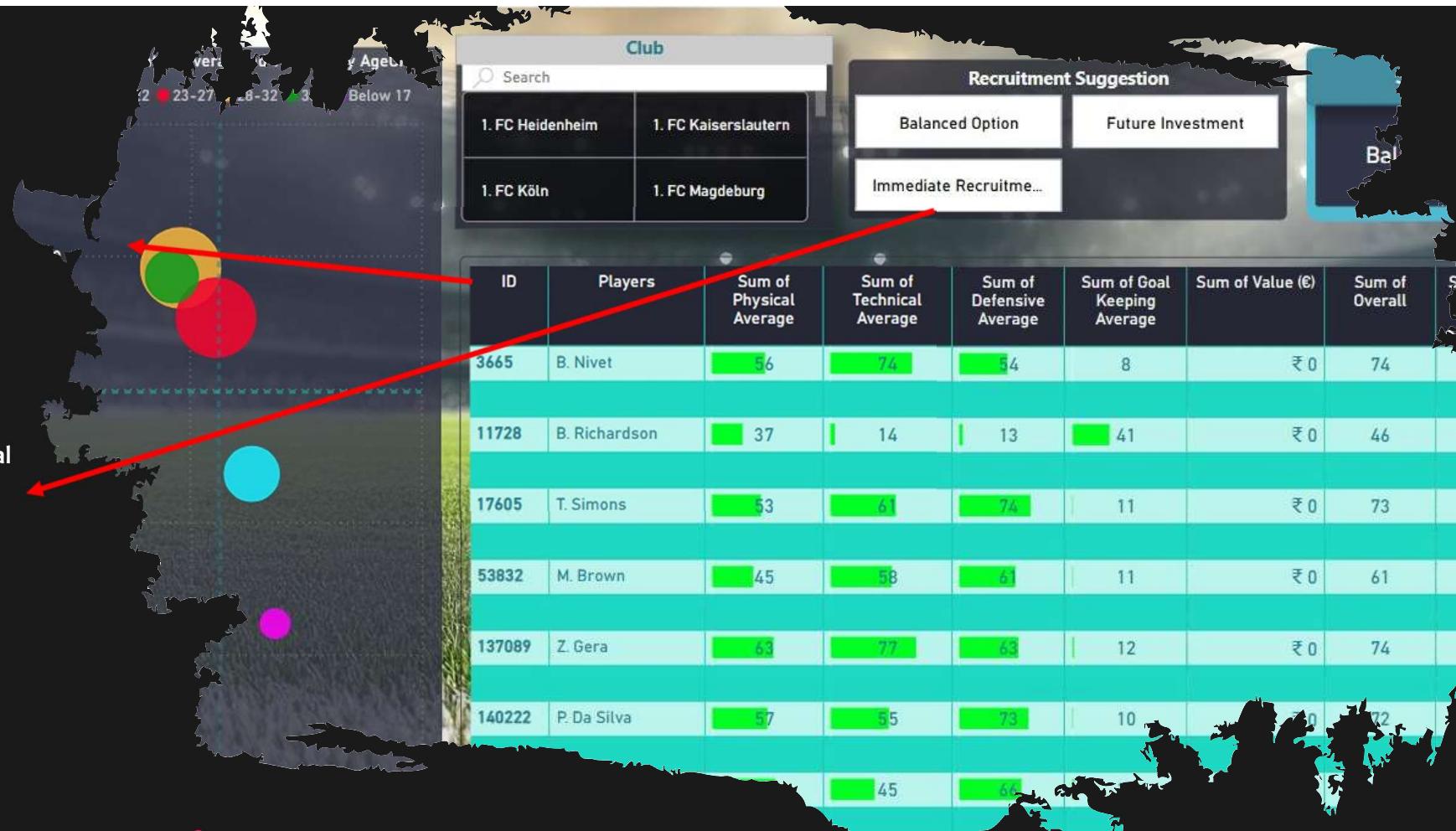
Created SQL queries for data extraction, transformation and analysis.



# BUSINESS USE CASES

The chart ranks players by their **overall performance score** and future potential rating.

These buttons helps in identifying **high-potential players** for recruitment by showcasing their ratings, making it easier to prioritize targets.

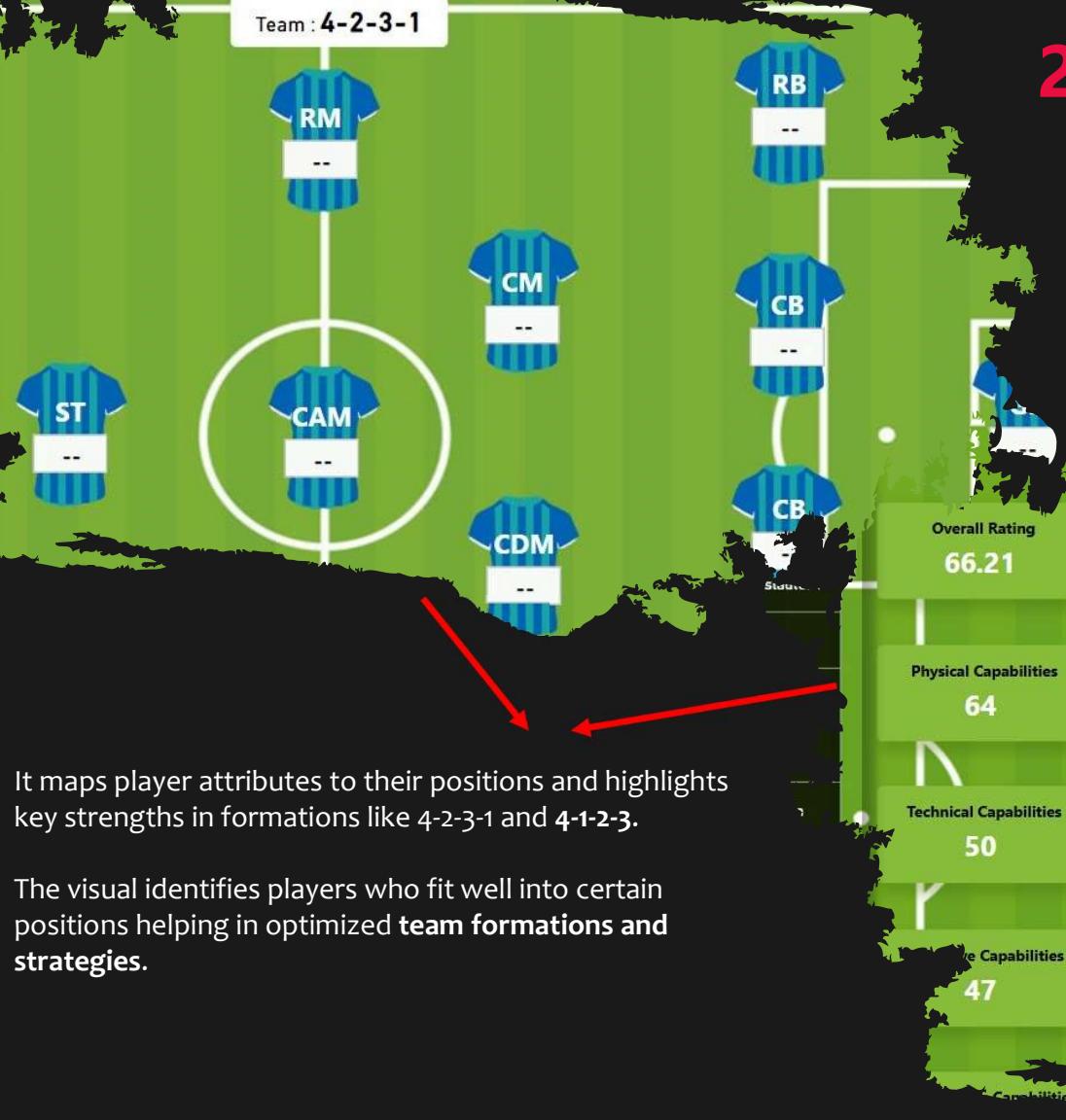


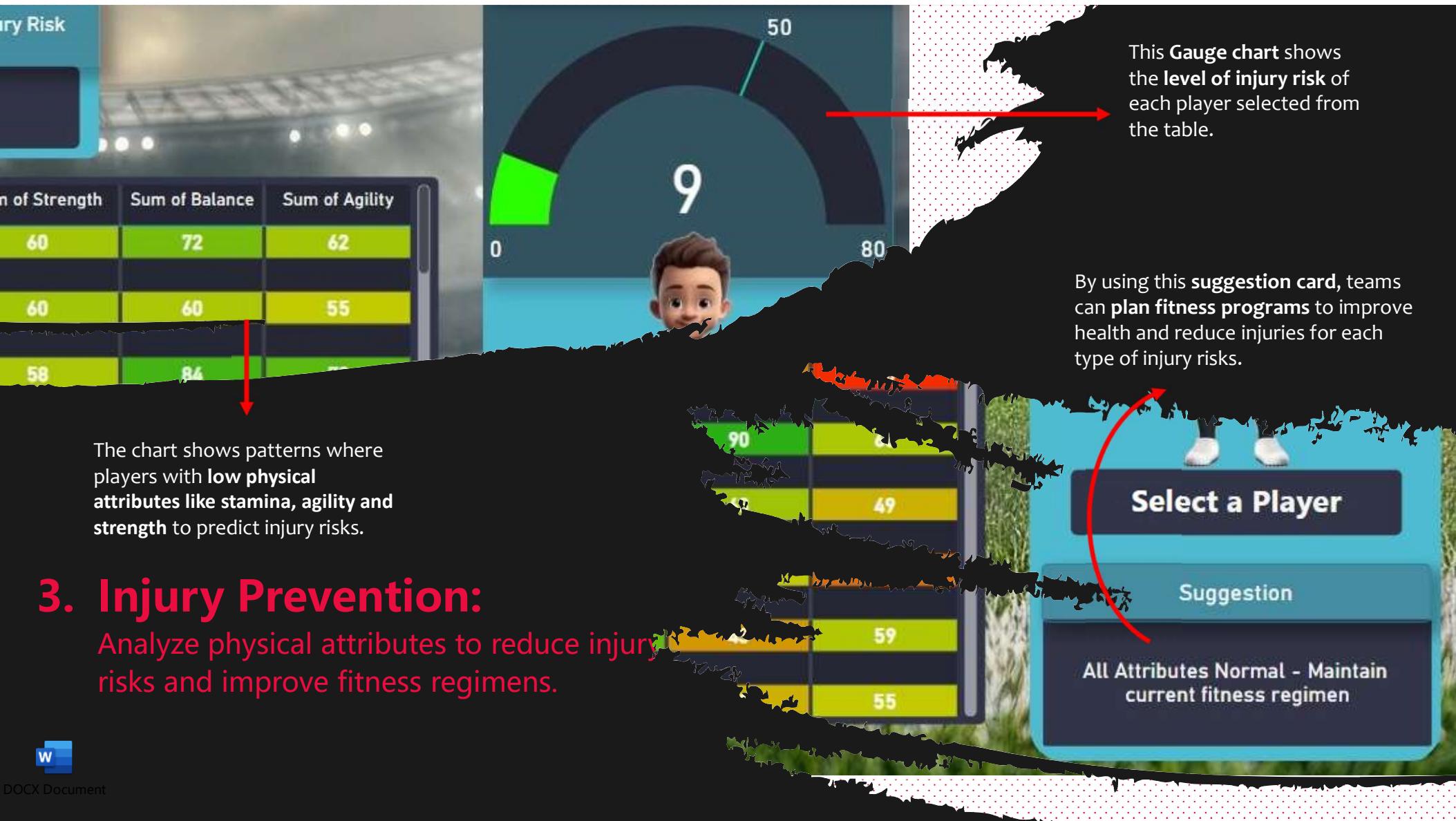
# 1. Player Scouting:

## Identify high-potential players based on performance metrics for recruitment.

## 2. Performance Analysis:

Assess player skills to optimize team formations and strategies.





### 3. Injury Prevention:

Analyze physical attributes to reduce injury risks and improve fitness regimens.



Player Performance data to enhance Fan Experience

**Top Players by Overall Rating**

Overall	Club
94	Real Madrid CF
93	FC Barcelona
92	FC Barcelona
92	FC Bayern Munich
92	Paris Saint-Germain
91	FC Bayern Munich

**Country**  
**Afghanistan**

**Club**  
**1. FC Heidenheim**

**Select a Player**

**Best Defender**

ID	Players	Ave. Tack
138956	G. Chiellini	91
178603	M. Hummels	90
183907	J. Boateng	89
155862	Sergio Ramos	90
137186	A. Barzagli	89

**"The Powerhouse" Board**

Sprint Speed	Sum of Sprint speed	Players with Best Endurance	ID	Players	Sum of Stamina
96	96	95	220925	A. Schöpf	95
96	96	94	170890	B. Matuidi	94
95	95	94			

**Top Scorers Board**

ID	Players	Sum of Penalties	ID	Players	Sum of Dribbling
17605	T. Simons	90	158023	Messi	92
148839	P. Verhaegh	90	208051	A. Robben	97
163631	L. Baines	90	9014	L. Messi	93
183900	D. Perotti	91	158021	E. Hazard	96
41236	Z. Ibrahimov	91	158021	Neymar	92
99	Fabinho	91	158021	P. Dybala	92
			9014	O. Dembélé	92

**Best Goal Keepers Board**

ID	Players	Sum of Goal Keeping Average
167695	M. Neuer	91
192448	M. ter Stegen	85
193080	De Gea	88

**Young Stars**

ID	Players
216393	Y. Tielemans
222737	Malcom
230142	Oyarzabal
10621	G. Donnarumma
230666	Gabriel Jesus
231443	O. Dembélé
231677	M. Rashford
231747	K. Mbappé

**Veteran's Glory**

ID	Players
1179	G. Buffon
9014	A. Robben
20801	Cristiano Ronaldo
41236	Z. Ibrahimović
138956	G. Chiellini
155862	Sergio Ramos
164240	Thiago Silva
167495	M. Neuer

These charts displays players' performance data that fans find engaging like top goal scorers or star players.

These metrics are used to create targeted marketing campaigns and player-focused fan content to enhance fan experience.

## 4. Fan Engagement:

Tailor marketing strategies using player performance data to enhance fan experience.

Using **bookmarks** and other **Page navigation** tools,  
I have connected the Fans' favourite players' BIO for  
Fans' fun engagement

Country  
**Afghanistan**

Club  
**1. FC Heidenheim**

Select a Player

Player Performance data to enhance Fan Experience

Top Players by Overall Rating		
Players	Overall	Club
Cristiano Ronaldo	94	Real Madrid CF
L. Messi	93	FC Barcelona
L. Suárez	92	FC Barcelona
M. Neuer	92	FC Bayern Munich
Neymar	92	Paris Saint-Germain
R. Lewandowski	91	FC Bayern Munich

**Fans' Favourite**

**C. RONALDO**  
Cristiano Ronaldo  
Overall Rating: 94  
ID: 20801  
Age: 32  
Value: € 95500000  
Club: Real Madrid CF  
Country: Portugal  
Preferred Positions: ST  
Special: 2228

**M. NEUER**  
Manuel Neuer  
Overall Rating: 92  
ID: 167495  
Age: 31  
Value: € 61000000  
Wage: € 230000  
Club: FC Bayern Munich  
Country: Germany  
Preferred Positions: GK  
Special: 1493

**L. MESSI**  
Lionel Messi  
Overall Rating: 93  
ID: 158023  
Age: 30  
Value: € 105000000  
Wage: € 230000  
Club: FC Barcelona  
Country: Argentina  
Preferred Positions: RW  
Special: 2154

**L. SUÁREZ**  
Luis Suárez  
Overall Rating: 92  
ID: 176580  
Age: 30  
Value: € 97000000  
Club: FC Barcelona  
Country: Uruguay  
Preferred Positions: ST  
Special: 2291

**NEYMAR**  
Neymar Da Silva Santos  
Overall Rating: 94  
ID: 190871  
Age: 25  
Value: € 123000000  
Club: Paris Saint-Germain  
Country: Brazil  
Preferred Positions: LW  
Special: 2100

**R. LEWANDOWSKI**  
Robert Lewandowski  
Overall Rating: 91  
ID: 188888  
Age: 31  
Value: € 120000000  
Club: FC Bayern Munich  
Country: Poland  
Preferred Positions: ST

Teams can justify salary increases for high performers or renegotiate contracts for those who are underperforming using this chart data.



## 5. Contract Negotiation:

Use performance insights to justify player salaries and contract terms.



**TASKS**

## Task 1

The screenshot shows a football management game interface. At the top, there's a navigation bar with a search icon and tabs for 'Club', 'English Premier L.', and 'Italiani Premier Le...'. Below the navigation bar, there's a grid of club names: 1. FC Heidenheim, 1. FC Kaiserslautern, 1. FC Köln, 1. FC Magdeburg, 1. FC Nürnberg, and 1. FC Union Berlin. The main content area displays a table titled 'Top Players by Overall Rating'. The table has columns for 'Players', 'Overall', and 'Club'. The data is as follows:

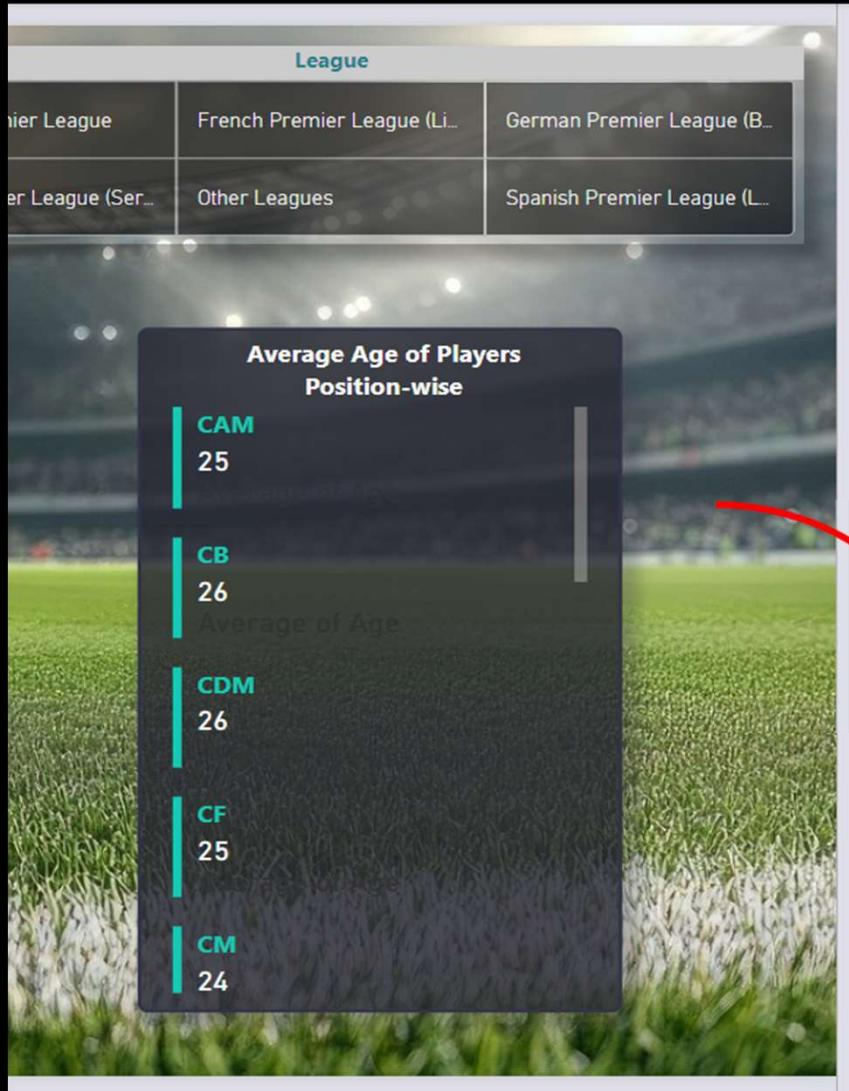
Players	Overall	Club
Cristiano Ronaldo	94	Real Madrid CF
L. Messi	93	FC Barcelona
L. Suárez	92	FC Barcelona
M. Neuer	92	FC Bayern Munich
Neymar	92	Paris Saint-Germain
R. Lewandowski	91	FC Bayern Munich
De Gea	90	Manchester United
E. Hazard	90	Chelsea
G. Higuaín	90	Juventus
Sergio Ramos	90	Real Madrid CF
T. Kroos	90	Real Madrid CF

**Identify the top players by overall rating.**

**Top Players by Overall Rating:** Cristiano Ronaldo leads with a rating of 94, followed by Messi and Suárez at 93 and 92 respectively.

**Recommendation:** Teams can focus on these top-rated players for important matches to improve overall performance.

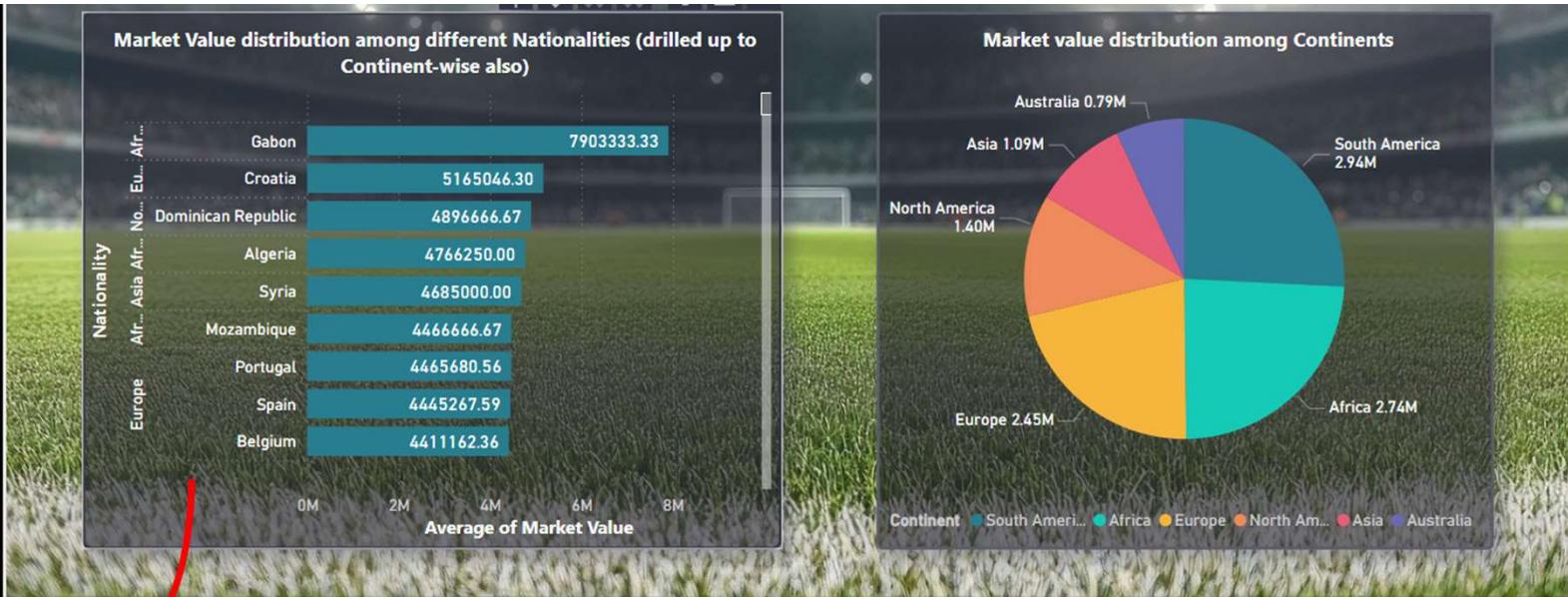
## Task 2



**Calculate the average age of players in each position.**

**Top Players by Overall Rating:** Cristiano Ronaldo leads with a rating of 94, followed by Messi and Suárez at 93 and 92 respectively.

**Recommendation:** Teams can focus on these top-rated players for important matches to improve overall performance.



**Determine the market value distribution among different nationalities.**

**Insight:** Market value varies across nationalities, with some players having significantly higher value.

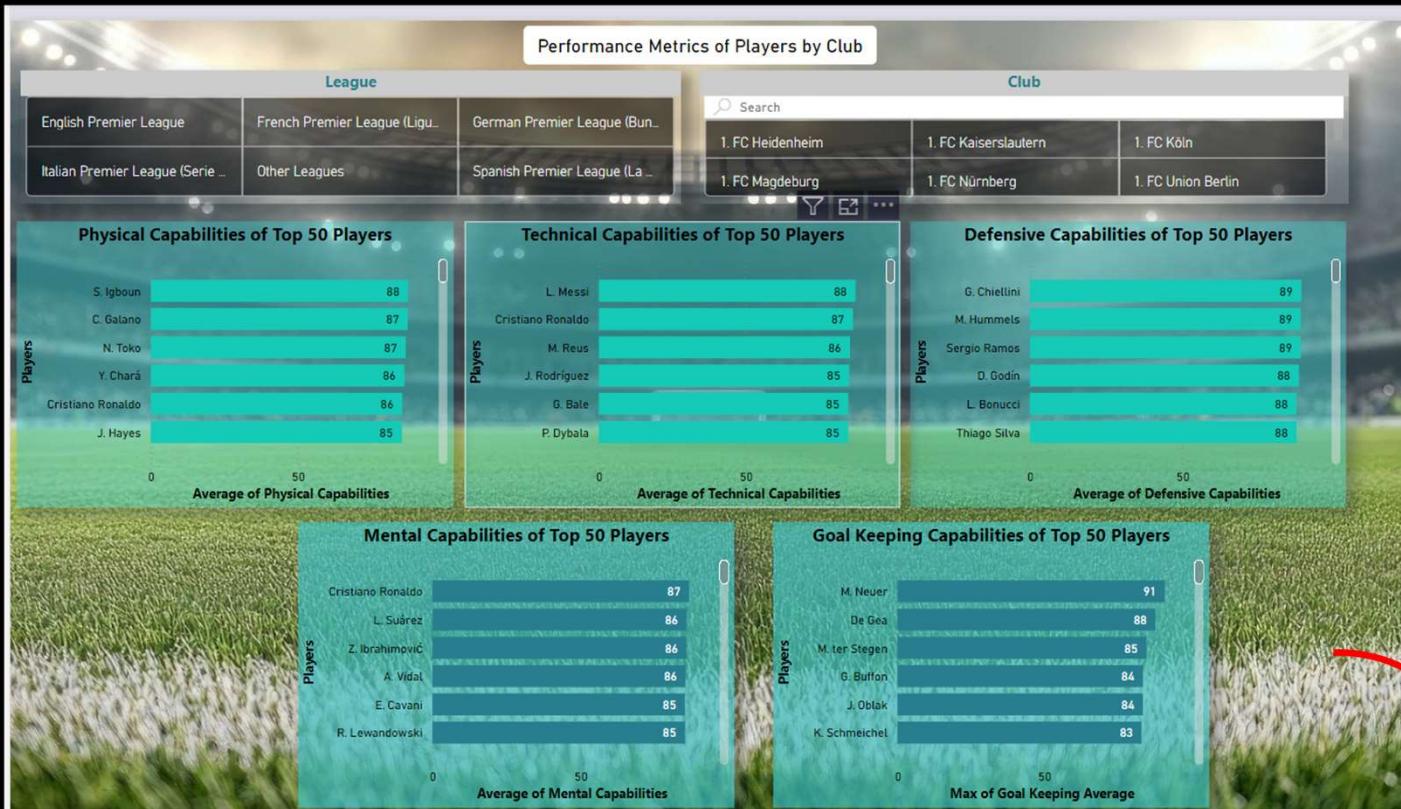
**Recommendation:** Focus on nationalities producing high-value players for recruitment opportunities.

**Insight:** Market value distribution has been done across Continent-wise too.

*I have manually included continents data column for each country present in the dataset and matched to its respective continent to get more broad results.*



**Task 3**

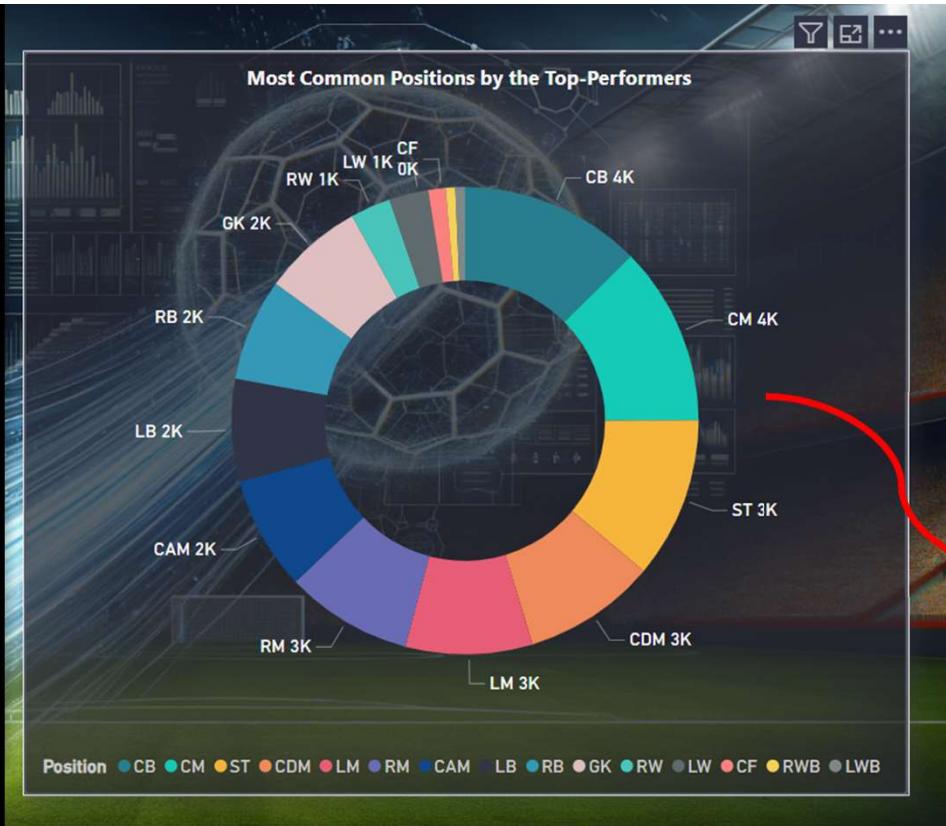


Task 4

## Analyze performance metrics of players by club.

**Insight:** Clubs like Real Madrid and FC Barcelona have top-performing players based on metrics.

**Suggestion:** Analyze clubs with lower performance to identify areas for improvement.



## Find the most common positions played by top-performing players.

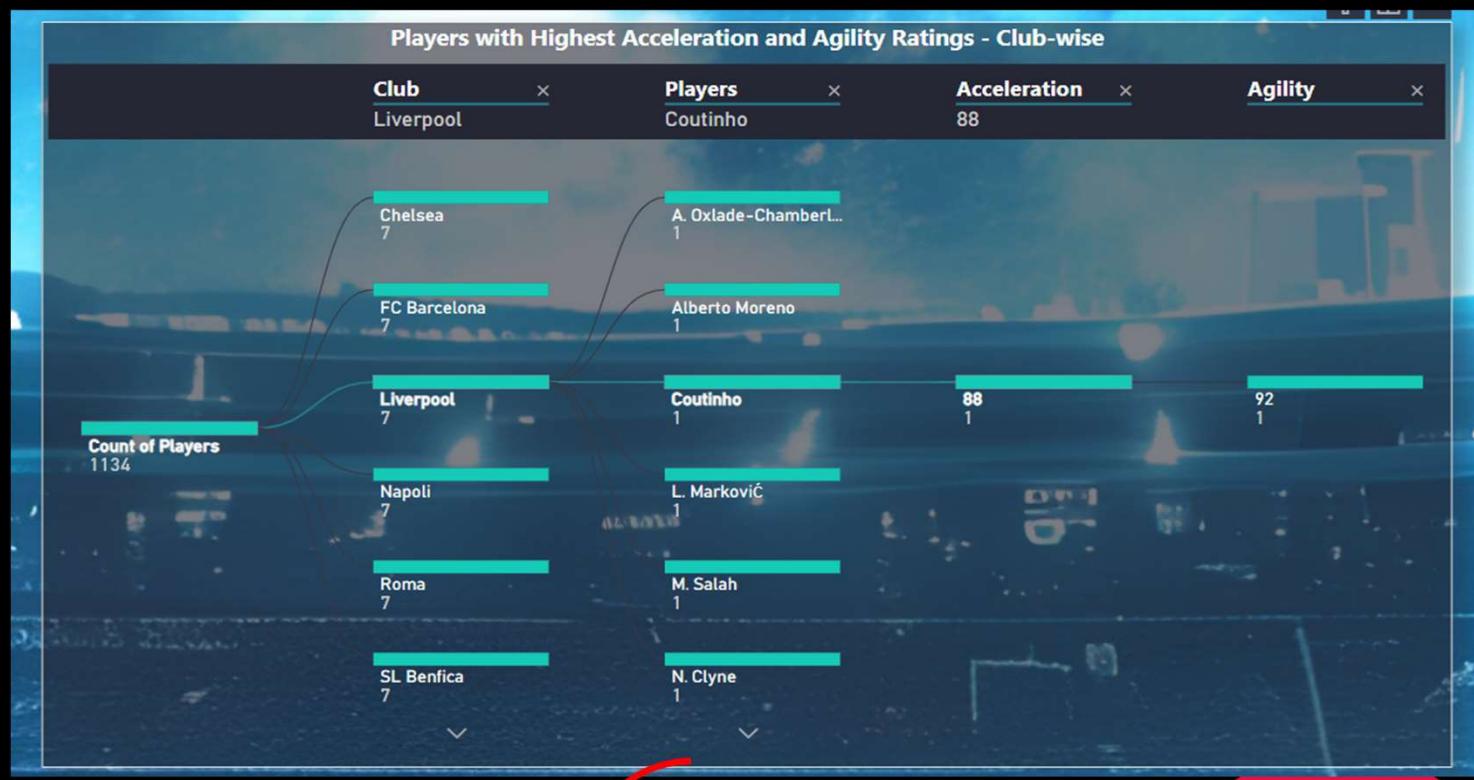


**Insight:** Top-performing players often occupy attacking positions like CF and CAM.

**Recommendation:** Teams can strengthen their attacking list to increase scoring.

**Task 5**

**Identify players with the highest acceleration and agility ratings.**



**Insight:** Players with high acceleration and agility have better ball control and speed.

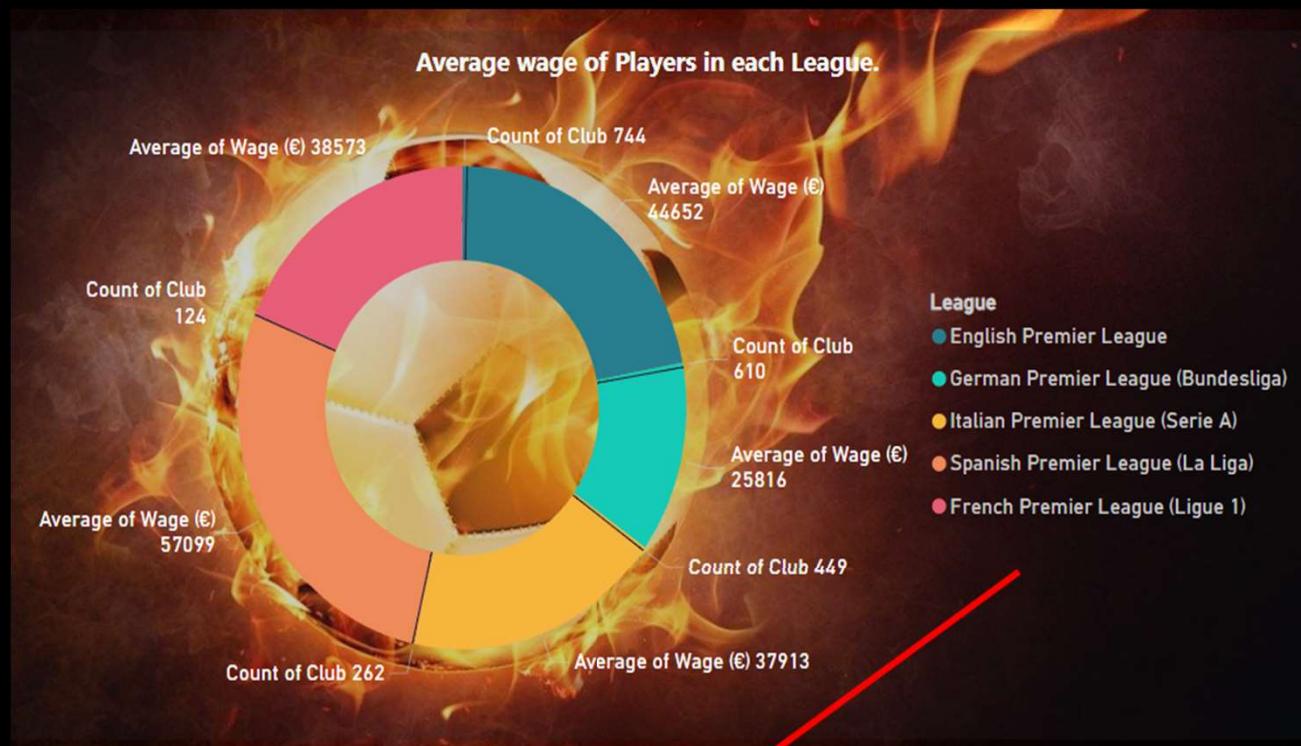
**Suggestion:** These players should be prioritized for fast-paced games.

**Task 6**

## Calculate the average wage for players in each league.

**Insight:** Wages differ significantly across leagues, with top leagues paying the most.

**Recommendation:** Teams must budget wisely to attract talented players from high-paying leagues



Since the given dataset did not include league information, I manually created leagues and grouped the clubs into **five major leagues** for analysis.

Task 7

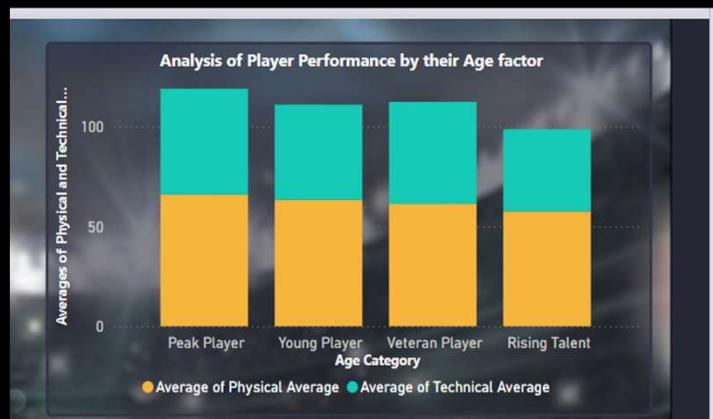


## Discover trends in player performance over the last few seasons.

**Insight:** Since season data is unavailable, players' age was considered to analyze performance trends. Younger players tend to show better growth potential while older players maintain consistent performance levels.

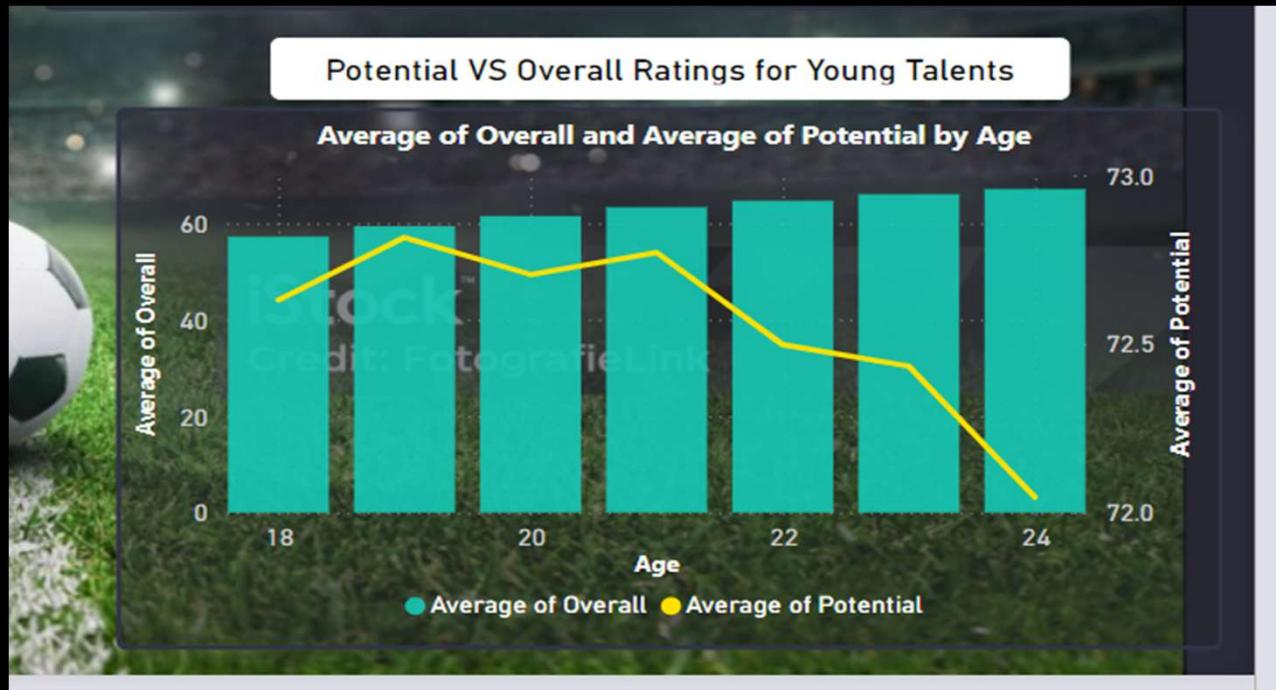
**Suggestion:** Teams should invest in younger players for long-term development while leveraging experienced players for stability and leadership on the field.

Task 8



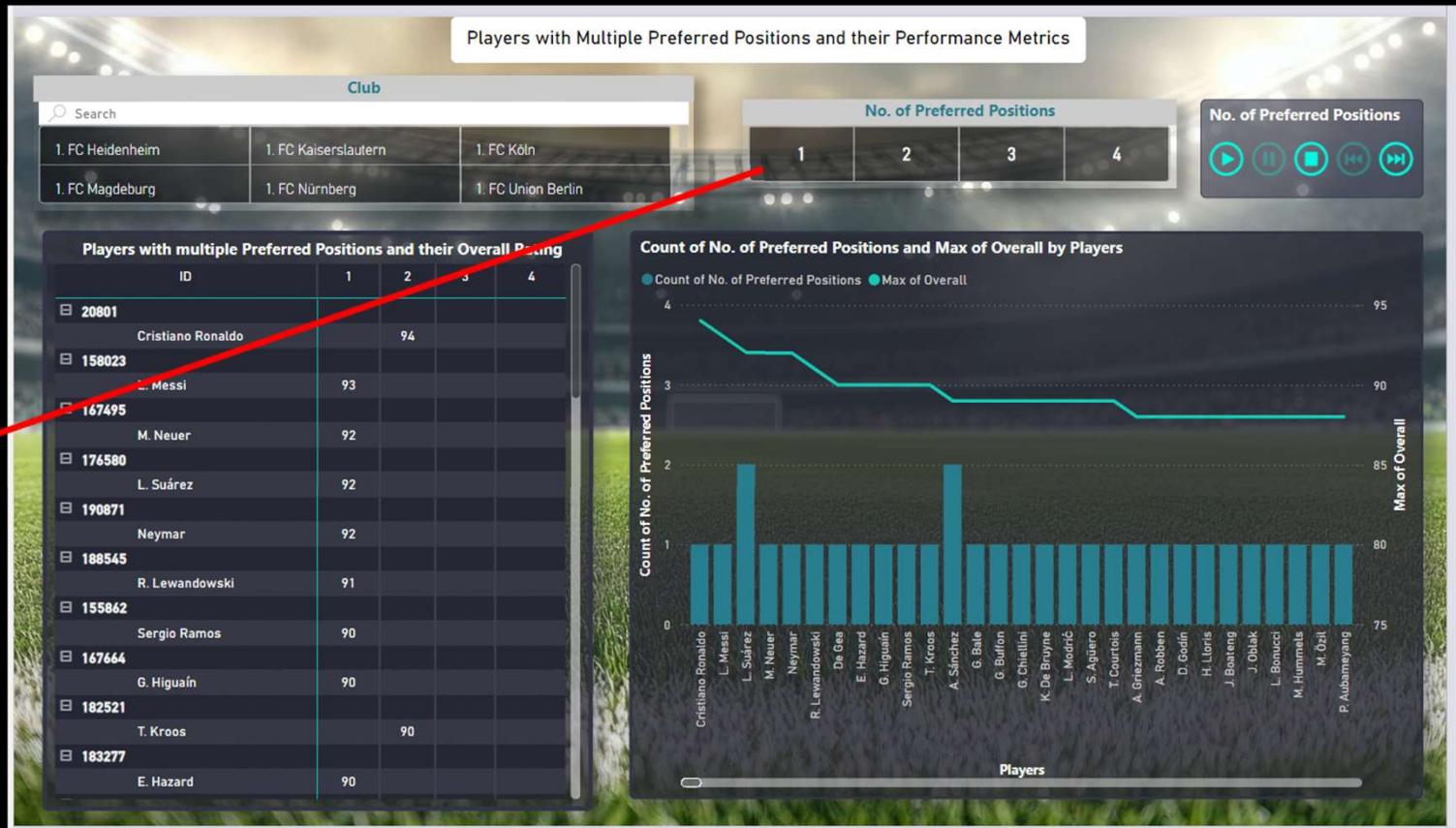
Determine the potential vs. overall rating for young talents.

Task 9



## Task 10

Identify players with multiple preferred positions and their performance metrics.

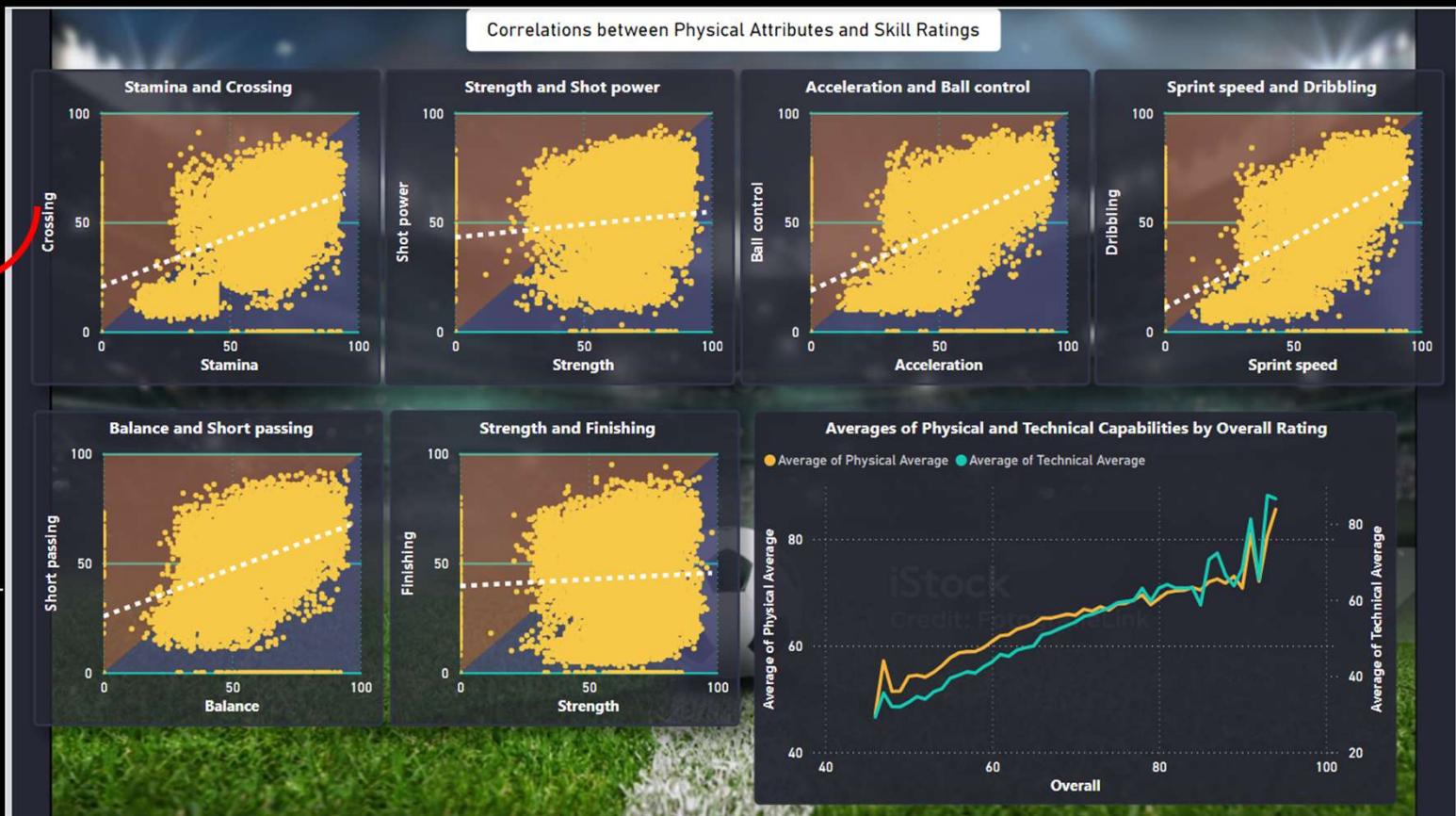


**Insight:** Versatile players perform well in multiple positions.

**Suggestion:** Utilize these players strategically to fill gaps in team formations.

## Analyze correlations between physical attributes and skill ratings.

### Task 11



**Insight:** Strong physical attributes improve skill ratings like dribbling and shot power.

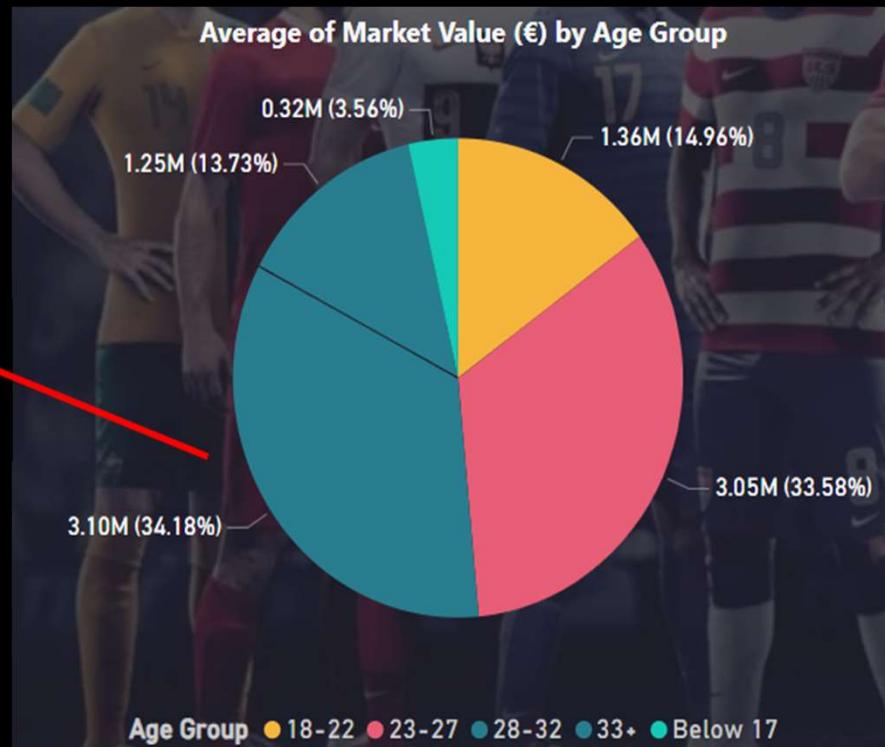
**Recommendation:** Train players to enhance physical fitness for better on-field performance.

## Task 12

Calculate the average market value of players by age group.

**Insight:** Players aged 24-28 have the highest market value.

**Recommendation:** Teams should focus on this age group for immediate returns on investment.

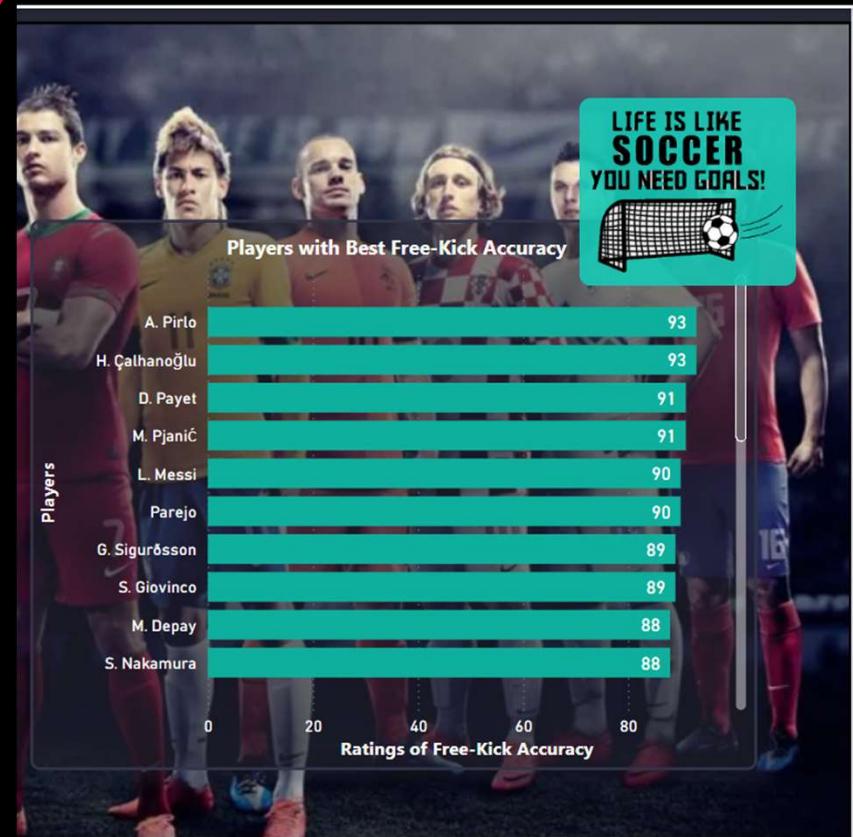


## Task 13

**Identify players with the best free-kick accuracy.**

**Insight:** Players with high free-kick accuracy are valuable for set-piece goals.

**Recommendation:** Use these players in critical set-piece situations to increase goal opportunities.





Create visualizations for player statistics comparisons by club.

### Task 14

**Insight:** Clubs vary in player statistics, with top clubs excelling in overall performance.

**Suggestion:** Lower-performing clubs should analyze top clubs' strategies to improve results.



**Insight:** Players with declining performance are at higher risk of transfer.

**Recommendation:** Monitor underperforming players and provide additional training to retain them.

These buttons help to identify if the selected player is in **risk** or **safe** position.

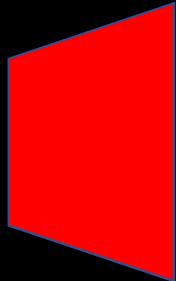
Develop queries to identify players at risk of being transferred based on performance.

Task 15



# SQL QUERIES

## **SQL Commands used**



**DDL – Data Definition Language**

-

**Create, Drop, Alter**

**DML – Data Manipulation Language**

-

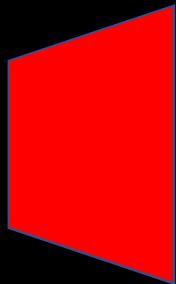
**Insert, Update, Delete**

**DQL – Data Query Language**

-

**Select**

## **Clauses used**

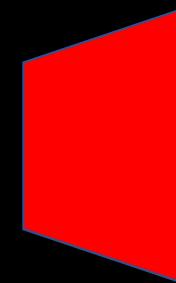


**where, having**

**order by, group by**

**limit**

## **Operators used**

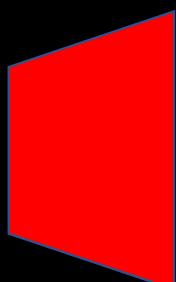


**LOGICAL – and, or, in**

**COMPARISON – between**

**NOT IN**

## **Aggregate functions used**

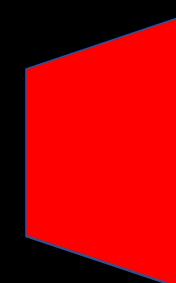


**MAX, MIN**

**SUM, AVG**

**COUNT**

## **Joins used**



**Inner Join, Union**

**Right Join, Left Join**

**Cross Join, Self-Join**



fifa\_Kanimoza" x

```

1 • use fifaj
2 • CREATE TABLE Players_1 (
3     ID INT PRIMARY KEY, Wage INT, Value INT, Player VARCHAR(300), Age INT, Continent VARCHAR(50), Nationality VARCHAR(50),
4     Overall INT, Potential INT, Club VARCHAR(300), League VARCHAR(300));
5
6 • select * from players_1;
7
8
9
10
11
12

```

Result Grid | Filter Rows: Edit: Export/Import: Wrap Cell Content: TA

ID	Wage	Value	Player	Age	Continent	Nationality	Overall	Potential	Club	League
HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

players\_154 x

Output

Action Output

#	Time	Action
2	11:32:44	CREATE TABLE Players_1 ( ID INT PRIMARY KEY, Wage INT, Value INT, Player VARCHAR(300), Age INT, C... 0 row(s) affected
3	11:32:44	select * from players_1; 11 row(s) returned

fifa\_Kanimoza" x

```

38 • INSERT INTO Players_2 (
39     ID, Physical_Average, Technical_Average, Defensive_Average, Mental_Average, Goal_Keeping_Average,
40     No_of_Preferred_Positions, Best_Position_Score, Best_Position_Name
41 )
42 VALUES
43     (190871, 79, 83, 35, 81, 11, 1, 89, 'LM'),
44     (193808, 56, 27, 20, 54, 88, 1, 80, 'GK'),
45     (183277, 81, 84, 34, 79, 9, 1, 88, 'LW'),
46     (192985, 76, 85, 46, 83, 12, 3, 86, 'CAM'),
47     (192119, 54, 21, 15, 43, 83, 1, 86, 'GK'),
48     (164248, 76, 68, 88, 75, 9, 1, 85, 'CB'),
49     (41236, 69, 85, 37, 86, 13, 1, 84, 'ST')

```

Result Grid | Filter Rows: Edit: Export/Import: Wrap Cell Content: TA

ID	Physical_Average	Technical_Average	Defensive_Average	Mental_Average	Goal_Keeping_Average	No_of_Preferred_Positions
41236	69	85	37	86	13	1
155862	78	69	89	73	10	1
158079	81	85	32	84	10	1
164240	76	68	88	75	9	1
167664	77	77	32	77	9	1
173731	82	85	61	80	12	1
177003	77	81	70	81	10	2
182493	69	57	88	71	11	1
183277	81	84	34	79	9	1
184344	70	65	88	73	3	1
190871	79	81	16	81	11	1

players\_155 x

Action Output

#	Time	Action
7	11:42:07	INSERT INTO Players_2 ( ID, Physical_Average, Technical_Average, Defensive_Average, Mental_Average, G... 16 row(s) affected Records: 16 rows(s) returned
8	11:42:14	select * from players_1; 11 LIMIT 0 1000

fifa\_Kanimoza" x

```

15 (184941, 2650000, 67500000, 'A. Sánchez', 28, 'South America', 'Chile', 89, 89, 'Arsenal', 'English Premier League'),
16 (153079, 325000, 66500000, 'S. Agüero', 29, 'South America', 'Argentina', 89, 89, 'Manchester City', 'English Premier League'),
17 (166355, 265000, 60000000, 'M. Ozil', 28, 'Europe', 'Germany', 88, 88, 'Arsenal', 'English Premier League'),
18 (167948, 165000, 38000000, 'H. Lloris', 30, 'Europe', 'France', 88, 88, 'Tottenham Hotspur', 'English Premier League'),
19 (164240, 175000, 34000000, 'Thiago Silva', 32, 'South America', 'Brazil', 88, 88, 'Paris Saint-Germain', 'French Premier League'),
20 (41236, 240000, 27000000, 'Z. Ibrahimović', 35, 'Europe', 'Sweden', 88, 88, 'Manchester United', 'English Premier League'),
21 (215914, 190000, 52500000, 'M. Kanté', 26, 'Europe', 'France', 87, 90, 'Chelsea', 'English Premier League'),
22 (199556, 130000, 64500000, 'M. Verratti', 24, 'Europe', 'Italy', 87, 91, 'Paris Saint-Germain', 'French Premier League (Ligue 1)'),
23 (195864, 195000, 66500000, 'P. Pogba', 24, 'Europe', 'France', 87, 92, 'Manchester United', 'English Premier League'),
24 (190460, 165000, 65000000, 'C. Eriksen', 25, 'Europe', 'Denmark', 87, 91, 'Tottenham Hotspur', 'English Premier League'),
25 • select * from players_1;

```

Result Grid | Filter Rows: Edit: Export/Import: Wrap Cell Content: TA

ID	Wage	Value	Player	Age	Continent	Nationality	Overall	Potential	Club	League
41236	240000	2700000	Z. Ibrahimović	35	Europe	Sweden	88	88	Manchester United	English Premier League
153079	325000	66500000	S. Agüero	29	South America	Argentina	89	89	Manchester City	English Premier League
164240	175000	34000000	Thiago Silva	32	South America	Brazil	88	88	Paris Saint-Germain	French Premier League (Ligue 1)
166355	265000	60000000	M. Ozil	28	Europe	Germany	88	88	Arsenal	English Premier League
187664	295000	90500000	E. Hazard	26	Europe	Belgium	90	91	Chelsea	English Premier League
184941	265000	67500000	A. Sánchez	28	South America	Chile	89	89	Arsenal	English Premier League
190871	280000	50000000	E. Benítez	55	Europe	Spain	87	91	Tottenham Hotspur	English Premier League
190871	190000	59000000	N. Neuer	25	South America	Brazil	92	94	Paris Saint-Germain	French Premier League (Ligue 1)
192119	190000	59000000	T. Courtois	25	Europe	Belgium	89	92	Chelsea	English Premier League
192985	280000	81000000	K. De Bruyne	26	Europe	Belgium	90	92	Manchester City	English Premier League

players\_155 x

Action Output

#	Time	Action
4	11:33:36	INSERT INTO Players_1 ( ID, Wage, Value, Player, Age, Continent, Nationality, Overall, Potential, Club, League)... 15 row(s) affected Records: 15 Duplicates: 0 Warnings: 0 15 rows(s) returned
5	11:33:36	select * from players_1; 11 LIMIT 0 1000

- Creating database and tables 1 and 2.
- Inserting records into the tables and retrieving them all using 'SELECT' command.

MySQL Workbench

Local instance MySQL80 ×

File Edit View Query Database Server Tools Scripting Help

Navigator: fifa\_Kanimozhi\* ×

SCHEMAS

Filter objects

fifa

Tables

players\_1

players\_2

Views

Stored Procedures

Functions

sys

56       (177003, 'L. Modrić', 77, 81, 70, 81, 10, 2, 86, 'CM'),  
57       (173731, 'G. Bale', 82, 85, 61, 80, 12, 1, 87, 'RW'),  
58       (184344, 'L. Bonucci', 70, 65, 88, 73, 3, 1, 86, 'CB'),  
59       (182493, 'D. Godin', 69, 57, 88, 71, 11, 1, 86, 'CB');  
60  
61 • select \* from players\_2;  
62  
63 • select Player, Best\_Position\_Name, Physical\_Average, Technical\_Average FROM Players\_2  
WHERE ID = 184344;  
64  
65

Result Grid | Filter Rows: Export: Wrap Cell Content:

	Player	Best_Position_Name	Physical_Average	Technical_Average
▶	L. Bonucci	CB	70	65

Administration Schemas

Information

Players\_2 1 ×

No object selected

Action Output

#	Time	Action	Message
1	12:03:30	select Player, Best_Position_Name, Physical_Average, Technical_Average FROM Players_2 WHERE ID = 184344 L...	1 row(s) returned

- Retrieves specific columns for a player with ID 184344.
- SELECT command with a WHERE clause for filtering rows.

```
fifa_Kanmozh* ×
224     players_1 p2 ON p1.Player = p2.Player
225             AND p1.ID <> p2.ID;
226
227
228
229
230 •   SELECT          /* Aggregate function - Count*/
231     (SELECT COUNT(*) FROM players_1) AS Count_Table1,
232     (SELECT COUNT(*) FROM players_2) AS Count_Table2;
233
234
235
236
237
238
```

❖ Count function

Result Grid	
Count_Table1	Count_Table2
16	16

Result 12 ×

Output :::::

Action Output

#	Time	Action	Message
24	18:27:09	SELECT p1.Player AS Player_Name, p1.ID AS ID1, p2.ID AS ID2, p1.Club AS Club1, p2.Club AS Club2	2 row(s) returned
25	12:10:52	SELECT /* Aggregate function - Count*/ (SELECT COUNT(*) FROM players_1) AS Count_Table1, (SELECT ...	1 row(s) returned

```
fifa_Kanimozhi* x
228
229
230 •   SELECT          /* Aggregate function - Count*/
231     (SELECT COUNT(*) FROM players_1) AS Count_Table1,
232     (SELECT COUNT(*) FROM players_2) AS Count_Table2;
233
234 •   SELECT          /* Aggregate function - AVERAGE*/
235     AVG(Wage) AS Average_Wage
236     FROM
237     players_1;
238
239
240
241
242
```

❖ AVERAGE function

Result Grid	
Filter Rows:	
Average_Wage	
228750.0000	

Output		
#	Time	Action
25	12:10:52	SELECT /* Aggregate function - Count*/ (SELECT COUNT(*) FROM players_1) AS Count_Table1, (SELECT ... 1 row(s) returned
26	12:30:05	SELECT /* Aggregate function - AVERAGE*/ AVG(Wage) AS Average_Wage FROM players_1 LIMIT 0, 1000 1 row(s) returned

```
fifa_Kanimozhi* x
233
234 •  SELECT          /* Aggregate function - AVERAGE*/
235      AVG(Wage) AS Average_Wage
236  FROM
237      players_1;
238
239 •  SELECT          /* Aggregate function - MIN MAX*/
240      MIN(Age) AS Youngest_Player,
241      MAX(Age) AS Oldest_Player
242  FROM
243      players_1;
244
245
246
247
```

❖ Minimum and Maximum function

Result Grid		
	Youngest_Player	Oldest_Player
▶	24	35

Result 14 x

Output :

Action Output

#	Time	Action	Message
26	12:30:05	SELECT /* Aggregate function - AVERAGE*/ AVG(Wage) AS Average_Wage FROM players_1 LIMIT 0, 1000	1 row(s) returned
27	12:32:06	SELECT /* Aggregate function - MIN MAX*/ MIN(Age) AS Youngest_Player, MAX(Age) AS Oldest_Player F...	1 row(s) returned

**fifa\_Kanimozhi\***

```

255     FROM
256     players_1
257 WHERE
258     Age BETWEEN 28 AND 30;
259
260
261 • SELECT          /* Logical Operator - AND */
262     Player, Overall, Potential
263 FROM
264     players_1
265 WHERE
266     Overall > 90
267     AND Potential > 90;
268

```

**fifa\_Kanimozhi\***

```

264     players_1
265 WHERE
266     Overall > 90
267     AND Potential > 90;
268
269 • SELECT          /* Logical Operator - OR */
270     Player, Best_Position_Name
271 FROM
272     players_2
273 WHERE
274     Best_Position_Name = 'GK'
275     OR Best_Position_Name = 'CB';
276
277

```

**Result Grid** | Filter Rows:  | Export: | Wrap Cell Content:

Player	Overall	Potential
Neymar	92	94
Neymar	92	94

**players\_1 22 x**

Output:

Action Output

#	Time	Action
34	12:40:44	SELECT /* Logical Operator - AND */ Player, Overall, Potential FROM players_1 WHERE Overall <
35	12:40:58	SELECT /* Logical Operator - AND */ Player, Overall, Potential FROM players_1 WHERE Overall >
28	12:35:57	SELECT Player, Club FROM players_1 WHERE Club IN ('Manchester United', 'Chelsea')

**players\_2 23 x**

Output:

Action Output

#	Time	Action	Message
35	12:40:58	SELECT /* Logical Operator - AND */ Player, Overall, Potential FROM players_1 WHERE Overall > 90 ...	2 row(s) returned
36	12:42:16	SELECT Player, Best_Position_Name FROM players_2 WHERE Best_Position_Name = 'GK' OR Bes...	6 row(s) returned

fifa\_Kanmozhi

```

67 •   select Player, Best_Position_Name, Physical_Average, Technical_Average FROM Players_2
68 WHERE ID = 190460;
69
70 •   SELECT          /* Inner Join - Players present in both the tables */
71     p1.ID,
72     p1.Player AS Player_Name,
73     p1.Club,
74     p2.Best_Position_Name
75   FROM Players_1 p1
76   INNER JOIN Players_2 p2
77   ON p1.ID = p2.ID;
78

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

ID	Player_Name	Club	Best_Position_Name
41236	Z. Ibrahimović	Manchester United	ST
164240	Thiago Silva	Paris Saint-Germain	CB
183277	E. Hazard	Chelsea	LW
190871	Neymar	Paris Saint-Germain	LW
192119	T. Courtois	Chelsea	GK
192985	K. De Bruyne	Manchester City	CAM
193080	De Gea	Manchester United	GK
215914	N. Kanté	Chelsea	CDM

Result 1

Output:

Action Output

#	Time	Action	Message
1	12:48:35	SELECT	/* Inner Join - Players present in both the tables */ p1.ID, p1.Player AS Player_Name... 8 row(s) returned

- ◆ Displays players present in both tables with their club and best position.
- ◆ Uses INNER JOIN to match entries based on ID.

fifa\_Kanimozhi x

79 • SELECT /\* Left Join - Players entries matched by ID \*/  
 80 p1.ID,  
 81 p1.Player AS Player\_Name,  
 82 p1.Club,  
 83 p1.Overall,  
 84 p1.Potential,  
 85 p2.No\_of\_preferred\_positions,  
 86 p2.Best\_Position\_Name  
 87 FROM Players\_1 p1  
 88 LEFT JOIN Players\_2 p2  
 89 ON p1.ID = p2.ID;  
 90  
 --

Result Grid | Filter Rows: Export: Wrap Cell Content:

ID	Player_Name	Club	Overall	Potential	No_of_preferred_positions	Best_Position_Name
183277	E. Hazard	Chelsea	90	91	1	LW
184941	A. Sánchez	Arsenal	89	89	NULL	NULL
190460	C. Eriksen	Tottenham Hotspur	87	91	NULL	NULL
190871	Neymar	Paris Saint-Germain	92	94	1	LW
192119	T. Courtois	Chelsea	89	92	1	GK
192985	K. De Bruyne	Manchester City	89	92	3	CAM
193080	De Gea	Manchester United	90	92	1	GK
195864	P. Pogba	Manchester United	87	92	NULL	NULL
199556	M. Verratti	Paris Saint-Germain	87	91	NULL	NULL
215914	N. Kanté	Chelsea	87	90	2	CDM

Result 2 x

Output:

Action Output

#	Time	Action	Message
1	12:48:35	SELECT /* Inner Join - Players present in both the tables */ p1.ID, p1.Player AS Player_Name... 8 row(s) returned	
2	12:50:42	SELECT /* Left Join - Players entries matched by ID */ p1.ID, p1.Player AS Player_Name, p1.Club, p1.Ove... 15 row(s) returned	

- ❖ This query retrieves all players from Players\_1 and matches them with players in Players\_2. If a match does not exist in Players\_2, the respective columns will have NULL values.
- ❖ Uses LEFT JOIN to include all records from the left table (Players\_1), whether or not they have a matching entry in Players\_2.

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```

191      p2.Player AS Player2,
192      p2.Best_Position_Name
193  FROM Players_1 p1
194  UNION Players_2 p2 ON p1.ID = p2.ID
195 WHERE p1.ID IS NULL;
196
197 • SELECT
198     p2.Player,
199     p2.Best_Position_Name
200  FROM Players_2 p2
201  LEFT JOIN Players_1 p1 ON p2.ID = p1.ID
202 WHERE p1.ID IS NULL;

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

Player	Best_Position_Name
Cristiano Ronaldo	ST
Sergio Ramos	CB
L. Messi	RW
G. Higuaín	ST
G. Bale	RW
L. Modrić	CM
D. Godín	CB
L. Bonucci	CB

Result 13 x

Output:

Action Output

#	Time	Action	Message
16	13:28:22	SELECT p1.Player AS Player1, p1.Club, p1.League, p2.Player AS Player2, p2.Best_Position_Name FR...	Error Code: 1064. Yo...
17	13:28:49	SELECT p2.Player, p2.Best_Position_Name FROM Players_2 p2 LEFT JOIN Players_1 p1 ON p2.ID = p1.ID ...	8 row(s) returned

- Search for the players present in Players\_2 but missing from Players\_1.
- LEFT JOIN with a WHERE clause checks for NULL values in Players\_1.

fifa\_Kanimozhi\* ×

212  
213  
214  
215 • SELECT  
216 p1.Player AS Player\_Name,  
217 p1.ID AS ID1, p2.ID AS ID2,  
218 p1.Club AS Club1, p2.Club AS Club2,  
219 p1.Continent AS Continent1, p2.Continent AS Continent2,  
220 p1.Nationality AS Nationality1, p2.Nationality AS Nationality2  
221 FROM  
222 players\_1 p1  
223 JOIN  
224 players\_1 p2 ON p1.Player = p2.Player  
225 AND p1.ID <> p2.ID;  
226

Result Grid | Filter Rows: Export: Wrap Cell Content:

Player_Name	ID1	ID2	Club1	Club2	Continent1	Continent2	Nationality1	Nationality2
Neymar	199999	190871	Paris Saint-Germain	Paris Saint-Germain	Europe	South America	France	Brazil
Neymar	190871	199999	Paris Saint-Germain	Paris Saint-Germain	South America	Europe	Brazil	France

Result 11 ×

Output:

Action Output

#	Time	Action	Message
23	18:26:28	SELECT p1.Player AS Player_Name, p1.ID AS ID1, p2.ID AS ID2, p1.Club AS Club1, p2.Club AS C...	Error Code: 1064. You have an
24	18:27:09	SELECT p1.Player AS Player_Name, p1.ID AS ID1, p2.ID AS ID2, p1.Club AS Club1, p2.Club AS C...	2 row(s) returned

- ❖ Self-JOIN is like comparing data within the same table.
- ❖ Here, it compares players with the same Name but with other attributes being different and identifies them.

- Retrieves all records from Players\_2 and matches those in Players\_1, showing NULL for unmatched entries from Players\_1.
- Uses RIGHT JOIN to prioritize Players\_2, ensuring its unmatched entries are included.

fifa\_Kanimozhi

```

91
92 •   SELECT          /* Right Join - Players entries matched by ID */
93     p2.ID,
94     p2.Player AS Player_Name,
95     p1.Club,
96     p2.Best_Position_Name
97   FROM Players_1 p1
98   RIGHT JOIN Players_2 p2
99   ON p1.ID = p2.ID;
100
101
102 •   SELECT          /* Union - Full Outer Join */
103   ...

```

Result Grid | Filter Rows: Export: Wrap Cell Content:

ID	Player_Name	Club	Best_Position_Name
20801	Cristiano Ronaldo	NULL	ST
41236	Z. Ibrahimović	Manchester United	ST
155862	Sergio Ramos	NULL	CB
158023	L. Messi	NULL	RW
164240	Thiago Silva	Paris Saint-Germain	CB
167664	G. Higuaín	NULL	ST
173731	G. Bale	NULL	RW
177003	L. Modrić	NULL	CM
182493	D. Godín	NULL	CB
183277	E. Hazard	Chelsea	LW
184344	I. Bonucci	NULL	CR

Result 3 x

Action Output

#	Time	Action	Message
2	12:50:42	SELECT /* Left Join - Players entries matched by ID */ p1.ID, p1.Player AS Player_Name, p1.Club, p1.O... 15 row(s) returned	
3	12:51:26	SELECT /* Right Join - Players entries matched by ID */ p2.ID, p2.Player AS Player_Name, p1.Club, p... 16 row(s) returned	

fifa\_Kanimozhi

```

100
101
102 •   SELECT          /* Union - Full Outer Join */
103     p1.ID, p1.Player AS Player1, p2.Player AS Player2, p1.Club, p2.Best_Position_Name
104   FROM Players_1 p1
105   LEFT JOIN Players_2 p2 ON p1.ID = p2.ID
106 UNION
107 SELECT
108     p2.ID, p1.Player AS Player1, p2.Player AS Player2, p1.Club, p2.Best_Position_Name
109   FROM Players_1 p1
110   RIGHT JOIN Players_2 p2 ON p1.ID = p2.ID;
111 ...

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

ID	Player1	Player2	Club	Best_Position_Name
41236	Z. Ibrahimović	Z. Ibrahimović	Manchester United	ST
153079	S. Agüero	<b>NULL</b>	Manchester City	<b>NULL</b>
164240	Thiago Silva	Thiago Silva	Paris Saint-Germain	CB
167948	H. Lloris	<b>NULL</b>	Tottenham Hotspur	<b>NULL</b>
176635	M. Özil	<b>NULL</b>	Arsenal	<b>NULL</b>
183277	E. Hazard	E. Hazard	Chelsea	LW
184941	A. Sánchez	<b>NULL</b>	Arsenal	<b>NULL</b>
190460	C. Eriksen	<b>NULL</b>	Tottenham Hotspur	<b>NULL</b>
190871	Neymar	Neymar	Paris Saint-Germain	LW
192119	T. Courtois	T. Courtois	Chelsea	GK
192985	K. De Bruyne	K. De Bruyne	Manchester City	CAM

Result 4 x

Output:

Action Output

#	Time	Action	Message
3	12:51:26	SELECT /* Right Join - Players entries matched by ID */ p2.ID, p2.Player AS Player_Name, p1.Club, p...	16 row(s) returned
4	12:51:45	SELECT /* Union - Full Outer Join */ p1.ID, p1.Player AS Player1, p2.Player AS Player2, p1.Club, p2.Best_Positi...	23 row(s) returned

- Combines LEFT JOIN and RIGHT JOIN with UNION to include all rows from both tables and identify mismatches.
- Similar to FULL OUTER JOIN functionality using a combination of joins.

- Generates all possible player combinations between Players\_1 and Players\_2 without any filtering.
- Uses CROSS JOIN to produce a cartesian product of the two tables.

Screenshot of a MySQL Workbench interface showing a query editor and results grid.

```

fifa_Kanimozhi x
109     FROM Players_1 p1
110     RIGHT JOIN Players_2 p2 ON p1.ID = p2.ID;
111
112
113 •   SELECT          /* Cross Join */
114     p1.Player AS Player1, p2.Player AS Player2
115     FROM Players_1 p1
116     CROSS JOIN Players_2 p2;
117
118
119 •   SELECT          /* Self-Join - Inner join */
120     p1.Player AS Player1,
...

```

**Result Grid:**

Player1	Player2
E. Hazard	Cristiano Ronaldo
M. Özil	Cristiano Ronaldo
H. Lloris	Cristiano Ronaldo
Thiago Silva	Cristiano Ronaldo
S. Agüero	Cristiano Ronaldo
Z. Ibrahimović	Cristiano Ronaldo
N. Kanté	Z. Ibrahimović
M. Verratti	Z. Ibrahimović
P. Pogba	Z. Ibrahimović
De Gea	Z. Ibrahimović
K. De Bruyne	Z. Ibrahimović

**Result 5 x**

**Action Output:**

#	Time	Action	Message
4	12:51:45	SELECT /* Union - Full Outer Join */ p1.ID, p1.Player AS Player1, p2.Player AS Player2, p1.Club, p2.Best_Positi...	23 row(s) returned
5	12:52:11	SELECT /* Cross Join */ p1.Player AS Player1, p2.Player AS Player2 FROM Players_1 p1 CROSS JOIN Players_...	240 row(s) returned

Code Editor:

```

124
125 • SELECT          /* players with an Overall score above 85 and a Best_Position_Score above 80 */
126     p1.Player,
127     p1.Overall,
128     p2.Best_Position_Name,
129     p2.Best_Position_Score
130 FROM Players_1 p1
131 INNER JOIN Players_2 p2 ON p1.ID = p2.ID
132 WHERE p1.Overall > 85 AND p2.Best_Position_Score > 80
133 ORDER BY p1.Overall DESC;
134
135 • SELECT          /* Players who are present in both tables with multiple preferred positions */
...

```

Result Grid:

Player	Overall	Best_Position_Name	Best_Position_Score
Neymar	92	LW	89
E. Hazard	90	LW	88
De Gea	90	GK	86
T. Courtois	89	GK	86
K. De Bruyne	89	CAM	86
Z. Ibrahimović	88	ST	84
Thiago Silva	88	CB	85
N. Kanté	87	CDM	84

Output:

#	Time	Action	Message
6	12:52:41	SELECT /* Self-Join - Inner join */ p1.Player AS Player1, p1.Continent FROM Players_1 p1 INNER JOIN Play...	240 row(s) returned
7	12:52:55	SELECT /* players with an Overall score above 85 and a Best_Position_Score above 80 */ p1.Player, p1.Ove...	8 row(s) returned

- ❖ Finds players with an overall score above 85 and preferred position score above 80, sorted by overall score.
- ❖ Combined filtering with WHERE and sorting using ORDER BY clauses.

fifa\_Kanimozhi.x

```

133     ORDER BY p1.Overall DESC;
134
135 •   SELECT                                     /* Players who are present in both tables with multiple
136     p2.Player,
137     p1.Club,
138     p1.Overall,
139     p2.No_of_Preferred_Positions,
140     p2.Best_Position_Name
141   FROM Players_2 p2
142   INNER JOIN Players_1 p1 ON p2.ID = p1.ID
143   WHERE p2.No_of_Preferred_Positions > 1
144   ORDER BY p2.No_of_Preferred_Positions DESC;
...

```

Result Grid | Filter Rows:  Export: Wrap Cell Content:

Player	Club	Overall	No_of_Preferred_Positions	Best_Position_Name
K. De Bruyne	Manchester City	89	3	CAM
N. Kanté	Chelsea	87	2	CDM

Result 8 x

Output

Action Output

#	Time	Action	Message
7	12:52:55	SELECT /* players with an Overall score above 85 and a Best_Position_Score above 80 */ p1.Player, p1.Ove...	8 row(s) returned
8	12:53:12	SELECT /* Players who are present in both tables with multiple preferred positions */ p2.Player, p1.Club, p1...	2 row(s) returned

- ❖ Results players with more than one preferred position, sorted by the number of positions.
- ❖ Filtering and sorting with WHERE and ORDER BY clauses.

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148

```

149 •   SELECT p1.Continent, p1.Player, p1.Overall
150   FROM Players_1 p1
151   WHERE (
152     SELECT COUNT(*)
153     FROM Players_1 p2
154     WHERE p2.Overall > p1.Overall
155   ) < 3
156   ORDER BY p1.Continent, p1.Overall DESC;
157
158
159 •   SELECT /* Players with Technical_Average and Defensive_Average scores
... 
```

Result Grid | Filter Rows: Export: Wrap Cell Content: □

Continent	Player	Overall
Europe	E. Hazard	90
Europe	De Gea	90
South America	Neymar	92

Players\_19 ×

Output :

Action Output

#	Time	Action	Message
8	12:53:12	SELECT /* Players who are present in both tables with multiple preferred positions */ p2.Player, p1.Club, p1...	2 row(s) returned
9	12:53:28	SELECT p1.Continent, p1.Player, p1.Overall FROM Players_1 p1 WHERE ( SELECT COUNT(*) FROM Player...	3 row(s) returned

- ❖ Finds the top 3 players by overall rating within each continent by counting players with a higher rating.
- ❖ Combines a WHERE clause with a sub-query and ORDER BY for sorting results.

- Retrieves players whose Technical\_Average and Defensive\_Average exceed 60, ordered by their combined scores in descending order.
- Filtering with WHERE and custom sorting using an expression in ORDER BY.

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```

157
158
159 •   SELECT          /* Players with Technical_Average and Defensive_Average scores above 70 */
160     p2.Player,
161     p2.Technical_Average,
162     p2.Defensive_Average
163 FROM Players_2 p2
164 WHERE p2.Technical_Average > 60 AND p2.Defensive_Average > 60
165 ORDER BY (p2.Technical_Average + p2.Defensive_Average) DESC;
166
167
168 •   SELECT
---
```

Result Grid | Filter Rows: Export: Wrap Cell Content: □

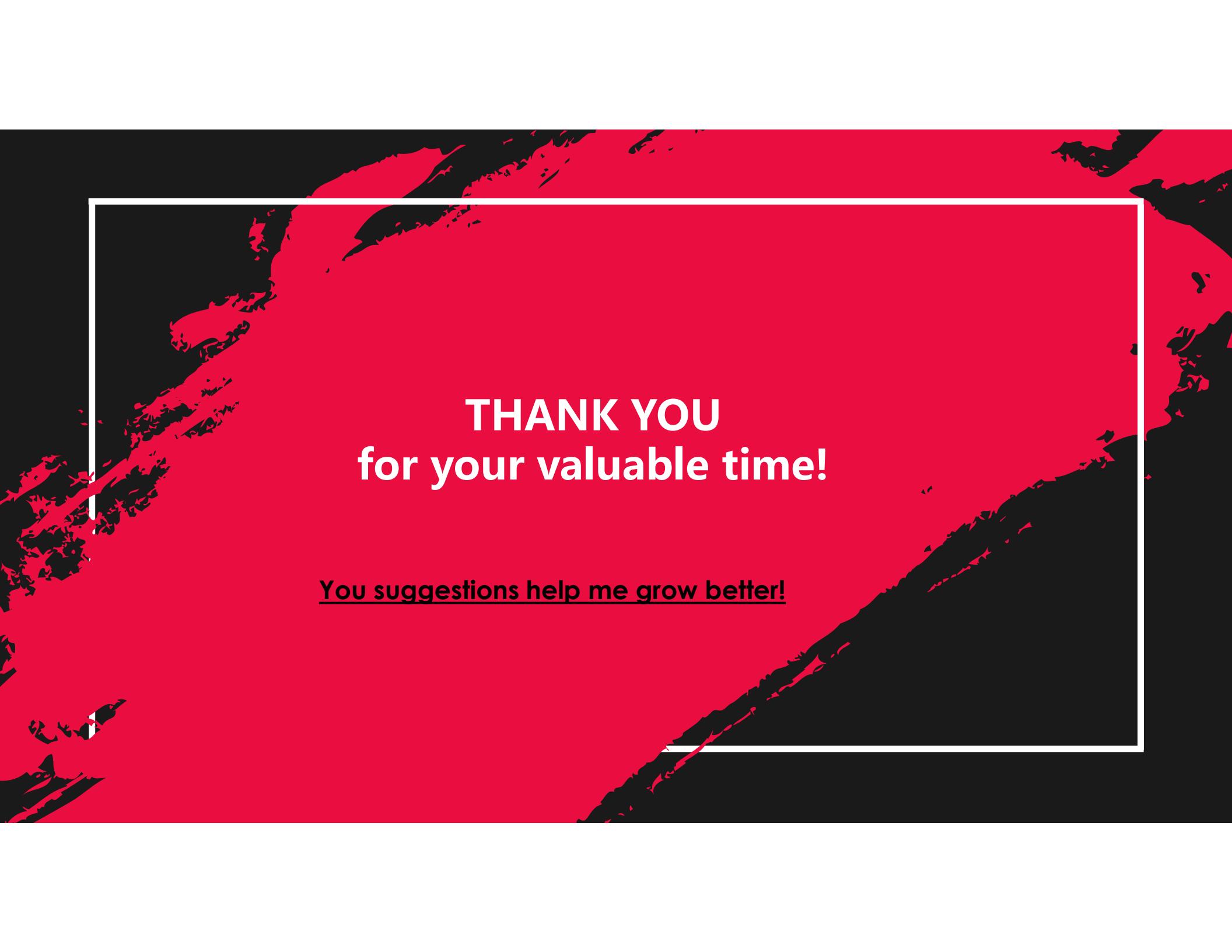
Player	Technical_Average	Defensive_Average
Sergio Ramos	69	89
Thiago Silva	68	88
L. Bonucci	65	88
L. Modrić	81	70
G. Bale	85	61
N. Kanté	66	79

Players\_2 10 ×

Output

Action Output

#	Time	Action	Message
9	12:53:28	SELECT p1.Continent, p1.Player, p1.Overall FROM Players_1 p1 WHERE ( SELECT COUNT(*) FROM Player...	3 row(s) returned
10	12:53:43	SELECT /* Players with Technical_Average and Defensive_Average scores above 70 */ p2.Player, p2.Techn...	6 row(s) returned



**THANK YOU  
for your valuable time!**

You suggestions help me grow better!