```python
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns


from google.colab import drive
drive.mount('/content/drive')
```

```
Mounted at /content/drive
```

```python
data=pd.read_csv("/content/drive/MyDrive/ipldataset.csv")
data.head()
```

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

```python
data.isnull().sum()
```

```
id              0
season          0
city            7
date            0
team1           0
team2           0
toss_winner     0
```

```
        toss_decision         0
        result                0
        dl_applied            0
        winner                3
        win_by_runs           0
        win_by_wickets        0
        player_of_match       3
        venue                 0
        umpire1               1
        umpire2               1
        umpire3             636
        dtype: int64
```

```python
data.shape
```

```
(636, 18)
```

```python
data.columns
```

```
Index(['id', 'season', 'city', 'date', 'team1', 'team2', 'toss_winner',
       'toss_decision', 'result', 'dl_applied', 'winner', 'win_by_runs',
       'win_by_wickets', 'player_of_match', 'venue', 'umpire1', 'umpire2',
       'umpire3'],
      dtype='object')
```

```python
print("matches played so far:",data.shape[0])
```

```
matches played so far: 636
```

```python
print("cities played at:",data['city'].unique())
```

```
cities played at: ['Hyderabad' 'Pune' 'Rajkot' 'Indore' 'Bangalore' 'Mumbai' 'Kolkata'
 'Delhi' 'Chandigarh' 'Kanpur' 'Jaipur' 'Chennai' 'Cape Town'
 'Port Elizabeth' 'Durban' 'Centurion' 'East London' 'Johannesburg'
 'Kimberley' 'Bloemfontein' 'Ahmedabad' 'Cuttack' 'Nagpur' 'Dharamsala'
 'Kochi' 'Visakhapatnam' 'Raipur' 'Ranchi' 'Abu Dhabi' 'Sharjah' nan]
```

```python
print("teams participation",data['team1'].unique())
```

```
teams participation ['Sunrisers Hyderabad' 'Mumbai Indians' 'Gujarat Lions'
 'Rising Pune Supergiant' 'Royal Challengers Bangalore'
 'Kolkata Knight Riders' 'Delhi Daredevils' 'Kings XI Punjab'
 'Chennai Super Kings' 'Rajasthan Royals' 'Deccan Chargers'
 'Kochi Tuskers Kerala' 'Pune Warriors' 'Rising Pune Supergiants']
```

```python
data['seasons']=pd.DatetimeIndex(data['date']).year
data.head()
```

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

```
matches_per_season=data.groupby(['season'])['id'].count().reset_index().rename(columns={'id':
matches_per_season
```
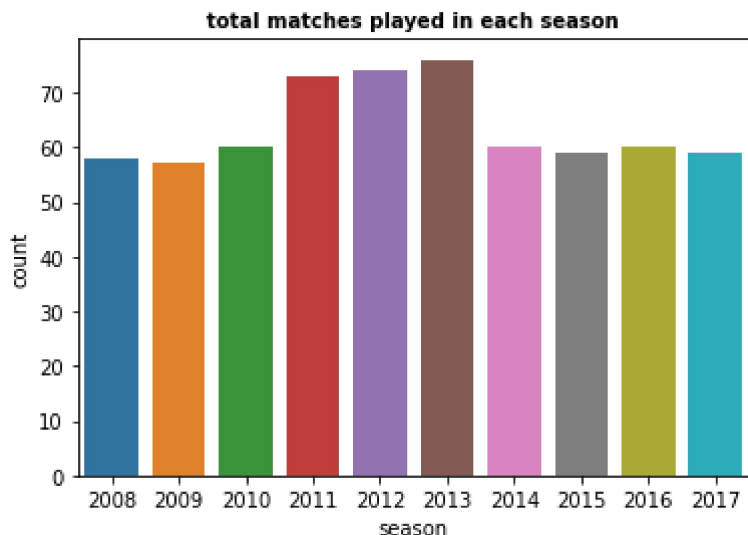
|	season	matches
0	2008	58
1	2009	57
2	2010	60
3	2011	73
4	2012	74
5	2013	76
6	2014	60
7	2015	59
8	2016	60
9	2017	59

```
sns.countplot(data['season'])
plt.xlabel('season',fontsize=10)
plt.ylabel('count',fontsize=10)
plt.title("total matches played in each season",fontsize=10,fontweight="bold")
```

Text(0.5, 1.0, 'total matches played in each season')

**total matches played in each season**


```
toss=data['toss_winner'].value_counts()
ax=plt.axes()
ax.set(facecolor="grey")
sns.set(rc={'figure.figsize':(15,10)},style='darkgrid')
ax.set_title("no of tosses won by each team",fontsize=15,fontweight="bold")
sns.barplot(y=toss.index,x=toss)
plt.xlabel('tosses won')
plt.ylabel('team')
plt.show()
```

no of tosses won by each team
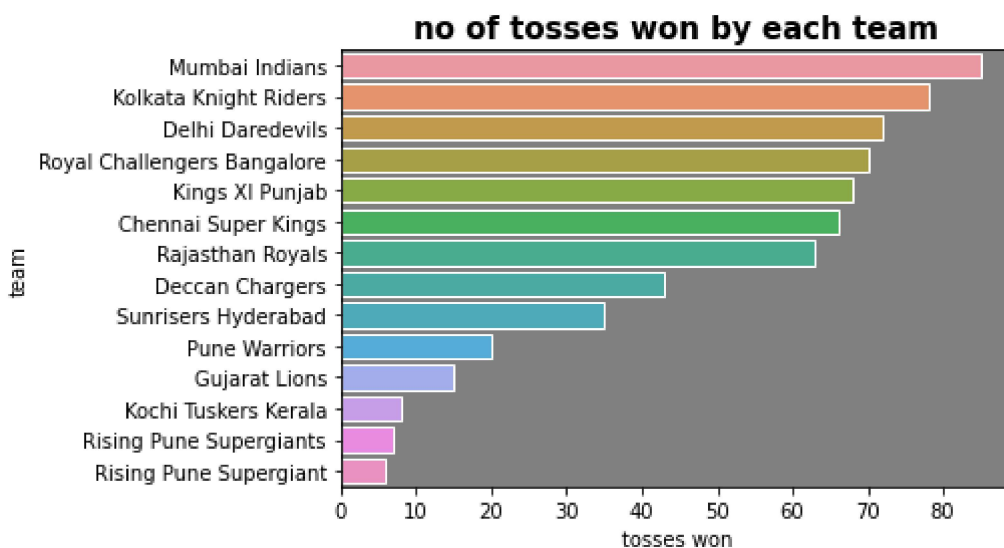

```
ax=plt.axes()
ax.set(facecolor='grey')
sns.countplot(x='season',hue="toss_decision",data=data,palette="magma")
```

```
plt.xlabel('season',fontsize=15)
plt.ylabel('count',fontsize=15)
plt.show()
```
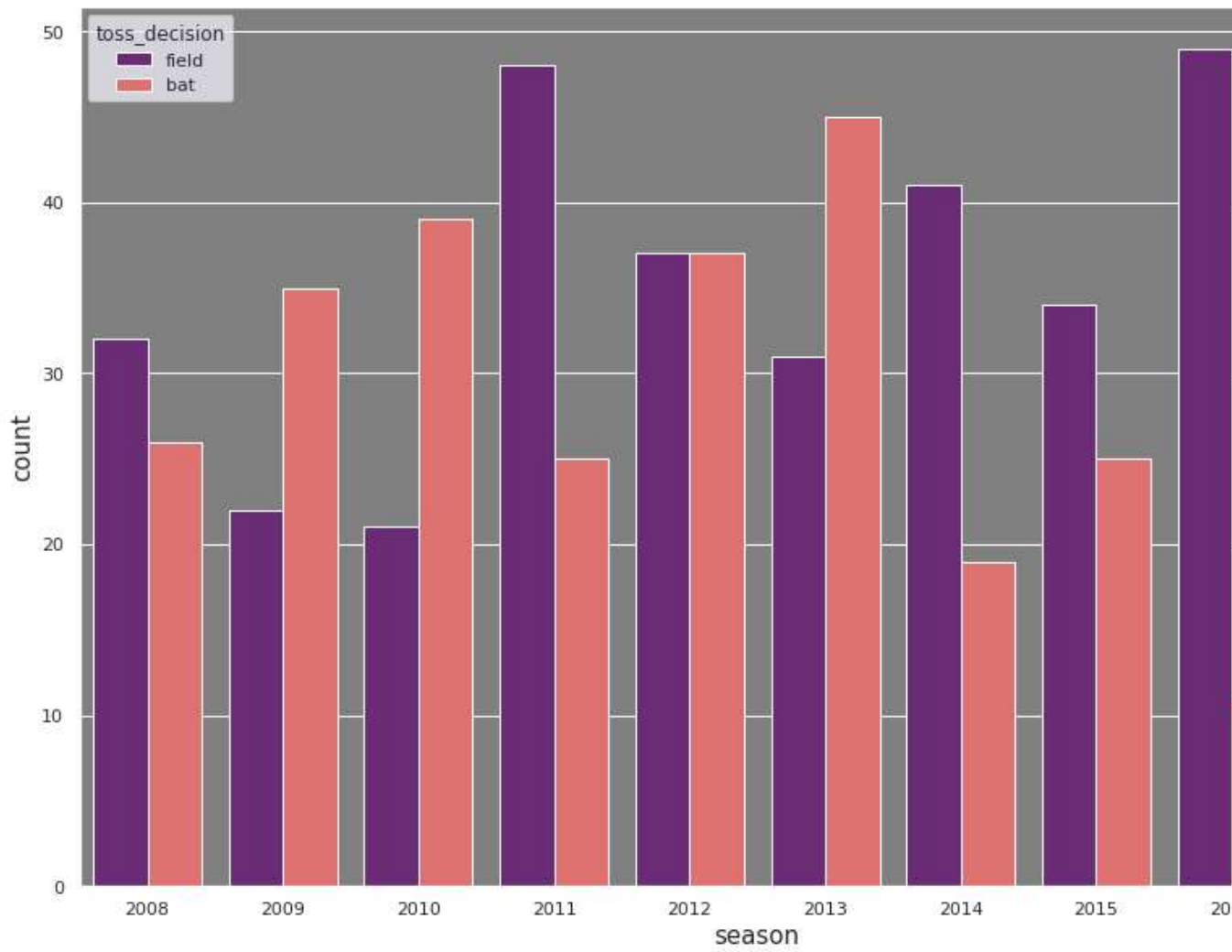


```
data['player_of_match'].value_counts()
```

```
CH Gayle            18
YK Pathan           16
DA Warner           15
AB de Villiers      15
SK Raina            14
                    ..
DJG Sammy            1
S Nadeem             1
TM Dilshan           1
Q de Kock            1
Umar Gul             1
Name: player_of_match, Length: 201, dtype: int64
```
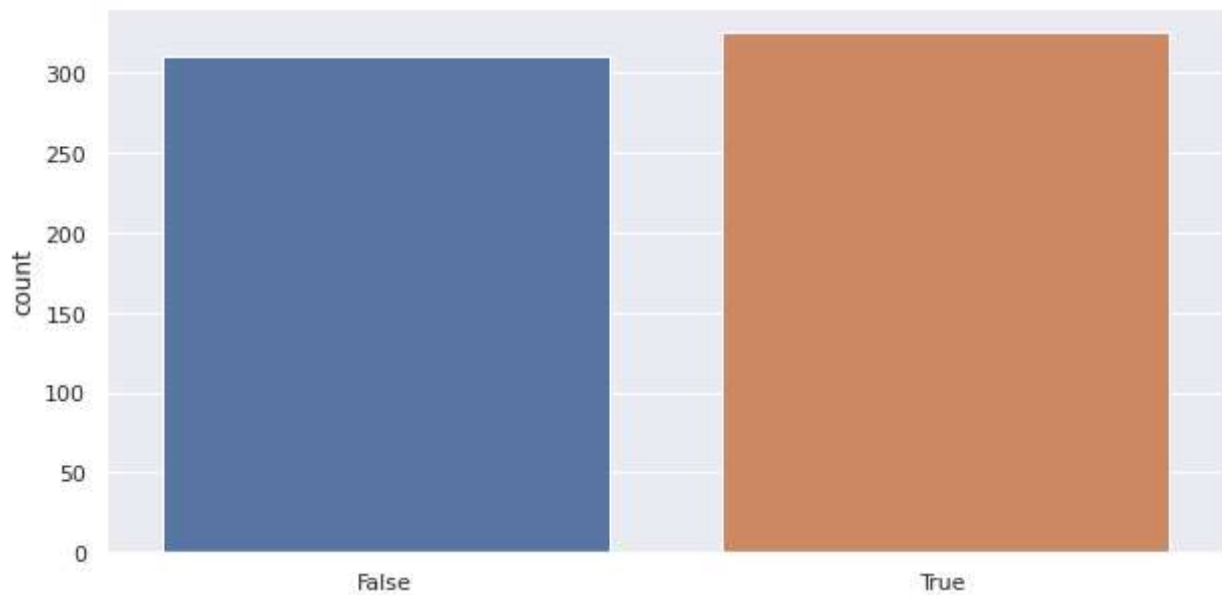
```python
data['player_of_match'].value_counts().max()
```

    18

```python
toss=data['toss_winner']==data['winner']
plt.figure(figsize=(10,5))
sns.countplot(toss)
plt.show()
```

    /usr/local/lib/python3.7/dist-packages/seaborn/_decorators.py:43: FutureWarning: Pass th
      FutureWarning


```python
temp=pd.DataFrame({'win':data['winner']})
count_wins=temp.value_counts()
print(count_wins)
```

    win
    Mumbai Indians   92
    Chennai Super Kings   79
    Kolkata Knight Riders   77
    Royal Challengers Bangalore   73
    Kings XI Punjab   70
    Rajasthan Royals   63
    Delhi Daredevils   62
    Sunrisers Hyderabad   42
    Deccan Chargers   29
    Gujarat Lions   13
    Pune Warriors   12
    Rising Pune Supergiant   10
    Kochi Tuskers Kerala   6
    Rising Pune Supergiants   5
    dtype: int64

✓ 0s   completed at 8:49 AM   ● ✕