```python
In [1]:  import pandas as pd
```

```python
In [2]:  from matplotlib import pyplot as plt
```

```python
In [3]:  import seaborn as sns
```

```python
In [4]:  ipl=pd.read_csv("matches.csv")
```

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

Out[5]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_by_wi
0	1	2017	Hyderabad	05-04-2017	Sunrisers Hyderabad	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	0	Sunrisers Hyderabad	35	
1	2	2017	Pune	06-04-2017	Mumbai Indians	Rising Pune Supergiant	Rising Pune Supergiant	field	normal	0	Rising Pune Supergiant	0	
2	3	2017	Rajkot	07-04-2017	Gujarat Lions	Kolkata Knight Riders	Kolkata Knight Riders	field	normal	0	Kolkata Knight Riders	0	
3	4	2017	Indore	08-04-2017	Rising Pune Supergiant	Kings XI Punjab	Kings XI Punjab	field	normal	0	Kings XI Punjab	0	
4	5	2017	Bangalore	08-04-2017	Royal Challengers Bangalore	Delhi Daredevils	Royal Challengers Bangalore	bat	normal	0	Royal Challengers Bangalore	15	

```python
In [6]:  ipl.tail()
```

Out[6]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_by_
750	11346	2019	Mohali	05-05-2019	Chennai Super Kings	Kings XI Punjab	Kings XI Punjab	field	normal	0	Kings XI Punjab	0	
751	11347	2019	Mumbai	05-05-2019	Kolkata Knight Riders	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	
752	11412	2019	Chennai	07-05-2019	Chennai Super Kings	Mumbai Indians	Chennai Super Kings	bat	normal	0	Mumbai Indians	0	
753	11413	2019	Visakhapatnam	08-05-2019	Sunrisers Hyderabad	Delhi Capitals	Delhi Capitals	field	normal	0	Delhi Capitals	0	
754	11414	2019	Visakhapatnam	10-05-2019	Delhi Capitals	Chennai Super Kings	Chennai Super Kings	field	normal	0	Chennai Super Kings	0	

```python
In [7]:  ipl.shape
```

Out[7]: (755, 18)

```python
In [8]:  ipl["player_of_match"].value_counts()
```

```
Out[8]:  CH Gayle          21
         AB de Villiers    20
         RG Sharma         17
         MS Dhoni          17
         DA Warner         17
                           ..
         PD Collingwood     1
         NV Ojha            1
         AC Voges           1
         J Theron           1
         S Hetmyer          1
         Name: player_of_match, Length: 226, dtype: int64
```

```python
In [9]:  ipl["player_of_match"].value_counts()[0:10]
```

```
Out[9]:   CH Gayle           21
          AB de Villiers     20
          RG Sharma          17
          MS Dhoni           17
          DA Warner          17
          YK Pathan          16
          SR Watson          15
          SK Raina           14
          G Gambhir          13
          MEK Hussey         12
          Name: player_of_match, dtype: int64
```

```
In [10]:  ipl["player_of_match"].value_counts()[0:5]
```

```
Out[10]:  CH Gayle           21
          AB de Villiers     20
          RG Sharma          17
          MS Dhoni           17
          DA Warner          17
          Name: player_of_match, dtype: int64
```
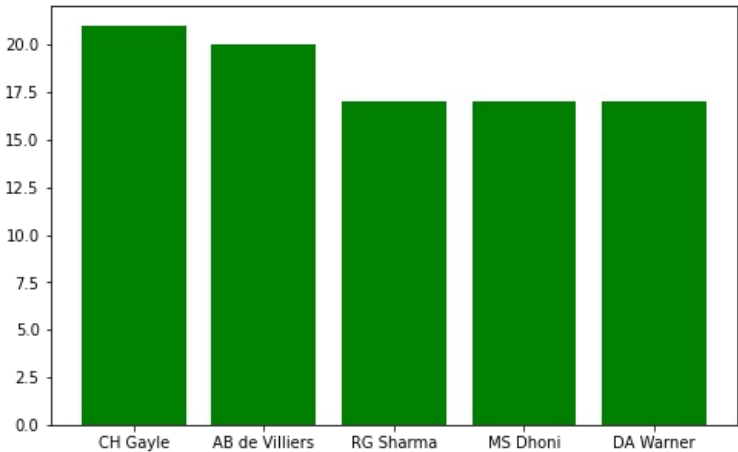
using bar plot for man of the match as we konw that x asix have the catogorial values and y axis have the numerical values

```
In [11]:  list(ipl["player_of_match"].value_counts()[0:5].keys())
```

```
Out[11]:  ['CH Gayle', 'AB de Villiers', 'RG Sharma', 'MS Dhoni', 'DA Warner']
```

```
In [12]:  plt.figure(figsize=(8,5))
          plt.bar(list(ipl["player_of_match"].value_counts()[0:5].keys()),list(ipl["player_of_match"].value_counts()[0:5]
          plt.show()
```



```
In [13]:  ipl.head(30)
```

Out[13]:

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

		2017	Bangalore		Punjab	Bangalore					Punjab	
8	9	2017	Pune	11-04-2017	Delhi Daredevils	Rising Pune Supergiant	Rising Pune Supergiant	field	normal	0	Delhi Daredevils	97
9	10	2017	Mumbai	12-04-2017	Sunrisers Hyderabad	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0
10	11	2017	Kolkata	13-04-2017	Kings XI Punjab	Kolkata Knight Riders	Kolkata Knight Riders	field	normal	0	Kolkata Knight Riders	0
11	12	2017	Bangalore	14-04-2017	Royal Challengers Bangalore	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0
12	13	2017	Rajkot	14-04-2017	Rising Pune Supergiant	Gujarat Lions	Gujarat Lions	field	normal	0	Gujarat Lions	0
13	14	2017	Kolkata	15-04-2017	Kolkata Knight Riders	Sunrisers Hyderabad	Sunrisers Hyderabad	field	normal	0	Kolkata Knight Riders	17
14	15	2017	Delhi	15-04-2017	Delhi Daredevils	Kings XI Punjab	Delhi Daredevils	bat	normal	0	Delhi Daredevils	51
15	16	2017	Mumbai	16-04-2017	Gujarat Lions	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0
16	17	2017	Bangalore	16-04-2017	Rising Pune Supergiant	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	0	Rising Pune Supergiant	27
17	18	2017	Delhi	17-04-2017	Delhi Daredevils	Kolkata Knight Riders	Delhi Daredevils	bat	normal	0	Kolkata Knight Riders	0
18	19	2017	Hyderabad	17-04-2017	Sunrisers Hyderabad	Kings XI Punjab	Kings XI Punjab	field	normal	0	Sunrisers Hyderabad	5
19	20	2017	Rajkot	18-04-2017	Royal Challengers Bangalore	Gujarat Lions	Gujarat Lions	field	normal	0	Royal Challengers Bangalore	21
20	21	2017	Hyderabad	19-04-2017	Sunrisers Hyderabad	Delhi Daredevils	Sunrisers Hyderabad	bat	normal	0	Sunrisers Hyderabad	15
21	22	2017	Indore	20-04-2017	Kings XI Punjab	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0
22	23	2017	Kolkata	21-04-2017	Kolkata Knight Riders	Gujarat Lions	Gujarat Lions	field	normal	0	Gujarat Lions	0
23	24	2017	Mumbai	22-04-2017	Mumbai Indians	Delhi Daredevils	Delhi Daredevils	field	normal	0	Mumbai Indians	14
24	25	2017	Pune	22-04-2017	Sunrisers Hyderabad	Rising Pune Supergiant	Rising Pune Supergiant	field	normal	0	Rising Pune Supergiant	0
25	26	2017	Rajkot	23-04-2017	Kings XI Punjab	Gujarat Lions	Gujarat Lions	field	normal	0	Kings XI Punjab	26
26	27	2017	Kolkata	23-04-2017	Kolkata Knight Riders	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	0	Kolkata Knight Riders	82
27	28	2017	Mumbai	24-04-2017	Rising Pune Supergiant	Mumbai Indians	Mumbai Indians	field	normal	0	Rising Pune Supergiant	3
28	29	2017	Pune	26-04-2017	Rising Pune Supergiant	Kolkata Knight Riders	Kolkata Knight Riders	field	normal	0	Kolkata Knight Riders	0
29	30	2017	Bangalore	27-04-2017	Royal Challengers Bangalore	Gujarat Lions	Gujarat Lions	field	normal	0	Gujarat Lions	0

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

```
Out[14]:    normal        742
            tie             9
            no result       4
            Name: result, dtype: int64
```

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

```
Out[15]:    Mumbai Indians               97
            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 [16]:   batting_first=ipl[ipl["win_by_runs"]!=0]
```
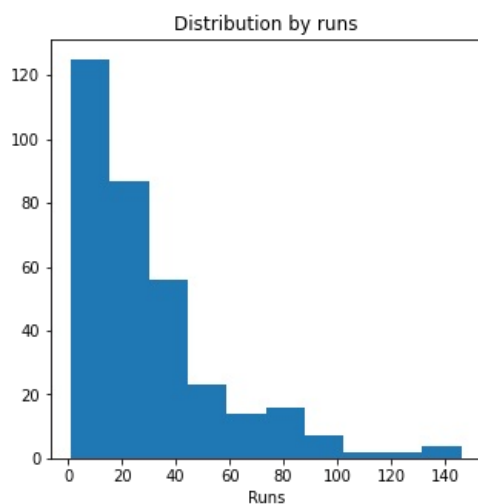
```
In [17]:   batting_first.head()
```

Out[17]:

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

```
In [18]:   batting_first.shape
```

```
Out[18]:   (336, 18)
```
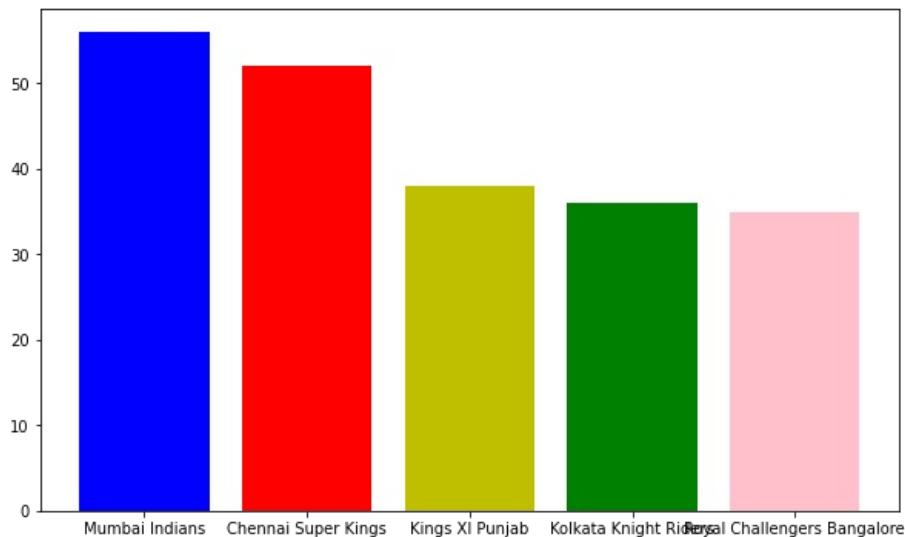
```
In [19]:   ## histogram plot to know by how many runs the team wins
           plt.figure(figsize=(5,5))
           plt.hist(batting_first["win_by_runs"])
           plt.title("Distribution by runs")
           plt.xlabel("Runs")
           plt.show()
```



```
In [20]:   batting_first["winner"].value_counts()
```
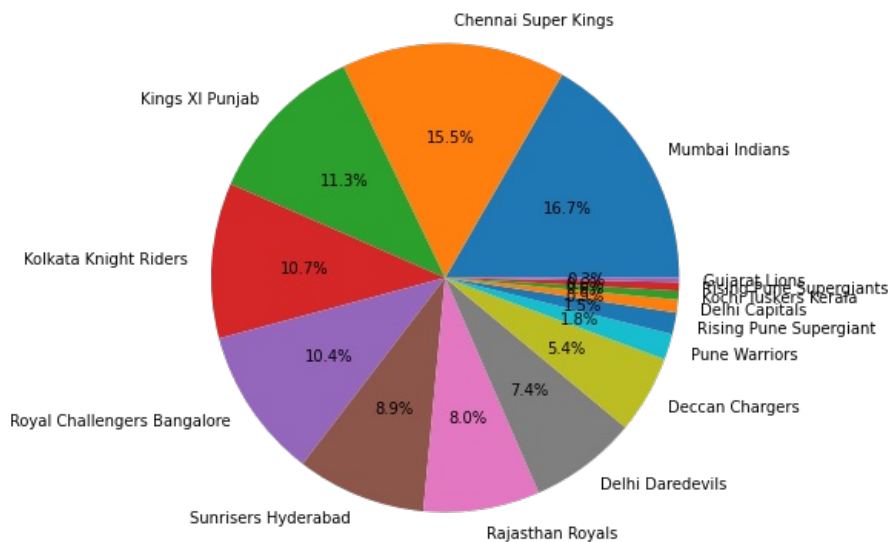
```
Mumbai Indians                56
Chennai Super Kings           52
Kings XI Punjab               38
Kolkata Knight Riders         36
Royal Challengers Bangalore   35
Sunrisers Hyderabad           30
Rajasthan Royals              27
Delhi Daredevils              25
Deccan Chargers               18
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 [21]:
```python
plt.figure(figsize=(10,6))
plt.bar(list(batting_first["winner"].value_counts()[0:5].keys()),list(batting_first["winner"].value_counts()[0:
plt.show()
```


now we are using pie chart to show the distribution first we have to gave the numerical values than we will gave the lables i.e is catagoriacal values

In [22]:
```python
plt.figure(figsize=(10,7))
plt.pie(list(batting_first["winner"].value_counts()),labels=list(batting_first["winner"].value_counts().keys())
plt.show()
```


In [23]:
```python
ipl.head()
```

Out[23]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_by_wi
0	1	2017	Hyderabad	05-04-2017	Sunrisers Hyderabad	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	0	Sunrisers Hyderabad	35	
1	2	2017	Pune	06-04-2017	Mumbai Indians	Rising Pune Supergiant	Rising Pune Supergiant	field	normal	0	Rising Pune Supergiant	0	
2	3	2017	Rajkot	07-04-2017	Gujarat Lions	Kolkata Knight Riders	Kolkata Knight Riders	field	normal	0	Kolkata Knight Riders	0	
3	4	2017	Indore	08-04-2017	Rising Pune Supergiant	Kings XI Punjab	Kings XI Punjab	field	normal	0	Kings XI Punjab	0	
4	5	2017	Bangalore	08-04-2017	Royal Challengers Bangalore	Delhi Daredevils	Royal Challengers Bangalore	bat	normal	0	Royal Challengers Bangalore	15	

```python
In [24]: batting_second=ipl[ipl["win_by_wickets"]!=0]
```
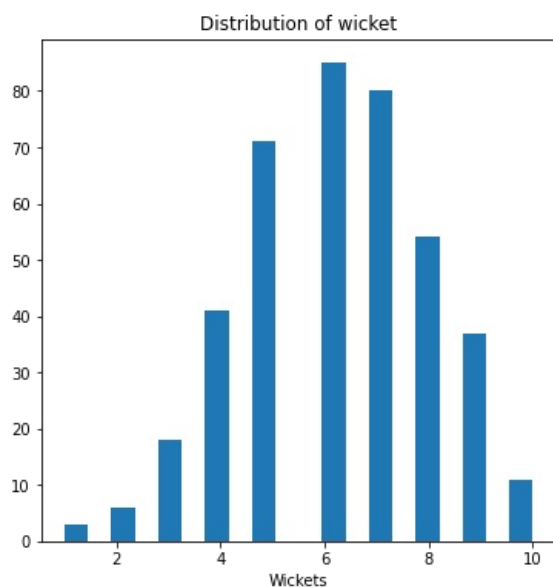
```python
In [25]: batting_second.head()
```

Out[25]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_by_wick
1	2	2017	Pune	06-04-2017	Mumbai Indians	Rising Pune Supergiant	Rising Pune Supergiant	field	normal	0	Rising Pune Supergiant	0	
2	3	2017	Rajkot	07-04-2017	Gujarat Lions	Kolkata Knight Riders	Kolkata Knight Riders	field	normal	0	Kolkata Knight Riders	0	
3	4	2017	Indore	08-04-2017	Rising Pune Supergiant	Kings XI Punjab	Kings XI Punjab	field	normal	0	Kings XI Punjab	0	
5	6	2017	Hyderabad	09-04-2017	Gujarat Lions	Sunrisers Hyderabad	Sunrisers Hyderabad	field	normal	0	Sunrisers Hyderabad	0	
6	7	2017	Mumbai	09-04-2017	Kolkata Knight Riders	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	

```python
In [26]: batting_second.shape
```

Out[26]: (406, 18)

```python
In [27]: plt.figure(figsize=(6,6))
plt.hist(batting_second["win_by_wickets"],bins=20)
plt.title("Distribution of wicket")
plt.xlabel("Wickets")
plt.show()
```
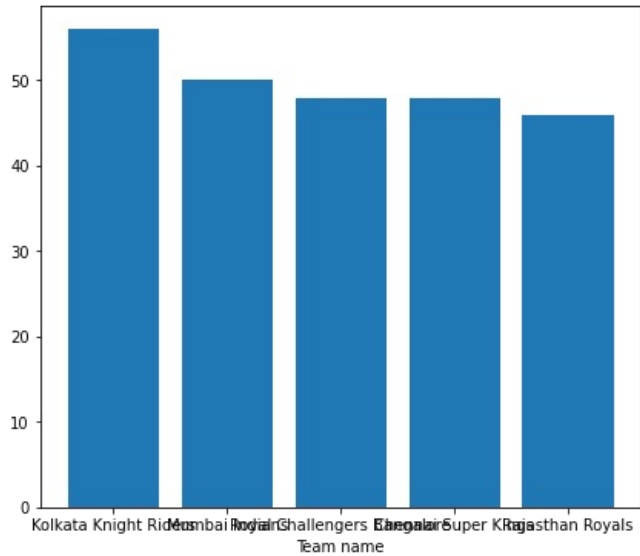


```python
In [28]: batting_second["winner"].value_counts()
```

```
Out[28]: Kolkata Knight Riders        56
         Mumbai Indians               50
         Royal Challengers Bangalore  48
         Chennai Super Kings          48
         Rajasthan Royals             46
         Kings XI Punjab              42
         Delhi Daredevils             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
```
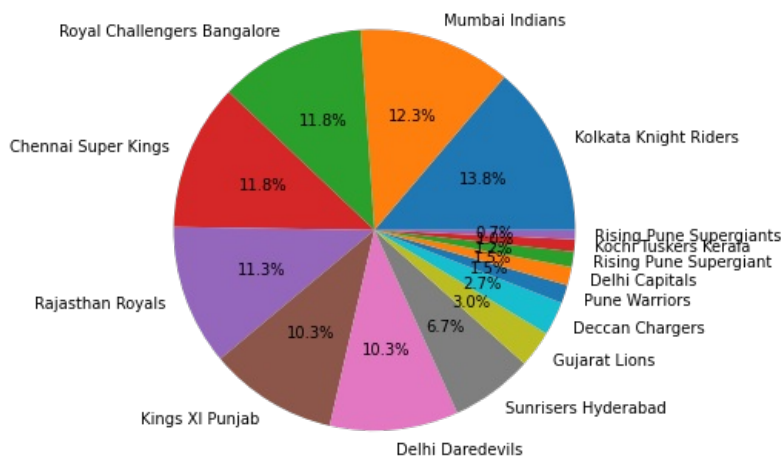
```python
In [29]: plt.figure(figsize=(7,6))
         plt.bar(list(batting_second["winner"].value_counts()[0:5].keys()),list(batting_second["winner"].value_counts()[
         plt.xlabel("Team name")
         plt.show()
```



```python
In [30]: plt.figure(figsize=(7,6))
         plt.pie(list(batting_second["winner"].value_counts()),labels=list(batting_second["winner"].value_counts().keys(
         plt.show()
```



```python
In [31]: ipl.head()
```

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_by_wi
0	1	2017	Hyderabad	05-04-2017	Sunrisers Hyderabad	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	0	Sunrisers Hyderabad	35	
1	2	2017	Pune	06-04-2017	Mumbai Indians	Rising Pune Supergiant	Rising Pune Supergiant	field	normal	0	Rising Pune Supergiant	0	
2	3	2017	Rajkot	07-04-2017	Gujarat Lions	Kolkata Knight Riders	Kolkata Knight Riders	field	normal	0	Kolkata Knight Riders	0	
3	4	2017	Indore	08-04-2017	Rising Pune Supergiant	Kings XI Punjab	Kings XI Punjab	field	normal	0	Kings XI Punjab	0	
4	5	2017	Bangalore	08-04-2017	Royal Challengers Bangalore	Delhi Daredevils	Royal Challengers Bangalore	bat	normal	0	Royal Challengers Bangalore	15	

```python
In [32]: ipl["season"].value_counts()
```

```
Out[32]: 2013    76
         2012    74
         2011    73
         2010    60
         2014    60
         2016    60
         2018    60
         2017    59
         2015    59
         2019    59
         2008    58
         2009    57
         Name: season, dtype: int64
```

```python
In [33]: ipl["city"].value_counts()
```

```
Out[33]: Mumbai            101
         Kolkata            77
         Delhi              74
         Bangalore          66
         Hyderabad          63
         Chennai            57
         Jaipur             47
         Chandigarh         46
         Pune               38
         Durban             15
         Bengaluru          14
         Visakhapatnam      13
         Centurion          12
         Ahmedabad          12
         Rajkot             10
         Mohali             10
         Indore              9
         Dharamsala          9
         Johannesburg        8
         Cuttack             7
         Ranchi              7
         Port Elizabeth      7
         Cape Town           7
         Abu Dhabi           7
         Sharjah             6
         Raipur              6
         Kochi               5
         Kanpur              4
         Nagpur              3
         Kimberley           3
         East London         3
         Bloemfontein        2
         Name: city, dtype: int64
```

```python
In [34]: ## finding out how times toss wining team win the matches
         import numpy as np
         np.sum(ipl["toss_winner"]==ipl["winner"])
```

```
Out[34]: 392
```

```python
In [35]: ipl.shape
```

```
Out[35]: (755, 18)
```

```python
In [36]: 392/755
```

0.519205298013245

In [37]: `deliveries=pd.read_csv("deliveries.csv")`

In [38]: `deliveries.head()`

Out[38]:

	match_id	inning	batting_team	bowling_team	over	ball	batsman	non_striker	bowler	is_super_over	...	bye_runs	legbye_runs	noball
0	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	1	SC Ganguly	BB McCullum	P Kumar	0	...	0	1	
1	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	2	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	
2	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	3	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	
3	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	4	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	
4	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	5	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	

5 rows × 21 columns

In [39]: `deliveries.tail(10)`

Out[39]:

	match_id	inning	batting_team	bowling_team	over	ball	batsman	non_striker	bowler	is_super_over	...	bye_runs	legbye_runs
136588	577	2	Royal Challengers Bangalore	Sunrisers Hyderabad	19	3	CJ Jordan	Sachin Baby	Mustafizur Rahman	0	...	0	0
136589	577	2	Royal Challengers Bangalore	Sunrisers Hyderabad	19	4	CJ Jordan	Sachin Baby	Mustafizur Rahman	0	...	0	1
136590	577	2	Royal Challengers Bangalore	Sunrisers Hyderabad	19	5	Sachin Baby	CJ Jordan	Mustafizur Rahman	0	...	0	0
136591	577	2	Royal Challengers Bangalore	Sunrisers Hyderabad	19	6	Sachin Baby	CJ Jordan	Mustafizur Rahman	0	...	0	0
136592	577	2	Royal Challengers Bangalore	Sunrisers Hyderabad	20	1	CJ Jordan	Sachin Baby	B Kumar	0	...	0	0
136593	577	2	Royal Challengers Bangalore	Sunrisers Hyderabad	20	2	Sachin Baby	CJ Jordan	B Kumar	0	...	0	0
136594	577	2	Royal Challengers Bangalore	Sunrisers Hyderabad	20	3	Sachin Baby	CJ Jordan	B Kumar	0	...	0	0
136595	577	2	Royal Challengers Bangalore	Sunrisers Hyderabad	20	4	Iqbal Abdulla	Sachin Baby	B Kumar	0	...	0	1
136596	577	2	Royal Challengers Bangalore	Sunrisers Hyderabad	20	5	Sachin Baby	Iqbal Abdulla	B Kumar	0	...	0	0
136597	577	2	Royal Challengers Bangalore	Sunrisers Hyderabad	20	6	Iqbal Abdulla	Sachin Baby	B Kumar	0	...	0	0

10 rows × 21 columns

In [40]: `## now we want to check match id withnon reapeating`
`deliveries["match_id"].unique()`

```
Out[40]: array([  1,   2,   3,   4,   5,   6,   7,   8,   9,  10,  11,  12,  13,
               14,  15,  16,  17,  18,  19,  20,  21,  22,  23,  24,  25,  26,
               27,  28,  29,  30,  31,  32,  33,  34,  35,  36,  37,  38,  39,
               40,  41,  42,  43,  44,  45,  46,  47,  48,  49,  50,  51,  52,
               53,  54,  55,  56,  57,  58,  59,  60,  61,  62,  63,  64,  65,
               66,  67,  68,  69,  70,  71,  72,  73,  74,  75,  76,  77,  78,
               79,  80,  81,  82,  83,  84,  85,  86,  87,  88,  89,  90,  91,
               92,  93,  94,  95,  96,  97,  98,  99, 100, 101, 102, 103, 104,
              105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117,
              118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130,
              131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143,
              144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156,
              157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169,
              170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182,
              183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195,
              196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208,
              209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221,
              222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234,
              235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247,
              248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260,
              261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273,
              274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286,
              287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299,
              300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312,
              313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325,
              326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338,
              339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351,
              352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364,
              365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377,
              378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390,
              391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403,
              404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416,
              417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429,
              430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442,
              443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455,
              456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468,
              469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481,
              482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494,
              495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507,
              508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520,
              521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533,
              534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546,
              547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559,
              560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572,
              573, 574, 575, 576, 577], dtype=int64)
```

In [41]: `deliveries.shape`

Out[41]: (136598, 21)

In [42]: `deliveries.head()`

Out[42]:

	match_id	inning	batting_team	bowling_team	over	ball	batsman	non_striker	bowler	is_super_over	...	bye_runs	legbye_runs	noball
0	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	1	SC Ganguly	BB McCullum	P Kumar	0	...	0	0	1
1	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	2	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	0
2	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	3	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	0
3	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	4	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	0
4	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	5	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	0

5 rows × 21 columns

In [43]: `match_1=deliveries[deliveries["match_id"]==1]`

In [44]: `match_1.head()`

```
Out[44]:
```

	match_id	inning	batting_team	bowling_team	over	ball	batsman	non_striker	bowler	is_super_over	...	bye_runs	legbye_runs	noball
0	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	1	SC Ganguly	BB McCullum	P Kumar	0	...	0	1	
1	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	2	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	
2	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	3	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	
3	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	4	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	
4	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	5	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	

5 rows × 21 columns

```
In [45]: match_1.shape
Out[45]: (225, 21)

In [46]: kkr=match_1[match_1["inning"]==1]

In [47]: kkr
```

```
Out[47]:
```

	match_id	inning	batting_team	bowling_team	over	ball	batsman	non_striker	bowler	is_super_over	...	bye_runs	legbye_runs	nob
0	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	1	SC Ganguly	BB McCullum	P Kumar	0	...	0	1	
1	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	2	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	
2	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	3	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	
3	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	4	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	
4	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	1	5	BB McCullum	SC Ganguly	P Kumar	0	...	0	0	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
119	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	20	2	BB McCullum	Mohammad Hafeez	P Kumar	0	...	0	0	
120	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	20	3	BB McCullum	Mohammad Hafeez	P Kumar	0	...	0	0	
121	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	20	4	BB McCullum	Mohammad Hafeez	P Kumar	0	...	0	0	
122	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	20	5	BB McCullum	Mohammad Hafeez	P Kumar	0	...	0	0	
123	1	1	Kolkata Knight Riders	Royal Challengers Bangalore	20	6	BB McCullum	Mohammad Hafeez	P Kumar	0	...	0	0	

124 rows × 21 columns

```
In [48]: kkr["batsman_runs"].value_counts()
Out[48]: 0    45
         1    39
         4    15
         6    14
         2    11
         Name: batsman_runs, dtype: int64

In [49]: kkr["dismissal_kind"].value_counts()
Out[49]: caught    3
         Name: dismissal_kind, dtype: int64

In [50]: rcb=match_1[match_1["inning"]==2]
```

```
In [51]: rcb
```

Out[51]:

	match_id	inning	batting_team	bowling_team	over	ball	batsman	non_striker	bowler	is_super_over	...	bye_runs	legbye_runs	nob
124	1	2	Royal Challengers Bangalore	Kolkata Knight Riders	1	1	R Dravid	W Jaffer	AB Dinda	0	...	0	0	0
125	1	2	Royal Challengers Bangalore	Kolkata Knight Riders	1	2	W Jaffer	R Dravid	AB Dinda	0	...	0	0	0
126	1	2	Royal Challengers Bangalore	Kolkata Knight Riders	1	3	W Jaffer	R Dravid	AB Dinda	0	...	0	0	0
127	1	2	Royal Challengers Bangalore	Kolkata Knight Riders	1	4	W Jaffer	R Dravid	AB Dinda	0	...	0	0	0
128	1	2	Royal Challengers Bangalore	Kolkata Knight Riders	1	5	R Dravid	W Jaffer	AB Dinda	0	...	0	0	0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
220	1	2	Royal Challengers Bangalore	Kolkata Knight Riders	15	5	P Kumar	SB Joshi	I Sharma	0	...	0	0	1
221	1	2	Royal Challengers Bangalore	Kolkata Knight Riders	15	6	SB Joshi	P Kumar	I Sharma	0	...	0	0	0
222	1	2	Royal Challengers Bangalore	Kolkata Knight Riders	15	7	P Kumar	SB Joshi	I Sharma	0	...	0	0	0
223	1	2	Royal Challengers Bangalore	Kolkata Knight Riders	16	1	SB Joshi	P Kumar	LR Shukla	0	...	0	0	0
224	1	2	Royal Challengers Bangalore	Kolkata Knight Riders	16	2	SB Joshi	P Kumar	LR Shukla	0	...	0	0	0

101 rows × 21 columns

```
In [52]: rcb["batsman_runs"].value_counts()
```

Out[52]:
```
0    65
1    27
2     3
6     3
4     3
Name: batsman_runs, dtype: int64
```

```
In [53]: rcb["dismissal_kind"].value_counts()
```

Out[53]:
```
caught     6
bowled     3
run out    1
Name: dismissal_kind, dtype: int64
```

```
In [ ]:
```