

Import all libraries

```
In [60]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from matplotlib import style
import seaborn as sns
```

Read ipl.csv file and print first 5 records

```
In [2]: df=pd.read_csv("ipl data.csv")
df.head()
```

Out[2]:

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

Check total number of columns,entries note down your findings

```
In [3]: len(df.columns)
```

Out[3]: 18

```
In [4]: df.size
```

Out[4]: 11448

Total columns- 18 and total entries are 11448

Find null values

In [5]:

df.isnull()

Out[5]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_by_wickets	player_of_match	ver
0	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
...
631	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
632	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
633	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
634	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
635	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False

636 rows × 18 columns

Drop umpire3 column as it contains more than 75% of null values

In [6]:

df.drop("umpire3",axis=1,inplace=True)
df.head()

Out[6]:

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

Drop null values of city , winner ,player_of_match,umpire1,umpire2 column

In [14]: df.dropna(subset=["city", "winner", "player_of_match", "umpire1", "umpire2"], inplace=True)
df.head()

Out[14]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_by_wickets	player_c
0	1	2017	Hyderabad	2017-04-05	Sunrisers Hyderabad	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	0	Sunrisers Hyderabad	35	0	Yuv
1	2	2017	Pune	2017-04-06	Mumbai Indians	Rising Pune Supergiant	Rising Pune Supergiant	field	normal	0	Rising Pune Supergiant	0	7	Si
2	3	2017	Rajkot	2017-04-07	Gujarat Lions	Kolkata Knight Riders	Kolkata Knight Riders	field	normal	0	Kolkata Knight Riders	0	10	
3	4	2017	Indore	2017-04-08	Rising Pune Supergiant	Kings XI Punjab	Kings XI Punjab	field	normal	0	Kings XI Punjab	0	6	GJ
5	6	2017	Hyderabad	2017-04-09	Gujarat Lions	Sunrisers Hyderabad	Sunrisers Hyderabad	field	normal	0	Sunrisers Hyderabad	0	9	Ras

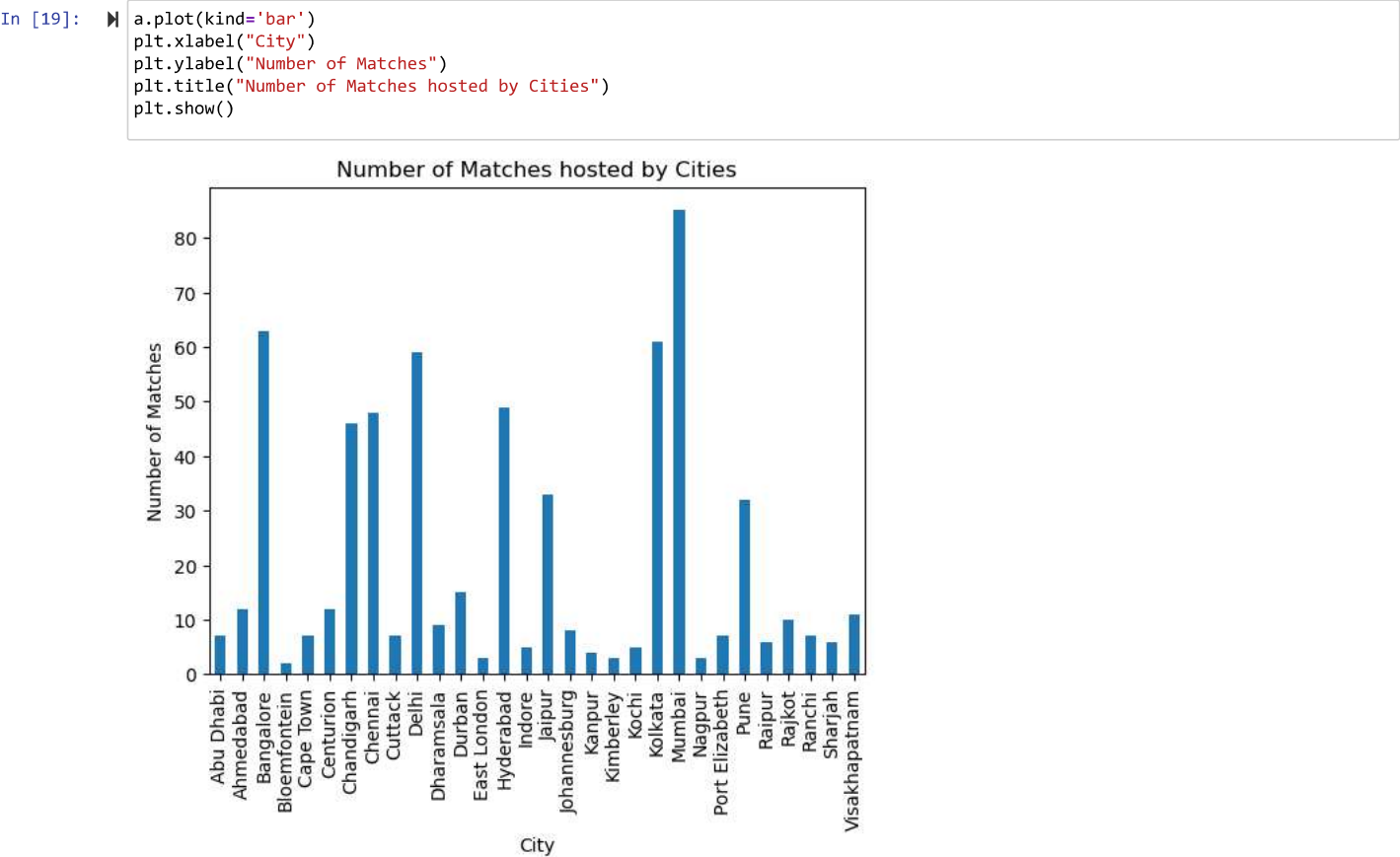
which city hosted most number of matches?

draw bar plot and write down your insights

In [18]: a= df.groupby("city").count()["id"]
a
b= a.sort_values(ascending=False).index[0]
b

Out[18]: 'Mumbai'

Most matches were played in mumbai(85).



According to the stats, Most matches were held in mumbai that are 85 matches. Above bar chart also represents the which city hosted most number of matches

Find all venue of mumbai city

```
In [20]: v=df[df["city"] == "Mumbai"]["venue"].unique()  
v
```

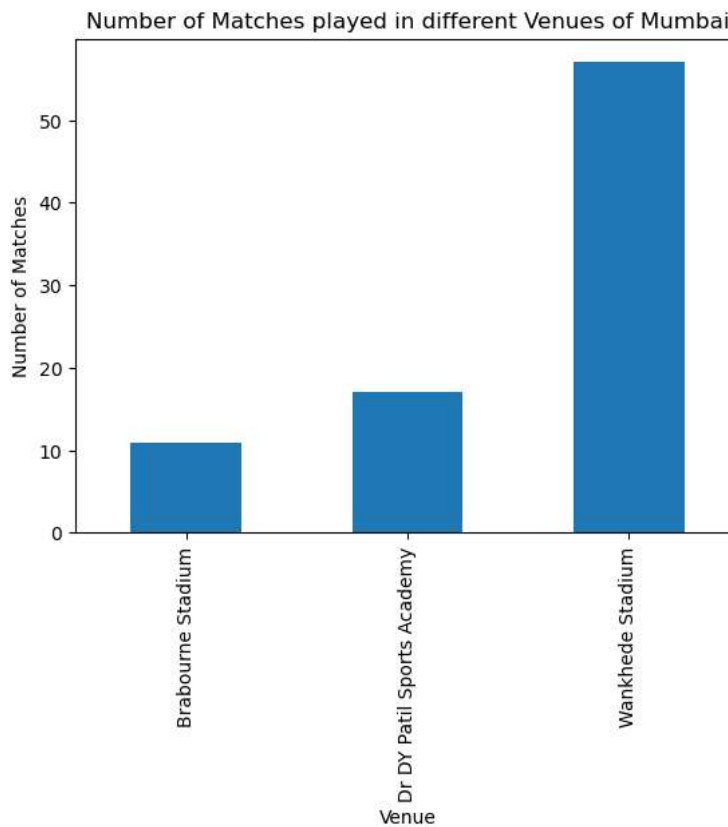
```
Out[20]: array(['Wankhede Stadium', 'Dr DY Patil Sports Academy',  
              'Brabourne Stadium'], dtype=object)
```

now compare in which venue of mumbai most number of matches played (draw bar plot and write down insights)

```
In [21]: c=df[df["city"] == "Mumbai"]  
d= c.groupby("venue").count()["id"]  
e= d.sort_values(ascending=False).index[0]  
e
```

```
Out[21]: 'Wankhede Stadium'
```

```
In [22]: d.plot(kind='bar')  
plt.xlabel("Venue")  
plt.ylabel("Number of Matches")  
plt.title("Number of Matches played in different Venues of Mumbai")  
plt.show()
```



By this we come to know that in the venue of mumbai most number of matches played were in Wankhede stadium.

What is the preferred choice after winning a toss in mumbai

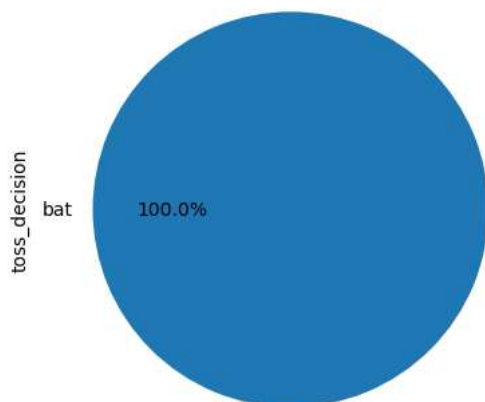
```
In [31]: f=df[(df["city"] == "Mumbai") & (df["toss_decision"] != "field")]
g=f["toss_decision"].value_counts()
g
```

```
Out[31]: bat    34
Name: toss_decision, dtype: int64
```

Graphical representation of above question

```
In [32]: g.plot(kind='pie', autopct='%1.1f%')
plt.title("Preferred choice after winning a toss in Mumbai")
plt.show()
```

Preferred choice after winning a toss in Mumbai



Which team won most number of toss

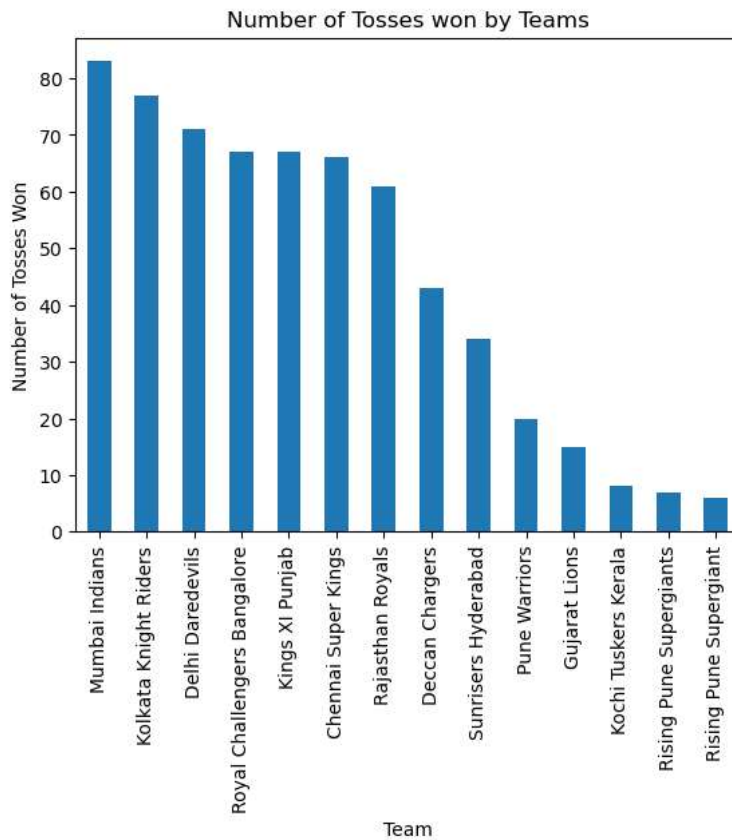
```
In [34]: h= df["toss_winner"].value_counts()
h
```

```
Out[34]: Mumbai Indians          83
Kolkata Knight Riders          77
Delhi Daredevils              71
Royal Challengers Bangalore    67
Kings XI Punjab               67
Chennai Super Kings           66
Rajasthan Royals              61
Deccan Chargers               43
Sunrisers Hyderabad           34
Pune Warriors                 20
Gujarat Lions                 15
Kochi Tuskers Kerala           8
Rising Pune Supergiants        7
Rising Pune Supergiant         6
Name: toss_winner, dtype: int64
```

Mumbai Indians won most number of toss in the tournament.

Show graphical representation of above question

```
In [37]: h.plot(kind='bar')
plt.xlabel("Team")
plt.ylabel("Number of Tosses Won")
plt.title("Number of Tosses won by Teams")
plt.show()
```



Find what mumbai indians preferred after winning a toss?

```
In [38]: i= df[((df["team1"] == "Mumbai Indians") | (df["team2"] == "Mumbai Indians")) & (df["toss_decision"] != "field")]
j= i["toss_decision"].value_counts()
j
```

```
Out[38]: bat    69
         Name: toss_decision, dtype: int64
```

Head to head winning count of Mumbai Indians vs Chennai Super Kings

```
In [40]: count= df[((df["team1"] == "Mumbai Indians") & (df["team2"] == "Chennai Super Kings")) | ((df["team1"] == "Chennai Super Kings" & (df["team2"] == "Mumbai Indians")))]
```

Out[40]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_by_wickets	player_of_the_match
66	67	2008	Chennai	2008-04-23	Chennai Super Kings	Mumbai Indians	Mumbai Indians	field	normal	0	Chennai Super Kings	6	0	ML Hay
95	96	2008	Mumbai	2008-05-14	Chennai Super Kings	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	9	ST Jayasu
117	118	2009	Cape Town	2009-04-18	Mumbai Indians	Chennai Super Kings	Chennai Super Kings	field	normal	0	Mumbai Indians	19	0	SR Tendu
161	162	2009	Port Elizabeth	2009-05-16	Mumbai Indians	Chennai Super Kings	Mumbai Indians	bat	normal	0	Chennai Super Kings	0	7	ML Hay
193	194	2010	Mumbai	2010-03-25	Chennai Super Kings	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	5	SR Tendu
210	211	2010	Chennai	2010-04-06	Chennai Super Kings	Mumbai Indians	Chennai Super Kings	bat	normal	0	Chennai Super Kings	24	0	SK R
233	234	2010	Mumbai	2010-04-25	Chennai Super Kings	Mumbai Indians	Chennai Super Kings	bat	normal	0	Chennai Super Kings	22	0	SK R
256	257	2011	Mumbai	2011-04-22	Mumbai Indians	Chennai Super Kings	Chennai Super Kings	field	normal	0	Mumbai Indians	8	0	Harbhajan Si
307	308	2012	Chennai	2012-04-04	Chennai Super Kings	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	8	RE I
354	355	2012	Mumbai	2012-05-06	Chennai Super Kings	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	2	DR Sr
378	379	2012	Bangalore	2012-05-23	Chennai Super Kings	Mumbai Indians	Mumbai Indians	field	normal	0	Chennai Super Kings	38	0	MS Dr
385	386	2013	Chennai	2013-04-06	Mumbai Indians	Chennai Super Kings	Mumbai Indians	bat	normal	0	Mumbai Indians	9	0	KA Pol
429	430	2013	Mumbai	2013-05-05	Mumbai Indians	Chennai Super Kings	Mumbai Indians	bat	normal	0	Mumbai Indians	60	0	MG John
453	454	2013	Delhi	2013-05-21	Chennai Super Kings	Mumbai Indians	Chennai Super Kings	bat	normal	0	Chennai Super Kings	48	0	MEK Hus
456	457	2013	Kolkata	2013-05-26	Mumbai Indians	Chennai Super Kings	Mumbai Indians	bat	normal	0	Mumbai Indians	23	0	KA Pol
489	490	2014	Mumbai	2014-05-10	Mumbai Indians	Chennai Super Kings	Chennai Super Kings	field	normal	0	Chennai Super Kings	0	4	DR Sr
514	515	2014	Mumbai	2014-05-28	Mumbai Indians	Chennai Super Kings	Chennai Super Kings	field	normal	0	Chennai Super Kings	0	7	SK R
529	530	2015	Mumbai	2015-04-17	Mumbai Indians	Chennai Super Kings	Mumbai Indians	bat	normal	0	Chennai Super Kings	0	6	A Ne
558	559	2015	Chennai	2015-05-08	Chennai Super Kings	Mumbai Indians	Chennai Super Kings	bat	normal	0	Mumbai Indians	0	6	HH Pan
572	573	2015	Mumbai	2015-05-19	Mumbai Indians	Chennai Super Kings	Mumbai Indians	bat	normal	0	Mumbai Indians	25	0	KA Pol
575	576	2015	Kolkata	2015-05-24	Mumbai Indians	Chennai Super Kings	Chennai Super Kings	field	normal	0	Mumbai Indians	41	0	RG Sha

```
In [41]: k= count["winner"].value_counts()
k
```

```
Out[41]: Mumbai Indians      12
Chennai Super Kings        9
Name: winner, dtype: int64
```

Which team won most of the matches in mumbai?

```
In [42]: l= df[(df["city"] == "Mumbai") & (df["winner"].notnull())]
l
```

```
Out[42]:
```

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_by_wickets	playe
6	7	2017	Mumbai	2017-04-09	Kolkata Knight Riders	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	4	
9	10	2017	Mumbai	2017-04-12	Sunrisers Hyderabad	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	4	
15	16	2017	Mumbai	2017-04-16	Gujarat Lions	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	6	
23	24	2017	Mumbai	2017-04-22	Mumbai Indians	Delhi Daredevils	Delhi Daredevils	field	normal	0	Mumbai Indians	14	0	MJ M
27	28	2017	Mumbai	2017-04-24	Rising Pune Supergiant	Mumbai Indians	Mumbai Indians	field	normal	0	Rising Pune Supergiant	3	0	
...	
572	573	2015	Mumbai	2015-05-19	Mumbai Indians	Chennai Super Kings	Mumbai Indians	bat	normal	0	Mumbai Indians	25	0	
576	577	2016	Mumbai	2016-04-09	Mumbai Indians	Rising Pune Supergiants	Mumbai Indians	bat	normal	0	Rising Pune Supergiants	0	9	
584	585	2016	Mumbai	2016-04-16	Mumbai Indians	Gujarat Lions	Gujarat Lions	field	normal	0	Gujarat Lions	0	3	
589	590	2016	Mumbai	2016-04-20	Royal Challengers Bangalore	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	6	
599	600	2016	Mumbai	2016-04-28	Kolkata Knight Riders	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	6	

85 rows × 17 columns

```
In [43]: m= l["winner"].value_counts()
m
```

```
Out[43]: Mumbai Indians      45
Chennai Super Kings        8
Kings XI Punjab            5
Royal Challengers Bangalore 5
Rajasthan Royals           5
Deccan Chargers            3
Kolkata Knight Riders       3
Pune Warriors              3
Rising Pune Supergiant      2
Delhi Daredevils           2
Kochi Tuskers Kerala        1
Sunrisers Hyderabad         1
Rising Pune Supergiants     1
Gujarat Lions               1
Name: winner, dtype: int64
```

How many times each team won the toss and won the match in mumbai


```
In [44]: l= df[(df["city"] == "Mumbai") & (df["winner"].notnull())]
1
```

Out[44]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_by_wickets	playe
	6	7	2017	Mumbai	2017-04-09	Kolkata Knight Riders	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	4
	9	10	2017	Mumbai	2017-04-12	Sunrisers Hyderabad	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	4
	15	16	2017	Mumbai	2017-04-16	Gujarat Lions	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	6
	23	24	2017	Mumbai	2017-04-22	Mumbai Indians	Delhi Daredevils	Delhi Daredevils	field	normal	0	Mumbai Indians	14	0 MJ M
	27	28	2017	Mumbai	2017-04-24	Rising Pune Supergiant	Mumbai Indians	Mumbai Indians	field	normal	0	Rising Pune Supergiant	3	0

	572	573	2015	Mumbai	2015-05-19	Mumbai Indians	Chennai Super Kings	Mumbai Indians	bat	normal	0	Mumbai Indians	25	0
	576	577	2016	Mumbai	2016-04-09	Mumbai Indians	Rising Pune Supergiants	Mumbai Indians	bat	normal	0	Rising Pune Supergiants	0	9
	584	585	2016	Mumbai	2016-04-16	Mumbai Indians	Gujarat Lions	Gujarat Lions	field	normal	0	Gujarat Lions	0	3
	589	590	2016	Mumbai	2016-04-20	Royal Challengers Bangalore	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	6
	599	600	2016	Mumbai	2016-04-28	Kolkata Knight Riders	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	6

85 rows × 17 columns

```
In [45]: n = l.groupby(["toss_winner", "winner"]).count()["id"]
n
```

Out[45]:

toss_winner	winner	
Chennai Super Kings	Chennai Super Kings	5
	Kings XI Punjab	1
	Mumbai Indians	1
Deccan Chargers	Deccan Chargers	3
	Kolkata Knight Riders	1
	Mumbai Indians	1
Delhi Daredevils	Royal Challengers Bangalore	1
	Delhi Daredevils	2
	Mumbai Indians	5
Gujarat Lions	Rajasthan Royals	2
	Gujarat Lions	1
Kings XI Punjab	Chennai Super Kings	1
	Mumbai Indians	2
	Pune Warriors	1
Kochi Tuskers Kerala	Kochi Tuskers Kerala	1
	Pune Warriors	1
	Kolkata Knight Riders	1
Kolkata Knight Riders	Mumbai Indians	2
	Chennai Super Kings	1
	Kings XI Punjab	4
Mumbai Indians	Kolkata Knight Riders	1
	Mumbai Indians	26
	Pune Warriors	1
Pune Warriors	Rajasthan Royals	1
	Rising Pune Supergiant	2
	Rising Pune Supergiants	1
Rajasthan Royals	Royal Challengers Bangalore	2
	Chennai Super Kings	1
	Mumbai Indians	2
Royal Challengers Bangalore	Mumbai Indians	3
	Rajasthan Royals	2
	Sunrisers Hyderabad	1
Sunrisers Hyderabad	Mumbai Indians	2
	Royal Challengers Bangalore	2
	Mumbai Indians	1

Name: id, dtype: int64

Which venue hosted most number of matches

In [46]:

```
o= df["venue"].value_counts()
o
```

Out[46]:

M Chinnaswamy Stadium	63
Eden Gardens	61
Feroz Shah Kotla	59
Wankhede Stadium	57
Rajiv Gandhi International Stadium, Uppal	49
MA Chidambaram Stadium, Chepauk	48
Punjab Cricket Association Stadium, Mohali	35
Sawai Mansingh Stadium	33
Dr DY Patil Sports Academy	17
Subrata Roy Sahara Stadium	17
Maharashtra Cricket Association Stadium	15
Kingsmead	15
Sardar Patel Stadium, Motera	12
SuperSport Park	12
Punjab Cricket Association IS Bindra Stadium, Mohali	11
Dr. Y.S. Rajasekhara Reddy ACA-VDCA Cricket Stadium	11
Brabourne Stadium	11
Saurashtra Cricket Association Stadium	10
Himachal Pradesh Cricket Association Stadium	9
New Wanderers Stadium	8
Newlands	7
St George's Park	7
Sheikh Zayed Stadium	7
JSCA International Stadium Complex	7
Barabati Stadium	7
Shaheed Veer Narayan Singh International Stadium	6
Sharjah Cricket Stadium	6
Holkar Cricket Stadium	5
Nehru Stadium	5
Green Park	4
Vidarbha Cricket Association Stadium, Jamtha	3
De Beers Diamond Oval	3
Buffalo Park	3
OUTsurance Oval	2

Name: venue, dtype: int64

Find how many matches chennai super kings played at M Chinnaswamy stadium?

In [47]:

```
p= df[(df["venue"] == "M Chinnaswamy Stadium") & ((df["team1"] == "Chennai Super Kings") | (df["team2"] == "Chennai Super Kings"))]
p
```

Out[47]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_by_wickets	player_of_the_match
73	74	2008	Bangalore	2008-04-28	Chennai Super Kings	Royal Challengers Bangalore	Chennai Super Kings		bat normal	0	Chennai Super Kings	13	0	
191	192	2010	Bangalore	2010-03-23	Royal Challengers Bangalore	Chennai Super Kings	Chennai Super Kings		field normal	0	Royal Challengers Bangalore	36	0	
301	302	2011	Bangalore	2011-05-22	Chennai Super Kings	Royal Challengers Bangalore	Royal Challengers Bangalore		field normal	0	Royal Challengers Bangalore	0	8	
378	379	2012	Bangalore	2012-05-23	Chennai Super Kings	Mumbai Indians	Mumbai Indians		field normal	0	Chennai Super Kings	38	0	
451	452	2013	Bangalore	2013-05-18	Royal Challengers Bangalore	Chennai Super Kings	Chennai Super Kings		field normal	0	Royal Challengers Bangalore	24	0	
509	510	2014	Bangalore	2014-05-24	Royal Challengers Bangalore	Chennai Super Kings	Chennai Super Kings		field normal	0	Chennai Super Kings	0	8	
537	538	2015	Bangalore	2015-04-22	Chennai Super Kings	Royal Challengers Bangalore	Royal Challengers Bangalore		field normal	0	Chennai Super Kings	27	0	

In [48]:

```
q = p.count()["id"]
q
```

Out[48]: 7

Who won most matches at M Chinnaswamy stadium?

```
In [49]: r = df[(df["venue"] == "M Chinnaswamy Stadium") & (df["winner"].notnull())]
r
```

```
Out[49]:
```

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_by_wickets	pla
11	12	2017	Bangalore	2017-04-14	Royal Challengers Bangalore	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	4	
16	17	2017	Bangalore	2017-04-16	Rising Pune Supergiant	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	0	Rising Pune Supergiant	27	0	
29	30	2017	Bangalore	2017-04-27	Royal Challengers Bangalore	Gujarat Lions	Gujarat Lions	field	normal	0	Gujarat Lions	0	7	
41	42	2017	Bangalore	2017-05-05	Kings XI Punjab	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	0	Kings XI Punjab	19	0	Sa
44	45	2017	Bangalore	2017-05-07	Royal Challengers Bangalore	Kolkata Knight Riders	Kolkata Knight Riders	field	normal	0	Kolkata Knight Riders	0	6	
...
616	617	2016	Bangalore	2016-05-11	Royal Challengers Bangalore	Mumbai Indians	Mumbai Indians	field	normal	0	Mumbai Indians	0	6	
619	620	2016	Bangalore	2016-05-14	Royal Challengers Bangalore	Gujarat Lions	Gujarat Lions	field	normal	0	Royal Challengers Bangalore	144	0	
625	626	2016	Bangalore	2016-05-18	Royal Challengers Bangalore	Kings XI Punjab	Kings XI Punjab	field	normal	1	Royal Challengers Bangalore	82	0	
632	633	2016	Bangalore	2016-05-24	Gujarat Lions	Royal Challengers Bangalore	Royal Challengers Bangalore	field	normal	0	Royal Challengers Bangalore	0	4	
635	636	2016	Bangalore	2016-05-29	Sunrisers Hyderabad	Royal Challengers Bangalore	Sunrisers Hyderabad	bat	normal	0	Sunrisers Hyderabad	8	0	

63 rows × 17 columns

```
In [50]: s = r["winner"].value_counts()
s
```

```
Out[50]: Royal Challengers Bangalore    29
Mumbai Indians                        8
Kolkata Knight Riders                  6
Kings XI Punjab                       5
Chennai Super Kings                   4
Rajasthan Royals                      3
Delhi Daredevils                      3
Sunrisers Hyderabad                   2
Rising Pune Supergiant                1
Gujarat Lions                         1
Deccan Chargers                      1
Name: winner, dtype: int64
```

Matches played in each year

```
In [55]: t = df["season"].value_counts()
t
```

```
Out[55]: 2013    76
2012    74
2011    72
2010    60
2016    60
2017    58
2008    58
2009    57
2015    57
2014    53
Name: season, dtype: int64
```

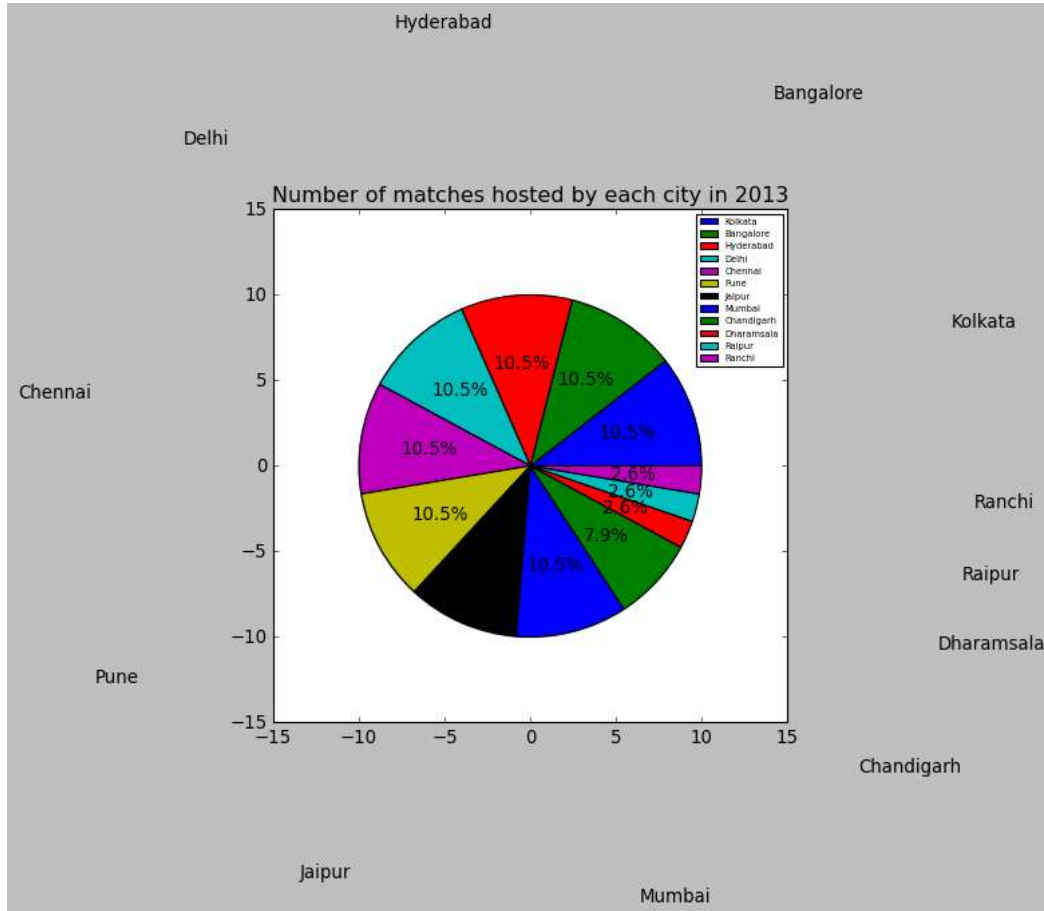
Which city hosted most number of matches in 2013

```
In [58]: u = df[(df["season"] == 2013)]
v = u["city"].value_counts()
v
```

```
Out[58]: Kolkata      8
Bangalore      8
Hyderabad      8
Delhi          8
Chennai        8
Pune           8
Jaipur         8
Mumbai         8
Chandigarh     6
Dharamsala     2
Raipur         2
Ranchi         2
Name: city, dtype: int64
```

lets analyse ipl season held in 2013

```
In [74]: u = df[(df["season"] == 2013) ]
v = u["city"].value_counts()
plt.pie(v.values, labels = v.index, autopct='%1.1f%%', radius=10, labeldistance=2.6, shadow=True, frame=True, normalize=True)
plt.title("Number of matches hosted by each city in 2013")
plt.legend(prop={'size': 6})
plt.show()
```



Here we will create yearwise groups

```
In [77]: w = df.groupby("season")
x = w.size()
x
```

Out[77]: season
2008 58
2009 57
2010 60
2011 72
2012 74
2013 76
2014 53
2015 57
2016 60
2017 58
dtype: int64

```
In [78]: y = w.get_group(2013)
y
```

Out[78]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied	winner	win_by_runs	win_by_wickets	player_of_the_match
381	382	2013	Kolkata	2013-04-03	Delhi Daredevils	Kolkata Knight Riders	Kolkata Knight Riders	field	normal	0	Kolkata Knight Riders	0	6	
382	383	2013	Bangalore	2013-04-04	Royal Challengers Bangalore	Mumbai Indians	Mumbai Indians	field	normal	0	Royal Challengers Bangalore	2	0	
383	384	2013	Hyderabad	2013-04-05	Sunrisers Hyderabad	Pune Warriors	Pune Warriors	field	normal	0	Sunrisers Hyderabad	22	0	
384	385	2013	Delhi	2013-04-06	Rajasthan Royals	Delhi Daredevils	Rajasthan Royals	bat	normal	0	Rajasthan Royals	5	0	
385	386	2013	Chennai	2013-04-06	Mumbai Indians	Chennai Super Kings	Mumbai Indians	bat	normal	0	Mumbai Indians	9	0	
...
452	453	2013	Hyderabad	2013-05-19	Kolkata Knight Riders	Sunrisers Hyderabad	Kolkata Knight Riders	bat	normal	0	Sunrisers Hyderabad	0	5	
453	454	2013	Delhi	2013-05-21	Chennai Super Kings	Mumbai Indians	Chennai Super Kings	bat	normal	0	Chennai Super Kings	48	0	
454	455	2013	Delhi	2013-05-22	Sunrisers Hyderabad	Rajasthan Royals	Sunrisers Hyderabad	bat	normal	0	Rajasthan Royals	0	4	
455	456	2013	Kolkata	2013-05-24	Rajasthan Royals	Mumbai Indians	Rajasthan Royals	bat	normal	0	Mumbai Indians	0	4	He
456	457	2013	Kolkata	2013-05-26	Mumbai Indians	Chennai Super Kings	Mumbai Indians	bat	normal	0	Mumbai Indians	23	0	

76 rows × 17 columns

THANK YOU!

```
In [ ]: 
```