

```
In [1]: import pandas as pd
from matplotlib import pyplot as plt
import seaborn as sns
```

```
In [3]: ipl = pd.read_csv('ipl data.csv')
```

```
In [4]: ipl
```

Out[4]:

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

756 rows × 18 columns

```
In [5]: ipl.head()
```

Out[5]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applie
0	1	2017	Hyderabad	05-04-2017	Sunrisers Hyderabad	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	(
1	2	2017	Pune	06-04-2017	Mumbai Indians	Rising Pune	Rising Pune	field	normal	4

1	2	2017	Pune	06-04-	Mumbai Indians	Rising Pune Supergiant	Rising Pune Supergiant	field	normal	(
2017										
2	3	2017	Rajkot	07-04-2017	Gujarat Lions	Kolkata Knight Riders	Kolkata Knight Riders	field	normal	(
3	4	2017	Indore	08-04-2017	Rising Pune Supergiant	Kings XI Punjab	Kings XI Punjab	field	normal	(
4	5	2017	Bangalore	08-04-2017	Royal Challengers Bangalore	Delhi Daredevils	Royal Challengers Bangalore	bat	normal	(

In [8]: `ipl.info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 756 entries, 0 to 755
Data columns (total 18 columns):
#   Column                Non-Null Count  Dtype
---  -
0   id                     756 non-null    int64
1   season                 756 non-null    int64
2   city                   749 non-null    object
3   date                   756 non-null    object
4   team1                  756 non-null    object
5   team2                  756 non-null    object
6   toss_winner            756 non-null    object
7   toss_decision          756 non-null    object
8   result                 756 non-null    object
9   dl_applied             756 non-null    int64
10  winner                  752 non-null    object
11  win_by_runs             756 non-null    int64
12  win_by_wickets          756 non-null    int64
13  player_of_match         752 non-null    object
14  venue                   756 non-null    object
15  umpire1                 754 non-null    object
16  umpire2                 754 non-null    object
17  umpire3                 119 non-null    object
dtypes: int64(5), object(13)
memory usage: 68.0+ KB
```

In [9]: `ipl.describe()`

Out[9]:

	id	season	dl_applied	win_by_runs	win_by_wickets
count	756.000000	756.000000	756.000000	756.000000	756.000000
mean	1792.178571	2013.444444	0.025132	13.283069	3.350529
std	3464.478148	3.366895	0.156630	23.471144	3.387963
min	1.000000	2008.000000	0.000000	0.000000	0.000000
25%	189.750000	2011.000000	0.000000	0.000000	0.000000
50%	378.500000	2013.000000	0.000000	0.000000	4.000000
75%	567.250000	2016.000000	0.000000	19.000000	6.000000
max	11415.000000	2019.000000	1.000000	146.000000	10.000000

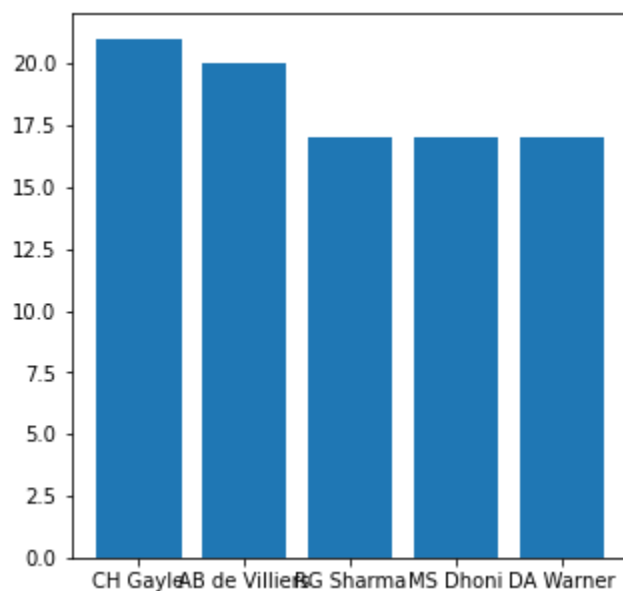
```
In [10]: ipl['player_of_match'].value_counts()
```

```
Out[10]: CH Gayle          21
         AB de Villiers   20
         RG Sharma       17
         MS Dhoni        17
         DA Warner       17
         ..
         TA Boult        1
         KK Cooper       1
         B Stanlake      1
         TG Southee      1
         AD Mathews      1
         Name: player_of_match, Length: 226, dtype: int64
```

```
In [11]: ipl['player_of_match'].value_counts()[0:5]
```

```
Out[11]: CH Gayle          21
         AB de Villiers   20
         RG Sharma       17
         MS Dhoni        17
         DA Warner       17
         Name: player_of_match, dtype: int64
```

```
In [12]: plt.figure(figsize=(5,5))
         plt.bar(list(ipl['player_of_match'].value_counts()[0:5].keys()),list(ipl['player_of_match'].value_counts()[0:5]))
         plt.show()
```



```
In [14]: ipl['result'].value_counts()
```

```
Out[14]: normal          743
         tie              9
         no result       4
         Name: result, dtype: int64
```

```
In [15]: ipl['toss_winner'].value_counts()
```

```
Out[15]: Mumbai Indians          98
         Kolkata Knight Riders    92
         Chennai Super Kings     89
         Kings XI Punjab         81
```

Royal Challengers Bangalore	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

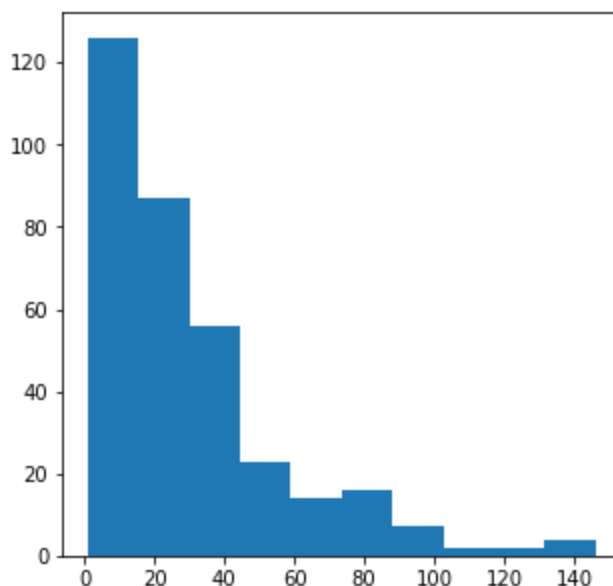
```
In [16]: batting_first =ipl[ipl['win_by_runs']!=0]
```

```
In [18]: batting_first.head()
```

Out[18]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_appl
0	1	2017	Hyderabad	05-04-2017	Sunrisers Hyderabad	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	
4	5	2017	Bangalore	08-04-2017	Royal Challengers Bangalore	Delhi Daredevils	Royal Challengers Bangalore	bat	normal	
8	9	2017	Pune	11-04-2017	Delhi Daredevils	Rising Pune Supergiant	Rising Pune Supergiant	field	normal	
13	14	2017	Kolkata	15-04-2017	Kolkata Knight Riders	Sunrisers Hyderabad	Sunrisers Hyderabad	field	normal	
14	15	2017	Delhi	15-04-2017	Delhi Daredevils	Kings XI Punjab	Delhi Daredevils	bat	normal	

```
In [19]: plt.figure(figsize=(5,5))
plt.hist(batting_first['win_by_runs'])
plt.show()
```



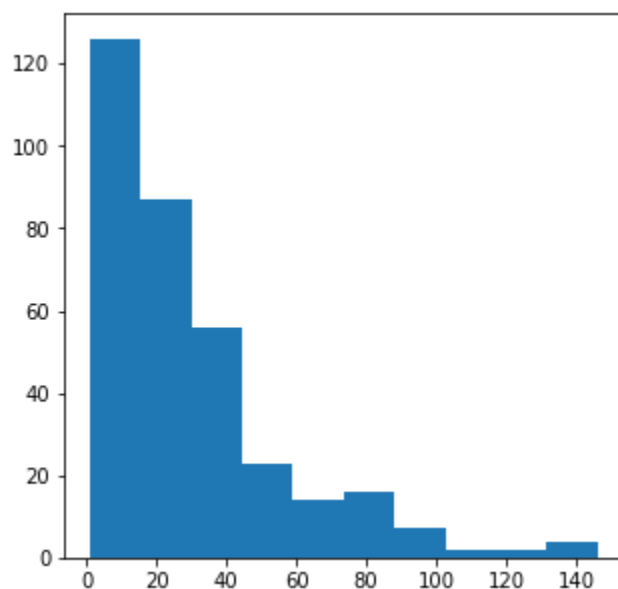
```
In [27]: batting_second = ipl[ipl['win_by_runs']!=0]
```

```
In [28]: batting_second.head()
```

Out[28]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_appl
0	1	2017	Hyderabad	05-04-2017	Sunrisers Hyderabad	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	
4	5	2017	Bangalore	08-04-2017	Royal Challengers Bangalore	Delhi Daredevils	Royal Challengers Bangalore	bat	normal	
8	9	2017	Pune	11-04-2017	Delhi Daredevils	Rising Pune Supergiant	Rising Pune Supergiant	field	normal	
13	14	2017	Kolkata	15-04-2017	Kolkata Knight Riders	Sunrisers Hyderabad	Sunrisers Hyderabad	field	normal	
14	15	2017	Delhi	15-04-2017	Delhi Daredevils	Kings XI Punjab	Delhi Daredevils	bat	normal	

```
In [34]: plt.figure(figsize=(5,5))
plt.hist(batting_second['win_by_runs'])
plt.show()
```



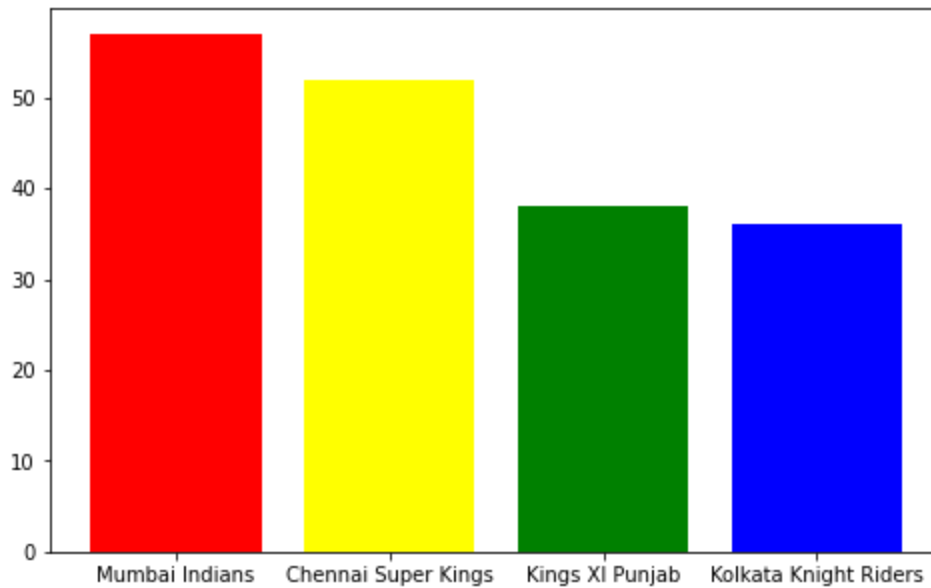
```
In [35]: batting_second['winner'].value_counts()
```

```
Out[35]: 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
```

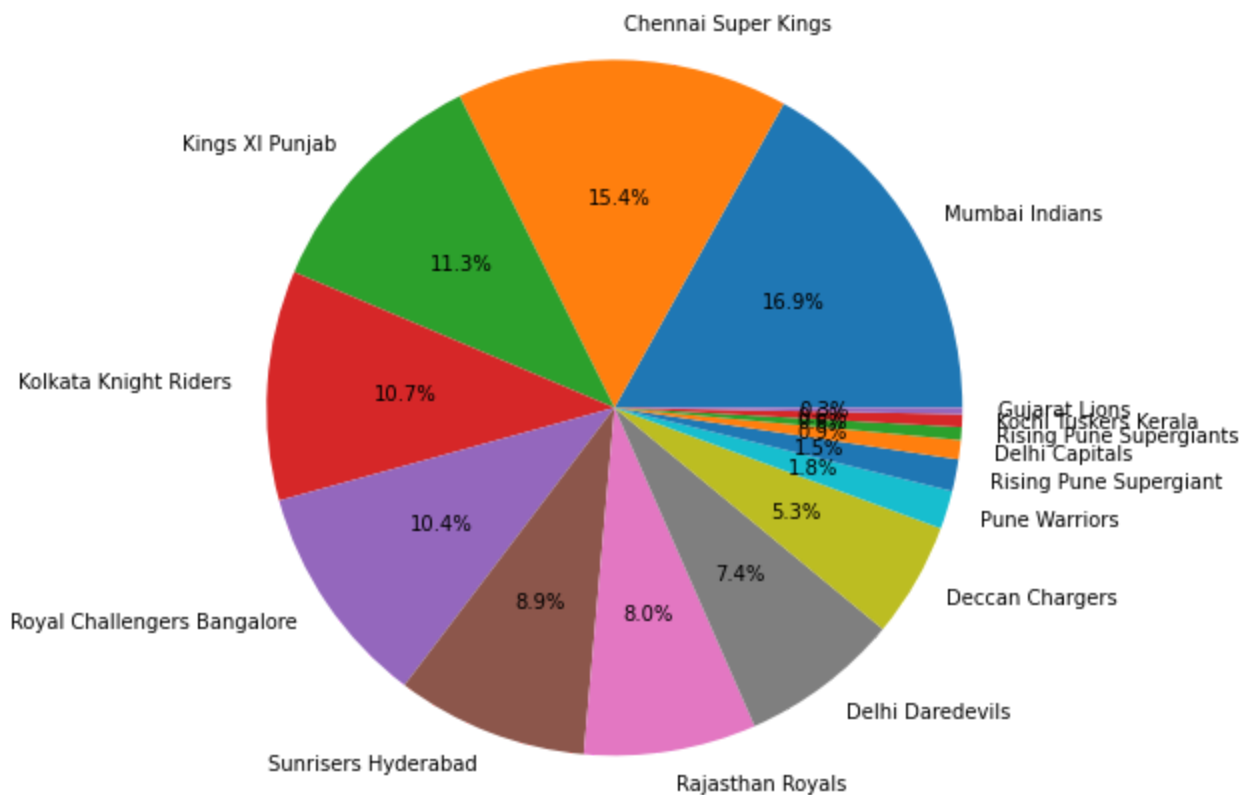
Delhi Capitals	3
Rising Pune Supergiants	2
Kochi Tuskers Kerala	2
Gujarat Lions	1

Name: winner, dtype: int64

```
In [36]: plt.figure(figsize=(8,5))
plt.bar(list(batting_second['winner'].value_counts()[0:4].keys()),list(batting_s
econd['winner'].value_counts()[0:4]),color=["red","yellow","green","blue"])
plt.show()
```



```
In [38]: plt.figure(figsize=(8,8))
plt.pie(list(batting_second['winner'].value_counts()),labels=list(batting_second
['winner'].value_counts().keys()),autopct='%0.1f%%')
plt.show()
```



```
In [39]: ipl['city'].value_counts()
```

```
Out[39]: Mumbai          101
Kolkata              77
Delhi                74
Bangalore            66
Hyderabad            64
Chennai              57
Jaipur               47
Chandigarh           46
Pune                 38
Durban               15
Bengaluru            14
Visakhapatnam        13
Centurion            12
Ahmedabad            12
Mohali               10
Rajkot               10
Indore               9
Dharamsala           9
Johannesburg         8
Cuttack              7
Cape Town            7
Abu Dhabi            7
Port Elizabeth       7
Ranchi               7
Raipur               6
Sharjah              6
Kochi                5
Kanpur               4
East London          3
Nagpur               3
Kimberley            3
Bloemfontein         2
Name: city, dtype: int64
```

```
In [42]: match_1=ipl[ipl['id']==1]
```

```
In [43]: match_1
```

```
Out[43]:
```

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied
0	1	2017	Hyderabad	05-04-2017	Sunrisers Hyderabad	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	0

```
In [46]: match_1['winner']
```

```
Out[46]: 0    Sunrisers Hyderabad
Name: winner, dtype: object
```

```
In [47]: match_1['player_of_match']
```

```
Out[47]: 0    Yuvraj Singh
Name: player_of_match, dtype: object
```

```
In [51]: srh=match_1[match_1['season']==2017]
```

In [52]: srh

Out[52]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied
0	1	2017	Hyderabad	05-04-2017	Sunrisers Hyderabad	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	0

In [54]: srh['date']

Out[54]: 0 05-04-2017
Name: date, dtype: object

In [56]: srh['venue']

Out[56]: 0 Rajiv Gandhi International Stadium, Uppal
Name: venue, dtype: object

In [57]: srh['toss_winner']

Out[57]: 0 Royal Challengers Bangalore
Name: toss_winner, dtype: object

In []: