



CHELSEA TRANSFER ANALYSIS

TEAM: BORA'S EXPLORAS



STEPS FOLLOWED:



Introduction

Clean and Process Data

Explore the Data

Transfer Strategy

Data Visualisation

Finalise Team & Budget

Conclusion

CHELSEA '24

40.9%

WINNING PERCENT

10TH

RANK IN LEAGUE

\$1BN+

MONEY SPENT

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PRE-PROCESSING

- Fetch data from understat API for different leagues
- Combine relevant data
- Fix header formats and issues
- Remove columns and attributes of no use
- Ensure no missing values
- Calculated field from other data tables and included in main dataset

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EXPLORE THE DATA

→ Figured out variables we would need for statistics

→ df.info()

→ df.describe()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 2946 entries, 0 to 2945
Data columns (total 18 columns):
#   Column              Non-Null Count  Dtype  
---  -
0   id                   2946 non-null   int64  
1   player_name         2946 non-null   object  
2   games               2946 non-null   int64  
3   time                2946 non-null   int64  
4   goals               2946 non-null   int64  
5   xG                  2946 non-null   float64 
6   assists             2946 non-null   int64  
7   xA                  2946 non-null   float64 
8   shots               2946 non-null   int64  
9   key_passes          2946 non-null   int64  
10  yellow_cards         2946 non-null   int64  
11  red_cards            2946 non-null   int64  
12  position             2946 non-null   object  
13  team_title           2946 non-null   object  
14  npg                  2946 non-null   int64  
15  npxG                 2946 non-null   float64 
16  xGChain              2946 non-null   float64 
17  xGBuildup            2946 non-null   float64
```

```
count    id      games      time      goals      xG
mean    7453.357434  12.124576  778.911745  1.069246  1.188806
std     3726.036579   6.558999  585.076435  2.037332  1.939957
min       3.000000   1.000000   0.000000  0.000000  0.000000
25%     5058.750000   6.000000  214.250000  0.000000  0.061358
50%     8080.500000  13.000000  747.000000  0.000000  0.443733
75%    10769.500000  18.000000 1269.000000  1.000000  1.445090
max    12413.000000  23.000000 2070.000000  24.000000 18.847552

count    assists      xA      shots    key_passes    yellow_cards
mean     0.753564    0.830263  10.114732   7.495927   1.657162
std     1.320221    1.178907  12.190358   9.332392   1.781411
min      0.000000    0.000000   0.000000   0.000000   0.000000
25%      0.000000    0.039070   1.000000   1.000000   0.000000
50%      0.000000    0.379686   6.000000   4.000000   1.000000
75%      1.000000    1.130833  14.000000  11.000000   3.000000
max     11.000000   10.750426  94.000000  66.000000  13.000000

count    red_cards      npg      npxG      xGChain      xGBuildup
mean     0.078072    0.963001  1.086612   3.357657   2.051938
std     0.287866    1.805760  1.723559   3.505017   2.307226
min      0.000000    0.000000   0.000000   0.000000   0.000000
25%      0.000000    0.000000   0.060115   0.705534   0.372605
50%      0.000000    0.000000   0.433047   2.366352   1.380206
75%      0.000000    1.000000   1.352715   4.786649   2.887566
max       2.000000   21.000000  16.574221  25.598131  17.123714
```

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TRANSFER STRATEGY

- 1) Chelsea vs Table Toppers Comparison
- 2) Chelsea – Past vs Present Comparison

Identify Chelsea's Weakness

- 3) Comparison of Chelsea's Players vs Other team's players
- 4) Comparison of Chelsea's Players within themselves

Decide Players to SELL

- 3) Optimise best players wrt budget

Decide Players to BUY



A player card for Nicolas Jackson, a Chelsea forward. The card features a blue background with a stylized lightning bolt and geometric shapes. Jackson is wearing a blue Chelsea jersey with the number 3. The card is framed by a blue border with a lightning bolt design. At the top, there are two small icons: a soccer ball and a star.

NICOLAS JACKSON

G	XG	Shots
7	11.2	45

SOLD



A player card for Enzo Fernández, a Chelsea midfielder. The card features a blue background with a stylized lightning bolt and geometric shapes. Fernández is wearing a blue Chelsea jersey with the number 10. The card is framed by a blue border with a lightning bolt design. At the top, there are two small icons: a soccer ball and a star.

ENZO FERNÁNDEZ

A	XA	Key Passes
2	2.1	17



A player card for Moisés Caicedo, a Brighton midfielder. The card features a blue background with a stylized lightning bolt and geometric shapes. Caicedo is wearing a blue Brighton jersey with the number 10. The card is framed by a blue border with a lightning bolt design. At the top, there are two small icons: a soccer ball and a star.

MOISÉS CAICEDO

A	XA	Key Passes
0	0.8	10

INJURED

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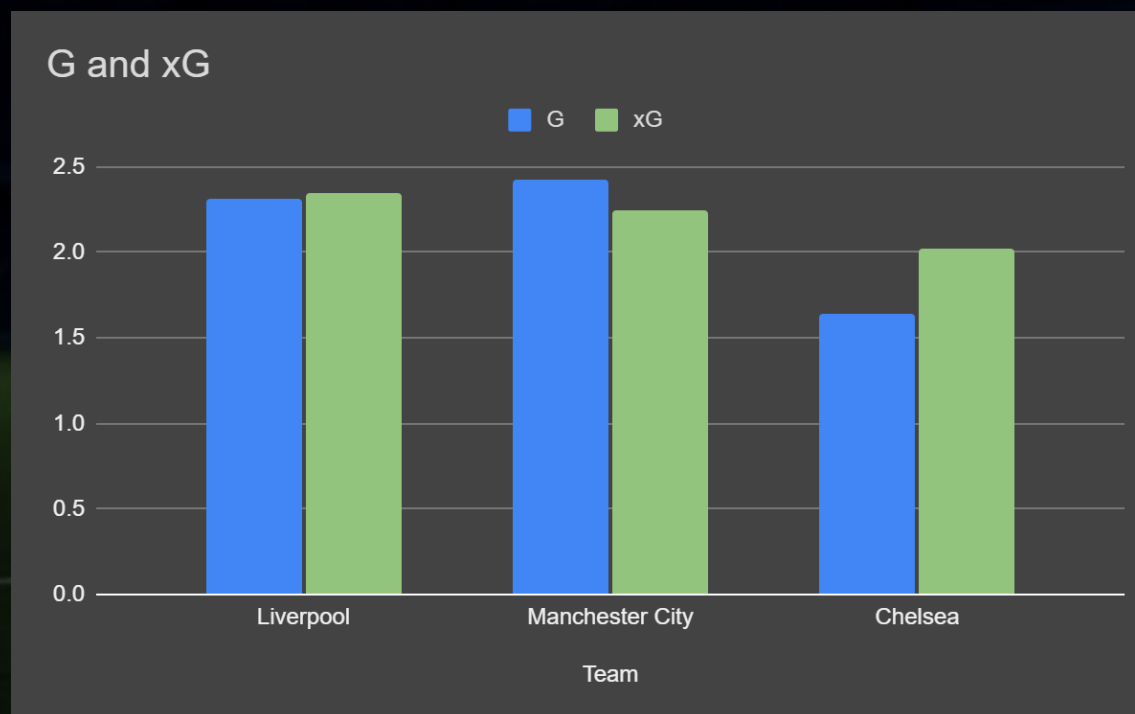
Transfer Strategy

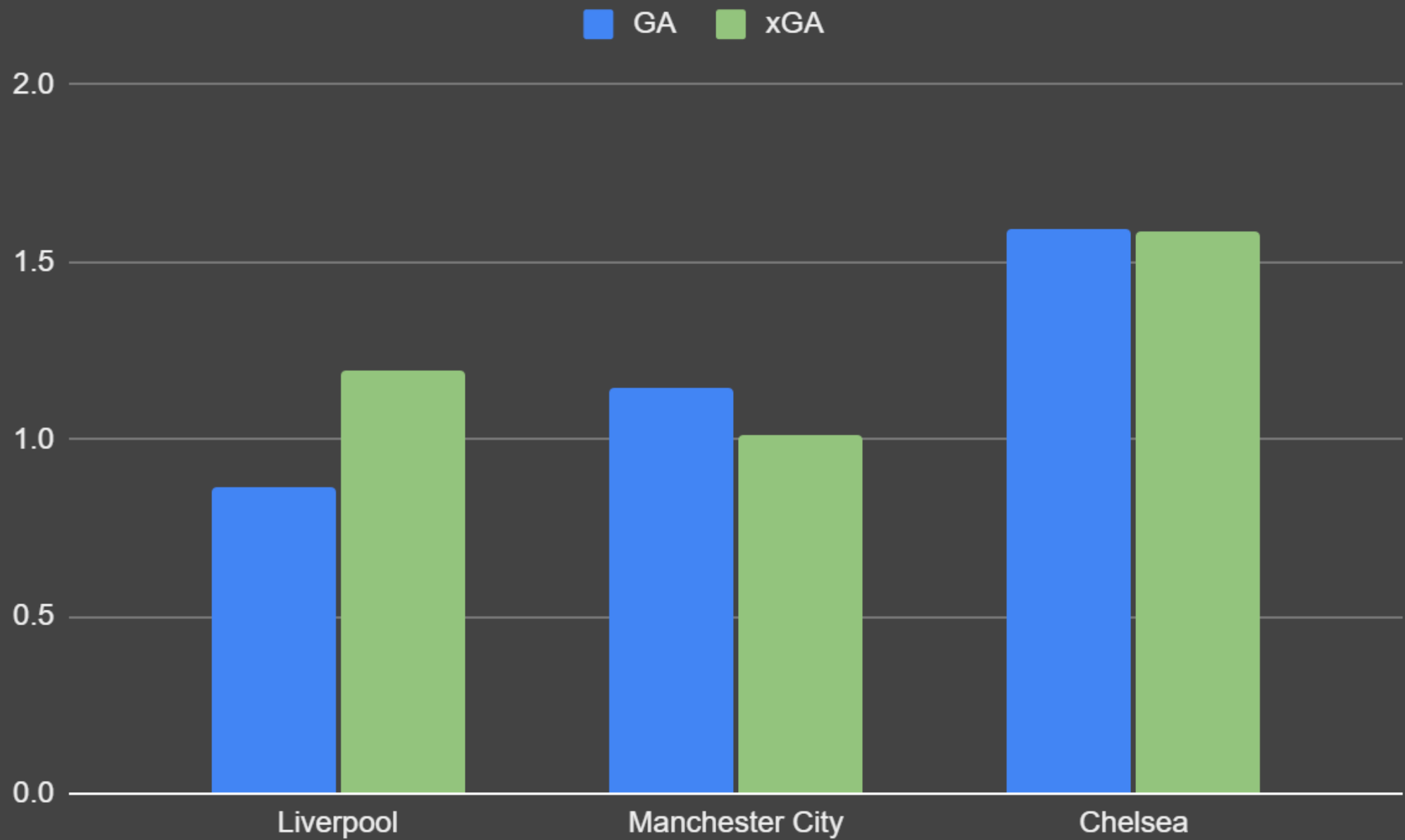
Data Visualisation

Finalise Team & Budget

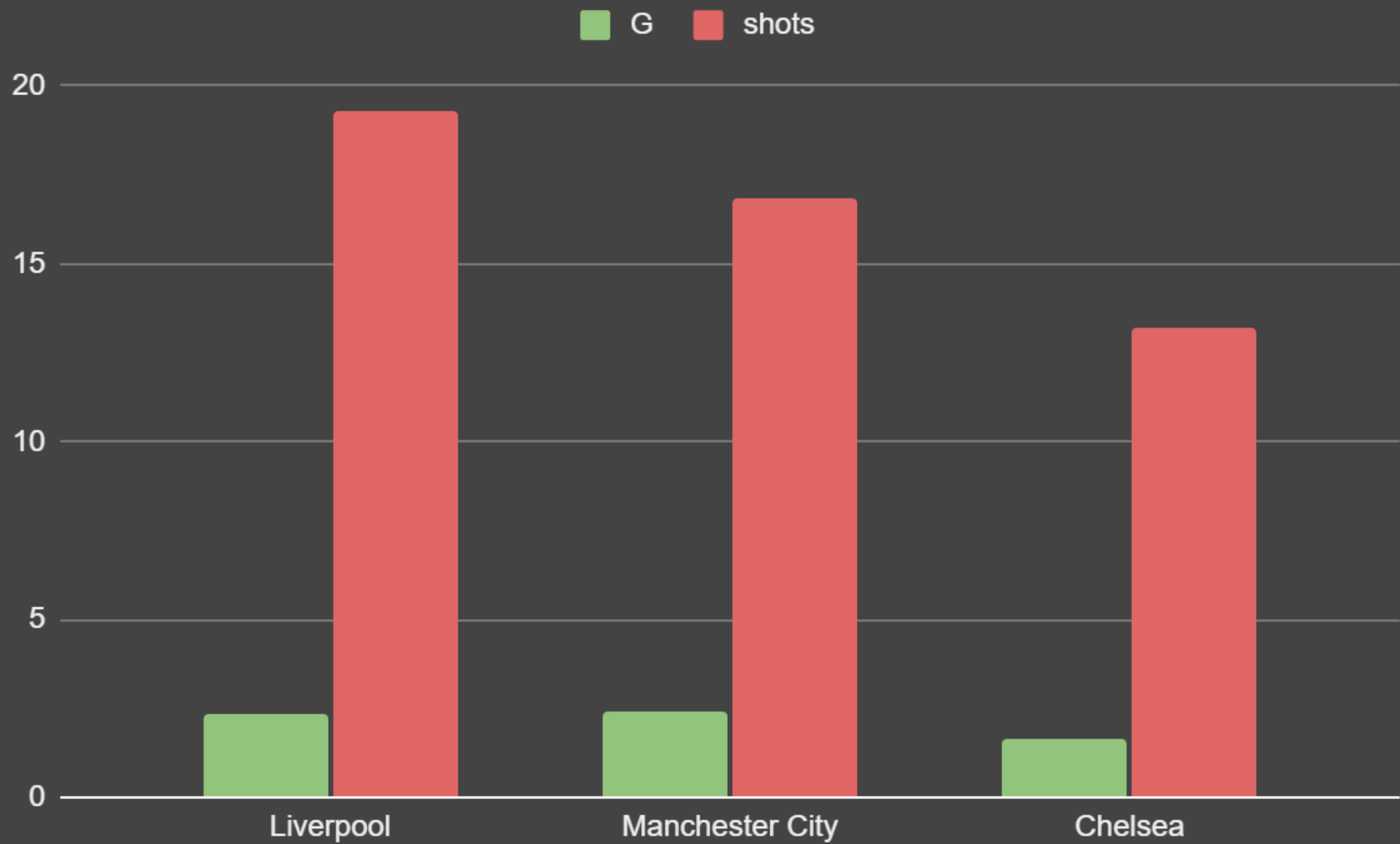
Conclusion

DATA VISUALISATION

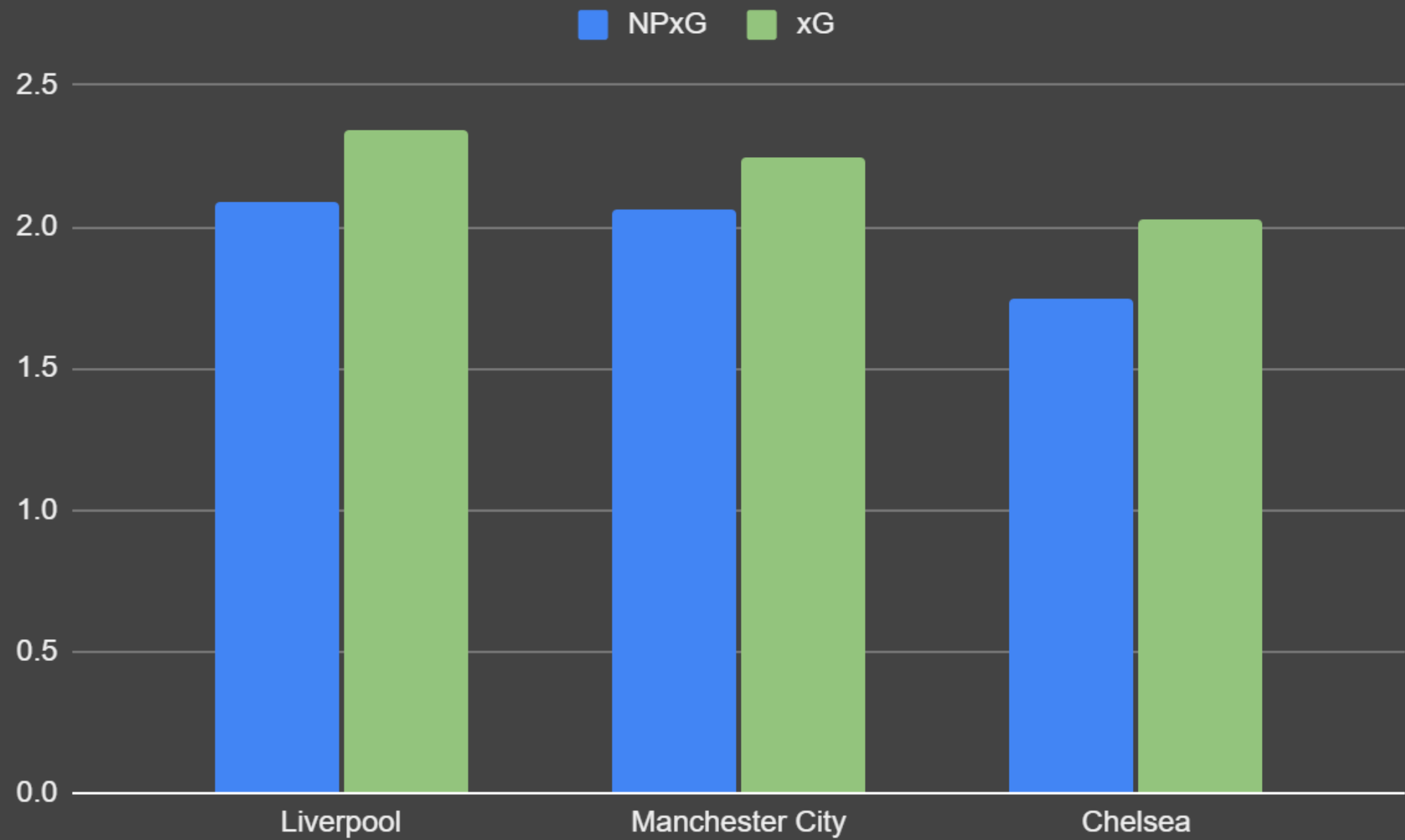










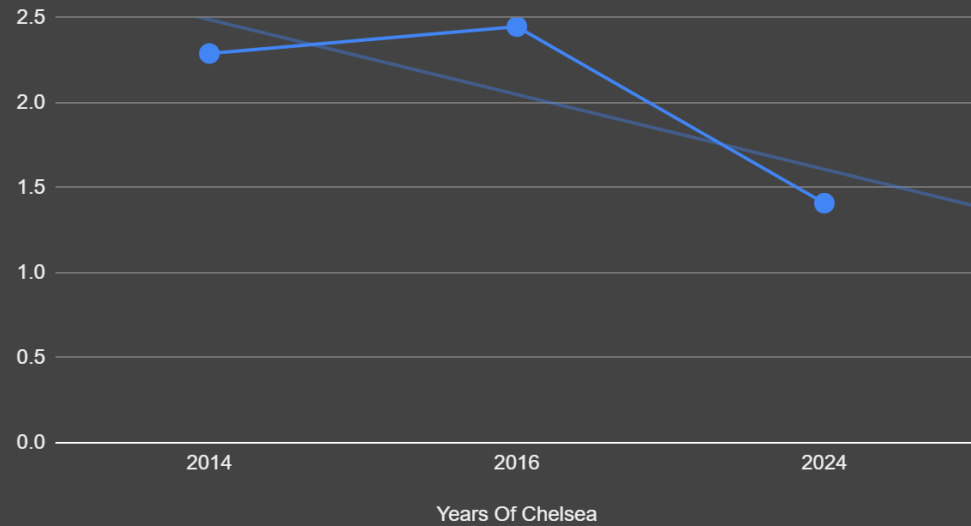




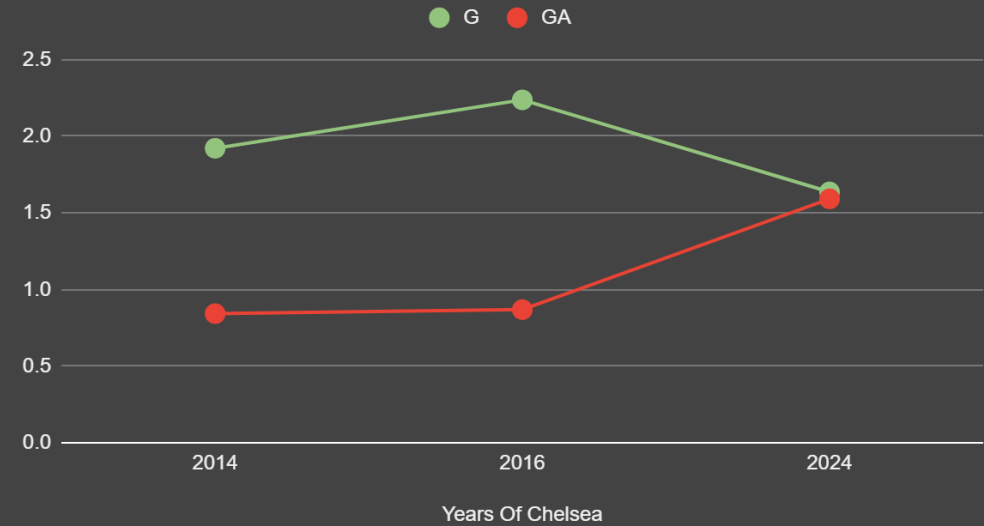
- An attacker outperforming their XG is needed.
- GA and xGA extremely high in comparison. Defense upgrade massively needed. A major shot stopper or blocker, a GK or a DEF.
- Lesser Shots taken by the team. Creative mid with more key passes required.
- $NPxG < xG$. This means penalties are getting converted and a penalty specialist is not a necessity



Years against PTS

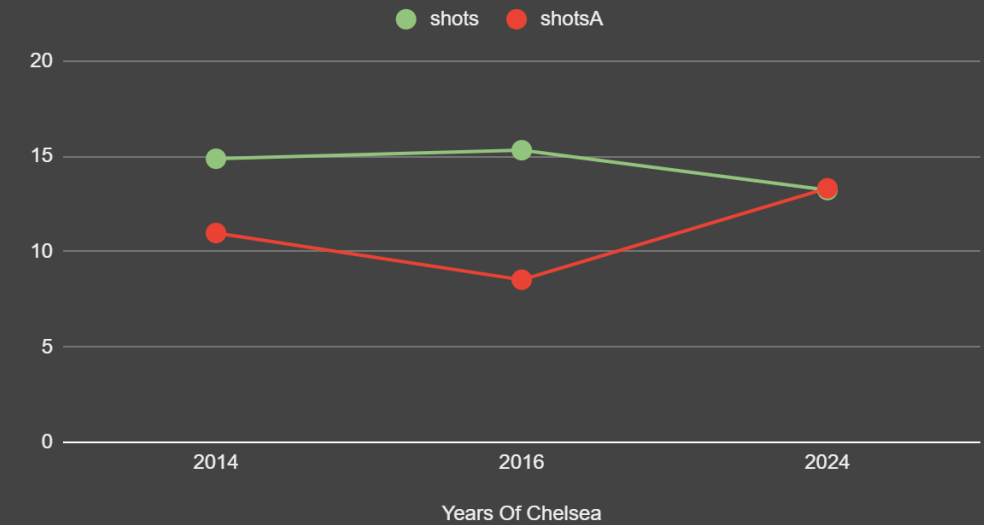


Years against G and GA



- ➔ Massive dip in points. Strategy and squad needs to be revamped
- ➔ Graphs also prove the inferred points previously.

Years against Shots and ShotsA



	B	C	D	E	F	G	H
1	player_name	games	time	goals	xG	assists	xA
2	Thiago Silva	21	1829	1	0.2096096575	0	0.7779160039
3	Conor Gallagher	21	1758	0	1.670500018	4	3.112052305
4	Axel Disasi	20	1780	1	0.9299943522	0	0.1573617086
5	Levi Colwill	20	1616	1	0.7760256305	1	1.237992246
6	Raheem Sterling	20	1613	5	5.865220726	3	3.692453085
7	Moisés Caicedo	19	1526	0	0.1482277075	0	0.8831624333
8	Enzo Fernández	19	1466	2	4.832361309	0	2.14346958
9	Nicolas Jackson	19	1458	7	11.18073603	2	2.957573416
10	Mykhailo Mudryk	18	826	3	2.585933138	1	1.404977664
11	Cole Palmer	18	1320	9	7.731454914	4	5.087213239
12	Robert Sánchez	16	1438	0	0	0	0
13	Malo Gusto	15	921	0	0.6059665196	3	1.985742092
14	Armando Broja	13	448	1	2.489345549	0	0.1379258521
15	Ian Maatsen	12	169	0	0.6834889837	0	0.05732445326
16	Noni Madueke	11	286	2	1.264032314	0	0.3727686107
17	Chimuanya Ugo	10	266	0	0	0	0.05015848577
18	Marc Cucurella	9	708	0	0.9692549165	0	0.2287536319
19	Ben Chilwell	8	411	0	0.959005028	1	1.341160949
20	Reece James	8	404	0	0.3389957156	1	2.19567249
21	Benoit Badiashile	7	549	0	0.3124654777	1	0.5357111124
22	Djordje Petrovic	7	542	0	0	0	0
23	Christopher Nk	4	167	2	0.9201845936	0	0.07201976329

THROUGH COLAB

```
filtered_df = df[df['goals'] > df['xG']]
top_5_players = filtered_df.sort_values(by='goals', ascending=False).head(5)
```

```
print("top5 strikers as replacement for Jackson:\n",top_5_players)
```

```
loop = asyncio.get_event_loop()
loop.run_until_complete(main())
```

```
➞ top5 strikers as replacement for Jackson:
```

	id	player name	games	time	goals	xG	assists	\
1405	647	Harry Kane	20	1780	24	18.847552	5	
400	3423	Kylian Mbappe-Lottin	19	1596	20	17.824278	4	
1864	7006	Lautaro Martinez	19	1611	19	13.635117	2	
1406	3738	Serhou Guirassy	14	1056	17	12.764916	1	
0	9988	Mateo Cassierra	16	1316	14	8.516328	1	

	xA	shots	key_passes	yellow_cards	red_cards	position	\
1405	5.078877	85	21	2	0	F	
400	3.949947	94	27	3	0	F M S	
1864	1.521982	65	16	2	0	F S	
1406	3.850828	47	24	0	0	F S	
0	1.276945	35	11	2	0	F M S	

	team_title	npg	npxG	xGChain	xGBuildup
1405	Bayern Munich	21	16.574221	23.444284	6.288854
400	Paris Saint Germain	15	12.503612	22.080693	7.934952
1864	Inter	17	12.112519	18.748646	7.593619
1406	VfB Stuttgart	14	10.491586	16.754187	4.090644
0	Zenit St. Petersburg	14	8.516328	11.992199	2.883037

```
filtered_df2 = df[df['position']=='M S']
```

```
# Sorting the filtered DataFrame by 'key_passes' column in descending order and selecting 1
top_5_players = filtered_df2.sort_values(by='key_passes', ascending=False).head(5)
print("Most key passes Midfielder:\n", top_5_players)
```

```
loop = asyncio.get_event_loop()
loop.run_until_complete(main())
```

```
➞ Most key passes Midfielder:
```

	id	player_name	games	time	goals	xG	assists	xA	\
2433	314	Ilkay Gündogan	22	1849	4	4.988644	4	6.249550	
1035	922	Andreas Pereira	23	1658	1	1.993093	5	4.626337	
2477	2094	Ivan Rakitic	18	1438	2	1.080336	1	3.312995	
1432	8397	Florian Wirtz	20	1577	5	4.982234	8	6.899908	
2531	2369	Toni Kroos	21	1386	1	1.199653	7	4.584406	

	shots	key_passes	yellow_cards	red_cards	position	team_title	\
2433	29	60	2	0	M S	Barcelona	
1035	28	49	5	0	M S	Fulham	
2477	32	49	6	0	M S	Sevilla	
1432	43	48	2	0	M S	Bayer Leverkusen	
2531	26	43	2	0	M S	Real Madrid	

	npg	npxG	xGChain	xGBuildup
2433	3	4.245366	21.189583	14.299041
1035	1	1.993093	8.797632	5.037407
2477	2	1.080336	4.866999	3.656939

Defense

id	player_name	games	time	goals	xG	assists	xA	shots	key_passes
10891	Carlos Augusto	21	777	0	0.6726682186126709	1	1.9542889073491096	14	10
557	Matteo Darmian	20	1543	0	0.36853274889290333	0	0.7621378395706415	4	14
1463	Francesco Acerbi	18	1481	1	0.8611980956047773	1	1.5077504962682724	11	5
9655	Pablo Rosario	17	1006	0	0.5473238825798035	0	0.7476404532790184	9	8
5613	Gabriel	20	1634	2	1.903535034507513	0	0.8747859355062246	15	3
64	Filip Kostic	20	1353	0	0.4250156534835696	4	5.691956587135792	12	34
6888	William Saliba	22	1980	1	1.6387791624292731	1	0.15471498668193817	6	4
987	Joseph Gomez	19	1071	0	0.5445053642615676	1	1.034731399267912	12	14
6960	Bremer	22	1975	2	1.9601727705448866	0	0.05695765279233456	9	2
148	Dante	19	1710	0	0.4793338105082512	1	0.6169781722128391	8	9

Mid Field

id	player_name	games	time	goals	xG	assists	xA	shots	key_passes
337	Leroy Sané	20	1757	8	9.621190639212728	11	10.750425968319178	61	63
11866	Álex Grimaldo	20	1796	7	3.0829383581876755	9	6.583418718539178	40	43
8397	Florian Wirtz	20	1577	5	4.982234204187989	8	6.8999078422784805	43	48
224	Thomas Müller	18	674	1	2.5389295406639576	7	6.67482359521091	14	33
6055	Phil Foden	21	1690	5	5.10170772485435	7	5.194825515151024	51	43
320	Jonas Hofmann	20	1580	5	3.7150106858462095	6	6.014208421111107	37	48
10846	Julián Álvarez	21	1800	8	8.56253857910633	5	4.240109716542065	58	47
3635	Bernardo Silva	17	1433	6	2.3876431211829185	4	4.979102602228522	19	33
8327	Bruno Guimarães	22	1961	1	2.5503133088350296	4	4.392050586640835	25	32
226	Kingsley Coman	15	1081	3	2.9748985283076763	3	3.4939965773373842	33	27

GK

id	player_name	games	time	goals	xG	assists	xA	shots	key_passes	yellow_cards	red_cards	position	team_title	npg	npxG
199	Yann Sommer	21	1890	0	0.0	0	0.0	0	0	1	0	GK	Inter	0	0.0
1244	Wojciech Szczesny	20	1800	0	0.0	0	0.07034061849117279	0	1	0	0	GK	Juventus	0	0.0
1257	Alisson	20	1800	0	0.0	0	0.0	0	0	1	0	GK	Liverpool	0	0.0
7772	Marcin Bulka	19	1710	0	0.0	0	0.0	0	0	1	0	GK	Nice	0	0.0
9676	David Raya	17	1530	0	0.0	0	0.0	0	0	0	0	GK	Arsenal	0	0.0
5603	Aaron Ramsdale	5	450	0	0.0	0	0.0	0	0	0	0	GK	Arsenal	0	0.0
1093	Mattia Perin	2	180	0	0.0	0	0.0	0	0	0	0	GK	Juventus	0	0.0
7904	Caoimhin Kelleher	2	180	0	0.0	0	0.0	0	0	0	0	GK	Liverpool	0	0.0

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Explore the Data

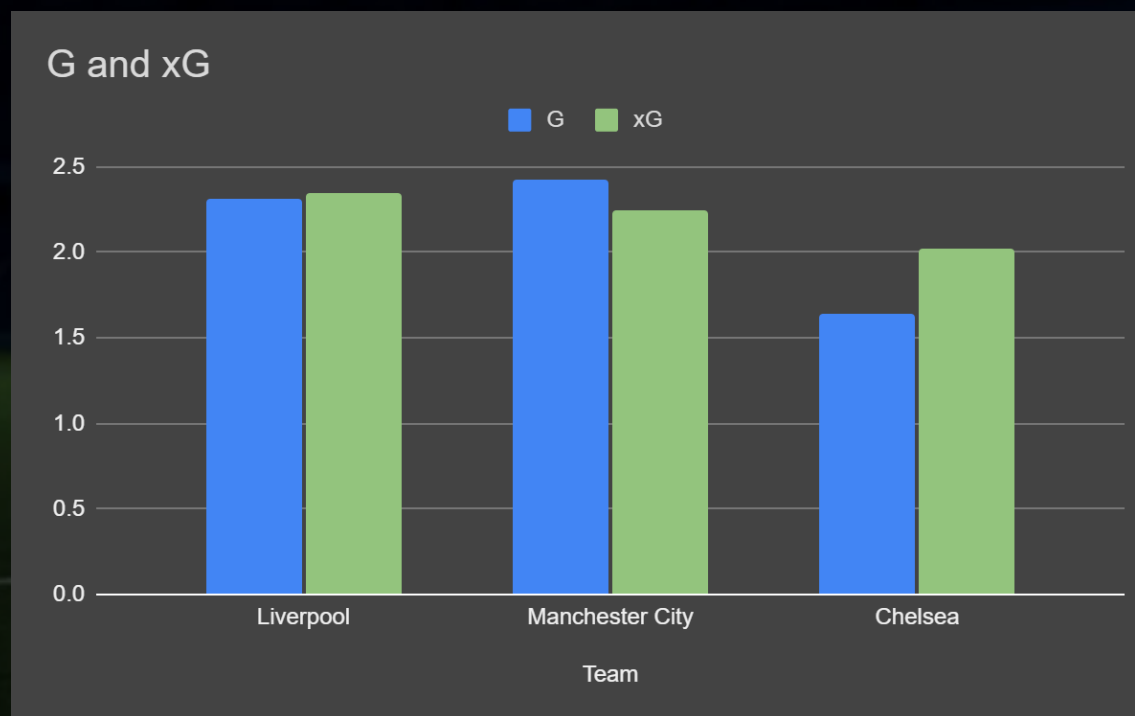
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FINAL TEAM

\$ 150 m

CURRENT BUDGET

A wide-angle shot of a soccer field at night. The field is illuminated by bright stadium lights, creating a strong contrast between the lit green grass and the dark, empty stands in the background. The perspective is from the center of the field, looking towards the goalposts. The text "RULES TO ADHERE TO" is superimposed in the center of the image.

**RULES TO
ADHERE TO**

2-WAY STRATEGY



**ATTACKING
CHANGES**

1D-2M-2A



**DEFENSIVE
CHANGES**

1A-2M-2D

ATTACKING CHANGES

1D-2M-2A

+\$ 25 m



A blue player card for Nicolas Jackson, a Chelsea player. The card features a blue background with a stylized lightning bolt and a soccer ball icon at the top. The player's name and stats are displayed at the bottom.

G	XG	Shots
7	11.2	45



An orange player card for Serhou Guirassy, a Leipzig player. The card features an orange background with a stylized lightning bolt and a soccer ball icon at the top. The player's name and stats are displayed at the bottom.

G	XG	Shots
17	12.8	47



-\$ 40 m

ATTACKING CHANGES

BOUGHT

SERHOU GUIRASSY

WILLIAM SALIBA

ÁLEX GRIMALDO

MATEO CASSIERRA

FLORIAN WIRTZ (★MIDFIELDER)

SOLD

NICOLAS JACKSON

BENOIT BADIASHILE MUKINAYI

MARC CUCURELLA

RAHEEM STERLING

DEFENSIVE CHANGES

1A-2M-2D

+\$ 25 m



A blue player card for Nicolas Jackson, a Chelsea player. The card features a blue background with a stylized lightning bolt and a soccer ball icon at the top. The player's name is at the bottom, followed by a table of statistics.

G	XG	Shots
7	11.2	45



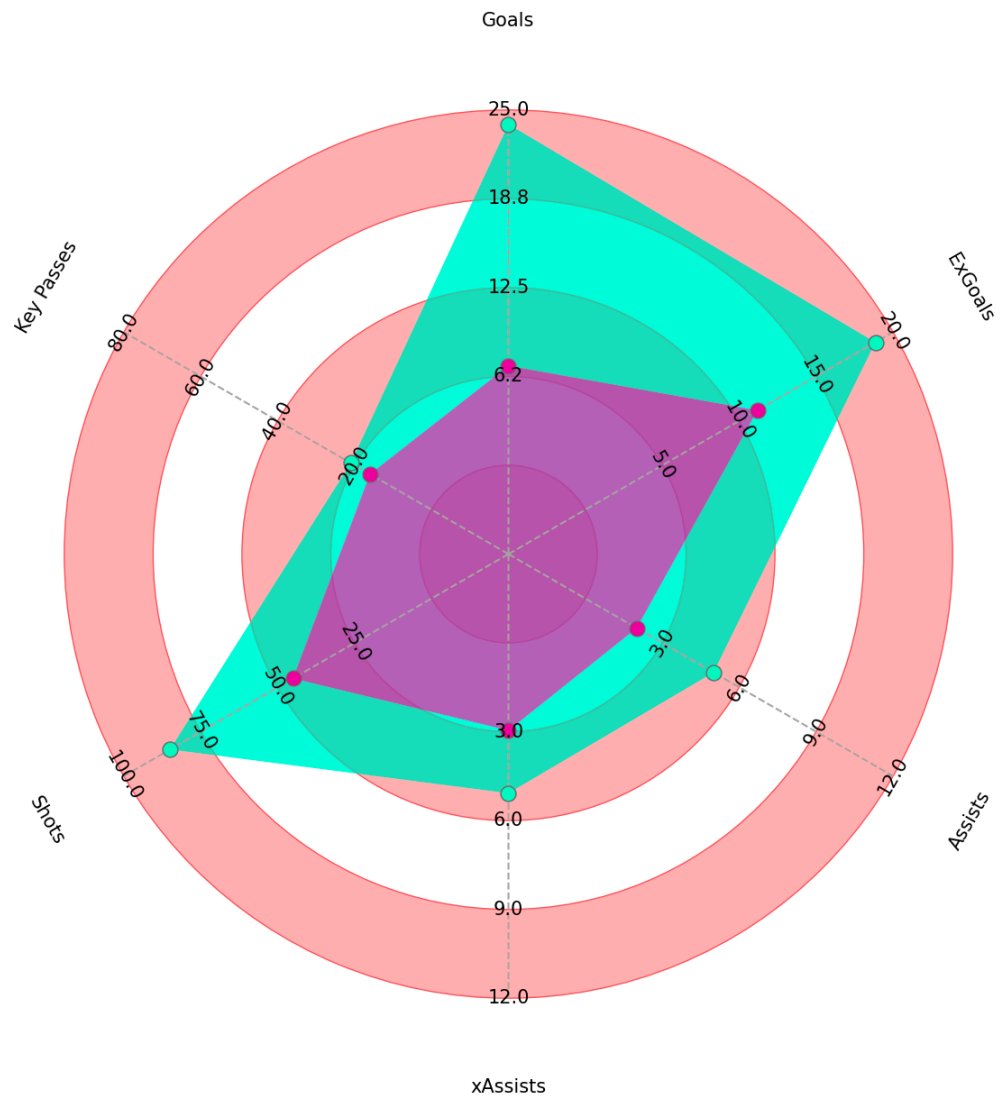
An orange player card for Harry Kane, an England player. The card features an orange background with a stylized lightning bolt and a soccer ball icon at the top. The player's name is at the bottom, followed by a table of statistics.

G	XG	Shots
23	18.0	79



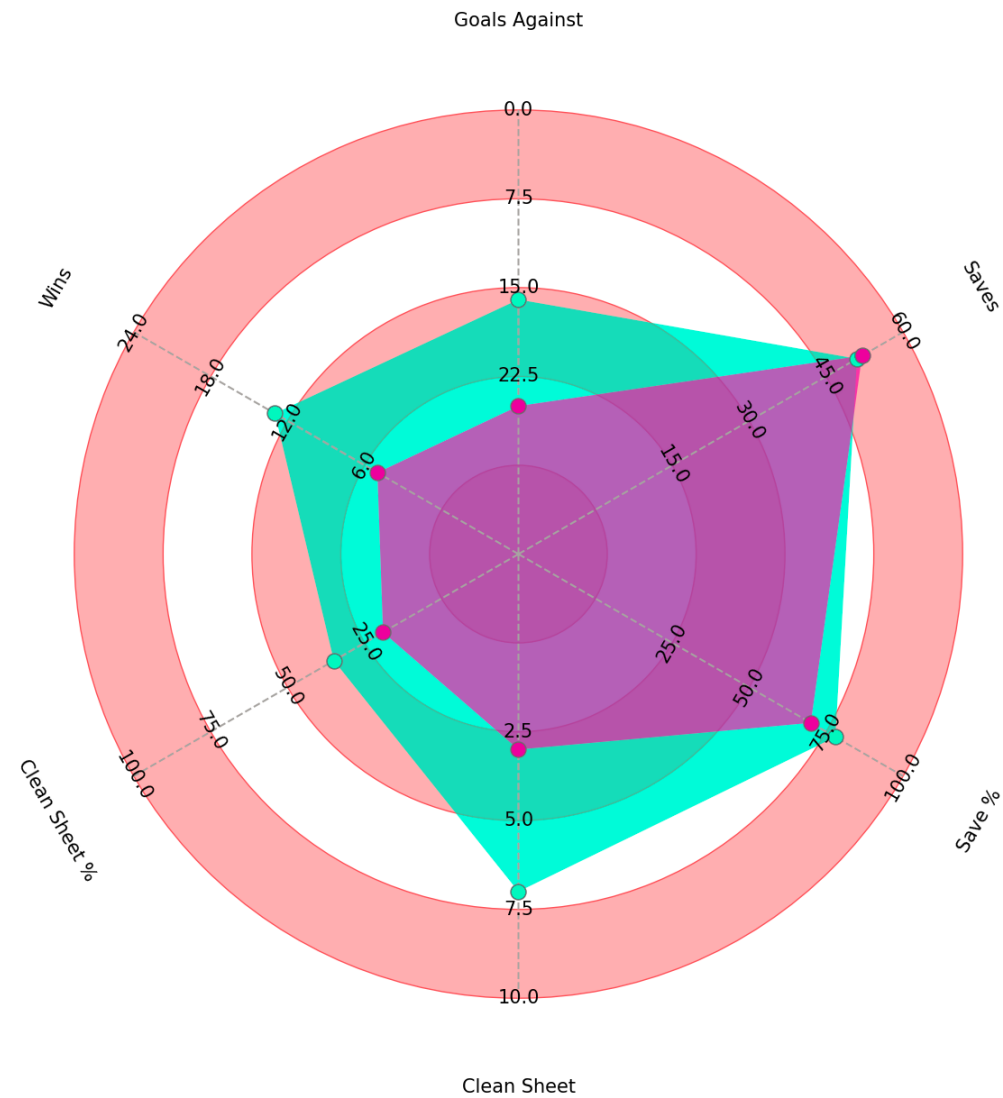
-\$ 110 m

Harry Kane
Bayern Munich



Nicolas Jackson
Chelsea

Alisson Becker
Liverpool



Robert Sanchez
Chelsea

DEFENSIVE CHANGES

BOUGHT

HARRY KANE

ALISSON BECKER

JOSEPH GOMEZ

PABLO ROSARIO

FLORIAN WIRTZ (★MIDFIELDER)

SOLD

NICOLAS JACKSON

ROBERT SÁNCHEZ

MARC CUCURELLA

RAHEEM STERLING

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FINAL TEAM

\$ 150 m

CURRENT BUDGET

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FINAL TEAM

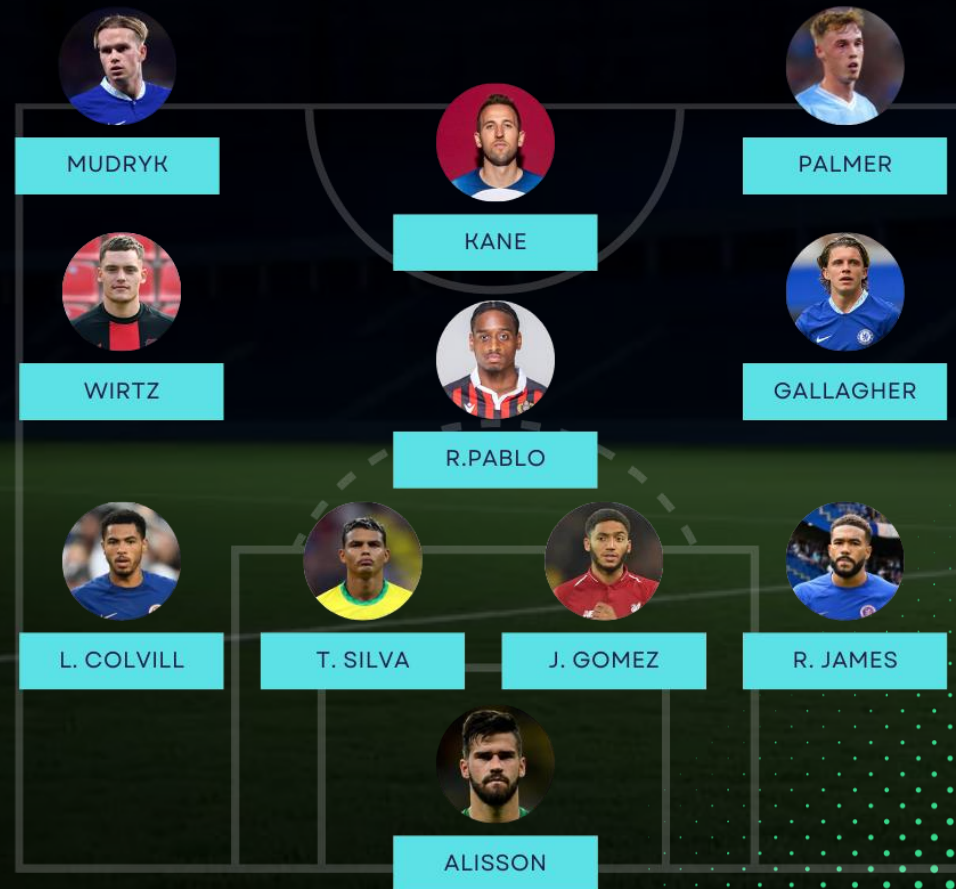
\$ 150 m

CURRENT BUDGET

ATTACKING



DEFENSIVE



BUDGET SHEET

Attacking Team						Defensive Team				
Transfer OUT	Transfer IN	OUT Value	IN Value	150 mil		Transfer OUT	Transfer IN	OUT Value	IN Value	150 mil
-	Wirtz	-	100 mil.	- 100 mil		-	Wirtz	-	100 mil	- 100 mil
Badiashile	Saliba	35 mil	75 mil	- 40 mil		Cucurella	Gomez	25 mil	22 mil	3 mil
Cucurella	Grimaldo	25 mil	35 mil	- 10 mil		Sterling	Rosario	45 mil	7 mil	38 mil
Jackson	Guirassy	25 mil	40 mil	- 15 mil		Sanchez	Alisson	30 mil	32 mil	-2 mil
Sterling	Cassiera	45 mil	9 mil	36 mil		Jackson	Kane	25 mil	110 mil	-85 mil
			Net Remains:	21 mil					Net Remains:	4 mil



THANKING YOU
TEAM: BORA'S EXPLORAS