

In [97]:

```
#importing the libraries
import pandas as pd
from matplotlib import pyplot as plt
import seaborn as sns
import numpy as np
```

In [6]:

```
#reading the .csv file
ipl=pd.read_csv('C:\pandas\matches.csv')
```

In [7]:

```
ipl
```

Out[7]:

	id	Season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_
0	1	IPL-2017	Hyderabad	05-04-2017	Sunrisers Hyderabad	Royal Challengers Bangalore	Royal Challengers Bangalore		field normal	0	Sunrisers Hyderabad	
1	2	IPL-2017	Pune	06-04-2017	Mumbai Indians	Rising Pune Supergiant	Rising Pune Supergiant		field normal	0	Rising Pune Supergiant	
2	3	IPL-2017	Rajkot	07-04-2017	Gujarat Lions	Kolkata Knight Riders	Kolkata Knight Riders		field normal	0	Kolkata Knight Riders	
3	4	IPL-2017	Indore	08-04-2017	Rising Pune Supergiant	Kings XI Punjab	Kings XI Punjab		field normal	0	Kings XI Punjab	
4	5	IPL-2017	Bangalore	08-04-2017	Royal Challengers Bangalore	Delhi Daredevils	Royal Challengers Bangalore		bat normal	0	Royal Challengers Bangalore	
...
751	11347	IPL-2019	Mumbai	05-05-2019	Kolkata Knight Riders	Mumbai Indians	Mumbai Indians		field normal	0	Mumbai Indians	
752	11412	IPL-2019	Chennai	07-05-2019	Chennai Super Kings	Mumbai Indians	Chennai Super Kings		bat normal	0	Mumbai Indians	
753	11413	IPL-2019	Visakhapatnam	08-05-2019	Sunrisers Hyderabad	Delhi Capitals	Delhi Capitals		field normal	0	Delhi Capitals	
754	11414	IPL-2019	Visakhapatnam	10-05-2019	Delhi Capitals	Chennai Super Kings	Chennai Super Kings		field normal	0	Chennai Super Kings	
755	11415	IPL-2019	Hyderabad	12-05-2019	Mumbai Indians	Chennai Super Kings	Mumbai Indians		bat normal	0	Mumbai Indians	

756 rows x 13 columns

In [8]:

```
#displaying the first ten records
ipl.head(10)
```

Out[8]:

	id	Season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_t
0	1	IPL-2017	Hyderabad	05-04-2017	Sunrisers Hyderabad	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	0	Sunrisers Hyderabad	35	
1	2	IPL-2017	Pune	06-04-2017	Mumbai Indians	Rising Pune Supergiant	Rising Pune Supergiant	field	normal	0	Rising Pune Supergiant	0	
2	3	IPL-2017	Rajkot	07-04-2017	Gujarat Lions	Kolkata Knight Riders	Kolkata Knight Riders	field	normal	0	Kolkata Knight Riders	0	
3	4	IPL-2017	Indore	08-04-2017	Rising Pune Supergiant	Kings XI Punjab	Kings XI Punjab	field	normal	0	Kings XI Punjab	0	
4	5	IPL-2017	Bangalore	08-04-2017	Royal Challengers Bangalore	Delhi Daredevils	Royal Challengers Bangalore	bat	normal	0	Royal Challengers Bangalore	15	
5	6	IPL-2017	Hyderabad	09-04-2017	Gujarat Lions	Sunrisers Hyderabad	Sunrisers Hyderabad	field	normal	0	Sunrisers Hyderabad	0	
6	7	IPL-2017	Mumbai	09-04-2017	Kolkata Knight Riders	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	
7	8	IPL-2017	Indore	10-04-2017	Royal Challengers Bangalore	Kings XI Punjab	Royal Challengers Bangalore	bat	normal	0	Kings XI Punjab	0	
8	9	IPL-2017	Pune	11-04-2017	Delhi Daredevils	Rising Pune Supergiant	Rising Pune Supergiant	field	normal	0	Delhi Daredevils	97	
9	10	IPL-2017	Mumbai	12-04-2017	Sunrisers Hyderabad	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	

In [10]:

```
#For getting the total rows & columns
ipl.shape
```

Out[10]:

(756, 18)

In [12]:

```
#Getting the frequency for the most MOM awards
ipl['player_of_match'].value_counts()
```

Out[12]:

```
CH Gayle      21
AB de Villiers 20
DA Warner     17
MS Dhoni      17
RG Sharma     17
..
CR Brathwaite 1
MR Marsh      1
GJ Bailey     1
S Badrinath   1
MF Maharroof  1
Name: player_of_match, Length: 226, dtype: int64
```

In [16]:

```
#Getting the first ten players awarded MOM awards  
ipl['player_of_match'].value_counts()[0:10]
```

Out[16]:

```
CH Gayle          21  
AB de Villiers    20  
DA Warner         17  
MS Dhoni          17  
RG Sharma         17  
YK Pathan         16  
SR Watson         15  
SK Raina          14  
G Gambhir         13  
MEK Hussey        12  
Name: player_of_match, dtype: int64
```

In [17]:

```
#Getting top five players awarded MOM awards  
ipl['player_of_match'].value_counts()[0:5]
```

Out[17]:

```
CH Gayle          21  
AB de Villiers    20  
DA Warner         17  
MS Dhoni          17  
RG Sharma         17  
Name: player_of_match, dtype: int64
```

In [18]:

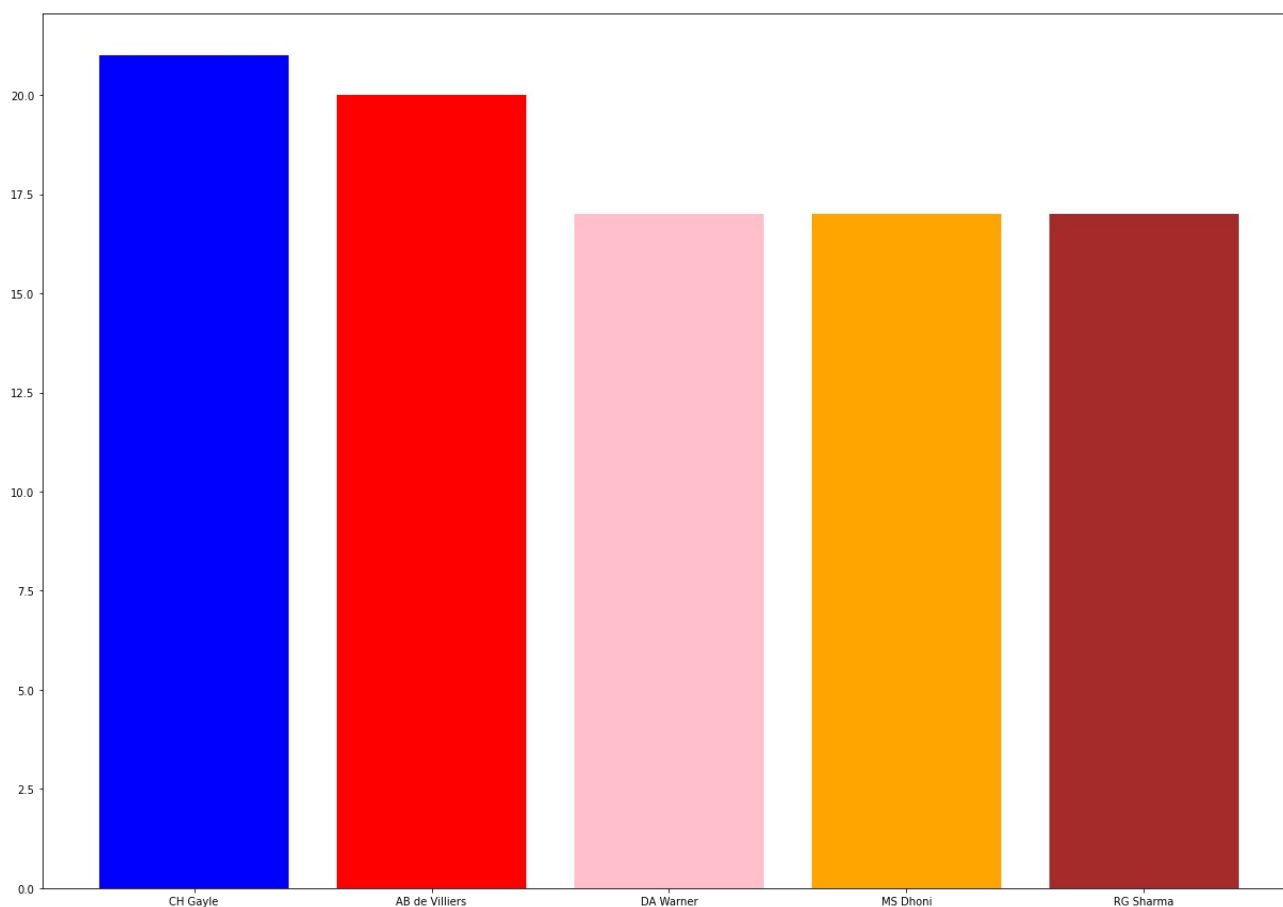
```
#List of top five players awarded MOM awards  
list(ipl['player_of_match'].value_counts()[0:5].keys())
```

Out[18]:

```
['CH Gayle', 'AB de Villiers', 'DA Warner', 'MS Dhoni', 'RG Sharma']
```

In [26]:

```
#Demonstrating the bar plot for the top five players with MOM awards
plt.figure(figsize=(21,15))
plt.bar(list(ipl['player_of_match'].value_counts()[0:5].keys()),list(ipl['player_of_match'].value_counts()[0:5]),
color=["blue","red","pink","orange","brown"])
plt.show()
```



In [28]:

```
#Getting the frequency of result column
ipl['result'].value_counts()
```

Out[28]:

```
normal      743
tie          9
no result    4
Name: result, dtype: int64
```

In [30]:

```
#Getting the toss winners of respective teams
ipl['toss_winner'].value_counts()
```

Out[30]:

```
Mumbai Indians      98
Kolkata Knight Riders 92
Chennai Super Kings  89
Royal Challengers Bangalore 81
Kings XI Punjab      81
Delhi Daredevils      80
Rajasthan Royals      80
Sunrisers Hyderabad  46
Deccan Chargers      43
Pune Warriors         20
Gujarat Lions         15
Delhi Capitals         10
Kochi Tuskers Kerala   8
Rising Pune Supergiants 7
Rising Pune Supergiant 6
Name: toss_winner, dtype: int64
```

In [31]:

```
ipl
```

Out[31]:

	id	Season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_ru
0	1	IPL-2017	Hyderabad	05-04-2017	Sunrisers Hyderabad	Royal Challengers Bangalore	Royal Challengers Bangalore		field	normal	0	Sunrisers Hyderabad
1	2	IPL-2017	Pune	06-04-2017	Mumbai Indians	Rising Pune Supergiant	Rising Pune Supergiant		field	normal	0	Rising Pune Supergiant
2	3	IPL-2017	Rajkot	07-04-2017	Gujarat Lions	Kolkata Knight Riders	Kolkata Knight Riders		field	normal	0	Kolkata Knight Riders
3	4	IPL-2017	Indore	08-04-2017	Rising Pune Supergiant	Kings XI Punjab	Kings XI Punjab		field	normal	0	Kings XI Punjab
4	5	IPL-2017	Bangalore	08-04-2017	Royal Challengers Bangalore	Delhi Daredevils	Royal Challengers Bangalore		bat	normal	0	Royal Challengers Bangalore
...
751	11347	IPL-2019	Mumbai	05-05-2019	Kolkata Knight Riders	Mumbai Indians	Mumbai Indians		field	normal	0	Mumbai Indians
752	11412	IPL-2019	Chennai	07-05-2019	Chennai Super Kings	Mumbai Indians	Chennai Super Kings		bat	normal	0	Mumbai Indians
753	11413	IPL-2019	Visakhapatnam	08-05-2019	Sunrisers Hyderabad	Delhi Capitals	Delhi Capitals		field	normal	0	Delhi Capitals
754	11414	IPL-2019	Visakhapatnam	10-05-2019	Delhi Capitals	Chennai Super Kings	Chennai Super Kings		field	normal	0	Chennai Super Kings
755	11415	IPL-2019	Hyderabad	12-05-2019	Mumbai Indians	Chennai Super Kings	Mumbai Indians		bat	normal	0	Mumbai Indians

756 rows × 18 columns

In [36]:

```
#Displaying the records where a team won by batting first
batting_first=ipl[ipl['win_by_runs']!=0]
```

In [38]:

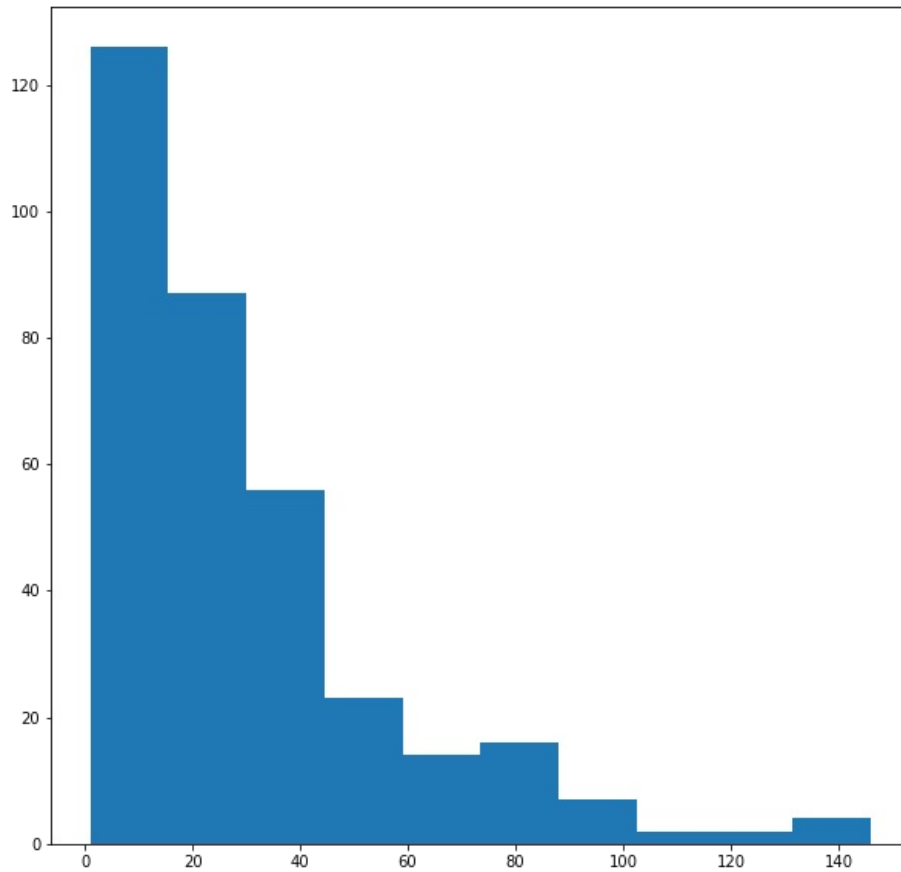
```
batting_first.head()
```

Out[38]:

	id	Season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	w
0	1	IPL-2017	Hyderabad	05-04-2017	Sunrisers Hyderabad	Royal Challengers Bangalore	Royal Challengers Bangalore		field	normal	0	Sunrisers Hyderabad	35
4	5	IPL-2017	Bangalore	08-04-2017	Royal Challengers Bangalore	Delhi Daredevils	Royal Challengers Bangalore		bat	normal	0	Royal Challengers Bangalore	15
8	9	IPL-2017	Pune	11-04-2017	Delhi Daredevils	Rising Pune Supergiant	Rising Pune Supergiant		field	normal	0	Delhi Daredevils	97
13	14	IPL-2017	Kolkata	15-04-2017	Kolkata Knight Riders	Sunrisers Hyderabad	Sunrisers Hyderabad		field	normal	0	Kolkata Knight Riders	17
14	15	IPL-2017	Delhi	15-04-2017	Delhi Daredevils	Kings XI Punjab	Delhi Daredevils		bat	normal	0	Delhi Daredevils	51

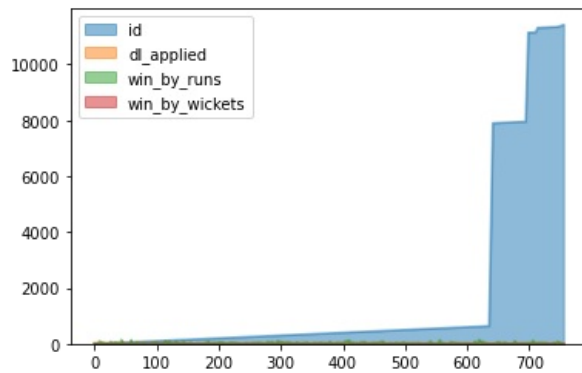
In [41]:

```
#Making a histogram for the batting_first wins  
plt.figure(figsize=(10,10))  
plt.hist(batting_first['win_by_runs'])  
plt.show()
```



In [46]:

```
batting_first.plot.area(stacked=False);
```



In [47]:

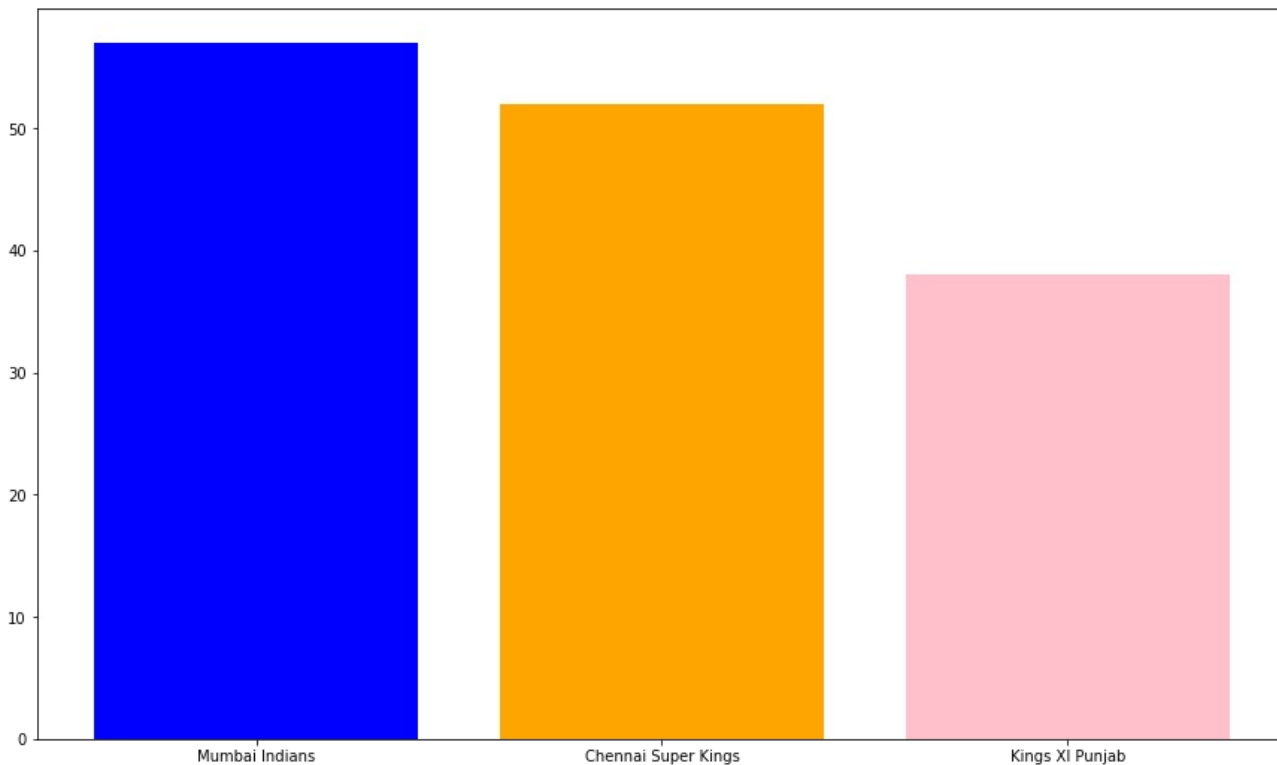
```
#Getting the winner of the matches by batting first  
batting_first['winner'].value_counts()
```

Out[47]:

```
Mumbai Indians          57  
Chennai Super Kings     52  
Kings XI Punjab         38  
Kolkata Knight Riders   36  
Royal Challengers Bangalore 35  
Sunrisers Hyderabad     30  
Rajasthan Royals        27  
Delhi Daredevils        25  
Deccan Chargers         18  
Pune Warriors           6  
Rising Pune Supergiant   5  
Delhi Capitals           3  
Kochi Tuskers Kerala     2  
Rising Pune Supergiants  2  
Gujarat Lions            1  
Name: winner, dtype: int64
```

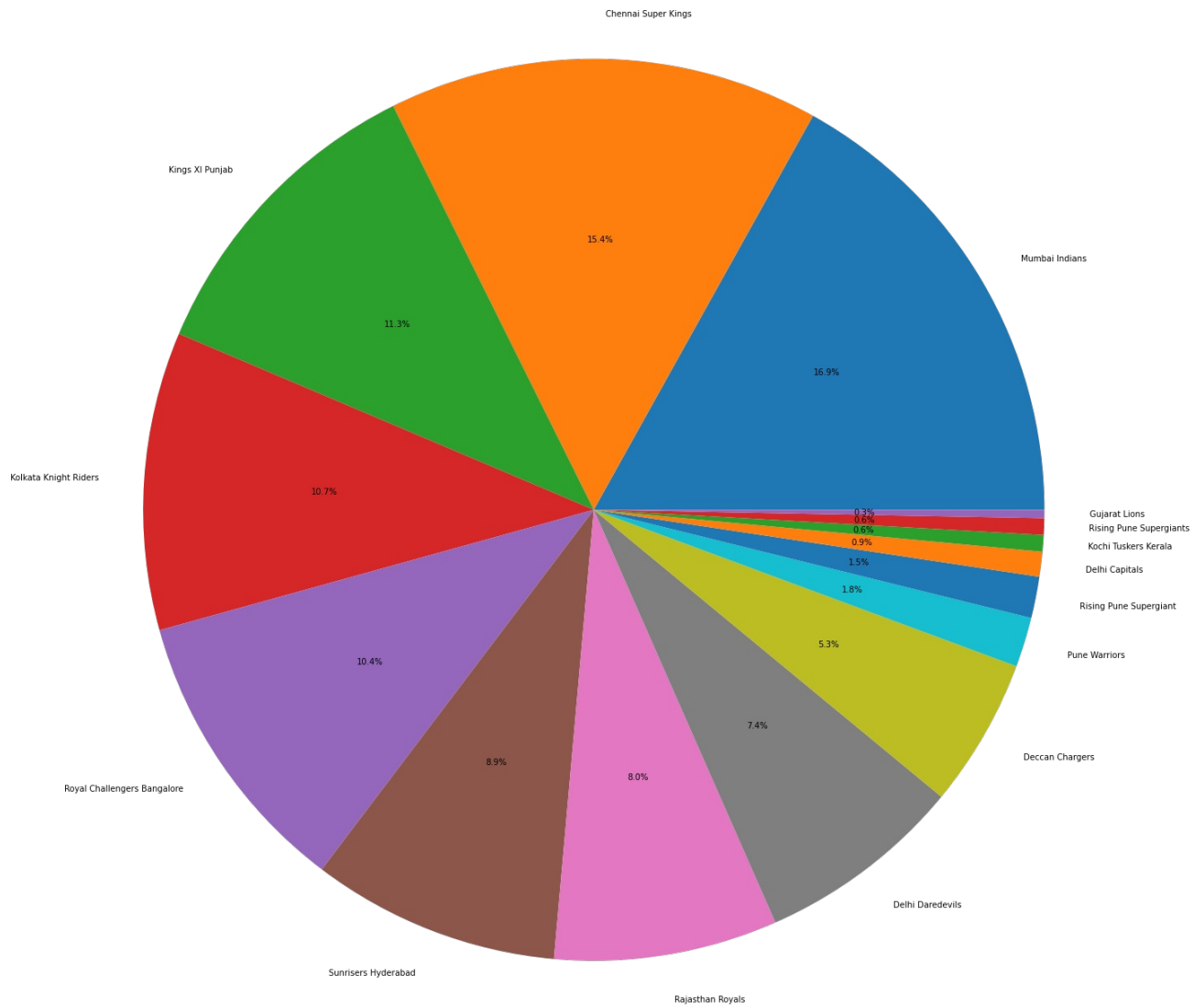
In [51]:

```
#Demonstrating with the help of the bar plot of top 3 winner batting first  
plt.figure(figsize=[15,9])  
plt.bar(list(batting_first['winner'].value_counts()[0:3].keys()), list(batting_first['winner'].value_counts()[0:3]),color=["blue","orange","pink"])  
plt.show()
```



In [69]:

```
#Making a Pie Chart
plt.figure(figsize=[25,25])
plt.pie(list(batting_first['winner'].value_counts()), labels = list(batting_first['winner'].value_counts().keys())
), autopct='%0.1f%%')
plt.show()
```



In [70]:

```
#Extracting the records where a team wins after batting second
batting_second=ipl[ipl['win_by_wickets']!=0]
```


In [71]:

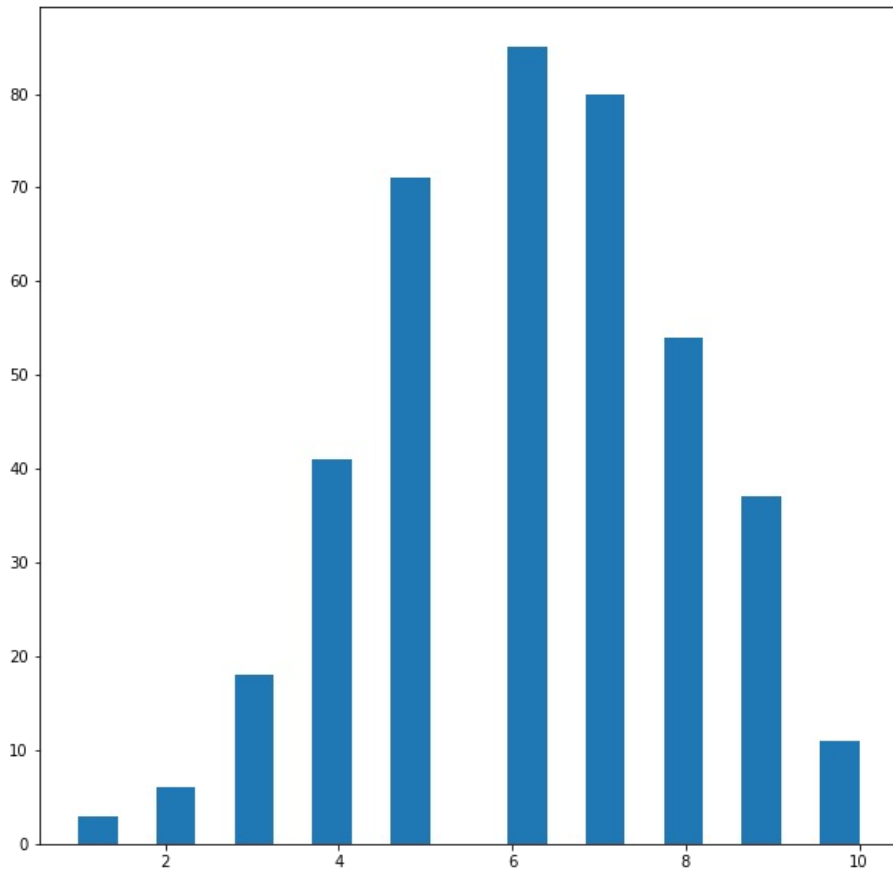
```
batting_second.head(10)
```

Out[71]:

	id	Season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_b
1	2	IPL-2017	Pune	06-04-2017	Mumbai Indians	Rising Pune Supergiant	Rising Pune Supergiant	field	normal	0	Rising Pune Supergiant	0	
2	3	IPL-2017	Rajkot	07-04-2017	Gujarat Lions	Kolkata Knight Riders	Kolkata Knight Riders	field	normal	0	Kolkata Knight Riders	0	
3	4	IPL-2017	Indore	08-04-2017	Rising Pune Supergiant	Kings XI Punjab	Kings XI Punjab	field	normal	0	Kings XI Punjab	0	
5	6	IPL-2017	Hyderabad	09-04-2017	Gujarat Lions	Sunrisers Hyderabad	Sunrisers Hyderabad	field	normal	0	Sunrisers Hyderabad	0	
6	7	IPL-2017	Mumbai	09-04-2017	Kolkata Knight Riders	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	
7	8	IPL-2017	Indore	10-04-2017	Royal Challengers Bangalore	Kings XI Punjab	Royal Challengers Bangalore	bat	normal	0	Kings XI Punjab	0	
9	10	IPL-2017	Mumbai	12-04-2017	Sunrisers Hyderabad	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	
10	11	IPL-2017	Kolkata	13-04-2017	Kings XI Punjab	Kolkata Knight Riders	Kolkata Knight Riders	field	normal	0	Kolkata Knight Riders	0	
11	12	IPL-2017	Bangalore	14-04-2017	Royal Challengers Bangalore	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	
12	13	IPL-2017	Rajkot	14-04-2017	Rising Pune Supergiant	Gujarat Lions	Gujarat Lions	field	normal	0	Gujarat Lions	0	

In [77]:

```
#Making a histogram for wins of the team batting second  
plt.figure(figsize=(10,10))  
plt.hist(batting_second['win_by_wickets'],bins=20)  
plt.show()
```



In [80]:

```
#Getting the winners after batting second  
batting_second['winner'].value_counts()
```

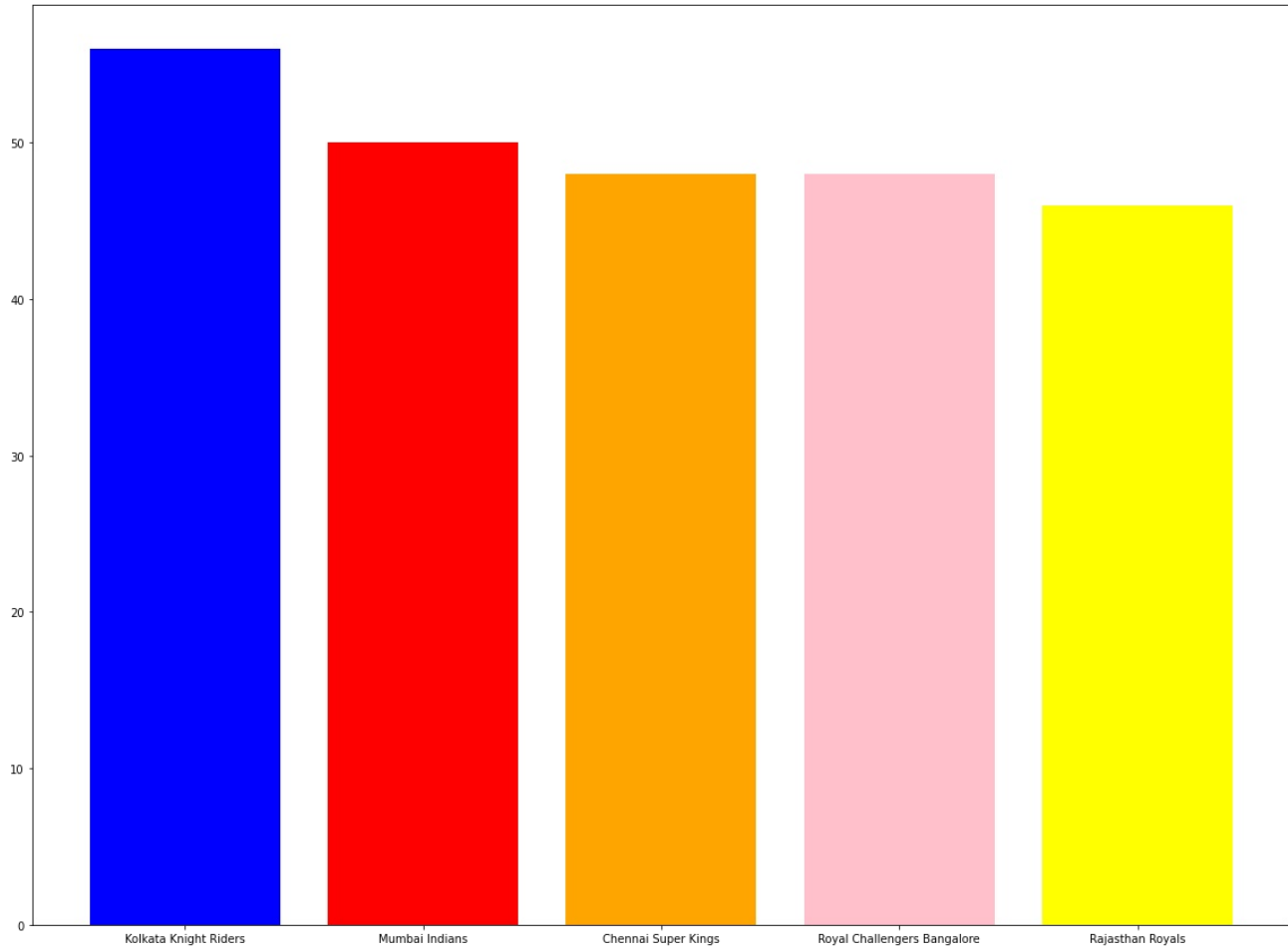
Out[80]:

Kolkata Knight Riders	56
Mumbai Indians	50
Chennai Super Kings	48
Royal Challengers Bangalore	48
Rajasthan Royals	46
Delhi Daredevils	42
Kings XI Punjab	42
Sunrisers Hyderabad	27
Gujarat Lions	12
Deccan Chargers	11
Pune Warriors	6
Delhi Capitals	6
Rising Pune Supergiant	5
Kochi Tuskers Kerala	4
Rising Pune Supergiants	3

Name: winner, dtype: int64

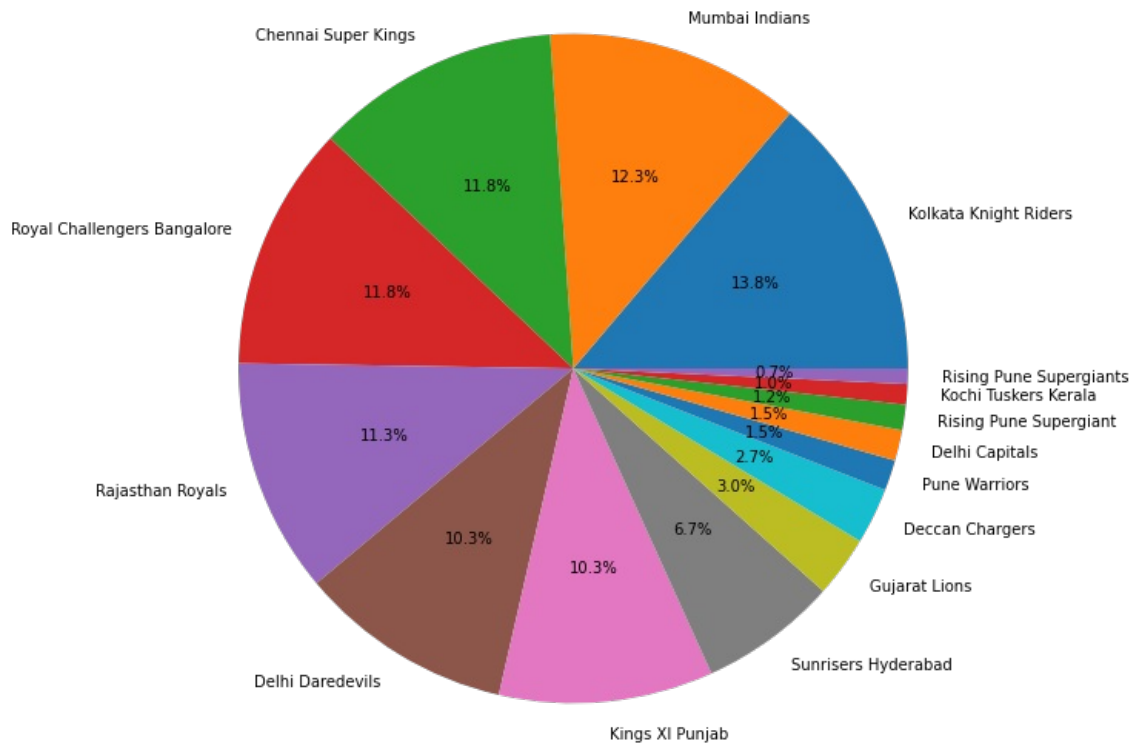
In [85]:

```
plt.figure(figsize=(20,15))
plt.bar(list(batting_second['winner'].value_counts()[0:5].keys()), list(batting_second['winner'].value_counts()[0:5]),color=["blue","red","orange","pink","yellow"])
plt.show()
```



In [90]:

```
#Making a pie chart for the distribution of the most wins after batting second
plt.figure(figsize=(15,10))
plt.pie(list(batting_second['winner'].value_counts()), labels=list(batting_second['winner'].value_counts().keys()), autopct='%0.1f%%')
plt.show()
```



In [95]:

```
#Matches played each session
ipl['Season'].value_counts()
```

Out[95]:

```
IPL-2013    76
IPL-2012    74
IPL-2011    73
IPL-2019    60
IPL-2018    60
IPL-2016    60
IPL-2014    60
IPL-2010    60
IPL-2017    59
IPL-2015    59
IPL-2008    58
IPL-2009    57
Name: Season, dtype: int64
```

In [96]:

```
#In which respective city were the matches played  
ipl['city'].value_counts()
```

Out[96]:

Mumbai	101
Kolkata	77
Delhi	74
Bangalore	66
Hyderabad	64
Chennai	57
Jaipur	47
Chandigarh	46
Pune	38
Durban	15
Bengaluru	14
Visakhapatnam	13
Ahmedabad	12
Centurion	12
Rajkot	10
Mohali	10
Dharamsala	9
Indore	9
Johannesburg	8
Abu Dhabi	7
Cuttack	7
Ranchi	7
Port Elizabeth	7
Cape Town	7
Raipur	6
Sharjah	6
Kochi	5
Kanpur	4
East London	3
Nagpur	3
Kimberley	3
Bloemfontein	2

Name: city, dtype: int64

In [98]:

```
#Finding out how many times a team has won the match after winning the toss  
np.sum(ipl['toss_winner']==ipl['winner'])
```

Out[98]:

393

In []:

In []: