



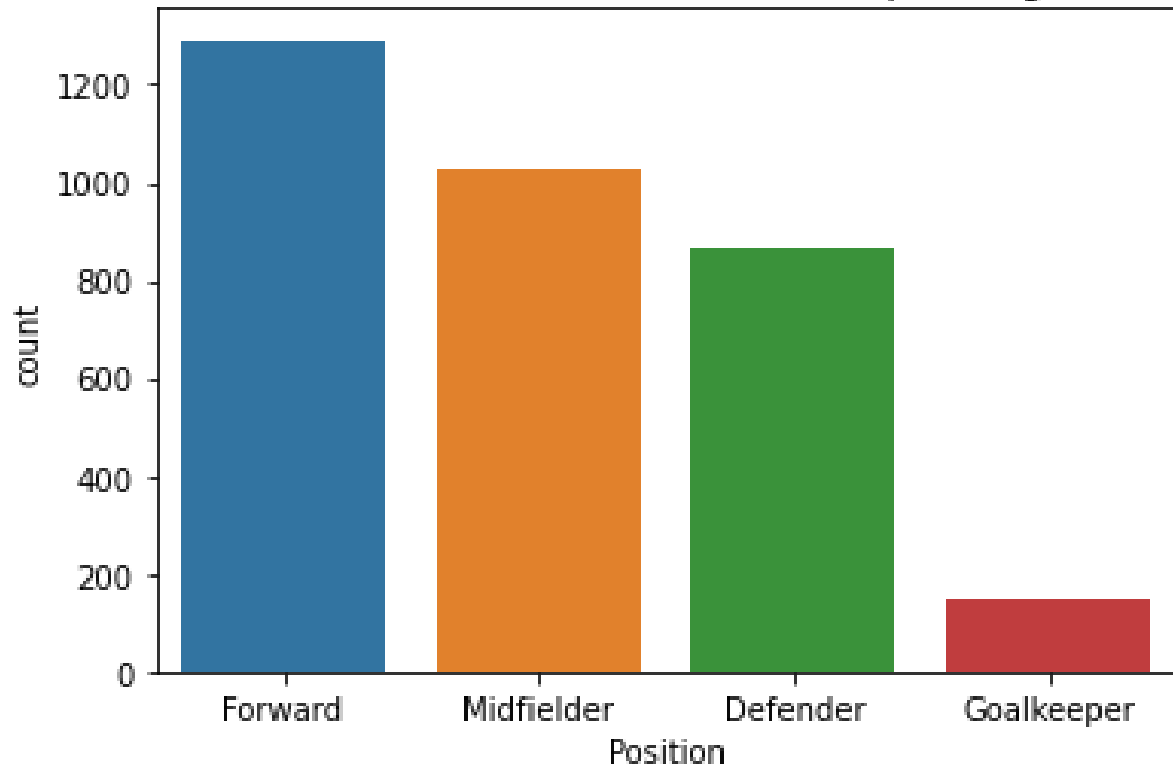
FOOTBALL TRANSFERS BETWEEN 2000-2018

Done by: Hamza Al Hajj Chehade

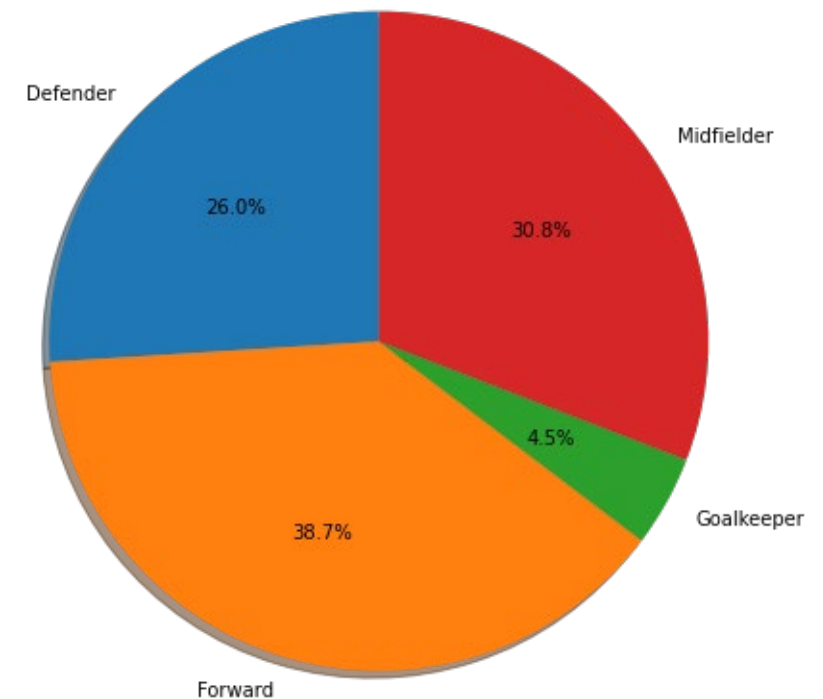
THE MOST PREFERRED POSITION IN THE TOP 5 LEAGUES

- ❑ **From the above two graphs (histogram and pie chart) we can notice that the Forward position is the most requested position compared to the other positions in the top 5 Leagues.**

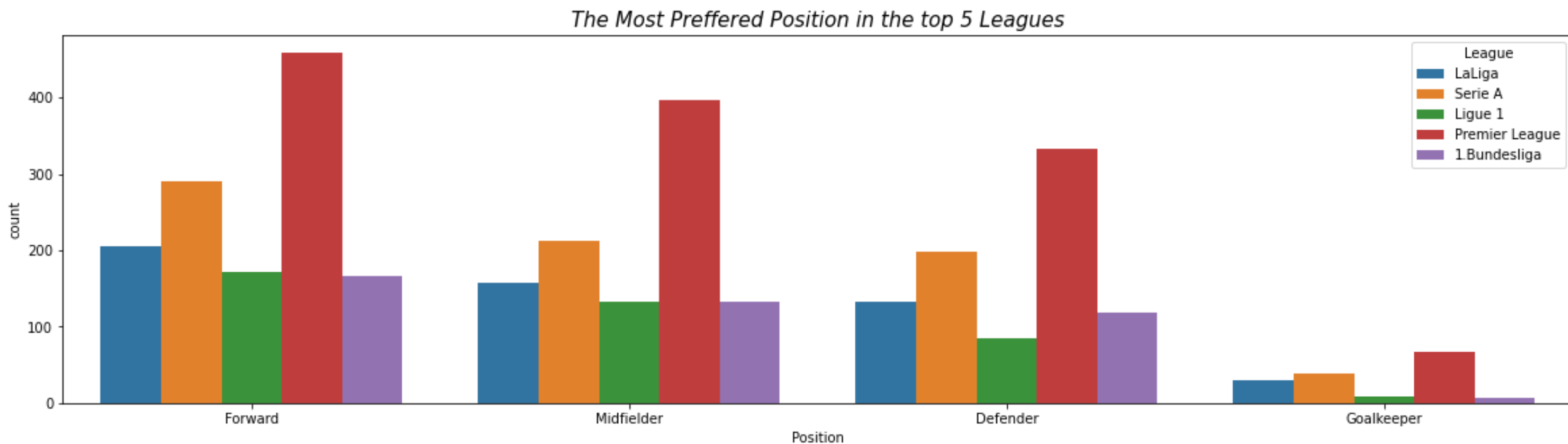
The Most Preferred Position in the top 5 Leagues



The Most Preferred Position in the top 5 Leagues



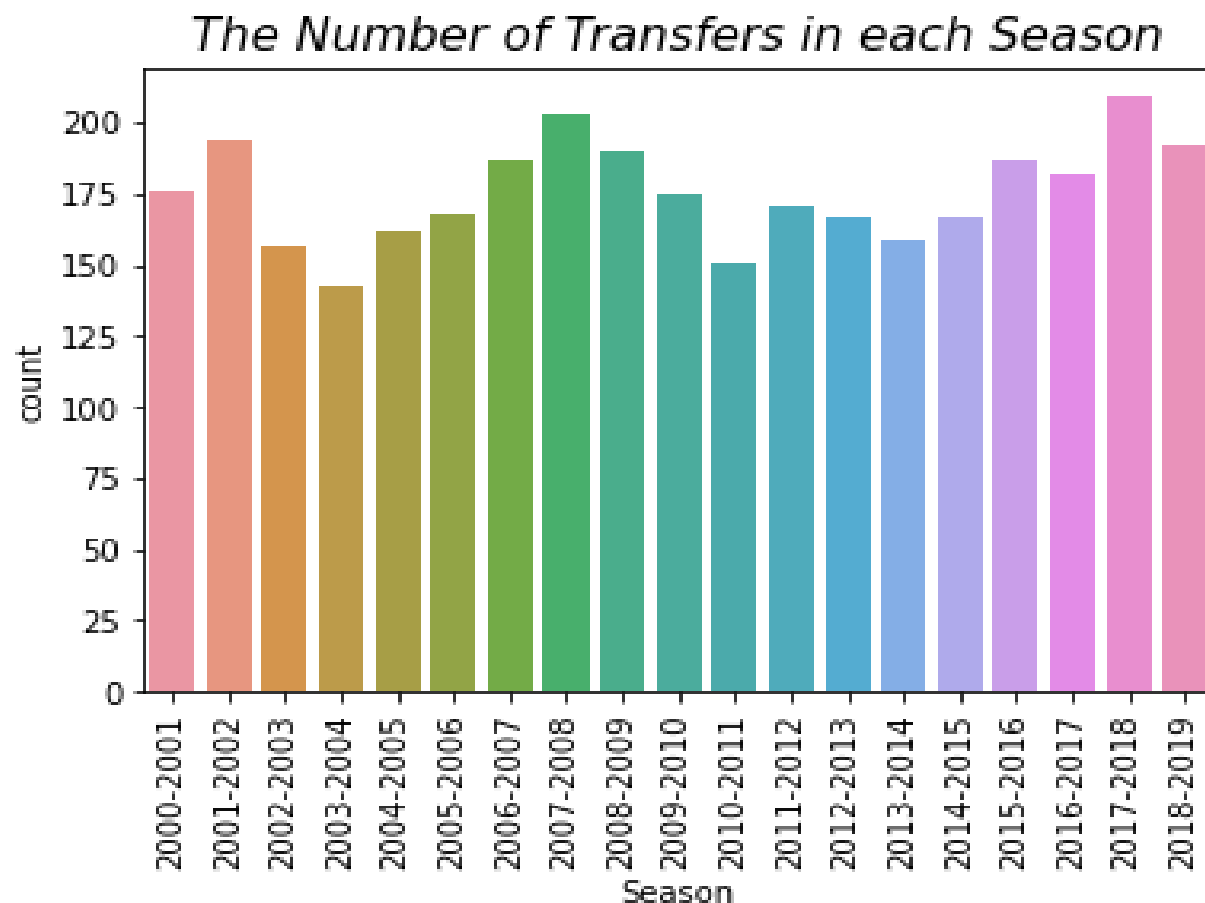
❑ **From this graph we can notice that the Premier League is most preferable league for all the players for different positions between the years 2000 and 2018. The league that follows the Premier league is the Serie A.**





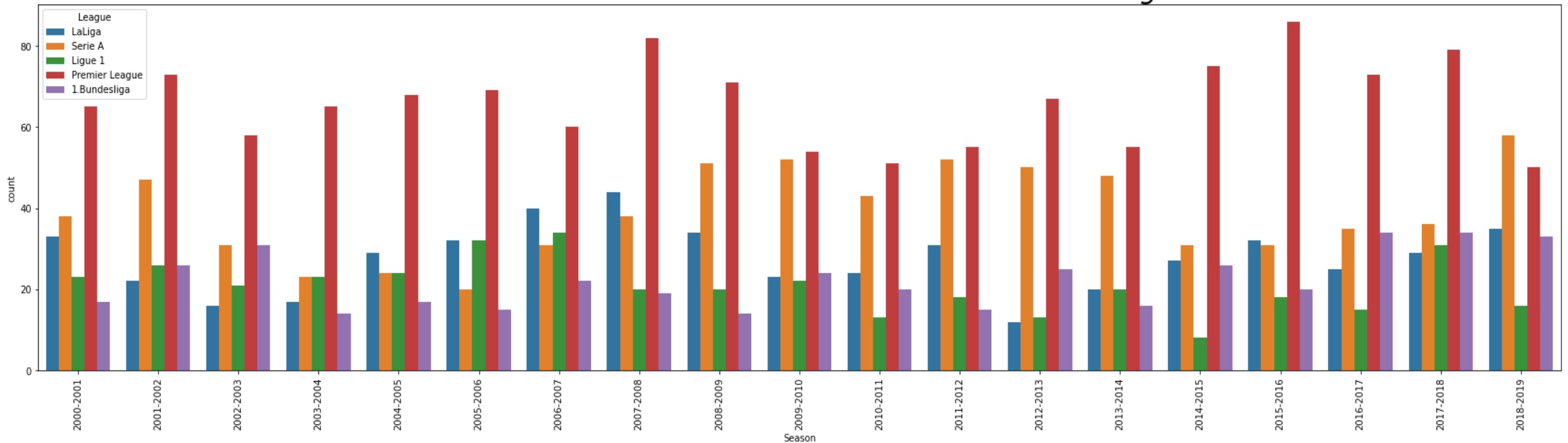
**HOW MANY TRANSFERS ARE
MADE EACH SEASON ?**

❑ **We can notice that the Season 2017-2018 contains the highest number of Transfers 209.**



❑ **We can notice that Premier League has the most number of transfers in each Season compared to other Leagues except in the season 2018-2019 in which Serie A surpass the other Leagues especially the Premier League.**

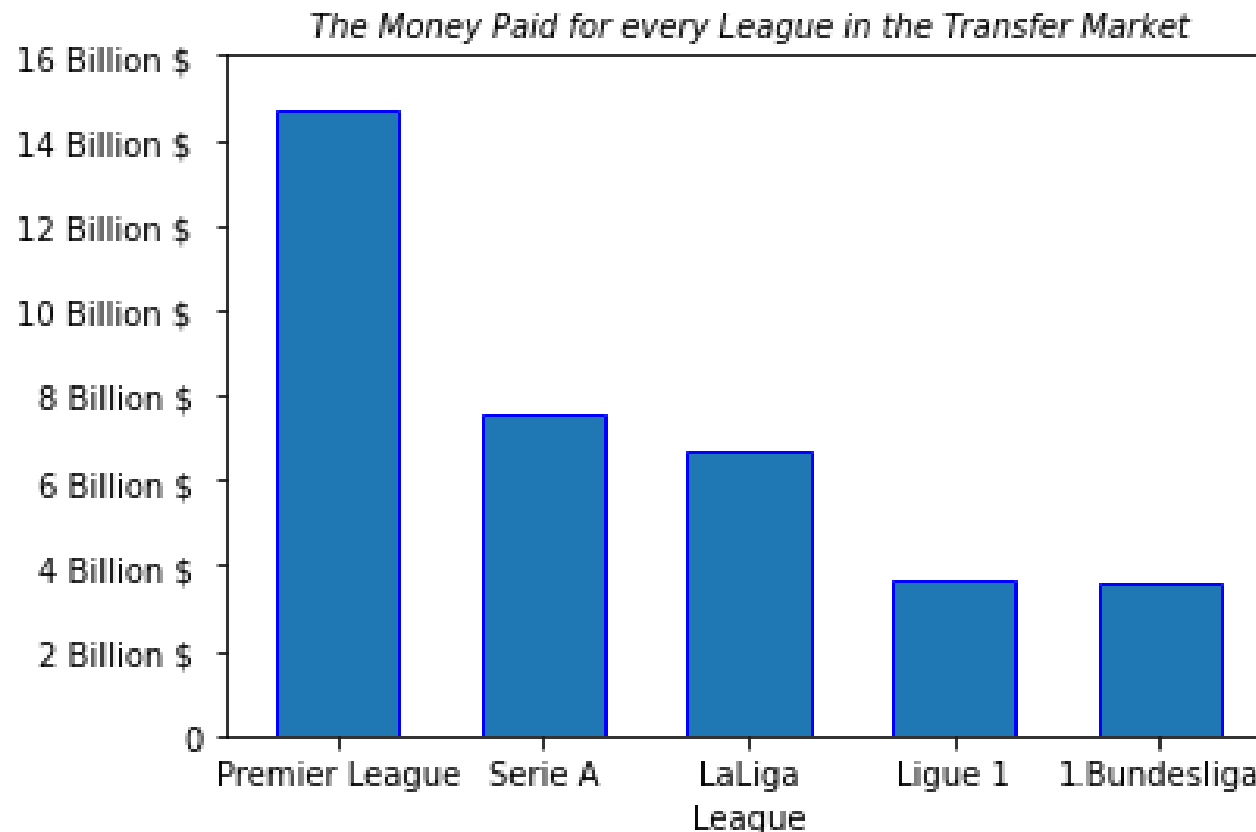
The Number of Transfers in each Season for each League



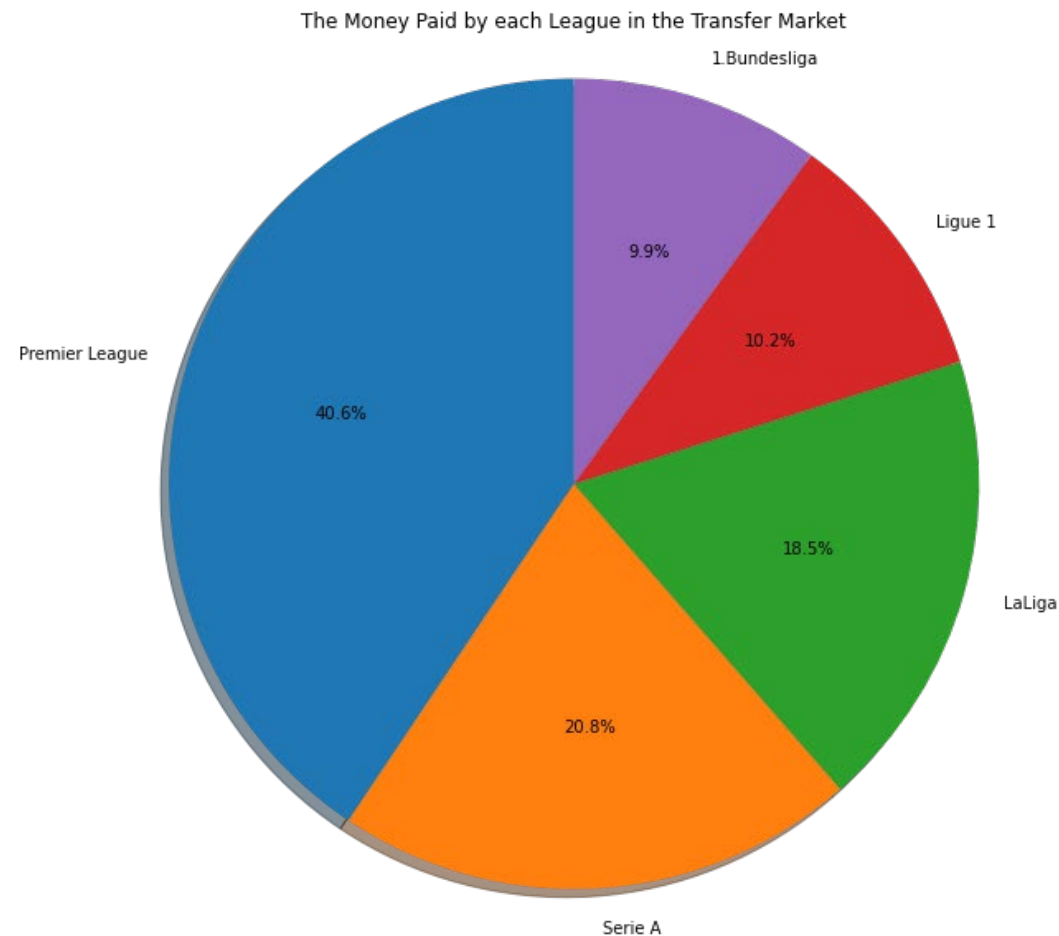


**WHICH LEAGUE PAYS THE MOST
MONEY IN THE TRANSFER
MARKET?**

- ❑ **From here we can notice that the Premier League is the league which pays the most money in the transfer market while the 1.Bundesliga is the lowest league which pays money in the transfer market.**



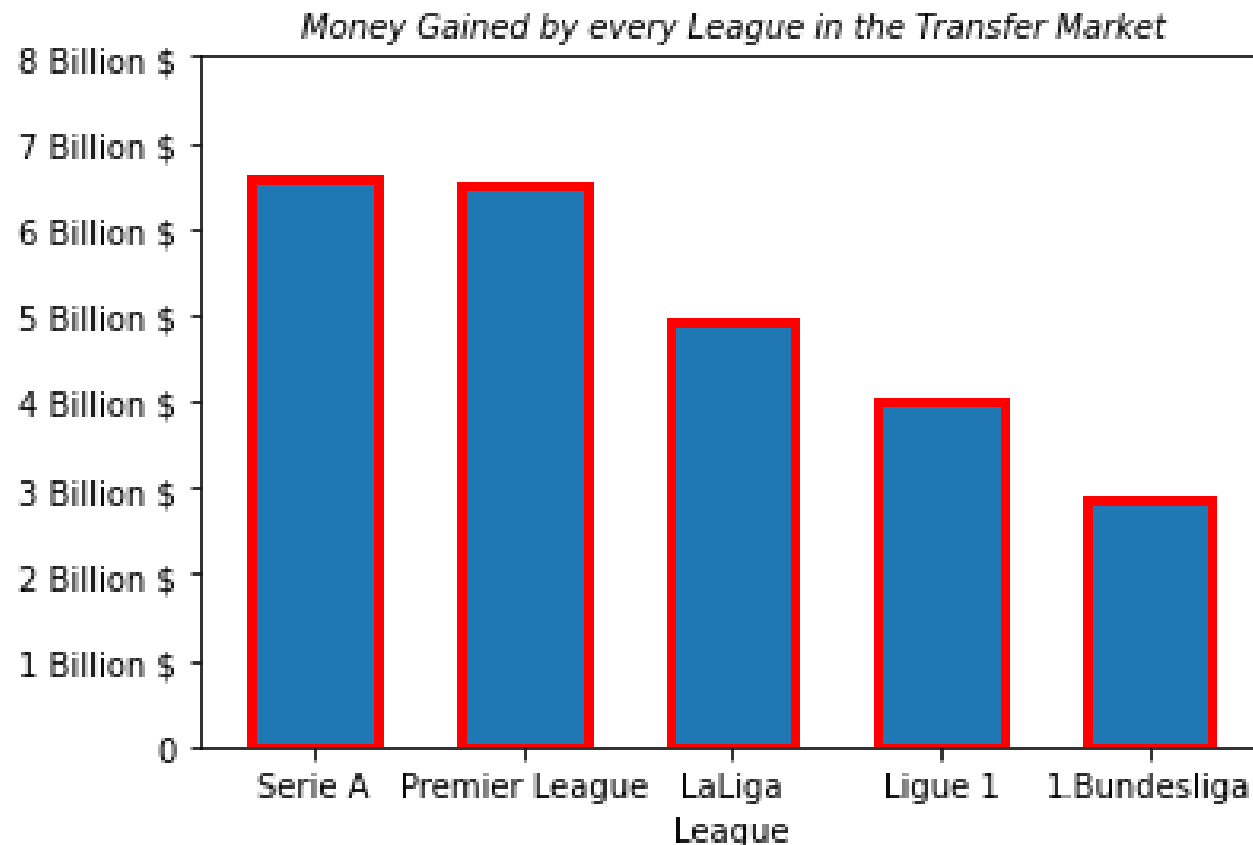
❑ **The Premier League is the League which paid the most money of percentage 40.6% while the 1.Bundesliga is the League which paid the least money of percentage 9.9%.**





**WHICH LEAGUE GAINS THE
MOST MONEY FROM
SELLING PLAYERS ?**

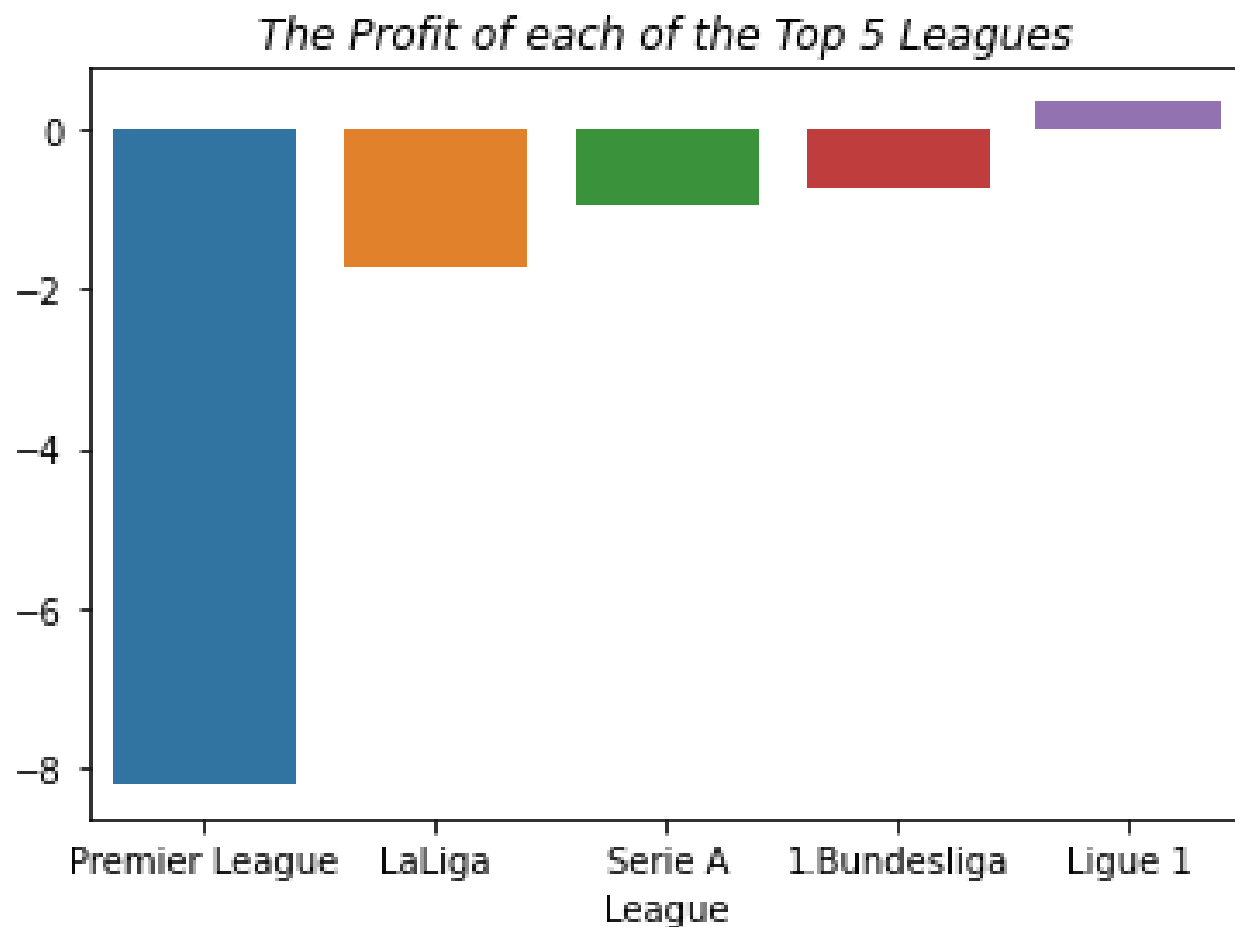
- ❑ **We can notice that Serie A is the most League that gains money by selling its players however Premier League can be considered also with the most leagues that gains money since it is approximately equal to Serie A. However, 1.Bundesliga is the league that gains the least money by selling its players.**





**DO THE TOP 5 LEAGUES MAKE
PROFIT OR LOSSES FROM
BUYING AND SELLING
PLAYERS ?**

- ❑ **Approximately all the Leagues losses except Ligue 1 which gains approximately 320,040**

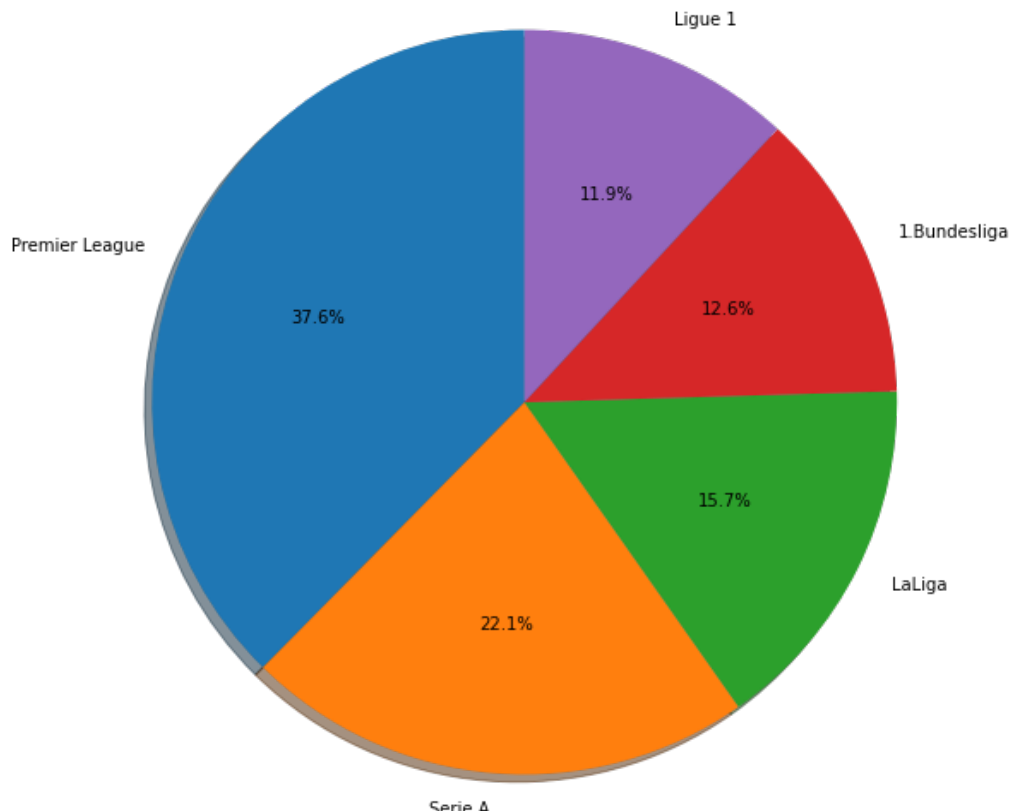




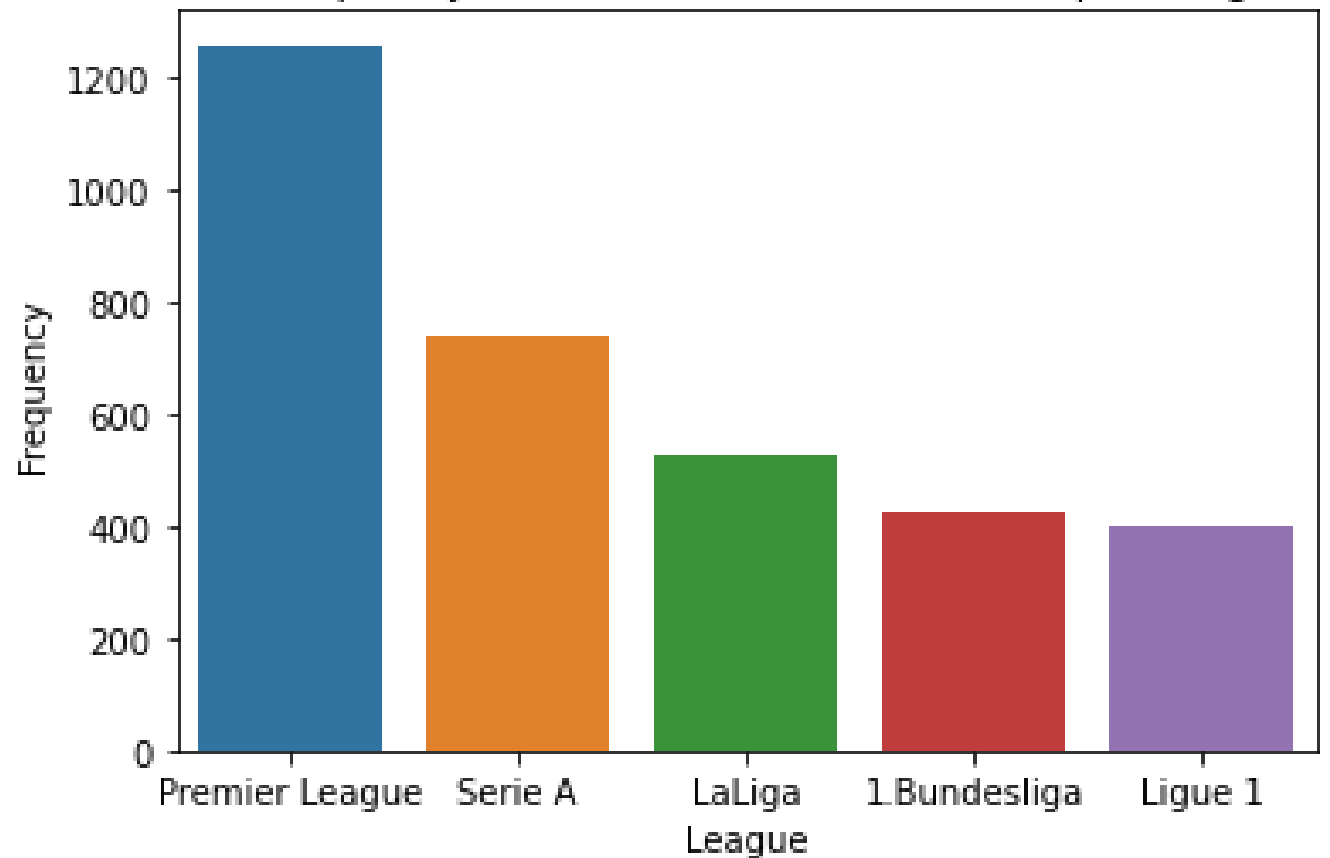
LEAGUE OF THE MOST NUMBER OF TRANSFERS

❑ The Premier League has the highest percentage of transfers with 37.6 % while the 1.Bundesliga has the lowest percentage of transfers with 11.9 %

The Percentage of number of Transfers in each of the Top 5 Leagues



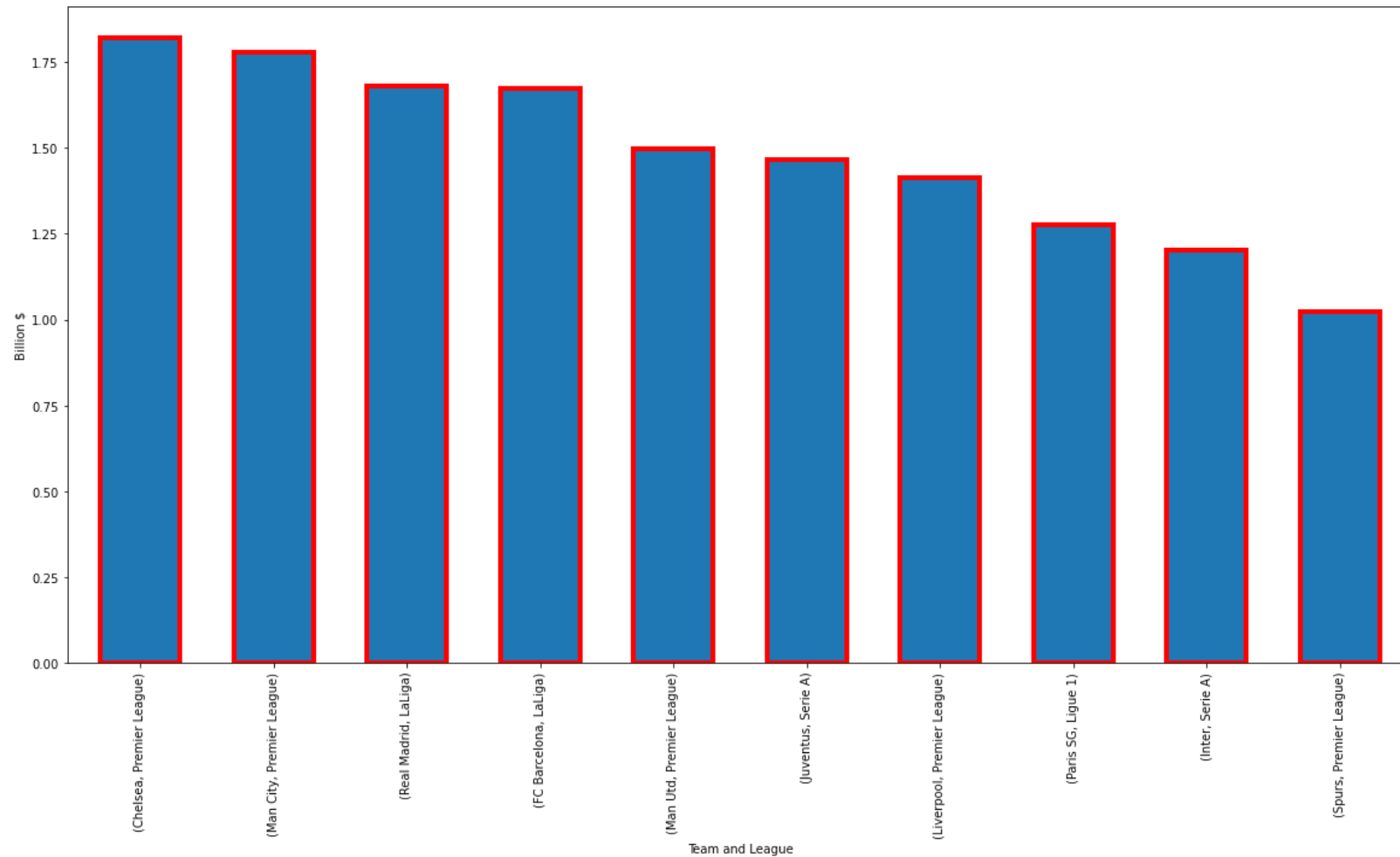
The Frequency of Transfers in each of the Top 5 Leagues





TEAMS WITH THE LARGEST TRANSFER FEE

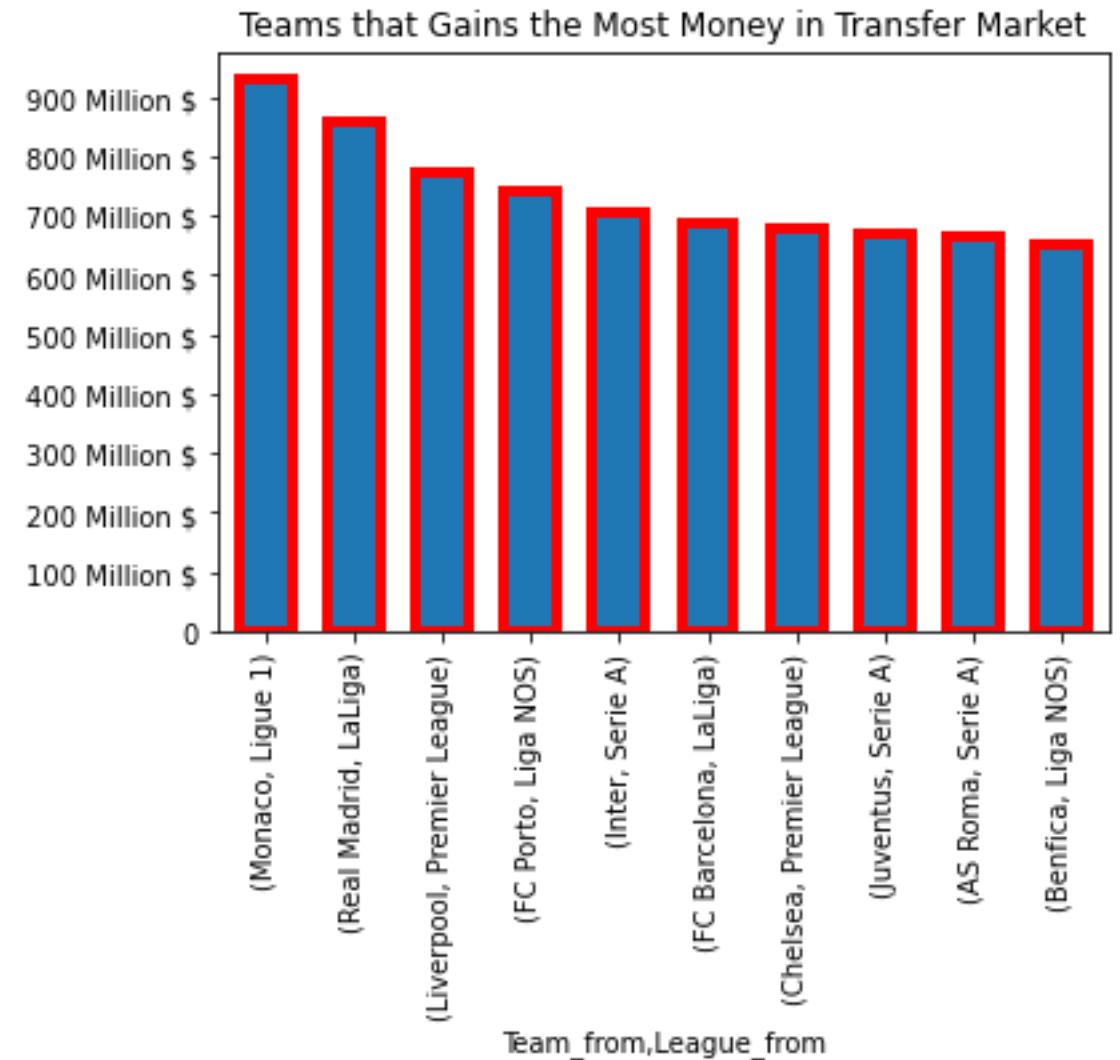
❑ **From the top 10 teams that have the largest transfer fees, we can notice that Chelsea is the team with the largest transfer fees compared to the other teams.**





**WHICH TEAM GAINS THE
MOST MONEY IN TRANSFER
MARKET**

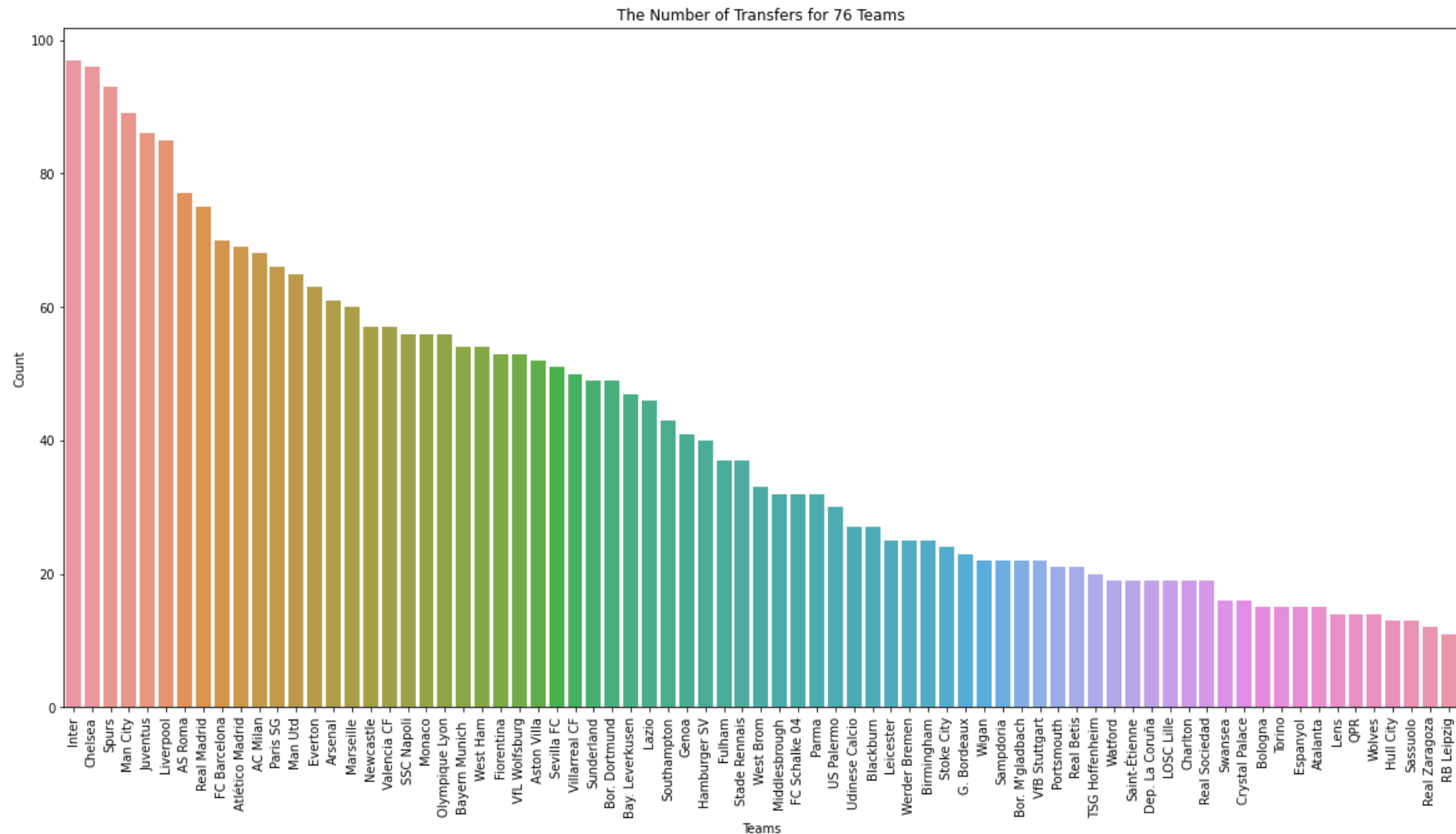
- ❑ **Monaco is the team that benefits the most from buying its players.**





TEAMS WITH THE MOST TRANSFERS IN THE TOP 5 LEAGUES

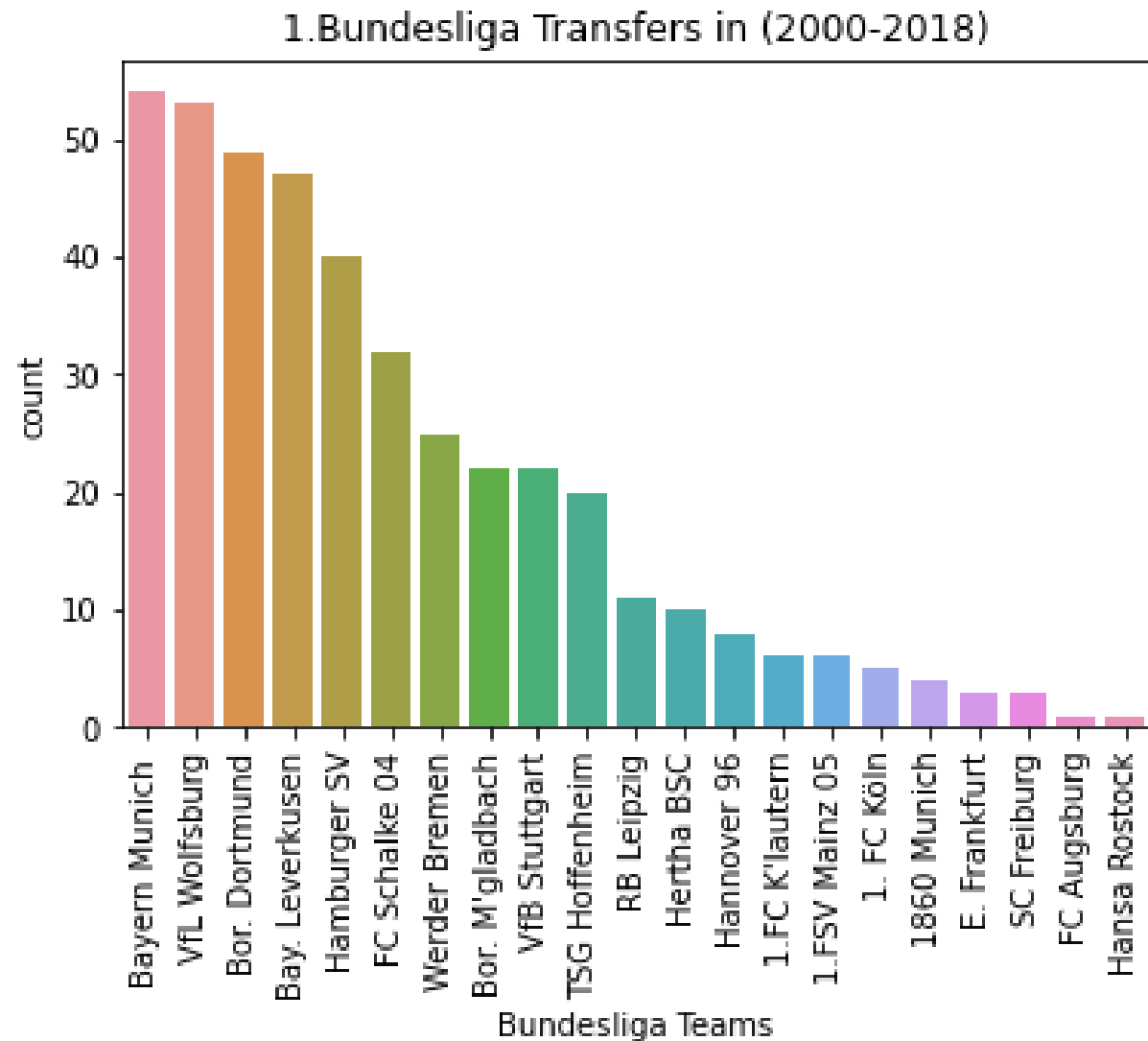
❑ **Inter is the team of the top 5 leagues that contains the largest frequency of Transfers.**



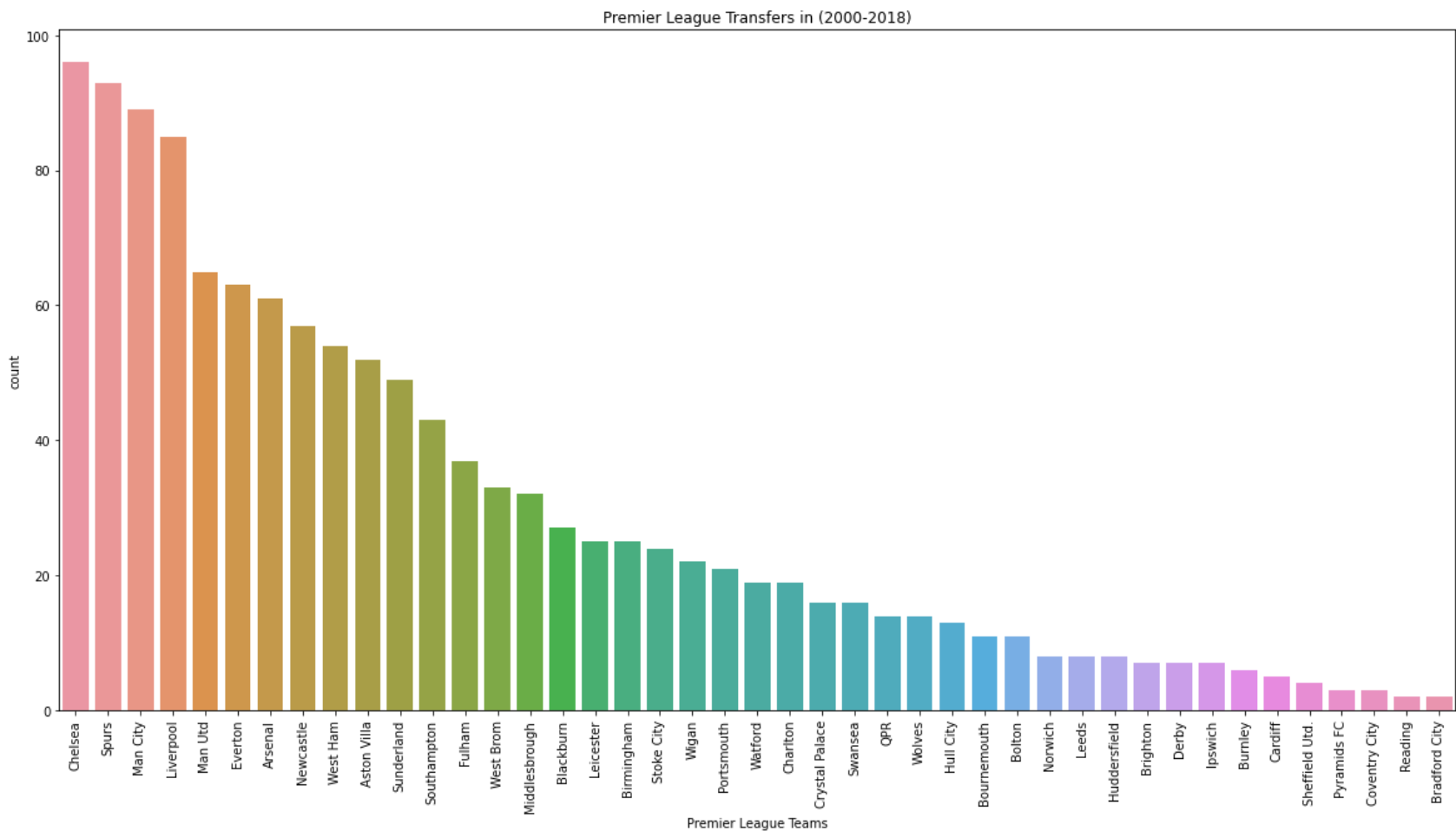


TEAMS WITH THE MOST TRANSFERS IN THE LEAGUES

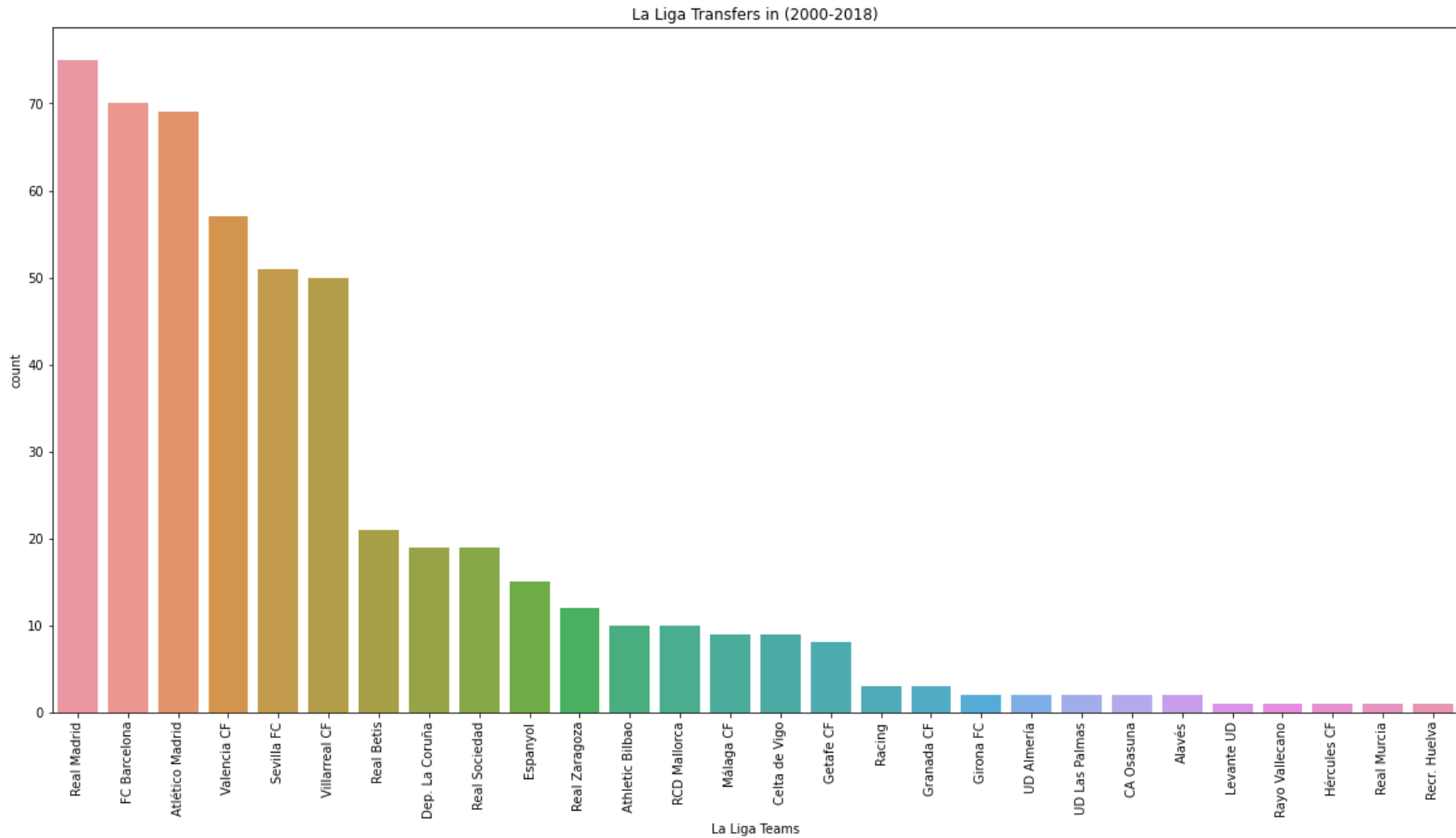
- ❑ **Bayern Munich is the team that contains the largest number of transfers with 54 transfer while Hansa Rostock is the team with the lowest number of transfers with 1 transfer only along with FC Augsburg in Bundesliga.**



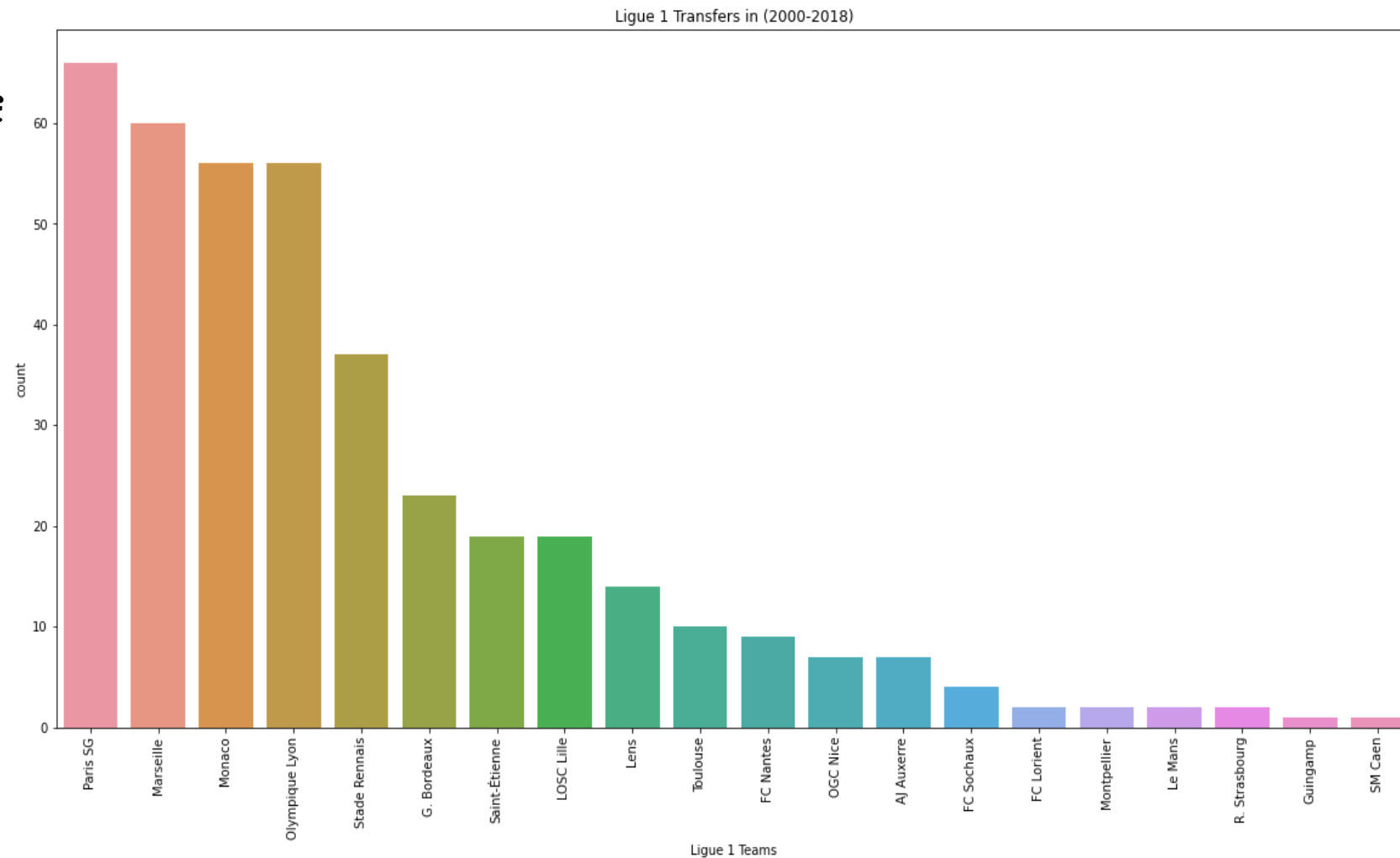
❑ In addition to that Chelsea is the team of the highest transfers between the leagues it is also the team of the highest transfers in the premier league with 96 transfer while Bradford City is the team with the lowest transfers with 2 along with Reading



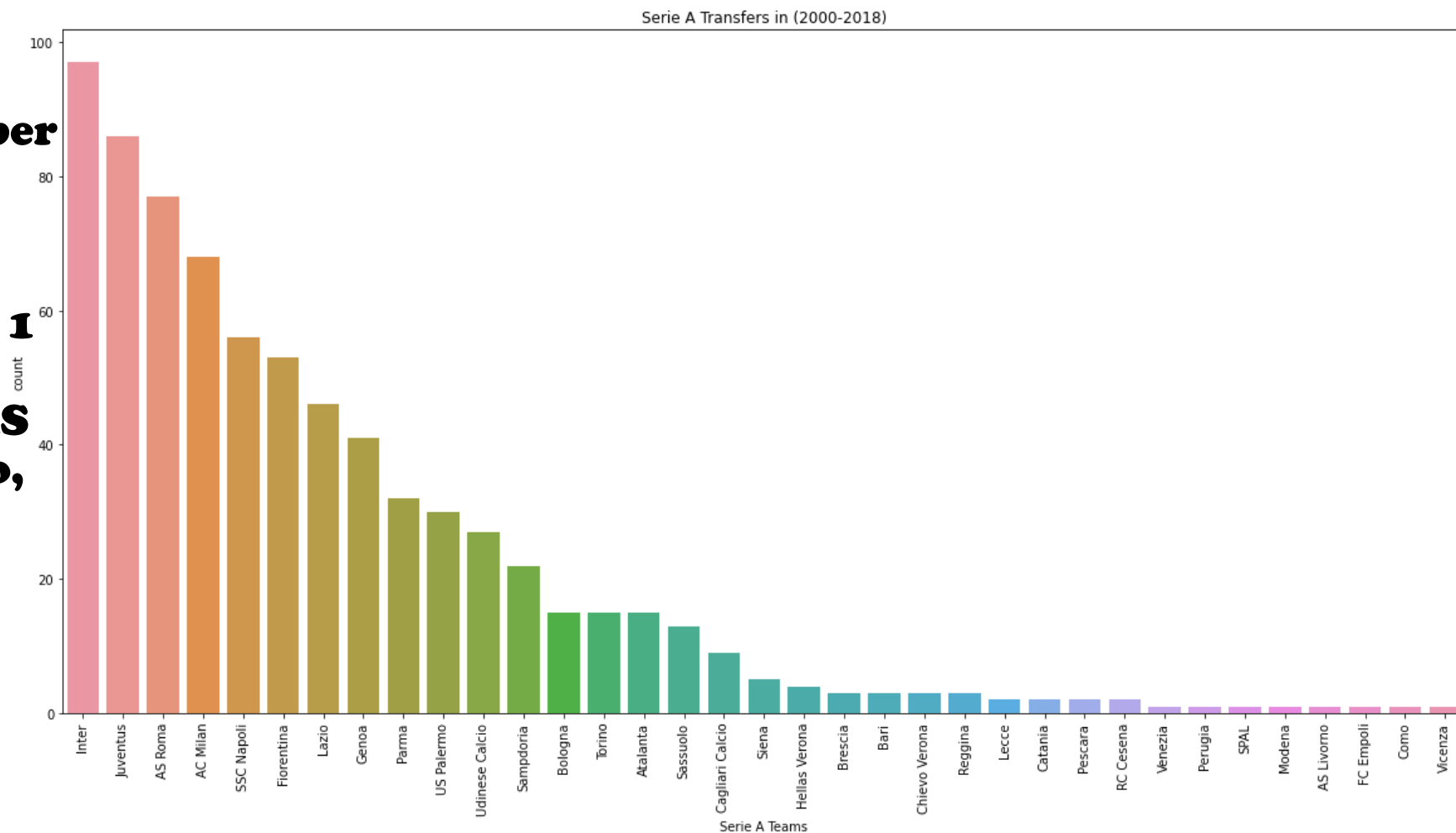
☐ **Real Madrid is the team that contains the largest number of transfers with 75 transfer while Levante ID is the team with the lowest number of transfers with 1 transfer only along with Rayo Vallecano ,Hercules CF ,Real Murcia , Recr . Huelva in La Liga**



❑ **Paris SG is the team that contains the largest number of transfers with 66 transfer while Guingamp is the team with the lowest number of transfers with 1 transfer only along with SM Caen in Ligue 1.**



❑ **Inter is the team that contains the largest number of transfers with 97 transfer while Venezia is the team with the lowest number of transfers with 1 transfer only along with Perugia, SPAL, Modena, AS Livorno, FC Empoli, Como, Vicenza in Serie A.**

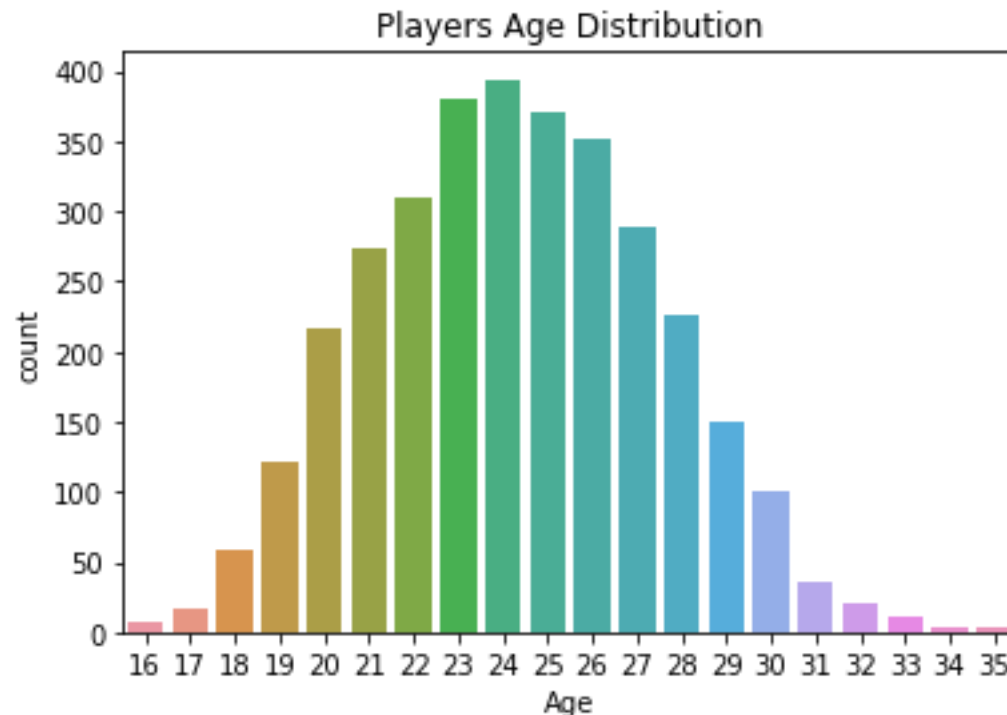




PLAYERS STATISTICS

PLAYERS AGE DISTRIBUTION:

- ❑ **This shows that the average age of a football player is 24 years old since age 24 has the highest frequency.**



AGE VS TRANSFER FEES

```
In [79]: # Age vs Transfer fees  
data_top5_leagues.groupby('Age').Transfer_fee.agg(['count', 'min', 'max'])
```

Out[79]:

	count	min	max
Age			
16	7	3000000	21000000
17	17	2000000	24000000
18	58	2700000	45000000
19	122	1500000	135000000
20	217	950000	115000000
21	274	825000	88200000
22	310	1300000	70000000
23	381	1000000	105000000
24	394	900000	101000000
25	370	1100000	222000000
26	351	1250000	78800000
27	288	1120000	81720000
28	226	1200000	90000000
29	150	1000000	77500000
30	100	1500000	42000000
31	35	1100000	36150000
32	20	1800000	15100000
33	11	1500000	117000000
34	4	2400000	5000000
35	4	2000000	5300000

AGE VS LEAGUE STATISTICS

- ❑ **This gives that the average of Age in each league is approximately 24 whereas 1.Bundesliga has the youngest average age of players**

```
In [81]: # Age vs League Statistics
data_top5_leagues.groupby('League_to').Age.agg(['mean', 'min', 'max'])
```

Out[81]:

	mean	min	max
League_to			
1.Bundesliga	23.725118	17	35
LaLiga	24.396190	17	34
Ligue 1	23.889169	16	35
Premier League	24.516720	16	35
Serie A	24.347767	16	35

```
In [82]: # This gives that the average of Age in each league is approximately 24 whereas 1.Bundesliga has the youngest average age of play
```

AGE VS POSITION STATISTICS

```
In [83]: # Age vs Position Statistics  
data_top5_leagues.groupby('Position').Age.agg(['mean', 'min', 'max'])
```

Out[83]:

	mean	min	max
Position			
Defender	24.322581	16	34
Forward	24.079721	16	33
Goalkeeper	26.000000	19	35
Midfielder	24.265049	16	35

```
In [138]: #GoalKeeper Position has the highest average age compared to other positions.
```


POSITION VS TRANSFER FEE

- ❑ **Forward position have the highest average of transfer fee whereas the Goalkeeper position have the lowest average of transfer fee.**

```
In [84]: # Position vs Transfer fee  
data_top5_leagues.groupby('Position').Transfer_fee.agg(['mean', 'min', 'max'])
```

Out[84]:

	mean	min	max
Position			
Defender	9.288738e+06	825000	78800000
Forward	1.221750e+07	900000	222000000
Goalkeeper	8.357248e+06	1320000	62500000
Midfielder	1.077717e+07	950000	125000000

TOP 5 LEAGUES- YOUNGEST PLAYER:

```
In [92]: # Top 5 Leagues-Youngest player:  
data_top5_leagues.loc[data_top5_leagues['Age'].idxmin()]
```

```
Out[92]: Name          Cesc Fàbregas  
Position      Midfielder  
Age           16  
Team_from     Barça Juvenil A  
League_from   Spain  
Team_to       Arsenal  
League_to     Premier League  
Season        2003-2004  
Market_value  NaN  
Transfer_fee  3200000  
Name: 841, dtype: object
```

TOP 5 LEAGUES-OLDEST PLAYER- HIGHEST TRANSFER FEE PLAYER

```
In [94]: #Top 5 Leagues-Oldest palyer:  
data_top5_leagues.loc[data_top5_leagues['Age'].idxmax()]
```

```
Out[94]: Name          José Luis Chilavert  
Position          Goalkeeper  
Age                35  
Team_from          Vélez Sarsfield  
League_from        Argentina  
Team_to            R. Strasbourg  
League_to          Ligue 1  
Season             2000-2001  
Market_value       NaN  
Transfer_fee        5300000  
Name: 112, dtype: object
```

```
In [98]: #Top 5 Leagues- Highest Transfer fee player  
data_top5_leagues.loc[data_top5_leagues['Transfer_fee'].idxmax()]
```

```
Out[98]: Name          Neymar  
Position          Forward  
Age                25  
Team_from          FC Barcelona  
League_from        LaLiga  
Team_to            Paris SG  
League_to          Ligue 1  
Season             2017-2018  
Market_value       100000000.0  
Transfer_fee        222000000  
Name: 4211, dtype: object
```

TOP 5 LEAGUES - LOWEST TRANSFER FEE PLAYER

```
In [99]: #Top 5 Leagues- Lowest Transfer fee player  
data_top5_leagues.loc[data_top5_leagues['Transfer_fee'].idxmin()]
```

```
Out[99]: Name          Rémo Meyer  
Position      Defender  
Age           21  
Team_from     Lausanne-Sport  
League_from   Challenge League  
Team_to       1860 Munich  
League_to     1.Bundesliga  
Season        2002-2003  
Market_value  NaN  
Transfer_fee  825000  
Name: 741, dtype: object
```

TOP 5 LEAGUES- HIGHEST MARKET VALUE PLAYER

```
In [97]: #Top 5 Leagues- Highest Market Value player  
data_top5_leagues.loc[data_top5_leagues['Market_value'].idxmax()]
```

```
Out[97]: Name          Kylian Mbappé  
Position      Forward  
Age           19  
Team_from     Monaco  
League_from   Ligue 1  
Team_to       Paris SG  
League_to     Ligue 1  
Season        2018-2019  
Market_value  120000000.0  
Transfer_fee   135000000  
Name: 4455, dtype: object
```

TOP 5 LEAGUES- LOWEST MARKET VALUE PLAYER

```
In [100]: #Top 5 Leagues- Lowest Market Value player  
data_top5_leagues.loc[data_top5_leagues['Market_value'].idxmin()]
```

```
Out[100]: Name          Richard Chaplow  
Position      Midfielder  
Age           20  
Team_from     Burnley  
League_from   Championship  
Team_to       West Brom  
League_to     Premier League  
Season        2004-2005  
Market_value  50000.0  
Transfer_fee  2250000  
Name: 1167, dtype: object
```


TOP 10 PLAYERS WITH HIGHEST TRANSFER FEES

```
In [114]: #Top 10 players with highest Transfer fees  
data_top5_leagues.sort_values('Transfer_fee',ascending=False)[0:10].reset_index(drop=True)
```

Out[114]:

	Name	Position	Age	Team_from	League_from	Team_to	League_to	Season	Market_value	Transfer_fee
0	Neymar	Forward	25	FC Barcelona	LaLiga	Paris SG	Ligue 1	2017-2018	100000000.0	222000000
1	Kylian Mbappé	Forward	19	Monaco	Ligue 1	Paris SG	Ligue 1	2018-2019	120000000.0	135000000
2	Philippe Coutinho	Midfielder	25	Liverpool	Premier League	FC Barcelona	LaLiga	2017-2018	90000000.0	125000000
3	Cristiano Ronaldo	Forward	33	Real Madrid	LaLiga	Juventus	Serie A	2018-2019	100000000.0	117000000
4	Ousmane Dembélé	Forward	20	Bor. Dortmund	1.Bundesliga	FC Barcelona	LaLiga	2017-2018	33000000.0	115000000
5	Paul Pogba	Midfielder	23	Juventus	Serie A	Man Utd	Premier League	2016-2017	70000000.0	105000000
6	Gareth Bale	Forward	24	Spurs	Premier League	Real Madrid	LaLiga	2013-2014	65000000.0	101000000
7	Cristiano Ronaldo	Forward	24	Man Utd	Premier League	Real Madrid	LaLiga	2009-2010	60000000.0	94000000
8	Gonzalo Higuaín	Forward	28	SSC Napoli	Serie A	Juventus	Serie A	2016-2017	65000000.0	90000000
9	Neymar	Forward	21	Santos FC	Série A	FC Barcelona	LaLiga	2013-2014	50000000.0	88200000

TOP 10 PLAYERS WITH HIGHEST MARKET VALUES

```
In [115]: # Top 10 players with highest Market Values
data_top5_leagues.sort_values('Market_value',ascending=False)[0:10].reset_index(drop=True)
```

Out[115]:

	Name	Position	Age	Team_from	League_from	Team_to	League_to	Season	Market_value	Transfer_fee
0	Kylian Mbappé	Forward	19	Monaco	Ligue 1	Paris SG	Ligue 1	2018-2019	120000000.0	135000000
1	Cristiano Ronaldo	Forward	33	Real Madrid	LaLiga	Juventus	Serie A	2018-2019	100000000.0	117000000
2	Neymar	Forward	25	FC Barcelona	LaLiga	Paris SG	Ligue 1	2017-2018	100000000.0	222000000
3	Philippe Coutinho	Midfielder	25	Liverpool	Premier League	FC Barcelona	LaLiga	2017-2018	90000000.0	125000000
4	Paul Pogba	Midfielder	23	Juventus	Serie A	Man Utd	Premier League	2016-2017	70000000.0	105000000
5	Gareth Bale	Forward	24	Spurs	Premier League	Real Madrid	LaLiga	2013-2014	65000000.0	101000000
6	Gonzalo Higuaín	Forward	28	SSC Napoli	Serie A	Juventus	Serie A	2016-2017	65000000.0	90000000
7	Naby Keita	Midfielder	23	RB Leipzig	1.Bundesliga	Liverpool	Premier League	2018-2019	65000000.0	60000000
8	Pierre-Emerick Aubameyang	Forward	28	Bor. Dortmund	1.Bundesliga	Arsenal	Premier League	2017-2018	65000000.0	63750000
9	Thomas Lemar	Forward	22	Monaco	Ligue 1	Atlético Madrid	LaLiga	2018-2019	65000000.0	70000000

LA LIGA - TOP 10 PLAYERS(TRANSFER FEES)

```
In [117]: #LaLiga - Top 10 Players(Transfer fees)
spain=laliga.sort_values('Transfer_fee',ascending=False)[0:10].reset_index(drop=True)
spain
```

Out[117]:

	Name	Position	Age	Team_from	League_from	Team_to	League_to	Season	Market_value	Transfer_fee
0	Philippe Coutinho	Midfielder	25	Liverpool	Premier League	FC Barcelona	LaLiga	2017-2018	90000000.0	125000000
1	Ousmane Dembélé	Forward	20	Bor. Dortmund	1.Bundesliga	FC Barcelona	LaLiga	2017-2018	33000000.0	115000000
2	Gareth Bale	Forward	24	Spurs	Premier League	Real Madrid	LaLiga	2013-2014	65000000.0	101000000
3	Cristiano Ronaldo	Forward	24	Man Utd	Premier League	Real Madrid	LaLiga	2009-2010	60000000.0	94000000
4	Neymar	Forward	21	Santos FC	Série A	FC Barcelona	LaLiga	2013-2014	50000000.0	88200000
5	Luis Suárez	Forward	27	Liverpool	Premier League	FC Barcelona	LaLiga	2014-2015	52000000.0	81720000
6	Zinédine Zidane	Midfielder	29	Juventus	Serie A	Real Madrid	LaLiga	2001-2002	NaN	77500000
7	James Rodríguez	Midfielder	23	Monaco	Ligue 1	Real Madrid	LaLiga	2014-2015	60000000.0	75000000
8	Thomas Lemar	Forward	22	Monaco	Ligue 1	Atlético Madrid	LaLiga	2018-2019	65000000.0	70000000
9	Zlatan Ibrahimovic	Forward	27	Inter	Serie A	FC Barcelona	LaLiga	2009-2010	45000000.0	69500000

```
In [121]: spain['Team_to'].value_counts()
```

```
Out[121]: FC Barcelona      5
Real Madrid      4
Atlético Madrid  1
Name: Team_to, dtype: int64
```

PREMIER LEAGUE-TOP 10 PLAYERS(TRANSFER FEES)

```
In [124]: #Premier League-Top 10 Players(Transfer fees)
england=premier_league.sort_values('Transfer_fee',ascending=False)[0:10].reset_index(drop=True)
england
```

Out[124]:

	Name	Position	Age	Team_from	League_from	Team_to	League_to	Season	Market_value	Transfer_fee
0	Paul Pogba	Midfielder	23	Juventus	Serie A	Man Utd	Premier League	2016-2017	70000000.0	105000000
1	Romelu Lukaku	Forward	24	Everton	Premier League	Man Utd	Premier League	2017-2018	50000000.0	84700000
2	Virgil van Dijk	Defender	26	Southampton	Premier League	Liverpool	Premier League	2017-2018	30000000.0	78800000
3	Kevin De Bruyne	Midfielder	24	VfL Wolfsburg	1.Bundesliga	Man City	Premier League	2015-2016	45000000.0	76000000
4	Ángel Di María	Forward	26	Real Madrid	LaLiga	Man Utd	Premier League	2014-2015	50000000.0	75000000
5	Riyad Mahrez	Forward	27	Leicester	Premier League	Man City	Premier League	2018-2019	50000000.0	67800000
6	Álvaro Morata	Forward	24	Real Madrid	LaLiga	Chelsea	Premier League	2017-2018	40000000.0	66000000
7	Aymeric Laporte	Defender	23	Athletic Bilbao	LaLiga	Man City	Premier League	2017-2018	25000000.0	65000000
8	Pierre-Emerick Aubameyang	Forward	28	Bor. Dortmund	1.Bundesliga	Arsenal	Premier League	2017-2018	65000000.0	63750000
9	Raheem Sterling	Forward	20	Liverpool	Premier League	Man City	Premier League	2015-2016	40000000.0	63700000

```
In [126]: england['Team_to'].value_counts()
```

```
Out[126]: Man City      4
Man Utd      3
Liverpool    1
Chelsea      1
Arsenal      1
Name: Team_to, dtype: int64
```

SERIE A-TOP 10 PLAYERS(TRANSFER FEES)

```
In [127]: #Serie A-Top 10 Players(Transfer fees)
italy=serieA.sort_values('Transfer_fee',ascending=False)[0:10].reset_index(drop=True)
italy
```

Out[127]:

	Name	Position	Age	Team_from	League_from	Team_to	League_to	Season	Market_value	Transfer_fee
0	Cristiano Ronaldo	Forward	33	Real Madrid	LaLiga	Juventus	Serie A	2018-2019	100000000.0	117000000
1	Gonzalo Higuaín	Forward	28	SSC Napoli	Serie A	Juventus	Serie A	2016-2017	65000000.0	90000000
2	Hernán Crespo	Forward	25	Parma	Serie A	Lazio	Serie A	2000-2001	NaN	56810000
3	Gianluigi Buffon	Goalkeeper	23	Parma	Serie A	Juventus	Serie A	2001-2002	NaN	52880000
4	Gaizka Mendieta	Midfielder	27	Valencia CF	LaLiga	Lazio	Serie A	2001-2002	NaN	48000000
5	Rui Costa	Midfielder	29	Fiorentina	Serie A	AC Milan	Serie A	2001-2002	NaN	42000000
6	Leonardo Bonucci	Defender	30	Juventus	Serie A	AC Milan	Serie A	2017-2018	45000000.0	42000000
7	Lilian Thuram	Defender	29	Parma	Serie A	Juventus	Serie A	2001-2002	NaN	41500000
8	João Cancelo	Defender	24	Valencia CF	LaLiga	Juventus	Serie A	2018-2019	35000000.0	40400000
9	Douglas Costa	Forward	27	Bayern Munich	1.Bundesliga	Juventus	Serie A	2018-2019	55000000.0	40000000

```
In [128]: italy['Team_to'].value_counts()
```

```
Out[128]: Juventus    6
Lazio                2
AC Milan             2
Name: Team_to, dtype: int64
```


LIGUE 1-TOP 10 PLAYERS(TRANSFER FEES)

```
In [129]: #Ligue 1-Top 10 Players(Transfer fees)
france=ligue1.sort_values('Transfer_fee',ascending=False)[0:10].reset_index(drop=True)
france
```

Out[129]:

	Name	Position	Age	Team_from	League_from	Team_to	League_to	Season	Market_value	Transfer_fee
0	Neymar	Forward	25	FC Barcelona	LaLiga	Paris SG	Ligue 1	2017-2018	100000000.0	222000000
1	Kylian Mbappé	Forward	19	Monaco	Ligue 1	Paris SG	Ligue 1	2018-2019	120000000.0	135000000
2	Edinson Cavani	Forward	26	SSC Napoli	Serie A	Paris SG	Ligue 1	2013-2014	55000000.0	64500000
3	Ángel Di María	Forward	27	Man Utd	Premier League	Paris SG	Ligue 1	2015-2016	50000000.0	63000000
4	David Luiz	Defender	27	Chelsea	Premier League	Paris SG	Ligue 1	2014-2015	26000000.0	49500000
5	James Rodríguez	Midfielder	21	FC Porto	Liga NOS	Monaco	Ligue 1	2013-2014	23000000.0	45000000
6	Falcao	Forward	27	Atlético Madrid	LaLiga	Monaco	Ligue 1	2013-2014	60000000.0	43000000
7	Thiago Silva	Defender	27	AC Milan	Serie A	Paris SG	Ligue 1	2012-2013	38000000.0	42000000
8	Javier Pastore	Midfielder	22	US Palermo	Serie A	Paris SG	Ligue 1	2011-2012	21000000.0	42000000
9	Lucas Moura	Forward	20	São Paulo	Série A	Paris SG	Ligue 1	2012-2013	35000000.0	40000000

```
In [130]: france['Team_to'].value_counts()
```

Out[130]: Paris SG 8
Monaco 2
Name: Team_to, dtype: int64

1.BUNDESLIGA-TOP 10 PLAYERS(TRANSFER FEES)

```
In [131]: #1Bundesliga-Top 10 Players(Transfer fees)
germany=bundesliga.sort_values('Transfer_fee',ascending=False)[0:10].reset_index(drop=True)
germany
```

Out[131]:

	Name	Position	Age	Team_from	League_from	Team_to	League_to	Season	Market_value	Transfer_fee
0	Julian Draxler	Midfielder	21	FC Schalke 04	1.Bundesliga	VfL Wolfsburg	1.Bundesliga	2015-2016	22000000.0	43000000
1	Corentin Tolisso	Midfielder	22	Olympique Lyon	Ligue 1	Bayern Munich	1.Bundesliga	2017-2018	22000000.0	41500000
2	Javi Martínez	Midfielder	24	Athletic Bilbao	LaLiga	Bayern Munich	1.Bundesliga	2012-2013	30000000.0	40000000
3	Arturo Vidal	Midfielder	28	Juventus	Serie A	Bayern Munich	1.Bundesliga	2015-2016	42000000.0	37500000
4	Mario Götze	Midfielder	21	Bor. Dortmund	1.Bundesliga	Bayern Munich	1.Bundesliga	2013-2014	45000000.0	37000000
5	Renato Sanches	Midfielder	18	Benfica	Liga NOS	Bayern Munich	1.Bundesliga	2016-2017	10000000.0	35000000
6	Mats Hummels	Defender	27	Bor. Dortmund	1.Bundesliga	Bayern Munich	1.Bundesliga	2016-2017	32000000.0	35000000
7	André Schürrle	Forward	24	Chelsea	Premier League	VfL Wolfsburg	1.Bundesliga	2014-2015	23000000.0	32000000
8	Mario Gómez	Forward	23	VfB Stuttgart	1.Bundesliga	Bayern Munich	1.Bundesliga	2009-2010	30000000.0	30000000
9	Franck Ribéry	Forward	24	Marseille	Ligue 1	Bayern Munich	1.Bundesliga	2007-2008	23000000.0	30000000

```
In [133]: germany['Team_to'].value_counts()
```

```
Out[133]: Bayern Munich      8
VfL Wolfsburg      2
Name: Team_to, dtype: int64
```