project1

February 25, 2023

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

```python
[2]: ipl=pd.read_excel("C:\\Users\\91824\\OneDrive\\Desktop\\work\\matches.xlsx")
```

```python
[3]: ipl.head()
```

```
[3]:    id  season       city        date                         team1  \
     0   1    2017   Hyderabad  2017-04-05            Sunrisers Hyderabad
     1   2    2017        Pune  2017-04-06                 Mumbai Indians
     2   3    2017      Rajkot  2017-04-07                  Gujarat Lions
     3   4    2017      Indore  2017-04-08          Rising Pune Supergiant
     4   5    2017   Bangalore  2017-04-08    Royal Challengers Bangalore

                              team2               toss_winner toss_decision  \
     0  Royal Challengers Bangalore  Royal Challengers Bangalore        field
     1        Rising Pune Supergiant        Rising Pune Supergiant        field
     2         Kolkata Knight Riders         Kolkata Knight Riders        field
     3              Kings XI Punjab              Kings XI Punjab        field
     4              Delhi Daredevils  Royal Challengers Bangalore          bat

        result  dl_applied                       winner  win_by_runs  \
     0  normal           0          Sunrisers Hyderabad           35
     1  normal           0        Rising Pune Supergiant            0
     2  normal           0         Kolkata Knight Riders            0
     3  normal           0               Kings XI Punjab            0
     4  normal           0  Royal Challengers Bangalore           15

        win_by_wickets player_of_match                                 venue  \
     0               0    Yuvraj Singh  Rajiv Gandhi International Stadium, Uppal
     1               7       SPD Smith    Maharashtra Cricket Association Stadium
     2              10         CA Lynn    Saurashtra Cricket Association Stadium
     3               6     GJ Maxwell                     Holkar Cricket Stadium
     4               0       KM Jadhav                   M Chinnaswamy Stadium

            umpire1       umpire2 umpire3
     0   AY Dandekar     NJ Llong     NaN
```

```
1    A Nand Kishore        S Ravi      NaN
2       Nitin Menon     CK Nandan      NaN
3      AK Chaudhary  C Shamshuddin      NaN
4               NaN           NaN      NaN
```
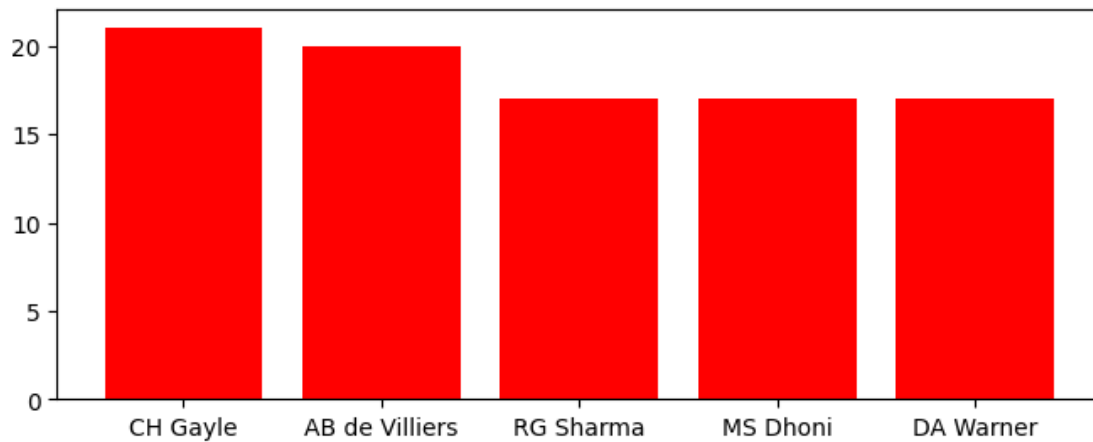
[4]: `ipl.shape`

[4]: (756, 18)

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

[5]:
```
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
```

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

[6]:
```
CH Gayle          21
AB de Villiers    20
RG Sharma         17
MS Dhoni          17
DA Warner         17
Name: player_of_match, dtype: int64
```

[7]:
```python
plt.figure(figsize=(8,3))
plt.bar(list(ipl['player_of_match'].value_counts()[0:5].
  ↪keys()),list(ipl['player_of_match'].value_counts()[0:5]), color="r")
plt.show()
```

```
[8]: ipl['result'].value_counts()
```

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

```
[9]: ipl['toss_winner'].value_counts()
```

```
[9]: Mumbai Indians              98
     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
```

```
[10]: batting_first=ipl[ipl['win_by_runs']!=0]
```

```
[11]: batting_first.head()
```

```
[11]:      id  season       city        date                          team1  \
      0   1    2017  Hyderabad  2017-04-05            Sunrisers Hyderabad
      4   5    2017  Bangalore  2017-04-08  Royal Challengers Bangalore
      8   9    2017       Pune  2017-04-11              Delhi Daredevils
      13  14   2017    Kolkata  2017-04-15          Kolkata Knight Riders
      14  15   2017      Delhi  2017-04-15              Delhi Daredevils

                                team2                  toss_winner toss_decision  \
      0   Royal Challengers Bangalore  Royal Challengers Bangalore         field
      4              Delhi Daredevils  Royal Challengers Bangalore           bat
      8          Rising Pune Supergiant       Rising Pune Supergiant         field
      13            Sunrisers Hyderabad          Sunrisers Hyderabad         field
      14                Kings XI Punjab             Delhi Daredevils           bat

          result  dl_applied                       winner  win_by_runs  \
      0   normal           0          Sunrisers Hyderabad           35
      4   normal           0  Royal Challengers Bangalore           15
      8   normal           0             Delhi Daredevils           97
      13  normal           0        Kolkata Knight Riders           17
      14  normal           0             Delhi Daredevils           51

          win_by_wickets player_of_match                                       venue  \
      0                0    Yuvraj Singh  Rajiv Gandhi International Stadium, Uppal
      4                0       KM Jadhav                    M Chinnaswamy Stadium
      8                0       SV Samson   Maharashtra Cricket Association Stadium
      13               0      RV Uthappa                              Eden Gardens
      14               0     CJ Anderson                           Feroz Shah Kotla

             umpire1      umpire2 umpire3
      0   AY Dandekar     NJ Llong     NaN
      4           NaN          NaN     NaN
      8   AY Dandekar       S Ravi     NaN
      13  AY Dandekar     NJ Llong     NaN
      14     YC Barde  Nitin Menon     NaN
```
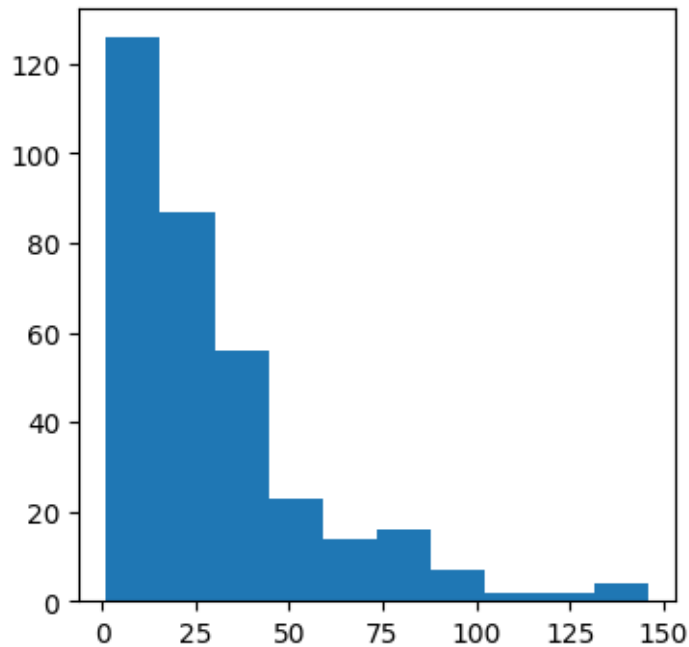
```python
[12]: plt.figure(figsize=(4,4))
      plt.hist(batting_first['win_by_runs'])
      plt.show()
```
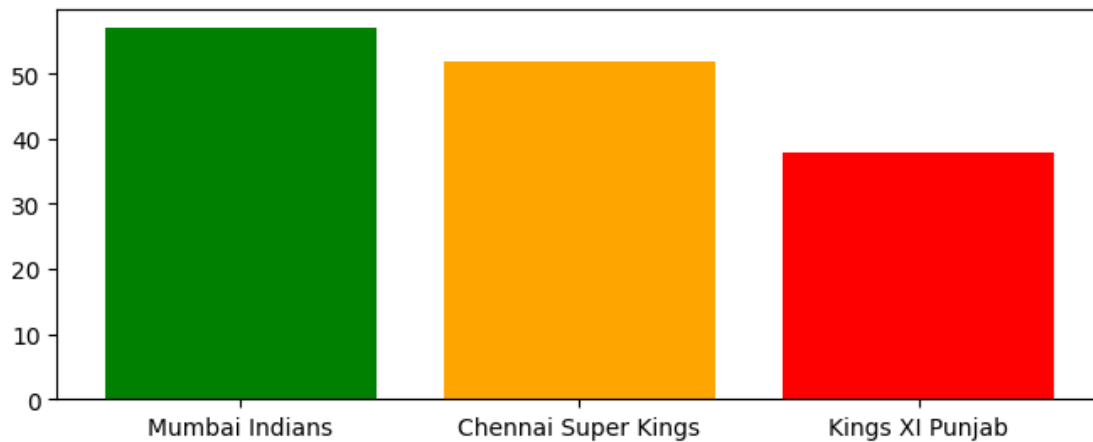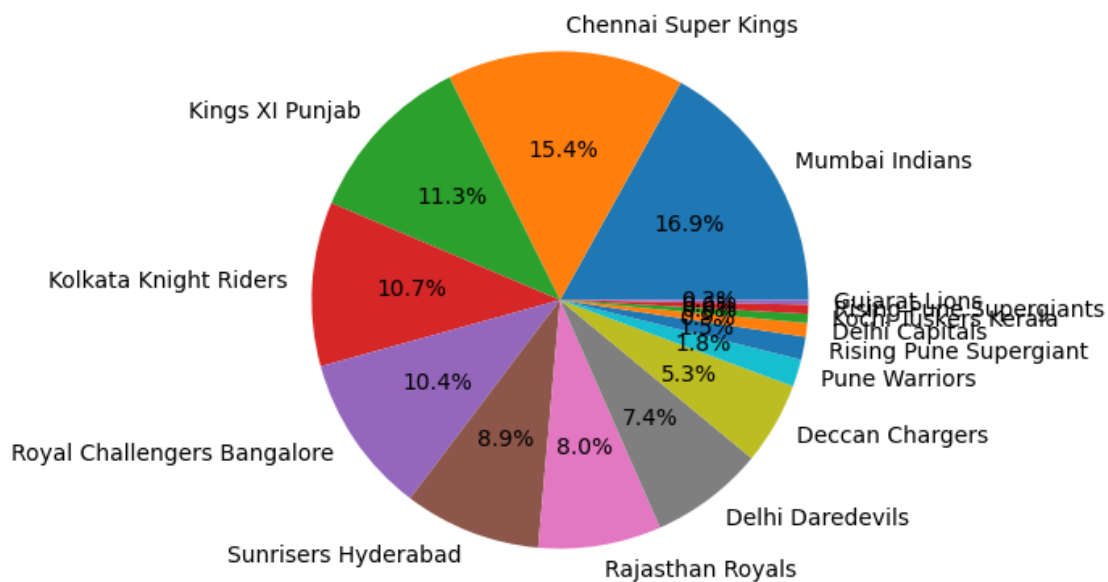
```
[13]: batting_first['winner'].value_counts()
```

```
[13]: Mumbai Indians               57
      Chennai Super Kings          52
      Kings XI Punjab              38
      Kolkata Knight Riders        36
      Royal Challengers Bangalore  35
      Sunrisers Hyderabad          30
      Rajasthan Royals             27
      Delhi Daredevils             25
      Deccan Chargers              18
      Pune Warriors                 6
      Rising Pune Supergiant        5
      Delhi Capitals                3
      Kochi Tuskers Kerala          2
      Rising Pune Supergiants       2
      Gujarat Lions                 1
      Name: winner, dtype: int64
```

```
[14]: plt.figure(figsize=(8,3))
      plt.bar(list(batting_first['winner'].value_counts()[0:3].
       ↪keys()),list(batting_first['winner'].value_counts()[0:
       ↪3]),color=["green","orange","red"])
      plt.show()
```

```
[15]: plt.figure(figsize=(5,5))
      plt.pie(list(batting_first['winner'].
       ↪value_counts()),labels=list(batting_first['winner'].value_counts().
       ↪keys()),autopct='%0.1f%%')
      plt.show()
```



```
[16]: batting_second=ipl[ipl['win_by_wickets']!=0]
```

```
[17]: batting_second.head()
```

```
[17]:    id  season       city       date                       team1  \
      1   2    2017       Pune 2017-04-06              Mumbai Indians
      2   3    2017     Rajkot 2017-04-07               Gujarat Lions
      3   4    2017     Indore 2017-04-08  Rising Pune Supergiant
      5   6    2017  Hyderabad 2017-04-09               Gujarat Lions
      6   7    2017     Mumbai 2017-04-09   Kolkata Knight Riders


                        team2               toss_winner toss_decision  result  \
      1  Rising Pune Supergiant  Rising Pune Supergiant         field  normal
      2   Kolkata Knight Riders   Kolkata Knight Riders         field  normal
      3        Kings XI Punjab         Kings XI Punjab         field  normal
      5     Sunrisers Hyderabad     Sunrisers Hyderabad         field  normal
      6          Mumbai Indians          Mumbai Indians         field  normal


         dl_applied                  winner  win_by_runs  win_by_wickets  \
      1           0  Rising Pune Supergiant            0               7
      2           0   Kolkata Knight Riders            0              10
      3           0         Kings XI Punjab            0               6
      5           0     Sunrisers Hyderabad            0               9
      6           0          Mumbai Indians            0               4


        player_of_match                                    venue        umpire1  \
      1       SPD Smith    Maharashtra Cricket Association Stadium  A Nand Kishore
      2        CA Lynn      Saurashtra Cricket Association Stadium     Nitin Menon
      3      GJ Maxwell                    Holkar Cricket Stadium    AK Chaudhary
      5     Rashid Khan  Rajiv Gandhi International Stadium, Uppal      A Deshmukh
      6         N Rana                         Wankhede Stadium      Nitin Menon


           umpire2 umpire3
      1      S Ravi     NaN
      2   CK Nandan     NaN
      3  C Shamshuddin     NaN
      5    NJ Llong     NaN
      6   CK Nandan     NaN
```

```
[18]: batting_second['winner'].value_counts()
```

```
[18]: 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
```
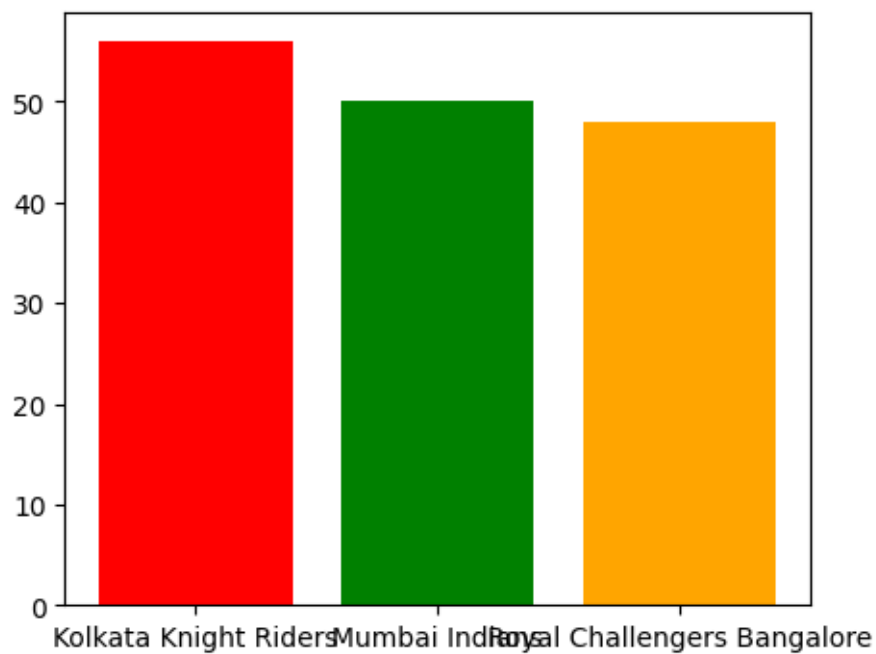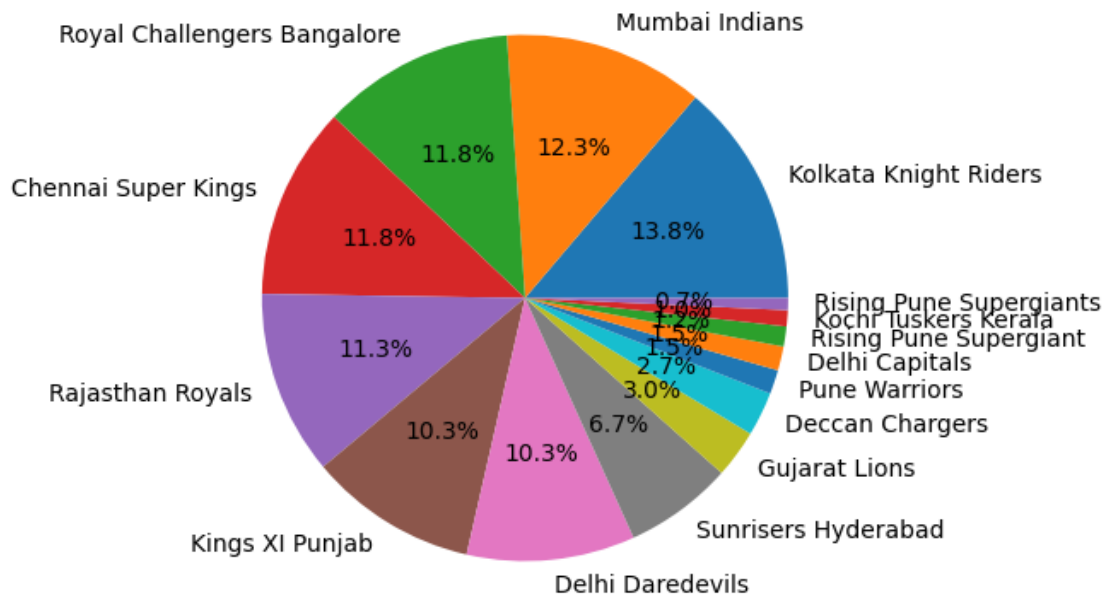
```
Pune Warriors              6
Delhi Capitals             6
Rising Pune Supergiant     5
Kochi Tuskers Kerala       4
Rising Pune Supergiants    3
Name: winner, dtype: int64
```

[19]:
```python
plt.figure(figsize=(5,4))
plt.bar(list(batting_second['winner'].value_counts()[0:3].
 ↪keys()),list(batting_second['winner'].value_counts()[0:
 ↪3]),color=["red","green","orange"])
plt.show()
```


[20]:
```python
plt.figure(figsize=(5,5))
plt.pie(list(batting_second['winner'].
 ↪value_counts()),labels=list(batting_second['winner'].value_counts().
 ↪keys()),autopct='%0.1f%%')
plt.show()
```

Pie chart showing distribution of IPL teams:
- Mumbai Indians: 12.3%
- Kolkata Knight Riders: 13.8%
- Rising Pune Supergiants: 0.7%
- Kochi Tuskers Kerala: 0.8%
- Rising Pune Supergiant: 1.2%
- Delhi Capitals: 1.0%
- Pune Warriors: 1.5%
- Deccan Chargers: 2.7%
- Gujarat Lions: 3.0%
- Sunrisers Hyderabad: 6.7%
- Delhi Daredevils: 10.3%
- Kings XI Punjab: 10.3%
- Rajasthan Royals: 11.3%
- Chennai Super Kings: 11.8%
- Royal Challengers Bangalore: 11.8%

```
[21]: ipl['season'].value_counts()
```

```
[21]: 2013    76
      2012    74
      2011    73
      2010    60
      2014    60
      2016    60
      2018    60
      2019    60
      2017    59
      2015    59
      2008    58
      2009    57
      Name: season, dtype: int64
```

```
[22]: ipl['city'].value_counts()
```

```
[22]: Mumbai       101
      Kolkata       77
      Delhi         74
      Bangalore     66
      Hyderabad     64
      Chennai       57
      Jaipur        47
```

```
Chandigarh         46
Pune               38
Durban             15
Bengaluru          14
Visakhapatnam      13
Centurion          12
Ahmedabad          12
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
```

[23]:
```python
import numpy as np
np.sum(ipl['toss_winner']==ipl['winner'])
```

[23]: 393

[24]:
```python
393/756
```

[24]: 0.5198412698412699

[ ]:

[ ]: