

```
In [2]: import numpy as np  
import pandas as pd
```

```
In [21]: df=pd.read_csv("match_data.csv",low_memory=False)  
df.head()
```

Out[21]:

	match_id	season	start_date	venue	innings	ball	batting_team	bowling_team	strike
0	1370353	2023	5/29/2023	Narendra Modi Stadium, Ahmedabad	1	0.1	Gujarat Titans	Chennai Super Kings	WP Sah:
1	1370353	2023	5/29/2023	Narendra Modi Stadium, Ahmedabad	1	0.2	Gujarat Titans	Chennai Super Kings	WP Sah:
2	1370353	2023	5/29/2023	Narendra Modi Stadium, Ahmedabad	1	0.3	Gujarat Titans	Chennai Super Kings	WP Sah:
3	1370353	2023	5/29/2023	Narendra Modi Stadium, Ahmedabad	1	0.4	Gujarat Titans	Chennai Super Kings	Shubma Gi
4	1370353	2023	5/29/2023	Narendra Modi Stadium, Ahmedabad	1	0.5	Gujarat Titans	Chennai Super Kings	WP Sah:

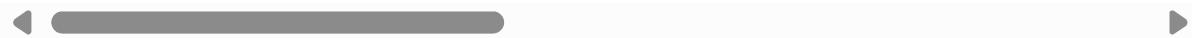
5 rows × 23 columns

```
In [22]: matchinfo=pd.read_csv("match_info_data.csv",low_memory=False)
```

```
In [23]: matchinfo.head()
```

Out[23]:

	<code>id</code>	<code>season</code>	<code>city</code>	<code>date</code>	<code>team1</code>	<code>team2</code>	<code>toss_winner</code>	<code>toss_decision</code>	<code>res</code>
0	1370353	2023	Ahmedabad	5/29/2023	Gujarat Titans	Chennai Super Kings	Chennai Super Kings	field	
1	1370352	2023	Ahmedabad	5/26/2023	Gujarat Titans	Mumbai Indians	Mumbai Indians	field	nor
2	1370351	2023	Chennai	5/24/2023	Mumbai Indians	Lucknow Super Giants	Mumbai Indians	bat	nor
3	1370350	2023	Chennai	5/23/2023	Chennai Super Kings	Gujarat Titans	Gujarat Titans	field	nor
4	1359543	2023	Mumbai	5/21/2023	Sunrisers Hyderabad	Mumbai Indians	Mumbai Indians	field	nor



```
In [24]: Chennai = matchinfo[matchinfo['city'] == 'Chennai']
Chennai
```

Out[24]:

		id	season	city	date	team1	team2	toss_winner	toss_decision	res
2	1370351	2023	Chennai	5/24/2023	Mumbai Indians	Lucknow Super Giants	Mumbai Indians		bat	norrr
3	1370350	2023	Chennai	5/23/2023	Chennai Super Kings	Gujarat Titans	Gujarat Titans		field	norrr
14	1359535	2023	Chennai	5/14/2023	Chennai Super Kings	Kolkata Knight Riders	Chennai Super Kings		bat	norrr
19	1359529	2023	Chennai	5/10/2023	Chennai Super Kings	Delhi Capitals	Chennai Super Kings		bat	norrr
25	1359523	2023	Chennai	5/6/2023	Mumbai Indians	Chennai Super Kings	Chennai Super Kings		field	norrr
...
993	336013	2007/08	Chennai	5/10/2008	Chennai Super Kings	Kings XI Punjab	Kings XI Punjab		field	norrr
998	336007	2007/08	Chennai	5/6/2008	Chennai Super Kings	Deccan Chargers	Deccan Chargers		field	norrr
1004	336001	2007/08	Chennai	5/2/2008	Chennai Super Kings	Delhi Daredevils	Chennai Super Kings		bat	norrr
1013	335993	2007/08	Chennai	4/26/2008	Chennai Super Kings	Kolkata Knight Riders	Kolkata Knight Riders		bat	norrr
1016	335989	2007/08	Chennai	4/23/2008	Chennai Super Kings	Mumbai Indians	Mumbai Indians		field	norrr

76 rows × 18 columns



```
In [25]: Chennaiwin = Chennai[Chennai['winner'] == 'Chennai Super Kings']
Chennaiwin.head()
```

Out[25]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result
3	1370350	2023	Chennai	5/23/2023	Chennai Super Kings	Gujarat Titans	Gujarat Titans	field	normal
19	1359529	2023	Chennai	5/10/2023	Chennai Super Kings	Delhi Capitals	Chennai Super Kings	bat	normal
25	1359523	2023	Chennai	5/6/2023	Mumbai Indians	Chennai Super Kings	Chennai Super Kings	field	normal
45	1359503	2023	Chennai	4/21/2023	Sunrisers Hyderabad	Chennai Super Kings	Chennai Super Kings	field	normal
68	1359480	2023	Chennai	4/3/2023	Chennai Super Kings	Lucknow Super Giants	Lucknow Super Giants	field	normal



```
In [26]: Chennaiwincount = len(Chennaiwin)
Chennaiwincount
```

Out[26]: 45

```
In [27]: print(Chennaiwincount/76*100)
```

59.210526315789465

```
In [28]: Chennailost = Chennai[Chennai['winner'] != 'Chennai Super Kings']
Chennailost.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Index: 31 entries, 2 to 1004
Data columns (total 18 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   id               31 non-null      int64  
 1   season           31 non-null      object  
 2   city              31 non-null      object  
 3   date              31 non-null      object  
 4   team1             31 non-null      object  
 5   team2             31 non-null      object  
 6   toss_winner        31 non-null      object  
 7   toss_decision     31 non-null      object  
 8   result            31 non-null      object  
 9   dl_applied         31 non-null      int64  
 10  winner            29 non-null      object  
 11  win_by_runs       31 non-null      int64  
 12  win_by_wickets    31 non-null      int64  
 13  player_of_match   31 non-null      object  
 14  venue              31 non-null      object  
 15  umpire1           31 non-null      object  
 16  umpire2           31 non-null      object  
 17  umpire3           31 non-null      object  
dtypes: int64(4), object(14)
memory usage: 4.6+ KB
```

```
In [29]: Chennailostcount = len(Chennailost)
Chennailostcount
```

```
Out[29]: 31
```

```
In [30]: print("Chennai Super Kings Wins in M. A. Chidambaram Stadium:", Chennaiwincount)
print("Chennai Super Kings Losses in M. A. Chidambaram Stadium:", Chennailostcount)
```

```
Chennai Super Kings Wins in M. A. Chidambaram Stadium: 45
Chennai Super Kings Losses in M. A. Chidambaram Stadium: 31
```

```
In [31]: tossfield = Chennai[Chennai['toss_decision'] == 'field']  
tossfield
```

Out[31]:

	<u>id</u>	<u>season</u>	<u>city</u>	<u>date</u>	<u>team1</u>	<u>team2</u>	<u>toss_winner</u>	<u>toss_decision</u>
3	1370350	2023	Chennai	5/23/2023	Chennai Super Kings	Gujarat Titans	Gujarat Titans	field
25	1359523	2023	Chennai	5/6/2023	Mumbai Indians	Chennai Super Kings	Chennai Super Kings	field
45	1359503	2023	Chennai	4/21/2023	Sunrisers Hyderabad	Chennai Super Kings	Chennai Super Kings	field
					Raiasthan	Chennai	Chennai	

```
In [32]: #Count of Toss Decision Field
```

```
tossfieldcount = len(tossfield)  
tossfieldcount
```

Out[32]: 31

```
In [33]: #Toss Decision Bat
```

```
tossbat = Chennai[Chennai['toss_decision'] == 'bat']  
tossbat
```

```
Out[33]:
```

	<code>id</code>	<code>season</code>	<code>city</code>	<code>date</code>	<code>team1</code>	<code>team2</code>	<code>toss_winner</code>	<code>toss_decision</code>
2	1370351	2023	Chennai	5/24/2023	Mumbai Indians	Lucknow Super Giants	Mumbai Indians	bat
14	1359535	2023	Chennai	5/14/2023	Chennai Super Kings	Kolkata Knight Riders	Chennai Super Kings	bat
19	1359529	2023	Chennai	5/10/2023	Chennai Super Kings	Delhi Capitals	Chennai Super Kings	bat
22	1359515	2023	Chennai	5/20/2023	Chennai Super Kings	Punjab	Chennai Super Kings	bat

```
In [34]: #count of Toss Decision Bat
```

```
tossbatcount = len(tossbat)  
tossbatcount
```

```
Out[34]: 45
```

```
In [35]: #summary of toss
```

```
print("Matches where Chennai Super Kings chose to field:", tossfieldcount)  
print("Matches where Chennai Super Kings chose to bat:", tossbatcount)
```

```
Matches where Chennai Super Kings chose to field: 31  
Matches where Chennai Super Kings chose to bat: 45
```

```
In [36]: #Toss Decision field Win
```

```
tossfieldwin = Chennai[(Chennai['toss_decision'] == 'field') & (Chennai['winner'] == 'Chennai')]  
print(tossfieldwin)
```

	id	season	city	date	team1	\
3	1370350	2023	Chennai	5/23/2023	Chennai Super Kings	
25	1359523	2023	Chennai	5/6/2023	Mumbai Indians	
45	1359503	2023	Chennai	4/21/2023	Sunrisers Hyderabad	
68	1359480	2023	Chennai	4/3/2023	Chennai Super Kings	
278	1178425	2019	Chennai	5/1/2019	Chennai Super Kings	
287	1178416	2019	Chennai	4/23/2019	Sunrisers Hyderabad	
305	1178398	2019	Chennai	4/9/2019	Kolkata Knight Riders	
317	1175367	2019	Chennai	3/31/2019	Chennai Super Kings	
327	1175356	2019	Chennai	3/23/2019	Royal Challengers Bangalore	
383	1136565	2018	Chennai	4/10/2018	Kolkata Knight Riders	
539	829765	2015	Chennai	4/28/2015	Chennai Super Kings	
564	829707	2015	Chennai	4/9/2015	Chennai Super Kings	
664	598034	2013	Chennai	4/28/2013	Chennai Super Kings	
686	598012	2013	Chennai	4/13/2013	Chennai Super Kings	
703	548380	2012	Chennai	5/25/2012	Delhi Daredevils	
720	548364	2012	Chennai	5/12/2012	Chennai Super Kings	
753	548330	2012	Chennai	4/19/2012	Chennai Super Kings	
821	501226	2011	Chennai	4/25/2011	Chennai Super Kings	
...

```
In [37]: #Count of Toss Decision field Win
```

```
tossfieldwincount = len(tossfieldwin)  
tossfieldwincount
```

```
Out[37]: 20
```

In [38]: #Toss Decision field Loss

```
tossfieldlost = Chennai[(Chennai['toss_decision'] == 'field') & (Chennai['winn  
tossfieldlost
```

Out[38]:

		id	season	city	date	team1	team2	toss_winner	toss_decision
57	1359491	2023	Chennai	4/12/2023	Rajasthan Royals	Chennai Super Kings	Chennai Super Kings	Chennai Super Kings	field
191	1254074	2021	Chennai	4/23/2021	Mumbai Indians	Punjab Kings	Punjab Kings	Punjab Kings	field
202	1254063	2021	Chennai	4/14/2021	Royal Challengers Bangalore	Sunrisers Hyderabad	Sunrisers Hyderabad	Sunrisers Hyderabad	field
203	1254062	2021	Chennai	4/13/2021	Mumbai Indians	Kolkata Knight Riders	Kolkata Knight Riders	Kolkata Knight Riders	field
205	1254060	2021	Chennai	4/11/2021	Kolkata Knight Riders	Sunrisers Hyderabad	Sunrisers Hyderabad	Sunrisers Hyderabad	field
207	1254058	2021	Chennai	4/9/2021	Mumbai Indians	Royal Challengers Bangalore	Royal Challengers Bangalore	Royal Challengers Bangalore	field
284	1178419	2019	Chennai	4/26/2019	Mumbai Indians	Chennai Super Kings	Chennai Super Kings	Chennai Super Kings	field
775	548306	2012	Chennai	4/4/2012	Chennai Super Kings	Mumbai Indians	Mumbai Indians	Mumbai Indians	field
777	501270	2011	Chennai	5/27/2011	Royal Challengers Bangalore	Mumbai Indians	Mumbai Indians	Mumbai Indians	field
893	419121	2009/10	Chennai	3/21/2010	Chennai Super Kings	Kings XI Punjab	Chennai Super Kings	Chennai Super Kings	field
998	336007	2007/08	Chennai	5/6/2008	Chennai Super Kings	Deccan Chargers	Deccan Chargers	Deccan Chargers	field



```
In [39]: #count of Toss Decision field Loss
```

```
tossfieldlostcount = len(tossfieldlost)
tossfieldlostcount
```

```
Out[39]: 11
```

```
In [40]: #Toss Decision bat Win
```

```
tossbatwin = Chennai[(Chennai['toss_decision'] == 'bat') & (Chennai['winner'] == 'Chennai Super Kings')]
print(tossbatwin)
```

	id	season	city	date	team1	\
19	1359529	2023	Chennai	5/10/2023	Chennai Super Kings	
309	1178393	2019	Chennai	4/6/2019	Chennai Super Kings	
521	829797	2015	Chennai	5/10/2015	Chennai Super Kings	
529	829779	2015	Chennai	5/4/2015	Chennai Super Kings	
542	829753	2015	Chennai	4/25/2015	Chennai Super Kings	
562	829711	2015	Chennai	4/11/2015	Chennai Super Kings	
638	598062	2013	Chennai	5/14/2013	Chennai Super Kings	
657	598041	2013	Chennai	5/2/2013	Chennai Super Kings	
668	598030	2013	Chennai	4/25/2013	Chennai Super Kings	
672	598026	2013	Chennai	4/22/2013	Chennai Super Kings	
732	548352	2012	Chennai	5/4/2012	Chennai Super Kings	
749	548332	2012	Chennai	4/21/2012	Chennai Super Kings	
763	548318	2012	Chennai	4/12/2012	Chennai Super Kings	
776	501271	2011	Chennai	5/28/2011	Chennai Super Kings	
786	501261	2011	Chennai	5/18/2011	Chennai Super Kings	
794	501253	2011	Chennai	5/12/2011	Chennai Super Kings	
807	501240	2011	Chennai	5/4/2011	Chennai Super Kings	
811	501236	2011	Chennai	5/1/2011	Chennai Super Kings	
825	501211	2011	Chennai	4/16/2011	Chennai Super Kings	

```
In [41]: #Count of Toss Decision field Win
```

```
tossbatwincount = len(tossbatwin)
tossbatwincount
```

```
Out[41]: 25
```

In [42]: #Toss Decision field Loss

```
tossbatlost = Chennai[(Chennai['toss_decision'] == 'bat') & (Chennai['winner'] != 'bat')]
```

Out[42]:

		id	season	city	date	team1	team2	toss_winner	toss_decision
2	1370351	2023	Chennai	5/24/2023	Mumbai Indians	Lucknow Super Giants	Mumbai Indians	Mumbai Indians	bat
14	1359535	2023	Chennai	5/14/2023	Chennai Super Kings	Kolkata Knight Riders	Chennai Super Kings	Chennai Super Kings	bat
32	1359515	2023	Chennai	4/30/2023	Chennai Super Kings	Punjab Kings	Chennai Super Kings	Chennai Super Kings	bat
189	1254077	2021	Chennai	4/25/2021	Delhi Capitals	Sunrisers Hyderabad	Delhi Capitals	Delhi Capitals	bat
194	1254071	2021	Chennai	4/21/2021	Punjab Kings	Sunrisers Hyderabad	Punjab Kings	Punjab Kings	bat
195	1254070	2021	Chennai	4/20/2021	Mumbai Indians	Delhi Capitals	Mumbai Indians	Mumbai Indians	bat
198	1254067	2021	Chennai	4/18/2021	Royal Challengers Bangalore	Kolkata Knight Riders	Royal Challengers Bangalore	Royal Challengers Bangalore	bat
199	1254066	2021	Chennai	4/17/2021	Mumbai Indians	Sunrisers Hyderabad	Mumbai Indians	Mumbai Indians	bat
271	1181764	2019	Chennai	5/7/2019	Chennai Super Kings	Mumbai Indians	Chennai Super Kings	Chennai Super Kings	bat
524	829789	2015	Chennai	5/8/2015	Chennai Super Kings	Mumbai Indians	Chennai Super Kings	Chennai Super Kings	bat
683	598015	2013	Chennai	4/15/2013	Chennai Super Kings	Pune Warriors	Pune Warriors	Pune Warriors	bat
697	598002	2013	Chennai	4/6/2013	Chennai Super Kings	Mumbai Indians	Mumbai Indians	Mumbai Indians	bat

	id	season	city	date	team1	team2	toss_winner	toss_decision
702	548381	2012	Chennai	5/27/2012	Kolkata Knight Riders	Chennai Super Kings	Chennai Super Kings	bat
737	548347	2012	Chennai	4/30/2012	Chennai Super Kings	Kolkata Knight Riders	Chennai Super Kings	bat
740	548343	2012	Chennai	4/28/2012	Chennai Super Kings	Kings XI Punjab	Kings XI Punjab	bat
859	419155	2009/10	Chennai	4/15/2010	Chennai Super Kings	Delhi Daredevils	Chennai Super Kings	bat
904	419110	2009/10	Chennai	3/14/2010	Chennai Super Kings	Deccan Chargers	Deccan Chargers	bat
975	336033	2007/08	Chennai	5/24/2008	Chennai Super Kings	Rajasthan Royals	Rajasthan Royals	bat
979	336029	2007/08	Chennai	5/21/2008	Chennai Super Kings	Royal Challengers Bangalore	Royal Challengers Bangalore	bat
1004	336001	2007/08	Chennai	5/2/2008	Chennai Super Kings	Delhi Daredevils	Chennai Super Kings	bat

In [43]: `#count of Toss Decision field Loss`

```
tossbatlostcount = len(tossbatlost)
tossbatlostcount
```

Out[43]: 20

```
In [44]: print("Toss Decision: Bat | Match Win Count:", tossbatwincount)
print("Toss Decision: Bat | Match Lost Count:", tossbatlostcount)
print("Toss Decision: Field | Match Win Count:", tossfieldwincount)
print("Toss Decision: Field | Match Lost Count:", tossfieldlostcount)
print("Total Match CSK Win Count:", Chennaiwincount)
print("CTotal Match CSK Lost Count:", Chennailostcount)
```

```
Toss Decision: Bat | Match Win Count: 25
Toss Decision: Bat | Match Lost Count: 20
Toss Decision: Field | Match Win Count: 20
Toss Decision: Field | Match Lost Count: 11
Total Match CSK Win Count: 45
CTotal Match CSK Lost Count: 31
```

```
In [45]: #Average number of matches won by CSK in Chennai
```

```
total_matches = len(Chennai)
total_wins = len(Chennai[Chennai['winner'] == 'Chennai Super Kings'])

average_win = total_wins / total_matches

print("Average number of matches won by Chennai Super Kings in Chennai:", ave
```

```
Average number of matches won by Chennai Super Kings in Chennai: 0.592105263
1578947
```

```
In [46]: #Average number of matches lost by CSK in Chennai
```

```
total_matches = len(Chennai)
total_losses = len(Chennai[Chennai['winner'] != 'Chennai Super Kings'])

average_loss = total_losses / total_matches

print("Average number of matches lost by Chennai Super Kings in Chennai:", av
```

```
Average number of matches lost by Chennai Super Kings in Chennai: 0.40789473
684210525
```

```
In [47]: #List of all cities
```

```
unique_cities = matchinfo['city'].unique()
print("List of all cities:", unique_cities)
```

```
List of all cities: ['Ahmedabad' 'Chennai' 'Mumbai' 'Bengaluru' 'Kolkata' 'De
lhi' 'Dharamsala'
'Hyderabad' 'Lucknow' 'Jaipur' 'Chandigarh' 'Guwahati' 'Navi Mumbai'
'Pune' 'Dubai' 'Sharjah' 'Abu Dhabi' 'nan' 'Visakhapatnam' 'Indore'
'Bangalore' 'Kanpur' 'Rajkot' 'Raipur' 'Ranchi' 'Cuttack' 'Kochi'
'Nagpur' 'Johannesburg' 'Centurion' 'Durban' 'Bloemfontein'
'Port Elizabeth' 'Kimberley' 'East London' 'Cape Town']
```

```
In [48]: import pandas as pd
```

```
# Assuming you have a DataFrame named 'matchinfodata' with a column named 'city'
# Replace 'matchinfodata' with the actual name of your DataFrame and adjust code accordingly

city_match_count = matchinfo['city'].value_counts().reset_index()
city_match_count.columns = ['City', 'Total Matches']

print("Total Matches played in each city:")
print(city_match_count)
```

Total Matches played in each city:

	City	Total Matches
0	Mumbai	166
1	Kolkata	86
2	Delhi	85
3	Chennai	76
4	Hyderabad	71
5	Bangalore	65
6	Chandigarh	61
7	Jaipur	52
8	Pune	51
9	Abu Dhabi	37
10	Ahmedabad	28
11	Bengaluru	22
12	Durban	15
13	Dubai	13
14	Visakhapatnam	13
15	Centurion	12
16	Dharamsala	11
17	Sharjah	10
18	Rajkot	10
19	Indore	9
20	Navi Mumbai	9
21	Johannesburg	8
22	Cuttack	7
23	Port Elizabeth	7
24	Cape Town	7
25	Ranchi	7
26	Lucknow	7
27	Raipur	6
28	Kochi	5
29	Kanpur	4
30	Nagpur	3
31	Kimberley	3
32	East London	3
33	Bloemfontein	2
34	Guwahati	2

```
In [49]: import pandas as pd
```

```
# Assuming you have a DataFrame named 'matchinfodata' with a column named 'city'
# Replace 'matchinfodata' with the actual name of your DataFrame and adjust code accordingly

city_match_count = matchinfo['city'].value_counts().reset_index()
city_match_count.columns = ['City', 'Total Matches']

print("Total Matches played in each city:")
print(city_match_count)
#Chennai Super Kings (Mumbai Stadium records)

Mumbai = matchinfo[matchinfo['city'] == 'Mumbai']
Mumbai
```

Total Matches played in each city:

	City	Total Matches
0	Mumbai	166
1	Kolkata	86
2	Delhi	85
3	Chennai	76
4	Hyderabad	71
5	Bangalore	65
6	Chandigarh	61
7	Jaipur	52
8	Pune	51
9	Abu Dhabi	37
10	Ahmedabad	28
11	Bengaluru	22
12	Durban	15
13	Dubai	13
14	Visakhapatnam	13
15	Centurion	12
16	Dharamsala	11
17	Sharjah	10
18	Rajkot	10
19	Indore	9
20	Navi Mumbai	9
21	Johannesburg	8
22	Cuttack	7
23	Port Elizabeth	7
24	Cape Town	7
25	Ranchi	7
26	Lucknow	7
27	Raipur	6
28	Kochi	5
29	Kanpur	4
30	Nagpur	3
31	Kimberley	3
32	East London	3
33	Bloemfontein	2
34	Guwahati	2

Out[49]:

		id	season	city	date	team1	team2	toss_winner	toss_decision
4	1359543	2023	Mumbai	5/21/2023	Sunrisers Hyderabad	Mumbai Indians	Mumbai Indians	Mumbai Indians	field
17	1359531	2023	Mumbai	5/12/2023	Mumbai Indians	Gujarat Titans	Gujarat Titans	Gujarat Titans	field
20	1359528	2023	Mumbai	5/9/2023	Royal Challengers Bangalore	Mumbai Indians	Mumbai Indians	Mumbai Indians	field
33	1359516	2023	Mumbai	4/30/2023	Rajasthan Royals	Mumbai Indians	Rajasthan Royals	Rajasthan Royals	bat
43	1359505	2023	Mumbai	4/22/2023	Punjab Kings	Mumbai Indians	Mumbai Indians	Mumbai Indians	field
...
988	336018	2007/08	Mumbai	5/14/2008	Mumbai Indians	Chennai Super Kings	Mumbai Indians	Mumbai Indians	field
997	336008	2007/08	Mumbai	5/7/2008	Mumbai Indians	Rajasthan Royals	Mumbai Indians	Mumbai Indians	field
1000	336004	2007/08	Mumbai	5/4/2008	Mumbai Indians	Delhi Daredevils	Delhi Daredevils	Delhi Daredevils	field
1010	335994	2007/08	Mumbai	4/27/2008	Mumbai Indians	Deccan Chargers	Deccan Chargers	Deccan Chargers	field
1020	335985	2007/08	Mumbai	4/20/2008	Mumbai Indians	Royal Challengers Bangalore	Mumbai Indians	Mumbai Indians	bat

166 rows × 18 columns



```
In [50]: #Mumbai Stadium matches win
```

```
Mumbaiwin = Mumbai[Mumbai['winner'] == 'Chennai Super Kings']
Mumbaiwin.head()
```

```
Out[50]:
```

		id	season	city	date	team1	team2	toss_winner	toss_decision	res
		62	1359486	2023	Mumbai	4/8/2023	Mumbai Indians	Chennai Super Kings	Chennai Super Kings	field norm
		126	1304068	2022	Mumbai	4/12/2022	Chennai Super Kings	Royal Challengers Bangalore	Royal Challengers Bangalore	field norm
		188	1254076	2021	Mumbai	4/25/2021	Chennai Super Kings	Royal Challengers Bangalore	Chennai Super Kings	bat norm
		193	1254072	2021	Mumbai	4/21/2021	Chennai Super Kings	Kolkata Knight Riders	Kolkata Knight Riders	field norm
		196	1254069	2021	Mumbai	4/19/2021	Chennai Super Kings	Rajasthan Royals	Rajasthan Royals	field norm



```
In [51]: #Mumbai Stadium matches win count
```

```
Mumbaiwincount = len(Mumbaiwin)
Mumbaiwincount
```

```
Out[51]: 17
```

```
In [55]: #Mumbai Stadium matches Lost
```

```
Mumbailost = Mumbai[Mumbai['winner'] != 'Chennai Super Kings']  
Mumbailost.head()
```

Out[55]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result
4	1359543	2023	Mumbai	5/21/2023	Sunrisers Hyderabad	Mumbai Indians	Mumbai Indians	field	normal
17	1359531	2023	Mumbai	5/12/2023	Mumbai Indians	Gujarat Titans	Gujarat Titans	field	normal
20	1359528	2023	Mumbai	5/9/2023	Royal Challengers Bangalore	Mumbai Indians	Mumbai Indians	field	normal
33	1359516	2023	Mumbai	4/30/2023	Rajasthan Royals	Mumbai Indians	Rajasthan Royals	bat	normal
43	1359505	2023	Mumbai	4/22/2023	Punjab Kings	Mumbai Indians	Mumbai Indians	field	normal



```
In [53]: #Mumbai Stadium matches Lost count
```

```
Mumbailostcount = len(Mumbailost)  
Mumbailostcount
```

Out[53]: 149

```
In [54]: #summary of win and Lost in Mumbai Stadium
```

```
print("Chennai Super Kings Wins in Mumbai Stadium:", Mumbaiwincount)  
print("Chennai Super Kings Losses in Mumbai Stadium:", Mumbailostcount)
```

```
Chennai Super Kings Wins in Mumbai Stadium: 17  
Chennai Super Kings Losses in Mumbai Stadium: 149
```

In [59]: df.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 243817 entries, 0 to 243816
Data columns (total 23 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   match_id        243817 non-null   int64  
 1   season          243817 non-null   object  
 2   start_date      243817 non-null   object  
 3   venue           243817 non-null   object  
 4   innings         243817 non-null   int64  
 5   ball            243817 non-null   float64 
 6   batting_team    243817 non-null   object  
 7   bowling_team    243817 non-null   object  
 8   striker          243817 non-null   object  
 9   non_striker     243817 non-null   object  
 10  bowler          243817 non-null   object  
 11  runs_off_bat   243817 non-null   int64  
 12  extras          243817 non-null   int64  
 13  wides           7652 non-null    float64 
 14  noballs         1018 non-null    float64 
 15  byes            628 non-null    float64 
 16  legbyes         3778 non-null   float64 
 17  penalty          2 non-null    float64 
 18  wicket_type     12067 non-null  object  
 19  player_dismissed 12067 non-null  object  
 20  other_wicket_type 0 non-null    float64 
 21  other_player_dismissed 0 non-null    float64 
 22  cricsheet_id    243817 non-null  int64  
dtypes: float64(8), int64(5), object(10)
memory usage: 42.8+ MB
```

In [65]: Chennai.info()

```
<class 'pandas.core.frame.DataFrame'>
Index: 76 entries, 2 to 1016
Data columns (total 18 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   id               76 non-null      int64  
 1   season            76 non-null      object  
 2   city              76 non-null      object  
 3   date              76 non-null      object  
 4   team1             76 non-null      object  
 5   team2             76 non-null      object  
 6   toss_winner        76 non-null      object  
 7   toss_decision     76 non-null      object  
 8   result             76 non-null      object  
 9   dl_applied         76 non-null      int64  
 10  winner             74 non-null      object  
 11  win_by_runs        76 non-null      int64  
 12  win_by_wickets     76 non-null      int64  
 13  player_of_match    76 non-null      object  
 14  venue              76 non-null      object  
 15  umpire1            76 non-null      object  
 16  umpire2            76 non-null      object  
 17  umpire3            76 non-null      object  
dtypes: int64(4), object(14)
memory usage: 11.3+ KB
```

In [69]: Chennai.describe()

Out[69]:

	id	dl_applied	win_by_runs	win_by_wickets
count	7.600000e+01	76.0	76.000000	76.000000
mean	8.056869e+05	0.0	14.289474	2.513158
std	3.732672e+05	0.0	21.575799	3.316598
min	3.359890e+05	0.0	0.000000	0.000000
25%	5.012498e+05	0.0	0.000000	0.000000
50%	5.980320e+05	0.0	6.500000	0.000000
75%	1.199838e+06	0.0	19.500000	6.000000
max	1.370351e+06	0.0	97.000000	9.000000

```
In [71]: Chennai.isnull()
```

Out[71]:

	id	season	city	date	team1	team2	toss_winner	toss_decision	result	dl_applied
	2	False	False	False	False	False	False	False	False	False
	3	False	False	False	False	False	False	False	False	False
	14	False	False	False	False	False	False	False	False	False
	19	False	False	False	False	False	False	False	False	False
	25	False	False	False	False	False	False	False	False	False

	993	False	False	False	False	False	False	False	False	False
	998	False	False	False	False	False	False	False	False	False
	1004	False	False	False	False	False	False	False	False	False
	1013	False	False	False	False	False	False	False	False	False
	1016	False	False	False	False	False	False	False	False	False

76 rows × 18 columns

```
In [45]: df=pd.read_csv("match_data.csv",low_memory=False)  
df[df['striker']=='V Kohli'].head()
```

Out[45]:

	match_id	season	start_date	venue	innings	ball	batting_team	bowling_team	str	
	1179	1359544	2023	5/21/2023	M Chinnaswamy Stadium, Bengaluru	1	0.1	Royal Challengers Bangalore	Gujarat Titans	K
	1180	1359544	2023	5/21/2023	M Chinnaswamy Stadium, Bengaluru	1	0.2	Royal Challengers Bangalore	Gujarat Titans	K
	1181	1359544	2023	5/21/2023	M Chinnaswamy Stadium, Bengaluru	1	0.3	Royal Challengers Bangalore	Gujarat Titans	K
	1182	1359544	2023	5/21/2023	M Chinnaswamy Stadium, Bengaluru	1	0.4	Royal Challengers Bangalore	Gujarat Titans	K
	1183	1359544	2023	5/21/2023	M Chinnaswamy Stadium, Bengaluru	1	0.5	Royal Challengers Bangalore	Gujarat Titans	K

5 rows × 23 columns

```
In [12]: print(df['striker'].unique())
```

```
['WP Saha' 'Shubman Gill' 'B Sai Sudharsan' 'HH Pandya' 'Rashid Khan'  
'RD Gaikwad' 'DP Conway' 'S Dube' 'AM Rahane' 'AT Rayudu' 'MS Dhoni'  
'RA Jadeja' 'RG Sharma' 'N Wadhera' 'C Green' 'SA Yadav' 'Tilak Varma'  
'Vishnu Vinod' 'TH David' 'CJ Jordan' 'PP Chawla' 'K Kartikeya'  
'JP Behrendorff' 'Ishan Kishan' 'HR Shokeen' 'KR Mayers' 'PN Mankad'  
'KH Pandya' 'MP Stoinis' 'A Badoni' 'N Pooran' 'DJ Hooda' 'K Gowtham'  
'Ravi Bishnoi' 'Naveen-ul-Haq' 'Mohsin Khan (2)' 'MM Ali' 'MD Shanaka'  
'DA Miller' 'V Shankar' 'R Tewatia' 'DG Nalkande' 'Noor Ahmad'  
'Mohammed Shami' 'Vivrant Sharma' 'MA Agarwal' 'H Klaasen' 'GD Phillips'  
'AK Markram' 'HC Brook' 'Sanvir Singh' 'V Kohli' 'F du Plessis'  
'GJ Maxwell' 'MK Lomror' 'MG Bracewell' 'KD Karthik' 'Anuj Rawat'  
'PP Shaw' 'DA Warner' 'PD Salt' 'RR Rossouw' 'YV Dhull' 'AR Patel'  
'Aman Hakim Khan' 'Lalit Yadav' 'A Nortje' 'Kuldeep Yadav' 'C Sakariya'  
'KS Sharma' 'Q de Kock' 'JJ Roy' 'VR Iyer' 'N Rana' 'Rahmanullah Gurbaz'  
'RK Singh' 'AD Russell' 'SN Thakur' 'SP Narine' 'VG Arora'  
'P Simran Singh' 'Atharva Taide' 'S Dhawan' 'LS Livingstone' 'SM Curran'  
'JM Sharma' 'M Shahrukh Khan' 'YBK Jaiswal' 'JC Buttler' 'D Padikkal'  
'SV Samson' 'SO Hetmyer' 'R Parag' 'Dhruv Jurel' 'TA Boult'  
'Abhishek Sharma' 'RA Tripathi' 'Harpreet Brar' 'MM Sharma'
```

```
In [14]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>  
RangeIndex: 243817 entries, 0 to 243816  
Data columns (total 23 columns):  
 #   Column           Non-Null Count  Dtype     
---  --    
 0   match_id        243817 non-null   int64    
 1   season          243817 non-null   object    
 2   start_date      243817 non-null   object    
 3   venue           243817 non-null   object    
 4   innings         243817 non-null   int64    
 5   ball            243817 non-null   float64   
 6   batting_team    243817 non-null   object    
 7   bowling_team    243817 non-null   object    
 8   striker          243817 non-null   object    
 9   non_striker     243817 non-null   object    
 10  bowler          243817 non-null   object    
 11  runs_off_bat   243817 non-null   int64    
 12  extras          243817 non-null   int64    
 13  wides           7652 non-null    float64   
 14  noballs         1018 non-null    float64   
 15  byes            628 non-null    float64   
 16  legbyes         3778 non-null   float64   
 17  penalty         2 non-null     float64   
 18  wicket_type     12067 non-null  object    
 19  player_dismissed 12067 non-null  object    
 20  other_wicket_type 0 non-null    float64   
 21  other_player_dismissed 0 non-null   float64   
 22  cricsheet_id    243817 non-null  int64    
dtypes: float64(8), int64(5), object(10)  
memory usage: 42.8+ MB
```

```
In [43]: df=pd.read_csv("match_data.csv",low_memory=False)
df[(df['striker'] == 'MS Dhoni') ]
total_runs = df['runs_off_bat'].sum()

print("Total runs scored by MS Dhoni:", total_runs)
```

Total runs scored by MS Dhoni: 305407

```
In [44]: df=pd.read_csv("match_data.csv",low_memory=False)
df[(df['striker'] == 'HH Pandya')]
total_runs= df['runs_off_bat'].sum()
print("Total runs scored by HH Pandya:",total_runs)
```

Total runs scored by HH Pandya: 305407

```
In [47]: unique_bowlers = df['bowler'].unique()
print("Total unique bowler names:", len(unique_bowlers))
print(unique_bowlers)
```

Total unique bowler names: 503

['DL Chahar' 'TU Deshpande' 'M Theekshana' 'RA Jadeja' 'M Pathirana'
'Mohammed Shami' 'HH Pandya' 'Rashid Khan' 'Noor Ahmad' 'J Little'
'MM Sharma' 'JP Behrendorff' 'C Green' 'Akash Madhwani' 'CJ Jordan'
'PP Chawla' 'K Kartikeya' 'KH Pandya' 'K Gowtham' 'Naveen-ul-Haq'
'Yash Thakur' 'Mohsin Khan (2)' 'Ravi Bishnoi' 'HR Shokeen' 'DG Nalkande'
'B Kumar' 'Nithish Kumar Reddy' 'Mayank Dagar' 'Kartik Tyagi'
'Umran Malik' 'Vivrant Sharma' 'AK Markram' 'Yash Dayal' 'Mohammed Siraj'
'WD Parnell' 'Vijaykumar Vyshak' 'H Sharma' 'HV Patel' 'MG Bracewell'
'KK Ahmed' 'Lalit Yadav' 'AR Patel' 'A Nortje' 'C Sakariya'
'Kuldeep Yadav' 'Harshit Rana' 'VG Arora' 'CV Varun' 'N Rana' 'SN Thakur'
'SP Narine' 'Suyash Sharma' 'AD Russell' 'TA Boult' 'Sandeep Sharma'
'NA Saini' 'A Zampa' 'YS Chahal' 'SM Curran' 'K Rabada' 'Arshdeep Singh'
'NT Ellis' 'RD Chahar' 'Shahbaz Ahmed' 'KV Sharma' 'Abhishek Sharma'
'T Natarajan' 'GD Phillips' 'Harpreet Brar' 'I Sharma' 'Mukesh Kumar'
'Swapnil Singh' 'M Jansen' 'Fazalhaq Farooqi' 'M Markande' 'R Tewatia'
'R Ashwin' 'KM Asif' 'GJ Maxwell' 'MM Ali' 'Yudhvir Singh' 'KR Mayers'
'Avesh Khan' 'A Mishra' 'P Dubey' 'MR Marsh' 'R Dhawan' 'Sikandar Raza'
'AS Joseph' 'JE Root' 'AS Roy' 'JR Hazlewood' 'PWH de Silva'
'LS Livingstone' 'MP Stoinis' 'K Yadav' 'M Ashwin' 'OC McCoy' 'JC Archer'
'Arshad Khan (2)' 'R Goyal' 'T Stubbs' 'MK Lomror' 'Akash Singh'
'RP Meredith' 'JO Holder' 'KR Sen' 'AJ Hosein' 'Gurnoor Brar' 'A Badoni'
'DJ Willey' 'UT Yadav' 'Arjun Tendulkar' 'Washington Sundar' 'D Wiese'
'K Khejroliya' 'J Yadav' 'MW Short' 'Duan Jansen' 'LH Ferguson'
'Mustafizur Rahman' 'MA Wood' 'SSB Magala' 'Tilak Varma' 'JD Unadkat'
'Mohit Rathee' 'R Powell' 'MJ Santner' 'D Pretorius' 'DJ Hooda'
'AU Rashid' 'Akash Deep' 'TG Southee' 'BA Stokes' 'RS Hangargekar'
'RJW Topley' 'R Sai Kishore' 'M Prasidh Krishna' 'PVD Chameera'
'J Suchith' 'R Shepherd' 'DR Sams' 'JJ Bumrah' 'Ramandeep Singh'
'Mukesh Choudhary' 'Simarjeet Singh' 'PH Solanki' 'S Kaul'
'R Sanjay Yadav' 'DJ Bravo' 'KA Pollard' 'PJ Cummins' 'VR Iyer'
'Shivam Mavi' 'PJ Sangwan' 'SA Abbott' 'S Gopal' 'Shashank Singh'
'DJ Mitchell' 'SS Iyer' 'R Parag' 'OF Smith' 'TS Mills' 'FA Allen'
'Aman Hakim Khan' 'JDS Neesham' 'V Shankar' 'Basil Thampi' 'Rasikh Salam'
'D Brevis' 'AJ Tye' 'YBK Jaiswal' 'Abdul Samad' 'VR Aaron' 'S Dube'
'NM Coulter-Nile' 'KL Nagarkoti' 'AF Milne' 'Shakib Al Hasan'
'GHS Garton' 'DT Christian' 'TK Curran' 'Mohammad Nabi' 'RV Patel'
'MC Henriques' 'CH Morris' 'S Sandeep Warrier' 'KA Jamieson' 'T Shamsi'
'RG Sharma' 'IC Porel' 'DS Kulkarni' 'L Ngidi' 'Imran Tahir'
'KW Richardson' 'Harbhajan Singh' 'CR Woakes' 'LI Meriwala'
'Jalaj S Saxena' 'JA Richardson' 'Mujeeb Ur Rahman' 'S Nadeem'
'JL Pattinson' 'I Udana' 'CH Gayle' 'DW Steyn' 'DA Warner' 'AS Rajpoot'
'Monu Kumar' 'CJ Green' 'SS Cottrell' 'KS Williamson' 'MJ McClenaghan'
'SL Malinga' 'KMA Paul' 'SE Rutherford' 'HF Gurney' 'O Thomas' 'IS Sodhi'
'STR Binny' 'C de Grandhomme' 'BB Sran' 'S Lamichhane' 'CR Brathwaite'
'Y Prithvi Raj' 'GC Viljoen' 'KC Cariappa' 'P Negi' 'Mandeep Singh'
'SN Khan' 'SC Kuggeleijn' 'S Midhun' 'YK Pathan' 'GH Vihari'
'P Ray Barman' 'BCJ Cutting' 'SK Raina' 'B Laughlin'
'JPR Scantlebury-Searles' 'LE Plunkett' 'Anureet Singh' 'SR Watson'
'CJ Dala' 'Ankit Sharma' 'MG Johnson' 'JP Duminy' 'MK Tiwary'
'CJ Anderson' 'B Stanlake' 'Yuvraj Singh' 'DJM Short' 'A Dananjaya'
'R Vinay Kumar' 'Bipul Sharma' 'Z Khan' 'TM Head' 'P Kumar' 'JP Faulkner'
'MM Patel' 'Ankit Soni' 'MN Samuels' 'MJ Henry' 'DR Smith' 'A Choudhary'
'S Badree' 'S Aravind' 'A Nehra' 'IK Pathan' 'NB Singh' 'RA Tripathi'
'SS Agarwal' 'AD Mathews' 'S Kaushik' 'SB Jakati' 'AB Dinda' 'R Bhatia'
'Iqbal Abdulla' 'Tejas Baroka' 'MS Gony' 'M Morkel' 'R Sathish' 'C Munro'
'NLTC Perera' 'KJ Abbott' 'Gurkeerat Singh' 'Sachin Baby' 'M Vijay'

'PV Tambe' 'V Kohli' 'RP Singh' 'GB Hogg' 'Parvez Rasool' 'SM Boland'
'JA Morkel' 'P Sahu' 'A Ashish Reddy' 'JW Hastings' 'S Ladda' 'MA Starc'
'IC Pandey' 'BE Hendricks' 'Azhar Mahmood' 'GS Sandhu' 'J Botha'
'RS Bopara' 'M de Lange' 'Karanveer Singh' 'RN ten Doeschate' 'RG More'
'J Theron' 'DJ Muthuswami' 'Shivam Sharma' 'AN Ahmed' 'P Suyal'
'DJG Sammy' 'PP Ojha' 'L Balaji' 'P Awana' 'KK Cooper' 'R Rampaul'
'S Rana' 'VS Malik' 'M Muralitharan' 'K Santokie' 'Y Venugopal Rao'
'BW Hilfenhaus' 'DJ Hussey' 'R Shukla' 'LMP Simmons' 'JH Kallis'
'LR Shukla' 'SA Yadav' 'M Kartik' 'R Sharma' 'SK Trivedi' 'AG Murtaza'
'Anand Rajan' 'AC Gilchrist' 'BJ Hodge' 'SMSM Senanayake' 'LJ Wright'
'RV Gomez' 'AA Chavan' 'RE van der Merwe' 'A Mithun' 'BAW Mendis'
'Harmeet Singh' 'J Syed Mohammad' 'A Chandila' 'S Sreesanth' 'K Upadhyay'
'SW Tait' 'AB Agarkar' 'BJ Rohrer' 'R McLaren' 'MG Nesar' 'BMAJ Mendis'
'S Narwal' 'TL Suman' 'B Lee' 'AM Nayar' 'DP Nannes' 'BA Bhatt'
'AJ Finch' 'AD Mascarenhas' 'V Sehwag' 'AB McDonald' 'RJ Harris'
'Harmeet Singh (2)' 'CL White' 'TM Dilshan' 'JDP Oram' 'Sunny Gupta'
'JEC Franklin' 'P Parameswaran' 'V Pratap Singh' 'MJ Clarke' 'SC Ganguly'
'VY Mahesh' 'KP Appanna' 'JD Ryder' 'TP Sudhindra' 'AA Jhunjhunwala'
'AC Thomas' 'S Dhawan' 'Pankaj Singh' 'SPD Smith' 'DJ Harris' 'RR Powar'
'RJ Peterson' 'DL Vettori' 'AUK Pathan' 'A Singh' 'AL Menaria'
'KMDN Kulasekara' 'CJ McKay' 'DE Bollinger' 'KP Pietersen' 'Y Nagar'
'RR Bhatkal' 'DAJ Bracewell' 'F du Plessis' 'PC Valthaty' 'RW Price'
'SS Mundhe' 'SK Warne' 'JJ van der Wath' 'CK Langeveldt' 'SJ Srivastava'
'M Manhas' 'AM Salvi' 'JR Hopes' 'S Sriram' 'P Prasanth'
'Y Gnaneswara Rao' 'ND Doshi' 'AA Kazi' 'LRPL Taylor' 'SB Wagh'
'S Randiv' 'A Symonds' 'L Ablish' 'I Malhotra' 'B Chipli' 'JE Taylor'
'NL McCullum' 'B Akhil' 'Kamran Khan' 'Joginder Sharma' 'AS Raut'
'R Ninan' 'SB Styris' 'DB Ravi Teja' 'NJ Rimmington' 'CRD Fernando'
'A Kumble' 'SE Bond' 'S Tyagi' 'JM Kemp' 'VRV Singh' 'PD Collingwood'
'WPUJC Vaas' 'AC Voges' 'FY Fazal' 'MF Maharoof' 'AP Dole'
'ST Jayasuriya' 'T Thushara' 'Jaskaran Singh' 'KAJ Roach' 'MB Parmar'
'C Ganapathy' 'K Goel' 'YA Abdulla' 'A Uniyal' 'RS Gavaskar' 'RA Shaikh'
'SS Sarkar' 'T Henderson' 'WA Mota' 'C Nanda' 'Mashrafe Mortaza'
'Shoaib Ahmed' 'RR Raje' 'AM Rahane' 'SM Harwood' 'SR Tendulkar'
'LA Carseldine' 'D du Preez' 'FH Edwards' 'GR Napier' 'RR Bose'
'A Flintoff' 'Sohail Tanvir' 'M Ntini' 'GD McGrath' 'Mohammad Asif'
'SM Pollock' 'D Salunkhe' 'DP Vijaykumar' 'Shahid Afridi'
'PM Sarvesh Kumar' 'SB Bangar' 'LPC Silva' 'Umar Gul' 'B Geeves' 'A Nel'
'Gagandeep Singh' 'VS Yeligati' 'SD Chitnis' 'DNT Zoysa' 'DJ Thornely'
'Shoaib Akhtar' 'Abdur Razzak' 'CK Kapugedera' 'P Amarnath'
'Shoaib Malik' 'S Vidyut' 'Mohammad Hafeez' 'D Kalyankrishna' 'SB Joshi'
'MA Khote' 'AA Noffke']

In []: