## More important function

```
# value counts
# sort values
# rank
# sort index
# set index
# rename index -> rename
# reset index
# unique & nunique
# isnull/notnull/hasnans
# dropna
# fillna
# drop_duplicates
# drop
# apply
# isin
# corr
# nlargest -> nsmallest
# insert
# сору
import numpy as np
import pandas as pd
a = pd.Series([1,1,1,2,2,3])
a.value_counts()
1
     3
2
     2
3
Name: count, dtype: int64
# value counts(series and dataframe) # frequency batata hai ye
batayega ki data frame me kon kon se rows repeate hua hai
marks = pd.DataFrame([
    [100,80,10],
    [90,70,7],
    [120,100,14],
    [80,70,14],
    [80,70,14]
],columns=['iq','marks','package'])
marks
   ig marks package
  100
           80
                    10
1
   90
           70
                     7
```

```
2
   120
          100
                     14
3
                     14
    80
           70
    80
           70
                     14
marks.value counts()
     marks
            package
iq
80
                        2
     70
            14
90
     70
            7
                        1
                        1
100
     80
            10
     100
                        1
120
            14
Name: count, dtype: int64
ipl=pd.read csv("ipl-matches.csv")
ipl
          ID
                     City
                                  Date
                                         Season
                                                 MatchNumber \
0
     1312200
                Ahmedabad
                           2022-05-29
                                           2022
                                                        Final
1
                                                  Qualifier 2
     1312199
                Ahmedabad
                           2022-05-27
                                           2022
2
     1312198
                  Kolkata
                           2022-05-25
                                           2022
                                                  Eliminator
3
     1312197
                           2022-05-24
                                           2022
                  Kolkata
                                                  Qualifier 1
4
     1304116
                  Mumbai
                           2022-05-22
                                           2022
                                                           70
. .
                                                           . . .
                           2008-04-20
                                        2007/08
                                                            4
945
      335986
                  Kolkata
946
                           2008-04-20
                                        2007/08
                                                            5
      335985
                   Mumbai
                           2008-04-19
                                                            3
947
      335984
                    Delhi
                                        2007/08
948
      335983
              Chandigarh
                           2008-04-19
                                        2007/08
                                                            2
949
      335982
                Bangalore 2008-04-18
                                        2007/08
                                                            1
                            Team1
                                                           Team2
0
                                                  Gujarat Titans
                 Rajasthan Royals
1
     Royal Challengers Bangalore
                                                Rajasthan Royals
2
     Royal Challengers Bangalore
                                           Lucknow Super Giants
3
                 Rajasthan Royals
                                                  Gujarat Titans
4
              Sunrisers Hyderabad
                                                    Punjab Kings
945
           Kolkata Knight Riders
                                                 Deccan Chargers
946
                   Mumbai Indians
                                    Royal Challengers Bangalore
947
                 Delhi Daredevils
                                               Rajasthan Royals
948
                  Kings XI Punjab
                                            Chennai Super Kings
     Royal Challengers Bangalore
                                          Kolkata Knight Riders
949
                                            Venue
TossWinner \
                Narendra Modi Stadium, Ahmedabad
                                                                Rajasthan
Royals
                Narendra Modi Stadium, Ahmedabad
                                                                Rajasthan
Royals
                           Eden Gardens, Kolkata
                                                           Lucknow Super
Giants
```

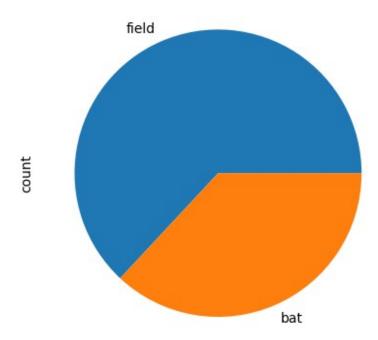
3		Ec	den Gardens, Kolkata	Gujarat
Titans 4		Wankh	nede Stadium, Mumbai	Sunrisers
Hyderabad			, , , , , ,	
945			Eden Gardens	Deccan
Chargers				
946 Indians			Wankhede Stadium	Mumbai
947			Feroz Shah Kotla	Rajasthan
	b Cricket As	sociat	ion Stadium, Mohali	Chennai Super
Kings 949		М	Chinnaswamy Stadium Royal C	hallengers
Bangalore				gog
TossDe Margin \	cision Super	Over	WinningTeam	WonBy
0	bat	N	Gujarat Titans	Wickets
7.0	field	N.	Doinethan Dovale	الماء مادمة م
1 7.0	iteta	N	Rajasthan Royals	Wickets
2 14.0	field	N	Royal Challengers Bangalore	Runs
3	field	N	Gujarat Titans	Wickets
4	bat	N	Punjab Kings	Wickets
5.0				
		•••	•••	
945 5.0	bat	N	Kolkata Knight Riders	Wickets
946	bat	N	Royal Challengers Bangalore	Wickets
5.0 947	bat	N	Delhi Daredevils	Wickets
9.0	bat	IN	Detili Daleuevits	WICKELS
948 33.0	bat	N	Chennai Super Kings	Runs
949	field	N	Kolkata Knight Riders	Runs
140.0				
method Team1Playe	Player_of_Mars \	atch		
0 NaN	HH Pai	ndya	['YBK Jaiswal', 'JC Buttler'	, 'SV Samson',
'D 1 NaN	JC But	tler	['V Kohli', 'F du Plessis',	'RM Patidar',
'GJ 2 NaN	RM Pat	idar	['V Kohli', 'F du Plessis',	'RM Patidar'
	Tur Tac.			,

```
'GJ ..
3
                 DA Miller ['YBK Jaiswal', 'JC Buttler', 'SV Samson',
       NaN
'D ...
             Harpreet Brar ['PK Garg', 'Abhishek Sharma', 'RA
4
       NaN
Tripathi',
945
                 DJ Hussey ['WP Saha', 'BB McCullum', 'RT Ponting',
       NaN
'SC G...
                MV Boucher ['L Ronchi', 'ST Jayasuriya', 'DJ
946
       NaN
Thornely',
               MF Maharoof ['G Gambhir', 'V Sehwag', 'S Dhawan', 'MK
947
       NaN
Tiwa...
                MEK Hussey ['K Goel', 'JR Hopes', 'KC Sangakkara',
948
       NaN
'Yuvra...
               BB McCullum ['R Dravid', 'W Jaffer', 'V Kohli', 'JH
949
       NaN
Kallis...
                                          Team2Players
                                                               Umpire1
     ['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan...
                                                           CB Gaffaney
     ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
                                                           CB Gaffaney
     ['Q de Kock', 'KL Rahul', 'M Vohra', 'DJ Hooda... J Madanagopal
     ['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan...
                                                          BNJ Oxenford
     ['JM Bairstow', 'S Dhawan', 'M Shahrukh Khan',...
                                                          AK Chaudhary
     ['AC Gilchrist', 'Y Venugopal Rao', 'VVS Laxma...
945
                                                             BF Bowden
     ['S Chanderpaul', 'R Dravid', 'LRPL Taylor', '...
946
                                                              SJ Davis
     ['T Kohli', 'YK Pathan', 'SR Watson', 'M Kaif'...
947
                                                             Aleem Dar
     ['PA Patel', 'ML Hayden', 'MEK Hussey', 'MS Dh...
948
                                                             MR Benson
     ['SC Ganguly', 'BB McCullum', 'RT Ponting', 'D...
949
                                                             Asad Rauf
            Umpire2
        Nitin Menon
1
        Nitin Menon
2
           MA Gough
3
          VK Sharma
4
      NA Patwardhan
. .
```

```
945
        K Hariharan
946
          DJ Harper
947
     GA Pratapkumar
         SL Shastri
948
949
        RE Koertzen
[950 rows x 20 columns]
# find which player has won most man of the match award in
semifinal(Qualifiers) and finals
ipl[~ipl['MatchNumber'].str.isdigit()]
['Player of Match'].value counts()
Player of Match
KA Pollard
                      3
                      3
F du Plessis
                      3
SK Raina
                      2
A Kumble
                      2
MK Pandey
                      2
YK Pathan
M Vijay
                      2
JJ Bumrah
                      2
AB de Villiers
                      2
                      2
SR Watson
                      1
HH Pandya
Harbhajan Singh
                      1
                      1
A Nehra
                      1
V Sehwag
                      1
UT Yadav
MS Bisla
                      1
                      1
BJ Hodge
MEK Hussey
                      1
                      1
MS Dhoni
CH Gayle
                      1
                      1
MM Patel
                      1
DE Bollinger
AC Gilchrist
                      1
RG Sharma
                      1
DA Warner
                      1
                      1
MC Henriques
                      1
JC Buttler
RM Patidar
                      1
                      1
DA Miller
VR Iyer
                      1
SP Narine
                      1
RD Gaikwad
                      1
TA Boult
                      1
                      1
MP Stoinis
KS Williamson
                      1
RR Pant
                      1
```

```
SA Yadav
Rashid Khan
                     1
AD Russell
                     1
KH Pandva
                     1
KV Sharma
                     1
NM Coulter-Nile
                     1
Washington Sundar
                     1
BCJ Cutting
                     1
M Ntini
                     1
Name: count, dtype: int64
# Toss decision plot
ipl.head()
        ID
                 City
                              Date Season
                                           MatchNumber \
   1312200
            Ahmedabad
                       2022-05-29
                                     2022
                                                 Final
           Ahmedabad 2022-05-27
                                     2022
                                           Oualifier 2
  1312199
2
  1312198
              Kolkata 2022-05-25
                                     2022
                                            Eliminator
3
              Kolkata 2022-05-24
                                     2022
  1312197
                                           Qualifier 1
               Mumbai 2022-05-22
                                     2022
  1304116
                                                    70
                         Team1
                                                Team2 \
0
              Rajasthan Royals
                                       Gujarat Titans
1
   Royal Challengers Bangalore
                                     Rajasthan Royals
2
   Royal Challengers Bangalore
                                 Lucknow Super Giants
3
              Rajasthan Royals
                                       Gujarat Titans
4
           Sunrisers Hyderabad
                                         Punjab Kings
                               Venue
                                                TossWinner TossDecision
  Narendra Modi Stadium, Ahmedabad
                                          Rajasthan Royals
                                                                     bat
1
  Narendra Modi Stadium, Ahmedabad
                                          Rajasthan Royals
                                                                   field
2
              Eden Gardens, Kolkata
                                      Lucknow Super Giants
                                                                   field
3
              Eden Gardens, Kolkata
                                            Gujarat Titans
                                                                   field
           Wankhede Stadium, Mumbai Sunrisers Hyderabad
                                                                     bat
  Super0ver
                              WinningTeam
                                             WonBy
                                                    Margin method
0
                          Gujarat Titans
                                                       7.0
                                           Wickets
                                                               NaN
          N
1
          N
                        Rajasthan Royals
                                           Wickets
                                                       7.0
                                                               NaN
2
          Ν
             Royal Challengers Bangalore
                                              Runs
                                                       14.0
                                                               NaN
3
          N
                          Gujarat Titans
                                           Wickets
                                                       7.0
                                                               NaN
4
                                                       5.0
          Ν
                             Punjab Kings
                                           Wickets
                                                               NaN
  Player of Match
Team1Players \
        HH Pandya
                   ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
```

```
JC Buttler ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ...
         RM Patidar ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ...
          DA Miller ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
     Harpreet Brar ['PK Garg', 'Abhishek Sharma', 'RA Tripathi', ...
                                                      Team2Players
                                                                                 Umpire1 \
    ['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan...
                                                                           CB Gaffaney
   ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ... CB Gaffaney
['Q de Kock', 'KL Rahul', 'M Vohra', 'DJ Hooda... J Madanagopal
['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan... BNJ Oxenford
['JM Bairstow', 'S Dhawan', 'M Shahrukh Khan',... AK Chaudhary
            Umpire2
      Nitin Menon
0
1
      Nitin Menon
2
          MA Gough
         VK Sharma
3
   NA Patwardhan
ipl['TossDecision'].value counts().plot(kind='pie')
<Axes: ylabel='count'>
```



```
## how many matches each team has played
ipl.head()
        ID
                 City
                             Date Season
                                           MatchNumber \
   1312200
            Ahmedabad
                       2022-05-29
                                     2022
                                                 Final
                                           Oualifier 2
   1312199
            Ahmedabad
                       2022-05-27
                                     2022
1
   1312198
              Kolkata
                       2022-05-25
                                     2022
                                            Eliminator
3
  1312197
              Kolkata 2022-05-24
                                     2022
                                           Qualifier 1
  1304116
               Mumbai 2022-05-22
                                     2022
                                                    70
                         Team1
                                                Team2 \
0
              Rajasthan Royals
                                       Gujarat Titans
1
   Royal Challengers Bangalore
                                     Rajasthan Royals
                                 Lucknow Super Giants
   Royal Challengers Bangalore
3
              Rajasthan Royals
                                       Gujarat Titans
4
           Sunrisers Hyderabad
                                         Punjab Kings
                               Venue
                                                TossWinner TossDecision
   Narendra Modi Stadium, Ahmedabad
                                          Rajasthan Royals
                                                                     bat
   Narendra Modi Stadium, Ahmedabad
                                          Rajasthan Royals
                                                                   field
              Eden Gardens, Kolkata
                                      Lucknow Super Giants
2
                                                                   field
3
              Eden Gardens, Kolkata
                                            Gujarat Titans
                                                                   field
           Wankhede Stadium, Mumbai
                                       Sunrisers Hyderabad
                                                                     bat
  Super0ver
                             WinningTeam
                                             WonBy
                                                    Margin method
0
                           Guiarat Titans
                                                               NaN
          N
                                           Wickets
                                                       7.0
                        Rajasthan Royals
                                                       7.0
1
                                           Wickets
                                                               NaN
          N
2
          N
             Royal Challengers Bangalore
                                              Runs
                                                      14.0
                                                               NaN
3
                          Gujarat Titans
                                           Wickets
                                                       7.0
                                                               NaN
          N
4
          Ν
                             Punjab Kings
                                                               NaN
                                           Wickets
                                                       5.0
  Player_of_Match
Team1Players \
                   ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
       HH Pandya
       JC Buttler
                  ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ...
2
       RM Patidar
                   ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ...
                   ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
3
        DA Miller
    Harpreet Brar ['PK Garg', 'Abhishek Sharma', 'RA Tripathi', ...
                                         Team2Players
                                                              Umpire1 \
```

```
['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan... CB Gaffaney
['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ... CB Gaffaney
['Q de Kock', 'KL Rahul', 'M Vohra', 'DJ Hooda... J Madanagopal
['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan... BNJ Oxenford
['JM Bairstow', 'S Dhawan', 'M Shahrukh Khan',... AK Chaudhary
1
            Umpire2
0
      Nitin Menon
1
      Nitin Menon
2
          MA Gough
3
         VK Sharma
4 NA Patwardhan
ipl['Team1'].value counts()
Team1
Royal Challengers Bangalore
                                          126
Mumbai Indians
                                          112
Chennai Super Kings
                                          111
Kolkata Knight Riders
                                          105
Kings XI Punjab
                                           92
Rajasthan Royals
                                           89
                                           85
Delhi Daredevils
Sunrisers Hyderabad
                                           69
                                           39
Deccan Chargers
Delhi Capitals
                                           29
                                           23
Pune Warriors
                                           18
Punjab Kings
Gujarat Lions
                                           16
Lucknow Super Giants
                                            8
                                            7
Gujarat Titans
Rising Pune Supergiant
                                            7
                                            7
Rising Pune Supergiants
                                            7
Kochi Tuskers Kerala
Name: count, dtype: int64
ipl['Team2'].value counts()
Team2
Mumbai Indians
                                          119
Kolkata Knight Riders
                                          118
Rajasthan Royals
                                          103
Royal Challengers Bangalore
                                          100
Kings XI Punjab
                                           98
Chennai Super Kings
                                           97
Sunrisers Hyderabad
                                           83
Delhi Daredevils
                                           76
                                           36
Deccan Chargers
Delhi Capitals
                                           34
Pune Warriors
                                           23
```

```
Guiarat Lions
                                 14
Punjab Kings
                                 10
Gujarat Titans
                                  9
                                  9
Rising Pune Supergiant
                                  7
Rising Pune Supergiants
                                  7
Lucknow Super Giants
                                  7
Kochi Tuskers Kerala
Name: count, dtype: int64
ipl['Team1'].value counts() + ipl['Team2'].value_counts()
series ko add kar sakte hain agar index same ho to basically sare
arithmetic
# operation use kar sakte hain but dhyan rahe mainy values count
function ko hum series pe mainly use karte hain
Chennai Super Kings
                                208
                                 75
Deccan Chargers
                                 63
Delhi Capitals
                                161
Delhi Daredevils
Guiarat Lions
                                 30
                                 16
Gujarat Titans
                                190
Kings XI Punjab
Kochi Tuskers Kerala
                                14
Kolkata Knight Riders
                                223
                                 15
Lucknow Super Giants
Mumbai Indians
                                231
Pune Warriors
                                 46
Punjab Kings
                                 28
Rajasthan Royals
                                192
Rising Pune Supergiant
                                 16
Rising Pune Supergiants
                                 14
Royal Challengers Bangalore
                                226
Sunrisers Hyderabad
                                152
Name: count, dtype: int64
(ipl['Team1'].value counts() +
ipl['Team2'].value counts()).sort values(ascending=False)
Mumbai Indians
                                231
Royal Challengers Bangalore
                                226
Kolkata Knight Riders
                                223
Chennai Super Kings
                                208
Rajasthan Royals
                                192
Kings XI Punjab
                                190
Delhi Daredevils
                                161
Sunrisers Hyderabad
                                152
                                 75
Deccan Chargers
                                 63
Delhi Capitals
Pune Warriors
                                 46
                                 30
Gujarat Lions
```

```
Punjab Kings
                                 28
Gujarat Titans
                                 16
Rising Pune Supergiant
                                 16
Lucknow Super Giants
                                 15
Kochi Tuskers Kerala
                                 14
Rising Pune Supergiants
                                 14
Name: count, dtype: int64
# sort values(series and dataframe) -> ascending -> na position ->
inplace -> multiple cols
x = pd.Series([12,14,1,56,89])
     12
0
1
     14
2
      1
3
     56
4
     89
dtype: int64
x.sort values(ascending=False)
     89
4
3
     56
1
     14
0
     12
2
      1
dtype: int64
movies=pd.read csv('movies.csv')
movies.head()
                                 title x
                                            imdb id \
0
               Uri: The Surgical Strike
                                          tt8291224
1
                           Battalion 609
                                          tt9472208
2
  The Accidental Prime Minister (film)
                                          tt6986710
3
                        Why Cheat India
                                          tt8108208
4
                        Evening Shadows
                                          tt6028796
                                          poster path \
   https://upload.wikimedia.org/wikipedia/en/thum...
0
1
2
   https://upload.wikimedia.org/wikipedia/en/thum...
3
   https://upload.wikimedia.org/wikipedia/en/thum...
4
                                                  NaN
                                            wiki link \
   https://en.wikipedia.org/wiki/Uri:_The_Surgica...
0
         https://en.wikipedia.org/wiki/Battalion 609
1
   https://en.wikipedia.org/wiki/The Accidental P...
```

```
3
       https://en.wikipedia.org/wiki/Why Cheat India
4
       https://en.wikipedia.org/wiki/Evening Shadows
                                                  original title
                         title y
is adult \
        Uri: The Surgical Strike
                                       Uri: The Surgical Strike
0
1
                   Battalion 609
                                                   Battalion 609
0
2
  The Accidental Prime Minister The Accidental Prime Minister
0
3
                 Why Cheat India
                                                 Why Cheat India
0
4
                 Evening Shadows
                                                 Evening Shadows
0
   year of release runtime
                                              imdb rating imdb votes
                                      genres
/
0
              2019
                       138 Action|Drama|War
                                                       8.4
                                                                 35112
              2019
                       131
                                                       4.1
                                                                    73
1
                                         War
2
              2019
                       112
                             Biography|Drama
                                                       6.1
                                                                  5549
3
              2019
                       121
                                 Crime|Drama
                                                       6.0
                                                                  1891
              2018
                       102
                                                                   280
                                        Drama
                                                       7.3
                                                story \
  Divided over five chapters the film chronicle...
  The story revolves around a cricket match betw...
1
   Based on the memoir by Indian policy analyst S...
  The movie focuses on existing malpractices in ...
  While gay rights and marriage equality has bee...
                                              summary tagline \
   Indian army special forces execute a covert op...
                                                          NaN
  The story of Battalion 609 revolves around a c...
                                                          NaN
  Explores Manmohan Singh's tenure as the Prime ...
                                                          NaN
3
  The movie focuses on existing malpractices in ...
                                                          NaN
  Under the 'Evening Shadows' truth often plays...
                                                          NaN
                                              actors
wins nominations \
0 Vicky Kaushal|Paresh Rawal|Mohit Raina|Yami Ga...
4 wins
1 Vicky Ahuja|Shoaib Ibrahim|Shrikant Kamat|Elen...
2 Anupam Kher|Akshaye Khanna|Aahana Kumra|Atul S...
```

```
NaN
3 Emraan Hashmi|Shreya Dhanwanthary|Snighdadeep ...
NaN
   Mona Ambegaonkar|Ananth Narayan Mahadevan|Deva... 17 wins & 1
nomination
              release date
     11 January 2019 (USA)
1
   11 January 2019 (India)
2
     11 January 2019 (USA)
3
     18 January 2019 (USA)
4
  11 January 2019 (India)
# sort single column
# suppose hum chahate hain ki title x column sort ho jaye
movies.sort values('title x')
                       title x
                                  imdb id \
1498
            16 December (film)
                                tt0313844
1021
                   1920 (film)
                                tt1301698
287
                  1920: London
                                tt5638500
723
        1920: The Evil Returns
                                tt2222550
1039
              1971 (2007 film)
                                tt0983990
      Zindagi Na Milegi Dobara
778
                               tt1562872
670
             Zindagi Tere Naam tt2164702
756
                      Zokkomon
                                tt1605790
         Zor Lagaa Ke...Haiya!
939
                                tt1479857
1623
                      Zubeidaa tt0255713
                                             poster path \
1498
      https://upload.wikimedia.org/wikipedia/en/thum...
1021
      https://upload.wikimedia.org/wikipedia/en/thum...
287
      https://upload.wikimedia.org/wikipedia/en/thum...
723
      https://upload.wikimedia.org/wikipedia/en/e/e7...
1039
      https://upload.wikimedia.org/wikipedia/en/thum...
778
      https://upload.wikimedia.org/wikipedia/en/thum...
670
      https://upload.wikimedia.org/wikipedia/en/thum...
756
      https://upload.wikimedia.org/wikipedia/en/thum...
939
      https://upload.wikimedia.org/wikipedia/en/thum...
1623
      https://upload.wikimedia.org/wikipedia/en/thum...
                                               wiki link \
1498
       https://en.wikipedia.org/wiki/16 December (film)
1021
              https://en.wikipedia.org/wiki/1920 (film)
287
              https://en.wikipedia.org/wiki/1920 London
723
      https://en.wikipedia.org/wiki/1920:_The_Evil_R...
         https://en.wikipedia.org/wiki/1971 (2007 film)
1039
. . .
```

```
778
      https://en.wikipedia.org/wiki/Zindagi Na Mileg...
670
        https://en.wikipedia.org/wiki/Zindagi Tere Naam
756
                  https://en.wikipedia.org/wiki/Zokkomon
939
      https://en.wikipedia.org/wiki/Zor Lagaa Ke...H...
1623
                 https://en.wikipedia.org/wiki/Zubeidaa
                        title y
                                            original title
                                                             is adult
1498
                         16-Dec
                                                     16-Dec
                                                                     0
                                                       1920
                                                                     0
1021
                           1920
287
                    1920 London
                                                1920 London
                                                                     0
723
            1920: Evil Returns
                                        1920: Evil Returns
                                                                     0
1039
                                                                     0
                           1971
                                                       1971
. . .
                                                                   . . .
778
      Zindagi Na Milegi Dobara
                                  Zindagi Na Milegi Dobara
                                                                     0
                                                                     0
670
              Zindagi Tere Naam
                                         Zindagi Tere Naam
756
                       Zokkomon
                                                   Zokkomon
                                                                     0
                                                                     0
939
        Zor Lagaa Ke... Haiya!
                                    Zor Lagaa Ke... Haiya!
1623
                       Zubeidaa
                                                   Zubeidaa
                                                                     0
      year of release runtime
                                                           imdb rating \
                                                   genres
1498
                  2002
                           158
                                         Action|Thriller
                                                                    6.9
1021
                  2008
                           138
                                  Horror|Mystery|Romance
                                                                    6.4
                                          Horror | Mystery
287
                  2016
                           120
                                                                    4.1
723
                  2012
                           124
                                    Drama|Horror|Romance
                                                                    4.8
1039
                  2007
                           160
                                        Action|Drama|War
                                                                    7.9
. . .
                   . . .
                           . . .
                                                                    . . .
778
                  2011
                           155
                                            Comedy | Drama
                                                                    8.1
                                                                    4.7
670
                  2012
                           120
                                                  Romance
756
                  2011
                           109
                                                                    4.0
                                        Action|Adventure
939
                  2009
                            \ N
                                     Comedy|Drama|Family
                                                                    6.4
1623
                  2001
                                 Biography | Drama | History
                                                                    6.2
                           153
      imdb votes
                                                                  story \
1498
            1091
                   16 December
                                1971 was the day when India won t...
1021
            2588
                  A devotee of Bhagwan Shri Hanuman Arjun Singh...
287
            1373
                   Shivangi (Meera Chopra) lives in London with h...
            1587
723
                   This story revolves around a famous poet who m...
            1121
                   Based on true facts the film revolves around ...
1039
778
           60826
                   Three friends decide to turn their fantasy vac...
              27
670
                   Mr. Singh an elderly gentleman relates to hi...
             274
756
                   After the passing of his parents in an acciden...
939
              46
                   A tree narrates the story of four Mumbai-based...
            1384
1623
                   The film begins with Riyaz (Rajat Kapoor) Zub...
                                                   summary \
1498
      Indian intelligence agents race against time t...
1021
      After forsaking his family and religion a hus...
287
      After her husband is possessed by an evil spir...
723
      This story revolves around a famous poet who m...
```

```
1039
      Based on true facts the film revolves around ...
778
      Three friends decide to turn their fantasy vac...
670
      Mr. Singh an elderly gentleman relates to hi...
756
      An orphan is abused and abandoned believed to...
939
      Children build a tree-house to spy on a beggar...
1623
      Zubeidaa an aspiring Muslim actress marries ...
                                                  tagline
1498
                                                      NaN
1021
      A Love Made in Heaven... A Revenge Born in Hell...
287
                                      Fear strikes again
723
                                      Possession is back
1039
                                 Honor the heroes.....
. . .
778
                                                      NaN
670
                                                      NaN
756
                          Betrayal. Friendship. Bravery.
939
1623
                                 The Story of a Princess
                                                   actors
      Danny Denzongpa|Gulshan Grover|Milind Soman|Di...
1498
1021
      Rajniesh Duggall|Adah Sharma|Anjori Alagh|Raj ...
287
      Sharman Joshi|Meera Chopra|Vishal Karwal|Suren...
      Vicky Ahuja|Tia Bajpai|Irma Jämhammar|Sharad K...
723
1039
            Manoj Bajpayee|Ravi Kishan|Deepak Dobriyal|
. . .
778
      Hrithik Roshan|Farhan Akhtar|Abhay Deol|Katrin...
      Mithun Chakraborty|Ranjeeta Kaur|Priyanka Meht...
670
756
      Darsheel Safary|Anupam Kher|Manjari Fadnnis|Ti...
939
      Meghan Jadhav|Mithun Chakraborty|Riya Sen|Seem...
1623
      Karisma Kapoor|Rekha|Manoj Bajpayee|Rajit Kapo...
              wins nominations
                                               release date
1498
                                     22 March 2002 (India)
                 2 nominations
1021
                                 12 September 2008 (India)
                            NaN
287
                                          6 May 2016 (USA)
                            NaN
723
                            NaN
                                   2 November 2012 (India)
1039
                                      9 March 2007 (India)
                          1 win
778
      30 wins & 22 nominations
                                      15 July 2011 (India)
                                     16 March 2012 (India)
670
                          1 win
756
                            NaN
                                     22 April 2011 (India)
939
                            NaN
                                                        NaN
1623
       3 wins & 13 nominations
                                   19 January 2001 (India)
[1629 rows x 18 columns]
movies.sort values('title x',ascending=False)
```

```
title x
                                   imdb id
1623
                       Zubeidaa
                                 tt0255713
939
         Zor Lagaa Ke...Haiya!
                                 tt1479857
756
                       Zokkomon
                                 tt1605790
670
             Zindagi Tere Naam
                                 tt2164702
778
      Zindagi Na Milegi Dobara
                                 tt1562872
1039
              1971 (2007 film)
                                 tt0983990
        1920: The Evil Returns
723
                                 tt2222550
287
                   1920: London
                                 tt5638500
1021
                    1920 (film)
                                 tt1301698
1498
            16 December (film)
                                 tt0313844
                                              poster path \
1623
      https://upload.wikimedia.org/wikipedia/en/thum...
939
      https://upload.wikimedia.org/wikipedia/en/thum...
756
      https://upload.wikimedia.org/wikipedia/en/thum...
670
      https://upload.wikimedia.org/wikipedia/en/thum...
778
      https://upload.wikimedia.org/wikipedia/en/thum...
1039
      https://upload.wikimedia.org/wikipedia/en/thum...
723
      https://upload.wikimedia.org/wikipedia/en/e/e7...
287
      https://upload.wikimedia.org/wikipedia/en/thum...
1021
      https://upload.wikimedia.org/wikipedia/en/thum...
1498
      https://upload.wikimedia.org/wikipedia/en/thum...
                                                wiki link
1623
                 https://en.wikipedia.org/wiki/Zubeidaa
939
      https://en.wikipedia.org/wiki/Zor Lagaa Ke...H...
756
                 https://en.wikipedia.org/wiki/Zokkomon
670
        https://en.wikipedia.org/wiki/Zindagi_Tere_Naam
778
      https://en.wikipedia.org/wiki/Zindagi Na Mileg...
. . .
         https://en.wikipedia.org/wiki/1971 (2007 film)
1039
723
      https://en.wikipedia.org/wiki/1920: The Evil R...
287
              https://en.wikipedia.org/wiki/1920 London
1021
              https://en.wikipedia.org/wiki/1920 (film)
1498
       https://en.wikipedia.org/wiki/16 December (film)
                        title v
                                            original title
                                                             is adult
1623
                       Zubeidaa
                                                  Zubeidaa
                                                                    0
939
                                                                    0
        Zor Lagaa Ke... Haiya!
                                   Zor Lagaa Ke... Haiya!
                                                                    0
756
                       Zokkomon
                                                  Zokkomon
                                                                    0
670
             Zindagi Tere Naam
                                         Zindagi Tere Naam
                                                                    0
778
      Zindagi Na Milegi Dobara
                                 Zindagi Na Milegi Dobara
                                                                  . . .
1039
                           1971
                                                      1971
                                                                    0
                                        1920: Evil Returns
723
            1920: Evil Returns
                                                                    0
287
                    1920 London
                                               1920 London
                                                                    0
                                                                    0
1021
                           1920
                                                      1920
```

1498		16-Dec	16-De	ec 0	
1623 939 756 670 778	year_of_release 2001 2009 2011 2012 2011	runtime 153 \N 109 120 155	genres Biography Drama History Comedy Drama Family Action Adventure Romance Comedy Drama	imdb_rating 6.2 6.4 4.0 4.7 8.1	\
1039 723 287 1021 1498	2007 2012 2016 2008 2002	160 124 120 138 158	Action Drama War Drama Horror Romance Horror Mystery Horror Mystery Romance Action Thriller	7.9 4.8 4.1 6.4 6.9	
1623 939 756 670 778	46 A tr 274 Afte 27 Mr. 60826 Thre	ree narra er the pas Singh as ee friends	ins with Riyaz (Rajat Kap tes the story of four Mum ssing of his parents in a n elderly gentleman rela s decide to turn their fa	nbai-based on acciden otes to hi ontasy vac	\
1039 723 287 1021 1498	1587 This 1373 Shiv 2588 A de	s story ro vangi (Mee evotee of	e facts the film revolve evolves around a famous p era Chopra) lives in Lond Bhagwan Shri Hanuman Ar 1971 was the day when In	ooet who m lon with h jun Singh ndia won t	
1623 939 756 670 778	An orphan is abu Mr. Singh an el	a tree-housed and a derly gen	summary slim actress marries use to spy on a beggar abandoned believed to ntleman relates to hi turn their fantasy vac		
1039 723 287 1021 1498	This story revol After her husbar After forsaking	ves arou nd is pos his fami	film revolves around nd a famous poet who m sessed by an evil spir ly and religion a hus ts race against time t		
1623 939 756 670 778		Betra	tagline The Story of a Princess NaN yal. Friendship. Bravery. NaN NaN Honor the heroes		
723			Possession is back		

```
287
                                      Fear strikes again
1021
      A Love Made in Heaven...A Revenge Born in Hell...
1498
                                                      NaN
                                                  actors \
1623
      Karisma Kapoor|Rekha|Manoj Bajpayee|Rajit Kapo...
939
      Meghan Jadhav|Mithun Chakraborty|Riya Sen|Seem...
756
      Darsheel Safary|Anupam Kher|Manjari Fadnnis|Ti...
670
      Mithun Chakraborty|Ranjeeta Kaur|Priyanka Meht...
778
      Hrithik Roshan|Farhan Akhtar|Abhay Deol|Katrin...
. . .
1039
            Manoj Bajpayee|Ravi Kishan|Deepak Dobriyal|
      Vicky Ahuja|Tia Bajpai|Irma Jämhammar|Sharad K...
723
287
      Sharman Joshi|Meera Chopra|Vishal Karwal|Suren...
1021
      Rajniesh Duggall|Adah Sharma|Anjori Alagh|Raj ...
1498
      Danny Denzongpa|Gulshan Grover|Milind Soman|Di...
              wins nominations
                                              release date
1623
       3 wins & 13 nominations
                                   19 January 2001 (India)
939
756
                            NaN
                                     22 April 2011 (India)
670
                                     16 March 2012 (India)
                          1 win
778
      30 wins & 22 nominations
                                      15 July 2011 (India)
. . .
1039
                                      9 March 2007 (India)
                          1 win
                                   2 November 2012 (India)
723
                            NaN
287
                            NaN
                                          6 May 2016 (USA)
                                 12 September 2008 (India)
1021
                            NaN
1498
                 2 nominations
                                     22 March 2002 (India)
[1629 rows x 18 columns]
students = pd.DataFrame(
        'name':
['nitish','ankit','rupesh',np.nan,'mrityunjay',np.nan,'rishabh',np.nan
,'aditya',np.nan],
        'college':
['bit','iit','vit',np.nan,np.nan,'vlsi','ssit',np.nan,np.nan,'git'],
        'branch':
['eee','it','cse',np.nan,'me','ce','civ','cse','bio',np.nan],
        'cgpa':[6.66,8.25,6.41,np.nan,5.6,9.0,7.4,10,7.4,np.nan],
        'package': [4,5,6,np.nan,6,7,8,9,np.nan,np.nan]
    }
students
```

```
name college branch
                                        package
                                  cqpa
0
       nitish
                   bit
                           eee
                                  6.66
                                             4.0
1
        ankit
                   iit
                            it
                                  8.25
                                             5.0
2
                                  6.41
                                             6.0
       rupesh
                   vit
                           cse
3
           NaN
                   NaN
                           NaN
                                   NaN
                                             NaN
4
                                  5.60
                                             6.0
   mrityunjay
                   NaN
                            me
5
                  vlsi
                                  9.00
                                             7.0
           NaN
                            ce
6
      rishabh
                  ssit
                           civ
                                  7.40
                                             8.0
7
                                 10.00
           NaN
                   NaN
                           cse
                                             9.0
8
       aditya
                   NaN
                           bio
                                  7.40
                                             NaN
9
           NaN
                   git
                           NaN
                                   NaN
                                             NaN
# abb dekhenge ki agar nan value par sorting lagayenge to kya hoga
=> missing values ko automatically last me le jata hai
students.sort values('name')
          name college branch
                                  cqpa
                                        package
8
       aditva
                   NaN
                           bio
                                  7.40
                                             NaN
1
                                  8.25
                                             5.0
        ankit
                   iit
                            it
4
   mrityunjay
                   NaN
                                  5.60
                                             6.0
                            me
0
       nitish
                   bit
                                  6.66
                                             4.0
                           eee
6
      rishabh
                  ssit
                           civ
                                  7.40
                                             8.0
2
       rupesh
                   vit
                           cse
                                  6.41
                                             6.0
3
           NaN
                   NaN
                           NaN
                                   NaN
                                             NaN
5
           NaN
                  vlsi
                                  9.00
                                             7.0
                            ce
7
           NaN
                                             9.0
                   NaN
                           cse
                                 10.00
9
           NaN
                   git
                           NaN
                                   NaN
                                             NaN
students.sort_values('name',ascending=False) # ascending = False
karne par bhi nan value niche hi rah qya baki not-nan valuue
descending order me aa gya
          name college branch
                                        package
                                  cqpa
2
                   vit
       rupesh
                           cse
                                  6.41
                                             6.0
6
      rishabh
                                  7.40
                                             8.0
                  ssit
                           civ
0
       nitish
                   bit
                           eee
                                  6.66
                                             4.0
4
                                  5.60
                                             6.0
   mrityunjay
                   NaN
                            me
1
                                  8.25
                                             5.0
        ankit
                   iit
                            it
8
       aditya
                   NaN
                           bio
                                  7.40
                                             NaN
3
           NaN
                   NaN
                           NaN
                                   NaN
                                             NaN
5
           NaN
                  vlsi
                            ce
                                  9.00
                                             7.0
7
           NaN
                   NaN
                                 10.00
                                             9.0
                           cse
```

# if you want ki nan value top me chale jaye to ....
na\_position='first' kar do by default last hota hai
students.sort\_values('name',na\_position='first')

NaN

NaN

NaN

	name	college	branch	cgpa	package
3	NaN	NaN	NaN	NaN	NaN
5	NaN	vlsi	ce	9.00	7.0

git

9

NaN

```
7
           NaN
                   NaN
                                10.00
                                            9.0
                           cse
9
          NaN
                                   NaN
                                            NaN
                   git
                           NaN
8
       aditya
                   NaN
                           bio
                                  7.40
                                            NaN
1
                                  8.25
        ankit
                   iit
                            it
                                            5.0
4
                                  5.60
  mrityunjay
                   NaN
                            me
                                            6.0
0
       nitish
                   bit
                                  6.66
                                            4.0
                           eee
6
      rishabh
                  ssit
                           civ
                                  7.40
                                            8.0
2
       rupesh
                   vit
                                  6.41
                                            6.0
                           cse
```

students.sort\_values('name',na\_position='first',ascending=False)

	name	college	branch	cgpa	package
3	NaN	NaN	NaN	NaN	NaN
5	NaN	vlsi	ce	9.00	7.0
7	NaN	NaN	cse	10.00	9.0
9	NaN	git	NaN	NaN	NaN
2	rupesh	vit	cse	6.41	6.0
6	rishabh	ssit	civ	7.40	8.0
0	nitish	bit	eee	6.66	4.0
4	mrityunjay	NaN	me	5.60	6.0
1	ankit	iit	it	8.25	5.0
8	aditya	NaN	bio	7.40	NaN

students # => abhi sorting karne ke baad temporary change hua hai but
if you want to aap permanemnt change bhi kar sakte ho by inplace=True
parameter

```
name college branch
                                       package
                                 cgpa
                                            4.0
0
       nitish
                   bit
                          eee
                                 6.66
1
                                 8.25
                                            5.0
        ankit
                   iit
                            it
2
                                 6.41
                                            6.0
       rupesh
                   vit
                           cse
3
          NaN
                   NaN
                          NaN
                                  NaN
                                            NaN
4
   mrityunjay
                   NaN
                                 5.60
                                            6.0
                           me
5
                                 9.00
                                            7.0
          NaN
                  vlsi
                            ce
6
      rishabh
                  ssit
                                 7.40
                                            8.0
                           civ
7
                                            9.0
          NaN
                   NaN
                           cse
                               10.00
8
       aditya
                   NaN
                           bio
                                 7.40
                                            NaN
                                            NaN
          NaN
                          NaN
                                  NaN
                   git
```

students.sort\_values('name',na\_position='first',ascending=False ,inpla
ce=True)

## students

	name	college	branch	cgpa	package
3	NaN	NaN	NaN	NaN	NaN
5	NaN	vlsi	ce	9.00	7.0
7	NaN	NaN	cse	10.00	9.0
9	NaN	git	NaN	NaN	NaN
2	rupesh	vit	cse	6.41	6.0
6	rishabh	ssit	civ	7.40	8.0

```
0
                  bit
                                6.66
                                           4.0
       nitish
                          eee
   mrityunjay
                                5.60
4
                  NaN
                                           6.0
                           me
1
        ankit
                   iit
                           it
                                8.25
                                           5.0
8
       aditya
                  NaN
                          bio
                                7.40
                                           NaN
# sort multiple column
movies
                                    title x
                                                 imdb id
0
                  Uri: The Surgical Strike
                                               tt8291224
1
                              Battalion 609
                                               tt9472208
2
                                               tt6986710
      The Accidental Prime Minister (film)
3
                            Why Cheat India
                                               tt8108208
4
                            Evening Shadows
                                               tt6028796
1624
                      Tera Mera Saath Rahen
                                               tt0301250
                       Yeh Zindagi Ka Safar
1625
                                               tt0298607
1626
                            Sabse Bada Sukh
                                               tt0069204
1627
                                      Daaka
                                              tt10833860
                                   Humsafar
                                               tt2403201
1628
                                              poster path \
0
      https://upload.wikimedia.org/wikipedia/en/thum...
1
2
      https://upload.wikimedia.org/wikipedia/en/thum...
3
      https://upload.wikimedia.org/wikipedia/en/thum...
4
                                                      NaN
1624
      https://upload.wikimedia.org/wikipedia/en/2/2b...
      https://upload.wikimedia.org/wikipedia/en/thum...
1625
1626
1627
      https://upload.wikimedia.org/wikipedia/en/thum...
      https://upload.wikimedia.org/wikipedia/en/thum...
1628
                                                wiki link \
0
      https://en.wikipedia.org/wiki/Uri: The Surgica...
1
            https://en.wikipedia.org/wiki/Battalion 609
2
      https://en.wikipedia.org/wiki/The_Accidental_P...
3
          https://en.wikipedia.org/wiki/Why Cheat India
4
          https://en.wikipedia.org/wiki/Evening Shadows
      https://en.wikipedia.org/wiki/Tera Mera Saath ...
1624
1625
      https://en.wikipedia.org/wiki/Yeh Zindagi Ka S...
          https://en.wikipedia.org/wiki/Sabse Bada Sukh
1626
1627
                     https://en.wikipedia.org/wiki/Daaka
1628
                 https://en.wikipedia.org/wiki/Humsafar
                             title_y
                                                      original_title
is_adult
           Uri: The Surgical Strike
                                            Uri: The Surgical Strike
```

_					
0 1		Battalion 6	509	Battalion 60	9
0					
2	The Accidental P	rime Minist	ter The Accider	ntal Prime Ministe	er
0	V. He	Chant Ind	J:_	Why Chart Indi	
3 0	Wi	y Cheat Ind	11a	Why Cheat Indi	La
4	Ev	ening Shado	)WS	Evening Shadow	٧S
0		ching shad	,	Evening Shadov	• •
1624	Т М	- C D-I		Maria Caath Daha	
1624	Tera Mer	a Saath Rah	nen Tei	ra Mera Saath Rahe	en
0 1625	Yeh 7in	dagi Ka Sat	far Y	eh Zindagi Ka Safa	ar
0	TCII ZIII	adgi Na Sal	101	on Zindagi Na Jare	4 1
1626	Sa	bse Bada Su	ukh	Sabse Bada Suk	kh
0					
1627		Daa	aka	Daak	ка
0 1628		Humsat	far	Humsafa	r
0		пишѕа	iai	ΠuiiiSdTd	וג
	year_of_release	runtime	genres	<pre>imdb_rating</pre>	
imdb_\		120 4	ation   Duama   Wan	0.4	
0 35112	2019	138 A	ction Drama War	8.4	
1	2019	131	War	4.1	
73	2025	191			
2	2019	112 E	Biography Drama	6.1	
5549	0010				
3 1891	2019	121	Crime Drama	6.0	
4	2018	102	Drama	7.3	
280	2010	102	Diama	7.5	
1624	2001	148	Drama	4.9	
278 1625	2001	146	Drama	3.0	
133	2001	140	DI allid	3.0	
1626	2018	\N	Comedy Drama	6.1	
13			- '		
1627	2019	136	Action	7.4	
38	2011	25	Dunna I Damana	0.0	
1628 2968	2011	35	Drama Romance	9.0	
2900					
				story \	
0	Divided over fiv	e chapters	the film chro	nicle	

```
1
      The story revolves around a cricket match betw...
2
      Based on the memoir by Indian policy analyst S...
3
      The movie focuses on existing malpractices in ...
4
      While gay rights and marriage equality has bee...
1624
      Raj Dixit lives with his younger brother Rahu...
1625
      Hindi pop-star Sarina Devan lives a wealthy ...
1626
      Village born Lalloo re-locates to Bombay and ...
      Shinda tries robbing a bank so he can be wealt...
1627
1628
      Sara and Ashar are childhood friends who share...
                                                 summary tagline \
0
      Indian army special forces execute a covert op...
                                                              NaN
1
      The story of Battalion 609 revolves around a c...
                                                              NaN
2
      Explores Manmohan Singh's tenure as the Prime ...
                                                              NaN
3
      The movie focuses on existing malpractices in ...
                                                              NaN
4
      Under the 'Evening Shadows' truth often plays...
                                                              NaN
                                                              . . .
      A man is torn between his handicapped brother ...
1624
                                                              NaN
      A singer finds out she was adopted when the ed...
1625
                                                              NaN
     Village born Lalloo re-locates to Bombay and ...
1626
                                                              NaN
1627
      Shinda tries robbing a bank so he can be wealt...
                                                              NaN
      Ashar and Khirad are forced to get married due...
1628
                                                              NaN
                                                  actors
0
      Vicky Kaushal|Paresh Rawal|Mohit Raina|Yami Ga...
      Vicky Ahuja|Shoaib Ibrahim|Shrikant Kamat|Elen...
1
2
      Anupam Kher|Akshaye Khanna|Aahana Kumra|Atul S...
3
      Emraan Hashmi|Shreya Dhanwanthary|Snighdadeep ...
4
      Mona Ambegaonkar|Ananth Narayan Mahadevan|Deva...
1624
      Ajay Devgn|Sonali Bendre|Namrata Shirodkar|Pre...
      Ameesha Patel|Jimmy Sheirgill|Nafisa Ali|Gulsh...
1625
1626
      Vijay Arora|Asrani|Rajni Bala|Kumud Damle|Utpa...
1627
                               Gippy Grewal|Zareen Khan|
1628
                                             Fawad Khan|
                                           release date
            wins nominations
0
                      4 wins
                                  11 January 2019 (USA)
                                11 January 2019 (India)
1
                         NaN
2
                         NaN
                                  11 January 2019 (USA)
3
                         NaN
                                  18 January 2019 (USA)
                                11 January 2019 (India)
4
      17 wins & 1 nomination
                                7 November 2001 (India)
1624
                         NaN
1625
                         NaN
                               16 November 2001 (India)
1626
                         NaN
1627
                         NaN
                                  1 November 2019 (USA)
1628
                         NaN
                                  TV Series (2011–2012)
```

```
[1629 rows x 18 columns]
# mai chahate hu ki year of release ke according movie sort ho jaye
matlab ki jo pahle movie release hui hai usko pahle and so and aur
phir each year me
# jake movies name ko sort karna hai matlab ki jo movie a se suru hai
kisi particular year me wo pahle and then b and so on....
movies.sort values(['year of release', 'title x']) # bass ek list pass
kar do jiss, jiss bhi column ko sort karna hai
                                title x
                                            imdb id \
1575
                           Aalavandhan
                                          tt0294264
1576
      Aamdani Atthanni Kharcha Rupaiya
                                          tt0305173
                    Aashiq (2001 film)
1577
                                          tt0273406
1579
                   Ajnabee (2001 film)
                                          tt0278291
1578
                       Aks (2001 film)
                                          tt0289845
. . .
64
                           Ujda Chaman
                                         tt11046300
              Uri: The Surgical Strike
0
                                          tt8291224
3
                       Why Cheat India
                                          tt8108208
60
                    Yaaram (2019 film)
                                         tt11007050
73
                    Yeh Saali Aashigui
                                        tt10443846
                                             poster path \
      https://upload.wikimedia.org/wikipedia/en/thum...
1575
1576
      https://upload.wikimedia.org/wikipedia/en/thum...
1577
      https://upload.wikimedia.org/wikipedia/en/c/c6...
      https://upload.wikimedia.org/wikipedia/en/thum...
1579
1578
      https://upload.wikimedia.org/wikipedia/en/thum...
64
      https://upload.wikimedia.org/wikipedia/en/thum...
0
      https://upload.wikimedia.org/wikipedia/en/thum...
3
      https://upload.wikimedia.org/wikipedia/en/thum...
60
      https://upload.wikimedia.org/wikipedia/en/thum...
73
      https://upload.wikimedia.org/wikipedia/en/thum...
                                               wiki link \
1575
              https://en.wikipedia.org/wiki/Aalavandhan
      https://en.wikipedia.org/wiki/Aamdani Atthanni...
1576
1577
       https://en.wikipedia.org/wiki/Aashig (2001 film)
1579
      https://en.wikipedia.org/wiki/Ajnabee (2001 film)
1578
          https://en.wikipedia.org/wiki/Aks (2001 film)
. . .
64
              https://en.wikipedia.org/wiki/Ujda Chaman
      https://en.wikipedia.org/wiki/Uri: The Surgica...
0
3
          https://en.wikipedia.org/wiki/Why Cheat India
60
       https://en.wikipedia.org/wiki/Yaaram (2019 film)
       https://en.wikipedia.org/wiki/Yeh Saali Aashiqui
73
```

		titl	_e_y	
original_tit 1575	tle \	Aalavand	 lhan	
Aalavandhan				
1576 Aamdar Rupaiya	ni Attha	nni Kharcha Rupa	aiya	Aamdani Atthanni Kharcha
1577		Aas	shiq	
Aashiq 1579		Ajna	abee	
Ajnabee		,,,		
1578 Aks			Aks	
64		Ujda Cha	aman	Ujda
Chaman 0	Hei.	The Surgical St	ai ko	Uri: The Surgical
Strike	011;	ine surgical str	IVE	ori: The Surgicat
3 India		Why Cheat Ir	ndia	Why Cheat
60		#Yaa	aram	
#Yaaram 73		Yeh Saali Aashi	aui	Yeh Saali
Aashiqui		Ten Saaci Nashi	-40-	ren Saaci
is_adı	ult yea	r_of_release rur	ntime	genres
<pre>imdb_rating 1575</pre>	0	2001	177	Action Thriller
7.1				•
1576 4.7	0	2001	150	Comedy Drama Family
1577	0	2001	160	Action Drama Romance
3.8 1579	0	2001	165	Action Crime Drama
6.3	0			·
1578 5.9	0	2001	184	Action Crime Horror
64	0	2019	120	Comedy
8.1	0	2019	138	Action Drama War
8.4				
3 6.0	0	2019	121	Crime Drama
60	0	2019	\N	Comedy Romance
5.7 73	Θ	2019	137	Thriller

```
7.9
      imdb votes
                                                                story \
                  The story follows Abhay (Haasan) who has a dis...
1575
            1746
            1026
                  Jhoomri and her husband Bhimsha move into a ...
1576
1577
             357
                  Pooja and Chander Kapoor have a heart-to-heart...
            7480
                  A new couple get married and move to Switzerla...
1579
            1518
1578
                  Aks is the story of a hunter and his prey. A c...
. . .
                  Ujda Chaman is about a 30 -year-old bachelor C...
64
            1440
0
           35112
                  Divided over five chapters the film chronicle...
3
            1891
                  The movie focuses on existing malpractices in ...
60
                  All set for an arranged marriage Rohit Bajaj ...
73
            3200
                                                                  NaN
                                                 summary \
1575
      A psychopath tries to protect his twin brother...
1576
      In order to make ends meet three women steps ...
1577
      Pooja and Chander Kapoor have a heart-to-heart...
1579
      Bobby Deol and Kareena Kapoor play a new coupl...
1578
      Raghavan Ghatge a psychotic terrorist and Ma...
. . .
64
      Ujda Chaman is about a 30 -year-old bachelor C...
0
      Indian army special forces execute a covert op...
3
      The movie focuses on existing malpractices in ...
60
      All set for an arranged marriage Rohit Bajaj ...
73
                                            Add a Plot »
                                  tagline
1575
                             The Fearless
1576
                                      NaN
1577
                                      NaN
1579
                             Trust no one
1578
      There is a stranger in your mirror
64
                                      NaN
0
                                      NaN
3
                                      NaN
60
                                      NaN
73
                                      NaN
                                                  actors \
1575
      Kamal Haasan|Raveena Tandon|Manisha Koirala|Ki...
1576
      Govinda|Juhi Chawla|Tabu|Chandrachur Singh|Joh...
1577
                              Bobby Deol|Karisma Kapoor|
1579
      Akshay Kumar|Bobby Deol|Kareena Kapoor|Bipasha...
1578
      Amitabh Bachchan | Raveena Tandon | Manoj Bajpayee...
      Sunny Singh Nijjar|Maanvi Gagroo|Saurabh Shukl...
64
      Vicky Kaushal|Paresh Rawal|Mohit Raina|Yami Ga...
0
```

```
3
      Emraan Hashmi|Shreya Dhanwanthary|Snighdadeep ...
60
      Siddhanth Kapoor|Prateik|Anita Raj|Ishita Raj|...
73
                              Vardhan Puri|Jessey Lever|
             wins nominations
                                              release date
1575
         1 win & 1 nomination
                                 16 November 2001 (India)
1576
                 1 nomination
                                 21 December 2001 (India)
1577
                           NaN
                                  26 January 2001 (India)
                                21 September 2001 (India)
1579
       3 wins & 9 nominations
1578
      9 wins & 14 nominations
                                     13 July 2001 (India)
. . .
                                    1 November 2019 (USA)
64
                           NaN
0
                        4 wins
                                    11 January 2019 (USA)
3
                                    18 January 2019 (USA)
                           NaN
60
                           NaN
                                                       NaN
73
                           NaN
                                                       NaN
[1629 rows x 18 columns]
# just an example ki movies ke name ko descending order me sort karna
hai
movies.sort values(['year of release', 'title x'], ascending=[True, False
]) # ascending parameter ke andar ek list pass kar do
                                    title x
                                                 imdb id
1623
                                               tt0255713
                                   Zubeidaa
1625
                      Yeh Zindagi Ka Safar
                                              tt0298607
1622
             Yeh Teraa Ghar Yeh Meraa Ghar
                                              tt0298606
1620
                  Yeh Raaste Hain Pyaar Ke
                                              tt0292740
1573
                        Yaadein (2001 film)
                                              tt0248617
. . .
37
                         Article 15 (film)
                                             tt10324144
46
                              Arjun Patiala
                                              tt7881524
10
                                     Amavas
                                              tt8396186
26
      Albert Pinto Ko Gussa Kyun Aata Hai?
                                              tt4355838
                                   22 Yards
21
                                              tt9496212
                                             poster path
      https://upload.wikimedia.org/wikipedia/en/thum...
1623
1625
      https://upload.wikimedia.org/wikipedia/en/thum...
1622
      https://upload.wikimedia.org/wikipedia/en/thum...
1620
      https://upload.wikimedia.org/wikipedia/en/thum...
1573
      https://upload.wikimedia.org/wikipedia/en/thum...
37
      https://upload.wikimedia.org/wikipedia/en/thum...
46
      https://upload.wikimedia.org/wikipedia/en/thum...
10
      https://upload.wikimedia.org/wikipedia/en/thum...
26
      https://upload.wikimedia.org/wikipedia/en/thum...
      https://upload.wikimedia.org/wikipedia/en/thum...
21
```

```
wiki link \
1623
                  https://en.wikipedia.org/wiki/Zubeidaa
1625
      https://en.wikipedia.org/wiki/Yeh Zindagi Ka S...
1622
      https://en.wikipedia.org/wiki/Yeh Teraa Ghar Y...
1620
      https://en.wikipedia.org/wiki/Yeh Raaste Hain ...
1573
      https://en.wikipedia.org/wiki/Yaadein (2001 film)
37
        https://en.wikipedia.org/wiki/Article 15 (film)
46
            https://en.wikipedia.org/wiki/Arjun Patiala
10
                    https://en.wikipedia.org/wiki/Amavas
26
      https://en.wikipedia.org/wiki/Albert Pinto Ko ...
                  https://en.wikipedia.org/wiki/22 Yards
21
                                     title y \
1623
                                    Zubeidaa
1625
                       Yeh Zindagi Ka Safar
             Yeh Teraa Ghar Yeh Meraa Ghar
1622
1620
                   Yeh Raaste Hain Pyaar Ke
1573
                                  Yaadein...
. . .
                                  Article 15
37
                              Arjun Patiala
46
10
                                      Amavas
26
      Albert Pinto Ko Gussa Kyun Aata Hai?
21
                                    22 Yards
                                              is adult year of release
                             original title
runtime
1623
                                    Zubeidaa
                                                      0
                                                                     2001
153
1625
                       Yeh Zindagi Ka Safar
                                                      0
                                                                     2001
146
                                                      0
1622
             Yeh Teraa Ghar Yeh Meraa Ghar
                                                                     2001
175
1620
                   Yeh Raaste Hain Pyaar Ke
                                                      0
                                                                     2001
149
1573
                                  Yaadein...
                                                                     2001
171
. . .
                                                                      . . .
. . .
37
                                  Article 15
                                                      0
                                                                     2019
130
46
                              Arjun Patiala
                                                      0
                                                                     2019
107
10
                                                                     2019
                                      Amavas
134
26
      Albert Pinto Ko Gussa Kyun Aata Hai?
                                                      0
                                                                     2019
100
                                    22 Yards
                                                      0
21
                                                                     2019
```

```
126
                        genres
                                imdb rating
                                              imdb votes \
      Biography | Drama | History
1623
                                        6.2
                                                    1384
1625
                                        3.0
                                                     133
                         Drama
1622
                 Comedy | Drama
                                        5.7
                                                     704
1620
                Drama | Romance
                                        4.0
                                                     607
1573
        Drama|Musical|Romance
                                        4.4
                                                    3034
. . .
                                                     . . .
37
                   Crime|Drama
                                                   13417
                                        8.3
46
                Action | Comedy
                                        4.1
                                                     676
                                        2.8
              Horror|Thriller
                                                     235
10
26
                         Drama
                                        4.8
                                                      56
21
                                        5.3
                                                     124
                         Sport
                                                    story \
1623
      The film begins with Riyaz (Rajat Kapoor) Zub...
1625
      Hindi pop-star Sarina Devan lives a wealthy ...
1622
      In debt; Dayashankar Pandey is forced to go to...
1620
      Two con artistes and car thieves Vicky (Ajay ...
      Raj Singh Puri is best friends with L.K. Malho...
1573
37
      In the rural heartlands of India an upright p...
46
      Arjun Patiala(Diljit Dosanjh)has recently been...
10
      Far away from the bustle of the city a young ...
26
      Albert leaves his house one morning without te...
21
      A dramatic portrayal of a victorious tale of a...
                                                  summary \
1623
      Zubeidaa an aspiring Muslim actress marries ...
1625
      A singer finds out she was adopted when the ed...
1622
      In debt; Dayashankar Pandey is forced to go to...
1620
      Two con artistes and car thieves Vicky (Ajay ...
1573
      Raj Singh Puri is best friends with L.K. Malho...
37
      In the rural heartlands of India an upright p...
46
      This spoof comedy narrates the story of a cop ...
10
      The lives of a couple turn into a nightmare a...
26
      Albert Pinto goes missing one day and his girl...
      A dramatic portrayal of a victorious tale of a...
21
                                      tagline \
1623
                     The Story of a Princess
1625
                                          NaN
1622
                                          NaN
1620
      Love is a journey... not a destination
1573
                       memories to cherish...
. . .
37
      Farq Bahut Kar Liya| Ab Farq Laayenge.
46
                                          NaN
```

```
10
                                          NaN
26
                                          NaN
21
                                          NaN
                                                   actors \
1623
      Karisma Kapoor|Rekha|Manoj Bajpayee|Rajit Kapo...
1625
      Ameesha Patel|Jimmy Sheirgill|Nafisa Ali|Gulsh...
1622
      Sunil Shetty|Mahima Chaudhry|Paresh Rawal|Saur...
      Ajay Devgn|Madhuri Dixit|Preity Zinta|Vikram G...
1620
1573
      Jackie Shroff|Hrithik Roshan|Kareena Kapoor|Am...
. . .
37
      Ayushmann Khurrana|Nassar|Manoj Pahwa|Kumud Mi...
46
      Diljit Dosanjh|Kriti Sanon|Varun Sharma|Ronit ...
10
      Ali Asgar|Vivan Bhatena|Nargis Fakhri|Sachiin ...
26
                                 Manav Kaul|Nandita Das|
21
      Barun Sobti|Rajit Kapur|Panchhi Bora|Kartikey ...
             wins nominations
                                             release date
      3 wins & 13 nominations
                                 19 January 2001 (India)
1623
1625
                                16 November 2001 (India)
                           NaN
1622
                                 12 October 2001 (India)
                 1 nomination
1620
                                  10 August 2001 (India)
                           NaN
1573
                 1 nomination
                                    27 June 2001 (India)
. . .
37
                         1 win
                                      28 June 2019 (USA)
46
                           NaN
                                      26 July 2019 (USA)
10
                           NaN
                                 8 February 2019 (India)
26
                                   12 April 2019 (India)
                           NaN
21
                           NaN
                                   15 March 2019 (India)
[1629 rows x 18 columns]
#rank(only used in series)
batsman = pd.read csv("batsman runs ipl.csv")
batsman
batsman.head(5)
           batter
                   batsman run
0
   A Ashish Reddy
                            280
1
         A Badoni
                            161
2
       A Chandila
                              4
3
                             53
         A Chopra
                             25
      A Choudhary
# just an example ki hum ek rank provide karna chahate hain on the
basis of ki kon se batsman ne kitne run banaye hain
batsman['batsman run'].rank()
0
       439.5
1
       380.0
```

```
2
        71.0
3
       277.0
4
       203.5
       . . .
600
        12.0
601
       263.0
602
        58.5
603
       579.0
       350.0
604
Name: batsman run, Length: 605, dtype: float64
batsman['batsman run'].rank(ascending=False)
0
       166.5
1
       226.0
2
       535.0
3
       329.0
4
       402.5
600
       594.0
601
       343.0
602
       547.5
603
        27.0
       256.0
604
Name: batsman run, Length: 605, dtype: float64
batsman['batsman rank'] = batsman['batsman run'].rank(ascending=False)
          # new column add ho gya batsman rank name se
batsman
                      batsman_run batsman_rank
              batter
0
     A Ashish Reddy
                              280
                                           166.5
1
           A Badoni
                               161
                                           226.0
2
                                           535.0
         A Chandila
                                4
3
                                53
           A Chopra
                                           329.0
4
                                25
                                           402.5
        A Choudhary
                               . . .
600
         Yash Dayal
                                           594.0
                                0
                               47
                                           343.0
601
      Yashpal Singh
602
        Younis Khan
                                3
                                           547.5
603
       Yuvraj Singh
                             2754
                                            27.0
             Z Khan
604
                               117
                                           256.0
[605 rows x 3 columns]
# now we can sort on the basis of rank
batsman.sort values('batsman rank')
           batter
                    batsman run
                                  batsman rank
569
          V Kohli
                           6634
                                           1.0
         S Dhawan
462
                           6244
                                           2.0
130
        DA Warner
                           5883
                                           3.0
```

```
430
        RG Sharma
                                          4.0
                           5881
         SK Raina
493
                           5536
                                          5.0
                                          . . .
                            . . .
      SS Cottrell
512
                             0
                                        594.0
466
        S Kaushik
                              0
                                        594.0
203
        IC Pandey
                              0
                                        594.0
          S Ladda
                              0
                                        594.0
467
468 S Lamichhane
                              0
                                        594.0
[605 rows x 3 columns]
# sort index (for both series and dataframe)
marks = {
    'maths':67,
    'english':57,
    'science':89,
    'hindi':100
}
marks series = pd.Series(marks)
marks series
maths
            67
            57
english
            89
science
hindi
           100
dtype: int64
marks series.sort index() # index ke basis pe sort ho gya by default
ascending
english
            57
hindi
           100
maths
            67
science
            89
dtype: int64
marks_series.sort_index(ascending=False)
science
            89
maths
            67
hindi
           100
            57
english
dtype: int64
movies
                                    title x
                                                imdb id \
0
                  Uri: The Surgical Strike
                                              tt8291224
1
                              Battalion 609
                                              tt9472208
2
      The Accidental Prime Minister (film)
                                              tt6986710
```

```
3
                            Why Cheat India
                                               tt8108208
4
                            Evening Shadows
                                               tt6028796
                      Tera Mera Saath Rahen
                                               tt0301250
1624
1625
                       Yeh Zindagi Ka Safar
                                               tt0298607
1626
                            Sabse Bada Sukh
                                               tt0069204
1627
                                      Daaka
                                              tt10833860
1628
                                   Humsafar
                                               tt2403201
                                              poster path \
0
      https://upload.wikimedia.org/wikipedia/en/thum...
1
      https://upload.wikimedia.org/wikipedia/en/thum...
2
3
      https://upload.wikimedia.org/wikipedia/en/thum...
4
. . .
1624
      https://upload.wikimedia.org/wikipedia/en/2/2b...
1625
      https://upload.wikimedia.org/wikipedia/en/thum...
1626
1627
      https://upload.wikimedia.org/wikipedia/en/thum...
      https://upload.wikimedia.org/wikipedia/en/thum...
1628
                                                wiki link
0
      https://en.wikipedia.org/wiki/Uri: The Surgica...
1
            https://en.wikipedia.org/wiki/Battalion 609
2
      https://en.wikipedia.org/wiki/The Accidental \overline{P}...
3
          https://en.wikipedia.org/wiki/Why Cheat India
4
          https://en.wikipedia.org/wiki/Evening Shadows
      https://en.wikipedia.org/wiki/Tera Mera Saath ...
1624
1625
      https://en.wikipedia.org/wiki/Yeh Zindagi Ka S...
1626
          https://en.wikipedia.org/wiki/Sabse Bada Sukh
1627
                     https://en.wikipedia.org/wiki/Daaka
1628
                 https://en.wikipedia.org/wiki/Humsafar
                             title y
                                                      original title
is_adult
           Uri: The Surgical Strike
                                            Uri: The Surgical Strike
0
1
                       Battalion 609
                                                       Battalion 609
0
2
      The Accidental Prime Minister
                                      The Accidental Prime Minister
0
3
                     Why Cheat India
                                                     Why Cheat India
0
4
                     Evening Shadows
                                                     Evening Shadows
0
              Tera Mera Saath Rahen
                                               Tera Mera Saath Rahen
1624
```

0 1625	Yeh Zi	ndagi Ka S	afar Ye	h Zindagi Ka Safar	
0 1626	C	abse Bada	Cukh	Sabse Bada Sukh	
0	J.	ause baua	JUNII	Jause Daua Jukii	
1627		D	aaka	Daaka	
0		l li i m a		II	
1628 0		Hums	afar	Humsafar	
indb	year_of_release	runtime	genres	<pre>imdb_rating</pre>	
0	votes \ 2019	138	Action Drama War	8.4	
35112	2013	130	Accion prama mar	011	
1	2019	131	War	4.1	
73 2	2019	112	Biography Drama	6.1	
5549	2013	112	brog apriy   brama	011	
3	2019	121	Crime Drama	6.0	
1891 4	2018	102	Drama	7.3	
280	2010	102	Diama	7.5	
 1624	2001	148	Drama	4.9	
278	2001	140	Diama	713	
1625	2001	146	Drama	3.0	
133 1626	2018	\N	Comedy Drama	6.1	
13	2010	/14	comedy   D1 ama	0.1	
1627	2019	136	Action	7.4	
38 1628	2011	35	Drama Romance	9.0	
2968			2 / 6   1 / 6		
				story \	
0	Divided over fi	ve chapter	s the film chron	story \ icle	
1	The story revol	ves around	l a cricket match	betw	
2			dian policy analy		
3 4			ting malpractices riage equality has		
1624			younger brother		
1625 1626			evan lives a weal ccates to Bombay		
1627	Shinda tries ro	bbing a ba	ink so he can be w	ealt	
1628	Sara and Ashar	are childh	ood friends who s	hare	
				summary tagline \	
0	Indian army spe	cial force	es execute a cover		

```
1
      The story of Battalion 609 revolves around a c...
                                                               NaN
2
      Explores Manmohan Singh's tenure as the Prime ...
                                                               NaN
3
      The movie focuses on existing malpractices in ...
                                                               NaN
4
      Under the 'Evening Shadows' truth often plays...
                                                               NaN
                                                               . . .
1624
      A man is torn between his handicapped brother ...
                                                               NaN
1625
      A singer finds out she was adopted when the ed...
                                                               NaN
1626
      Village born Lalloo re-locates to Bombay and ...
                                                               NaN
1627
      Shinda tries robbing a bank so he can be wealt...
                                                               NaN
1628 Ashar and Khirad are forced to get married due...
                                                               NaN
                                                   actors \
0
      Vicky Kaushal|Paresh Rawal|Mohit Raina|Yami Ga...
1
      Vicky Ahuja|Shoaib Ibrahim|Shrikant Kamat|Elen...
2
      Anupam Kher|Akshaye Khanna|Aahana Kumra|Atul S...
3
      Emraan Hashmi|Shreya Dhanwanthary|Snighdadeep ...
4
      Mona Ambegaonkar|Ananth Narayan Mahadevan|Deva...
. . .
      Ajay Devgn|Sonali Bendre|Namrata Shirodkar|Pre...
1624
      Ameesha Patel|Jimmy Sheirgill|Nafisa Ali|Gulsh...
1625
      Vijay Arora|Asrani|Rajni Bala|Kumud Damle|Utpa...
1626
1627
                               Gippy Grewal | Zareen Khan |
1628
                                              Fawad Khan |
            wins nominations
                                            release date
0
                       4 wins
                                  11 January 2019 (USA)
1
                          NaN
                                11 January 2019 (India)
2
                          NaN
                                  11 January 2019 (USA)
3
                                  18 January 2019 (USA)
                          NaN
4
                                11 January 2019 (India)
      17 wins & 1 nomination
                                7 November 2001 (India)
1624
                          NaN
                               16 November 2001 (India)
1625
                          NaN
1626
                          NaN
                                                     NaN
1627
                          NaN
                                  1 November 2019 (USA)
1628
                          NaN
                                  TV Series (2011-2012)
[1629 rows x 18 columns]
# sort index in dataframe
movies.sort index(ascending=False)
                                                 imdb id
                                    title x
1628
                                   Humsafar
                                               tt2403201
1627
                                       Daaka
                                              tt10833860
1626
                            Sabse Bada Sukh
                                               tt0069204
1625
                       Yeh Zindagi Ka Safar
                                               tt0298607
                      Tera Mera Saath Rahen
1624
                                               tt0301250
. . .
                            Evening Shadows
                                               tt6028796
4
```

```
3
                            Why Cheat India
                                              tt8108208
2
      The Accidental Prime Minister (film)
                                              tt6986710
1
                              Battalion 609
                                               tt9472208
0
                  Uri: The Surgical Strike
                                              tt8291224
                                              poster path
1628
      https://upload.wikimedia.org/wikipedia/en/thum...
1627
      https://upload.wikimedia.org/wikipedia/en/thum...
1626
1625
      https://upload.wikimedia.org/wikipedia/en/thum...
1624
      https://upload.wikimedia.org/wikipedia/en/2/2b...
. . .
4
                                                      NaN
3
      https://upload.wikimedia.org/wikipedia/en/thum...
2
      https://upload.wikimedia.org/wikipedia/en/thum...
1
0
      https://upload.wikimedia.org/wikipedia/en/thum...
                                                wiki link \
                 https://en.wikipedia.org/wiki/Humsafar
1628
1627
                     https://en.wikipedia.org/wiki/Daaka
1626
          https://en.wikipedia.org/wiki/Sabse Bada Sukh
      https://en.wikipedia.org/wiki/Yeh Zindagi Ka S...
1625
1624
      https://en.wikipedia.org/wiki/Tera Mera Saath ...
4
          https://en.wikipedia.org/wiki/Evening Shadows
3
          https://en.wikipedia.org/wiki/Why Cheat India
2
      https://en.wikipedia.org/wiki/The Accidental P...
1
            https://en.wikipedia.org/wiki/Battalion 609
0
      https://en.wikipedia.org/wiki/Uri: The Surgica...
                             title y
                                                      original title
is adult \
1628
                            Humsafar
                                                            Humsafar
1627
                               Daaka
                                                               Daaka
1626
                    Sabse Bada Sukh
                                                     Sabse Bada Sukh
1625
               Yeh Zindagi Ka Safar
                                                Yeh Zindagi Ka Safar
1624
              Tera Mera Saath Rahen
                                               Tera Mera Saath Rahen
4
                    Evening Shadows
                                                     Evening Shadows
0
3
                    Why Cheat India
                                                     Why Cheat India
0
2
      The Accidental Prime Minister The Accidental Prime Minister
```

```
0
1
                       Battalion 609
                                                       Battalion 609
0
0
           Uri: The Surgical Strike
                                           Uri: The Surgical Strike
0
      year_of_release runtime
                                          genres imdb rating
imdb votes \
                                   Drama | Romance
                                                           9.0
1628
                 2011
                            35
2968
1627
                 2019
                           136
                                          Action
                                                           7.4
38
1626
                 2018
                            \N
                                    Comedy | Drama
                                                           6.1
13
1625
                 2001
                           146
                                                           3.0
                                           Drama
133
1624
                                                           4.9
                 2001
                           148
                                           Drama
278
. . .
                                                           7.3
4
                 2018
                           102
                                           Drama
280
3
                 2019
                           121
                                     Crime | Drama
                                                           6.0
1891
                           112
                                 Biography | Drama
                                                           6.1
                 2019
5549
                 2019
                           131
                                             War
                                                           4.1
1
73
                                                           8.4
                 2019
                           138 Action|Drama|War
35112
                                                    story \
      Sara and Ashar are childhood friends who share...
1628
      Shinda tries robbing a bank so he can be wealt...
1627
1626
      Village born Lalloo re-locates to Bombay and ...
1625
      Hindi pop-star Sarina Devan lives a wealthy ...
      Raj Dixit lives with his younger brother Rahu...
1624
. . .
      While gay rights and marriage equality has bee...
4
3
      The movie focuses on existing malpractices in ...
2
      Based on the memoir by Indian policy analyst S...
      The story revolves around a cricket match betw...
1
0
      Divided over five chapters the film chronicle...
                                                  summary tagline \
      Ashar and Khirad are forced to get married due...
1628
                                                              NaN
1627
      Shinda tries robbing a bank so he can be wealt...
                                                              NaN
1626 Village born Lalloo re-locates to Bombay and ...
                                                              NaN
1625 A singer finds out she was adopted when the ed...
                                                              NaN
1624 A man is torn between his handicapped brother ...
                                                              NaN
```

```
4
      Under the 'Evening Shadows' truth often plays...
                                                               NaN
3
      The movie focuses on existing malpractices in ...
                                                               NaN
2
      Explores Manmohan Singh's tenure as the Prime ...
                                                               NaN
1
      The story of Battalion 609 revolves around a c...
                                                               NaN
0
      Indian army special forces execute a covert op...
                                                               NaN
                                                   actors \
1628
                                              Fawad Khan |
1627
                               Gippy Grewal|Zareen Khan|
1626
      Vijay Arora|Asrani|Rajni Bala|Kumud Damle|Utpa...
      Ameesha Patel|Jimmy Sheirgill|Nafisa Ali|Gulsh...
1625
1624
      Ajay Devgn|Sonali Bendre|Namrata Shirodkar|Pre...
4
      Mona Ambegaonkar|Ananth Narayan Mahadevan|Deva...
3
      Emraan Hashmi|Shreya Dhanwanthary|Snighdadeep ...
2
      Anupam Kher|Akshaye Khanna|Aahana Kumra|Atul S...
1
      Vicky Ahuja|Shoaib Ibrahim|Shrikant Kamat|Elen...
0
      Vicky Kaushal|Paresh Rawal|Mohit Raina|Yami Ga...
            wins nominations
                                            release date
                                  TV Series (2011-2012)
1628
                          NaN
1627
                          NaN
                                  1 November 2019 (USA)
1626
                          NaN
1625
                          NaN
                               16 November 2001 (India)
1624
                          NaN
                                7 November 2001 (India)
4
      17 wins & 1 nomination
                                11 January 2019 (India)
3
                                   18 January 2019 (USA)
                          NaN
2
                          NaN
                                  11 January 2019 (USA)
1
                          NaN
                                11 January 2019 (India)
                       4 wins
                                  11 January 2019 (USA)
[1629 rows x 18 columns]
#set index (only in dataframe) -> inplace
batsman
             batter
                      batsman run
                                   batsman rank
     A Ashish Reddy
                              280
                                           166.5
1
           A Badoni
                                           226.0
                              161
2
         A Chandila
                                           535.0
                                4
3
                               53
                                           329.0
           A Chopra
4
                                           402.5
        A Choudhary
                               25
                               . . .
         Yash Dayal
600
                                0
                                           594.0
601
      Yashpal Singh
                               47
                                           343.0
602
        Younis Khan
                                3
                                           547.5
```

2754

27.0

603

Yuvraj Singh

604 Z Khan 117 256.0

[605 rows x 3 columns]

#hum chahate hain ki jo default indexing hai wo nn rahe and uske jagah pe batter index ban jaye

batsman.set\_index("batter")

	batsman_run	batsman_rank
batter	_	_
A Ashish Reddy	280	166.5
A Badoni	161	226.0
A Chandila	4	535.0
A Chopra	53	329.0
A Choudhary	25	402.5
Yash Dayal	0	594.0
Yashpal Singh	47	343.0
Younis Khan	3	547.5
Yuvraj Singh	2754	27.0
Z Khan	117	256.0

[605 rows x 2 columns]

batsman

	batter	batsman run	batsman rank
0	A Ashish Reddy		$\overline{1}66.5$
1	A Badoni	161	226.0
2	A Chandila	4	535.0
3	A Chopra	53	329.0
4	A Choudhary	25	402.5
600	Yash Dayal	0	594.0
601	Yashpal Singh	47	343.0
602	Younis Khan	3	547.5
603	Yuvraj Singh	2754	27.0
604	Z Khan	117	256.0

[605 rows x 3 columns]

# if permanent change karna chahate ho to inplace true kar do batsman.set\_index("batter",inplace=True)

batsman

	batsman_run	batsman_rank
batter	_	_
A Ashish Reddy	280	166.5
A Badoni	161	226.0
A Chandila	4	535.0

53 25	329.0 402.5
0	594.0
47	343.0
3	547.5
	27.0
117	256.0
	25  0 47 3 2754

# [605 rows x 2 columns]

# reset\_index (series + dataframe both ) -> drop parameter
batsman

	batsman_run	batsman_rank
batter		
A Ashish Reddy	280	166.5
A Badoni	161	226.0
A Chandila	4	535.0
A Chopra	53	329.0
A Choudhary	25	402.5
Yash Dayal	0	594.0
Yashpal Singh	47	343.0
Younis Khan	3	547.5
Yuvraj Singh	2754	27.0
Z Khan	117	256.0

## [605 rows x 2 columns]

batsman.reset\_index() # not permanent similar inplace = True kar do

	batter	batsman run	batsman rank
0	A Ashish Reddy		$\overline{1}66.5$
1	A Badoni	161	226.0
2	A Chandila	4	535.0
3	A Chopra	53	329.0
4	A Choudhary	25	402.5
600	Yash Dayal	0	594.0
601	Yashpal Singh	47	343.0
602	Younis Khan	3	547.5
603	Yuvraj Singh	2754	27.0
604	Z Khan	117	256.0
603	Yuvraj Singh	2754	27.0

# [605 rows x 3 columns]

batsman

batsman\_run batsman\_rank
batter

A Ashish Reddy A Badoni A Chandila A Chopra A Choudhary	280 161 4 53 25	166.5 226.0 535.0 329.0 402.5
Yash Dayal Yashpal Singh Younis Khan Yuvraj Singh Z Khan	 0 47 3 2754 117	594.0 343.0 547.5 27.0 256.0

## [605 rows x 2 columns]

# how to replace existing index without loosing
# basically ki hum chahate hain ki batter nahi batsman\_rank bale
column ko index banana hai

batsman.set\_index('batsman\_rank') # abhi batsman\_rank index to ban gya but batter bala column loose ho gya

	batsman_run
batsman_rank	
166.5	280
226.0	161
535.0	4
329.0	53
402.5	25
594.0	0
343.0	47
547.5	3
27.0	2754
256.0	117

# [605 rows x 1 columns]

### batsman

	batsman_run	batsman_rank
batter	_	_
A Ashish Reddy	280	166.5
A Badoni	161	226.0
A Chandila	4	535.0
A Chopra	53	329.0
A Choudhary	25	402.5
Yash Dayal	0	594.0
Yashpal Singh	47	343.0
Younis Khan	3	547.5
Yuvraj Singh	2754	27.0

```
Z Khan
                        117
                                     256.0
[605 rows x 2 columns]
batsman.reset_index().set_index('batsman_rank') # pahle r5eset karo
and then phir se set kar do
                      batter batsman run
batsman rank
166.5
              A Ashish Reddy
                                       280
226.0
                    A Badoni
                                       161
535.0
                  A Chandila
                                         4
329.0
                    A Chopra
                                        53
402.5
                 A Choudhary
                                        25
. . .
                                       . . .
594.0
                  Yash Dayal
                                         0
343.0
               Yashpal Singh
                                        47
547.5
                 Younis Khan
                                         3
                Yuvraj Singh
27.0
                                      2754
256.0
                      Z Khan
                                       117
[605 rows x 2 columns]
marks series
maths
            67
            57
english
science
            89
hindi
           100
dtype: int64
type(marks series)
pandas.core.series.Series
marks_series.reset_index() # series pe jab reset_index() function
use karte hain to series ko datframe me convert kar deta hai
              0
     index
             67
0
     maths
1 english
             57
   science
             89
3
     hindi
           100
type(marks series.reset index())
pandas.core.frame.DataFrame
# rename (dataframe) -> index => rename ka kaam hota hai column ko
rename karna
movies.set index('title x',inplace=True)
```

```
movies
                                          imdb id \
title x
Uri: The Surgical Strike
                                        tt8291224
Battalion 609
                                        tt9472208
The Accidental Prime Minister (film)
                                        tt6986710
Why Cheat India
                                        tt8108208
Evening Shadows
                                        tt6028796
Tera Mera Saath Rahen
                                        tt0301250
Yeh Zindagi Ka Safar
                                        tt0298607
Sabse Bada Sukh
                                        tt0069204
Daaka
                                       tt10833860
Humsafar
                                        tt2403201
poster path \
title x
Uri: The Surgical Strike
https://upload.wikimedia.org/wikipedia/en/thum...
Battalion 609
NaN
The Accidental Prime Minister (film)
https://upload.wikimedia.org/wikipedia/en/thum...
Why Cheat India
https://upload.wikimedia.org/wikipedia/en/thum...
Evening Shadows
NaN
. . .
Tera Mera Saath Rahen
https://upload.wikimedia.org/wikipedia/en/2/2b...
Yeh Zindagi Ka Safar
https://upload.wikimedia.org/wikipedia/en/thum...
Sabse Bada Sukh
NaN
Daaka
https://upload.wikimedia.org/wikipedia/en/thum...
Humsafar
https://upload.wikimedia.org/wikipedia/en/thum...
wiki link \
title_x
Uri: The Surgical Strike
https://en.wikipedia.org/wiki/Uri: The Surgica...
Battalion 609
```

```
https://en.wikipedia.org/wiki/Battalion 609
The Accidental Prime Minister (film)
https://en.wikipedia.org/wiki/The Accidental P...
Why Cheat India
https://en.wikipedia.org/wiki/Why Cheat India
Evening Shadows
https://en.wikipedia.org/wiki/Evening Shadows
Tera Mera Saath Rahen
https://en.wikipedia.org/wiki/Tera Mera Saath ...
Yeh Zindagi Ka Safar
https://en.wikipedia.org/wiki/Yeh_Zindagi_Ka_S...
Sabse Bada Sukh
https://en.wikipedia.org/wiki/Sabse Bada Sukh
Daaka
https://en.wikipedia.org/wiki/Daaka
Humsafar
https://en.wikipedia.org/wiki/Humsafar
                                                            title y \
title x
Uri: The Surgical Strike
                                           Uri: The Surgical Strike
Battalion 609
                                                      Battalion 609
The Accidental Prime Minister (film) The Accidental Prime Minister
Why Cheat India
                                                    Why Cheat India
Evening Shadows
                                                    Evening Shadows
Tera Mera Saath Rahen
                                              Tera Mera Saath Rahen
Yeh Zindagi Ka Safar
                                               Yeh Zindagi Ka Safar
Sabse Bada Sukh
                                                    Sabse Bada Sukh
Daaka
                                                              Daaka
Humsafar
                                                           Humsafar
                                                     original title
is adult \
title x
Uri: The Surgical Strike
                                           Uri: The Surgical Strike
Battalion 609
                                                      Battalion 609
The Accidental Prime Minister (film) The Accidental Prime Minister
Why Cheat India
                                                    Why Cheat India
                                                    Evening Shadows
Evening Shadows
```

Tera Mera Saath Rahen	Tera Mera Saath Rahen
Yeh Zindagi Ka Safar 0	Yeh Zindagi Ka Safar
Sabse Bada Sukh	Sabse Bada Sukh
0 Daaka	Daaka
	IIafan
Humsafar 0	Humsafar
1111	<pre>year_of_release runtime \</pre>
title_x Uri: The Surgical Strike Battalion 609 The Accidental Prime Minister (film) Why Cheat India Evening Shadows	2019 138 2019 131 2019 112 2019 121 2018 102
Tera Mera Saath Rahen Yeh Zindagi Ka Safar Sabse Bada Sukh Daaka Humsafar	2001 148 2001 146 2018 \N 2019 136 2011 35
	<pre>genres imdb_rating \</pre>
title_x Uri: The Surgical Strike Battalion 609 The Accidental Prime Minister (film) Why Cheat India Evening Shadows	Action Drama War 8.4 War 4.1 Biography Drama 6.1 Crime Drama 6.0 Drama 7.3
Tera Mera Saath Rahen Yeh Zindagi Ka Safar Sabse Bada Sukh Daaka Humsafar	Drama 4.9 Drama 3.0 Comedy Drama 6.1 Action 7.4 Drama Romance 9.0
	imdb_votes \
title_x Uri: The Surgical Strike Battalion 609 The Accidental Prime Minister (film) Why Cheat India Evening Shadows Tera Mera Saath Rahen Yeh Zindagi Ka Safar Sabse Bada Sukh	35112 73 5549 1891 280  278 133 13

Daaka Humsafar	38 2968
story \ title_x	
Uri: The Surgical Strike film chronicle Battalion 609 cricket match betw The Accidental Prime Minister (film) policy analyst S Why Cheat India malpractices in Evening Shadows equality has bee Tera Mera Saath Rahen brother Rahu Yeh Zindagi Ka Safar lives a wealthy Sabse Bada Sukh to Bombay and Daaka he can be wealt Humsafar friends who share	Divided over five chapters the The story revolves around a Based on the memoir by Indian The movie focuses on existing While gay rights and marriage  Raj Dixit lives with his younger Hindi pop-star Sarina Devan Village born Lalloo re-locates Shinda tries robbing a bank so Sara and Ashar are childhood
<pre>summary \ title_x</pre>	
Uri: The Surgical Strike execute a covert op Battalion 609 revolves around a c The Accidental Prime Minister (film) as the Prime Why Cheat India malpractices in Evening Shadows truth often plays	Indian army special forces The story of Battalion 609 Explores Manmohan Singh's tenure The movie focuses on existing Under the 'Evening Shadows'
Tera Mera Saath Rahen handicapped brother Yeh Zindagi Ka Safar adopted when the ed	A man is torn between his A singer finds out she was

Sabse Bada Sukh to Bombay and	Village born Lalloo re-locates
Daaka he can be wealt	Shinda tries robbing a bank so
Humsafar	Ashar and Khirad are forced to
get married due	
	tagline \
title_x Uri: The Surgical Strike	NaN
Battalion 609	NaN
The Accidental Prime Minister (film) Why Cheat India	NaN NaN
Evening Shadows	NaN
 Tera Mera Saath Rahen	 NaN
Yeh Zindagi Ka Safar	NaN
Sabse Bada Sukh Daaka	NaN NaN
Humsafar	NaN
actors \	
title_x	
Uri: The Surgical Strike Raina Yami Ga	Vicky Kaushal Paresh Rawal Mohit
Battalion 609	Vicky Ahuja Shoaib Ibrahim
Shrikant Kamat Elen The Accidental Prime Minister (film)	Anupam Kher Akshaye Khanna
Aahana Kumra Atul S	·
Why Cheat India Dhanwanthary Snighdadeep	Emraan Hashmi Shreya
Evening Shadows	Mona Ambegaonkar Ananth Narayan
Mahadevan Deva	
	Air Developed Production
Tera Mera Saath Rahen Shirodkar Pre	Ajay Devgn Sonali Bendre Namrata
Yeh Zindagi Ka Safar	Ameesha Patel Jimmy Sheirgill
Nafisa Ali Gulsh Sabse Bada Sukh	Vijay Arora Asrani Rajni Bala
Kumud Damle Utpa Daaka	
Grewal Zareen Khan	Gippy
Humsafar	
Fawad Khan	
title x	wins_nominations $\setminus$
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Uri: The Surgical Strike
                                                        4 wins
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The Accidental Prime Minister (film)
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Why Cheat India
                                                            NaN
                                        17 wins & 1 nomination
Evening Shadows
Tera Mera Saath Rahen
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Yeh Zindagi Ka Safar
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Sabse Bada Sukh
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Humsafar
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title x
Uri: The Surgical Strike
                                           11 January 2019 (USA)
                                         11 January 2019 (India)
Battalion 609
                                           11 January 2019 (USA)
The Accidental Prime Minister (film)
                                           18 January 2019 (USA)
Why Cheat India
Evening Shadows
                                         11 January 2019 (India)
                                        7 November 2001 (India)
Tera Mera Saath Rahen
                                        16 November 2001 (India)
Yeh Zindagi Ka Safar
Sabse Bada Sukh
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Daaka
                                           1 November 2019 (USA)
Humsafar
                                           TV Series (2011-2012)
[1629 \text{ rows } x 17 \text{ columns}]
movies.rename(columns={'imdb id':'imdb','poster path':'link'},inplace=
True)
movies
                                              imdb \
title x
Uri: The Surgical Strike
                                         tt8291224
Battalion 609
                                         tt9472208
The Accidental Prime Minister (film)
                                         tt6986710
Why Cheat India
                                         tt8108208
Evening Shadows
                                         tt6028796
Tera Mera Saath Rahen
                                         tt0301250
                                         tt0298607
Yeh Zindagi Ka Safar
Sabse Bada Sukh
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Daaka
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Humsafar
                                        tt2403201
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title x
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Uri: The Surgical Strike
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Yeh Zindagi Ka Safar
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Humsafar
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wiki link \
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The Accidental Prime Minister (film)
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Why Cheat India
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Tera Mera Saath Rahen
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Yeh Zindagi Ka Safar
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Sabse Bada Sukh
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Daaka
https://en.wikipedia.org/wiki/Daaka
Humsafar
https://en.wikipedia.org/wiki/Humsafar
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	title_y \
title_x Uri: The Surgical Strike Battalion 609 The Accidental Prime Minister (film) Why Cheat India Evening Shadows	Why Cheat India Evening Shadows
Tera Mera Saath Rahen Yeh Zindagi Ka Safar Sabse Bada Sukh Daaka Humsafar	Tera Mera Saath Rahen Yeh Zindagi Ka Safar Sabse Bada Sukh Daaka Humsafar
	original title
<pre>is_adult \ title_x</pre>	<b>ў</b> <u>-</u>
Uri: The Surgical Strike	Uri: The Surgical Strike
Battalion 609	Battalion 609
O The Accidental Prime Minister (film) O	The Accidental Prime Minister
Why Cheat India	Why Cheat India
Evening Shadows	Evening Shadows
Tera Mera Saath Rahen	Tera Mera Saath Rahen
Yeh Zindagi Ka Safar	Yeh Zindagi Ka Safar
Sabse Bada Sukh	Sabse Bada Sukh
Daaka	Daaka
0 Humsafar	Humsafar
0	
+i+lo v	<pre>year_of_release runtime \</pre>
title_x Uri: The Surgical Strike Battalion 609 The Accidental Prime Minister (film) Why Cheat India Evening Shadows	2019 138 2019 131 2019 112 2019 121 2018 102

Tera Mera Saath Rahen Yeh Zindagi Ka Safar Sabse Bada Sukh Daaka Humsafar	2001 148 2001 146 2018 \N 2019 136 2011 35
	<pre>genres imdb_rating \</pre>
title_x Uri: The Surgical Strike Battalion 609 The Accidental Prime Minister (film) Why Cheat India Evening Shadows	Action Drama War 8.4 War 4.1 Biography Drama 6.1 Crime Drama 6.0 Drama 7.3
Tera Mera Saath Rahen Yeh Zindagi Ka Safar Sabse Bada Sukh Daaka Humsafar	Drama 4.9 Drama 3.0 Comedy Drama 6.1 Action 7.4 Drama Romance 9.0
	<pre>imdb_votes \</pre>
title_x Uri: The Surgical Strike Battalion 609 The Accidental Prime Minister (film) Why Cheat India Evening Shadows	35112 73 5549 1891 280
Tera Mera Saath Rahen Yeh Zindagi Ka Safar Sabse Bada Sukh Daaka Humsafar	278 133 13 38 2968
<pre>story \ title_x</pre>	
Uri: The Surgical Strike	Divided over five chapters the
film chronicle Battalion 609	The story revolves around a
cricket match betw  The Accidental Prime Minister (film)	Based on the memoir by Indian
policy analyst S Why Cheat India	The movie focuses on existing
malpractices in Evening Shadows equality has bee	While gay rights and marriage

Tera Mera Saath Rahen brother Rahu	Raj Dixit lives with his younger
Yeh Zindagi Ka Safar	Hindi pop-star Sarina Devan
lives a wealthy Sabse Bada Sukh	Village born Lalloo re-locates
to Bombay and Daaka	Shinda tries robbing a bank so
he can be wealt	•
Humsafar friends who share	Sara and Ashar are childhood
summary \	
title_x	
Uri: The Surgical Strike	Indian army special forces
execute a covert op Battalion 609	The story of Battalion 609
revolves around a c	Evalores Manmahan Singhla tonura
The Accidental Prime Minister (film) as the Prime	Explores Manmohan Singh's tenure
Why Cheat India malpractices in	The movie focuses on existing
Evening Shadows	Under the 'Evening Shadows'
truth often plays	
Tera Mera Saath Rahen handicapped brother	A man is torn between his
Yeh Zindagi Ka Safar	A singer finds out she was
adopted when the ed Sabse Bada Sukh	Village born Lalloo re-locates
to Bombay and	· ·
Daaka he can be wealt	Shinda tries robbing a bank so
Humsafar	Ashar and Khirad are forced to
get married due	
+i+10 v	tagline \
<pre>title_x Uri: The Surgical Strike</pre>	NaN
Battalion 609 The Accidental Prime Minister (film)	NaN NaN
Why Cheat India	NaN
Evening Shadows	NaN
Tera Mera Saath Rahen	NaN
Yeh Zindagi Ka Safar Sabse Bada Sukh	NaN NaN
Daaka	NaN

Humsafar	NaN
actors \ title_x	
Uri: The Surgical Strike Raina Yami Ga	Vicky Kaushal Paresh Rawal Mohit
Battalion 609 Shrikant Kamat Elen	Vicky Ahuja Shoaib Ibrahim
The Accidental Prime Minister (film)	Anupam Kher Akshaye Khanna
Aahana Kumra Atul S Why Cheat India	Emraan Hashmi Shreya
Dhanwanthary Snighdadeep Evening Shadows Mahadevan Deva	Mona Ambegaonkar Ananth Narayan
Tera Mera Saath Rahen	Ajay Devgn Sonali Bendre Namrata
Shirodkar Pre Yeh Zindagi Ka Safar	Ameesha Patel Jimmy Sheirgill
Nafisa Ali Gulsh Sabse Bada Sukh	Vijay Arora Asrani Rajni Bala
Kumud Damle Utpa Daaka	Gippy
Grewal Zareen Khan  Humsafar Fawad Khan	
1:11 L W	wins_nominations \
title_x Uri: The Surgical Strike	4 wins
Battalion 609 The Accidental Prime Minister (film)	NaN NaN
Why Cheat India Evening Shadows	NaN 17 wins & 1 nomination
Tera Mera Saath Rahen	 NaN
Yeh Zindagi Ka Safar Sabse Bada Sukh	NaN NaN
Daaka Humsafar	NaN NaN
	release date
title_x Uri: The Surgical Strike	11 January 2019 (USA)
Battalion 609 The Accidental Prime Minister (film)	11 January 2019 (India) 11 January 2019 (USA)
Why Cheat India Evening Shadows	18 January 2019 (USA) 11 January 2019 (India)

```
7 November 2001 (India)
Tera Mera Saath Rahen
Yeh Zindagi Ka Safar
                                       16 November 2001 (India)
Sabse Bada Sukh
                                          1 November 2019 (USA)
Daaka
                                          TV Series (2011-2012)
Humsafar
[1629 \text{ rows x } 17 \text{ columns}]
# hum index value ko bhi rename kar sakte hain
movies.rename(index={'Uri: The Surgical Strike':'Uri','Battalion
609':'battalion'})
                                              imdb \
title x
Uri
                                        tt8291224
battalion
                                        tt9472208
The Accidental Prime Minister (film)
                                        tt6986710
Why Cheat India
                                        tt8108208
Evening Shadows
                                        tt6028796
Tera Mera Saath Rahen
                                        tt0301250
Yeh Zindagi Ka Safar
                                        tt0298607
Sabse Bada Sukh
                                        tt0069204
Daaka
                                       tt10833860
Humsafar
                                        tt2403201
link \
title x
https://upload.wikimedia.org/wikipedia/en/thum...
battalion
NaN
The Accidental Prime Minister (film)
https://upload.wikimedia.org/wikipedia/en/thum...
Why Cheat India
https://upload.wikimedia.org/wikipedia/en/thum...
Evening Shadows
NaN
. . .
Tera Mera Saath Rahen
https://upload.wikimedia.org/wikipedia/en/2/2b...
Yeh Zindagi Ka Safar
https://upload.wikimedia.org/wikipedia/en/thum...
Sabse Bada Sukh
NaN
```

```
Daaka
https://upload.wikimedia.org/wikipedia/en/thum...
Humsafar
https://upload.wikimedia.org/wikipedia/en/thum...
wiki_link \
title x
Uri
https://en.wikipedia.org/wiki/Uri: The Surgica...
battalion
https://en.wikipedia.org/wiki/Battalion 609
The Accidental Prime Minister (film)
https://en.wikipedia.org/wiki/The Accidental P...
Why Cheat India
https://en.wikipedia.org/wiki/Why Cheat India
Evening Shadows
https://en.wikipedia.org/wiki/Evening Shadows
. . .
Tera Mera Saath Rahen
https://en.wikipedia.org/wiki/Tera Mera Saath ...
Yeh Zindagi Ka Safar
https://en.wikipedia.org/wiki/Yeh Zindagi Ka S...
Sabse Bada Sukh
https://en.wikipedia.org/wiki/Sabse Bada Sukh
Daaka
https://en.wikipedia.org/wiki/Daaka
Humsafar
https://en.wikipedia.org/wiki/Humsafar
                                                             title y \
title x
Uri
                                           Uri: The Surgical Strike
                                                       Battalion 609
battalion
The Accidental Prime Minister (film) The Accidental Prime Minister
Why Cheat India
                                                     Why Cheat India
Evening Shadows
                                                     Evening Shadows
Tera Mera Saath Rahen
                                               Tera Mera Saath Rahen
Yeh Zindagi Ka Safar
                                                Yeh Zindagi Ka Safar
Sabse Bada Sukh
                                                     Sabse Bada Sukh
Daaka
                                                               Daaka
Humsafar
                                                            Humsafar
                                                      original title
is adult \
title x
```

llei	Uri, The Surgical Strike
Uri O	Uri: The Surgical Strike
battalion	Battalion 609
0 The Accidental Prime Minister (film) 0	The Accidental Prime Minister
Why Cheat India 0	Why Cheat India
Evening Shadows	Evening Shadows
Tera Mera Saath Rahen	Tera Mera Saath Rahen
Yeh Zindagi Ka Safar O	Yeh Zindagi Ka Safar
Sabse Bada Sukh 0	Sabse Bada Sukh
Daaka	Daaka
0 Humsafar 0	Humsafar
title x	<pre>year_of_release runtime \</pre>
Uri	2019 138
battalion	2019 131
The Accidental Prime Minister (film) Why Cheat India	2019 112 2019 121
Evening Shadows	2013 121
Tera Mera Saath Rahen Yeh Zindagi Ka Safar	2001 148 2001 146
Sabse Bada Sukh	2011 140 2018 \N
Daaka	2019 136
Humsafar	2011 35
	<pre>genres imdb_rating \</pre>
title_x	
Uri battalion	Action Drama War 8.4 War 4.1
The Accidental Prime Minister (film)	Biography Drama 6.1
Why Cheat India	Crime Drama 6.0
Evening Shadows	Drama 7.3
Tera Mera Saath Rahen	 Drama 4.9
Yeh Zindagi Ka Safar	Drama 3.0
Sabse Bada Sukh	Comedy   Drama 6.1
Daaka	Action 7.4

Humsafar	Drama Romance 9.0
	imdb_votes \
title_x Uri	35112
battalion	73
The Accidental Prime Minister (film)	5549
Why Cheat India	1891
Evening Shadows	280
Tera Mera Saath Rahen	278
Yeh Zindagi Ka Safar	133
Sabse Bada Sukh	13
Daaka Humsafar	38 2968
TidiiisaTaT	2300
story \ title x	
cree_x	
Uri	Divided over five chapters the
film chronicle battalion	The story revolves around a
cricket match betw	The story revolves around a
The Accidental Prime Minister (film)	Based on the memoir by Indian
policy analyst S Why Cheat India	The movie focuses on existing
malpractices in	The movie rocuses on existing
Evening Shadows	While gay rights and marriage
equality has bee	
• • • • • • • • • • • • • • • • • • • •	
Tera Mera Saath Rahen	Raj Dixit lives with his younger
brother Rahu	
Yeh Zindagi Ka Safar lives a wealthy	Hindi pop-star Sarina Devan
Sabse Bada Sukh	Village born Lalloo re-locates
to Bombay and	
Daaka he can be wealt	Shinda tries robbing a bank so
Humsafar	Sara and Ashar are childhood
friends who share	
summary \	
title_x	
Uri	Indian army special forces
execute a covert op	indian dring special forces
battalion	The story of Battalion 609

Manmohan Singh's tenure e focuses on existing e 'Evening Shadows'
torn between his  finds out she was  born Lalloo re-locates  ries robbing a bank so  d Khirad are forced to
\
ushal Paresh Rawal Mohit uja Shoaib Ibrahim  her Akshaye Khanna  ashmi Shreya egaonkar Ananth Narayan

```
Tera Mera Saath Rahen
                                       Ajay Devgn|Sonali Bendre|Namrata
Shirodkar|Pre...
Yeh Zindagi Ka Safar
                                       Ameesha Patel|Jimmy Sheirgill|
Nafisa Ali|Gulsh...
Sabse Bada Sukh
                                       Vijay Arora|Asrani|Rajni Bala|
Kumud Damle|Utpa...
Daaka
                                                                Gippy
Grewal|Zareen Khan|
Humsafar
Fawad Khan|
                                             wins nominations \
title x
Uri
                                                        4 wins
battalion
                                                           NaN
The Accidental Prime Minister (film)
                                                           NaN
Why Cheat India
                                                           NaN
Evening Shadows
                                       17 wins & 1 nomination
Tera Mera Saath Rahen
                                                           NaN
Yeh Zindagi Ka Safar
                                                           NaN
Sabse Bada Sukh
                                                           NaN
Daaka
                                                           NaN
Humsafar
                                                           NaN
                                                    release date
title_x
Uri
                                          11 January 2019 (USA)
                                        11 January 2019 (India)
battalion
The Accidental Prime Minister (film)
                                          11 January 2019 (USA)
                                          18 January 2019 (USA)
Why Cheat India
Evening Shadows
                                        11 January 2019 (India)
                                        7 November 2001 (India)
Tera Mera Saath Rahen
Yeh Zindagi Ka Safar
                                       16 November 2001 (India)
Sabse Bada Sukh
                                                             NaN
Daaka
                                          1 November 2019 (USA)
Humsafar
                                          TV Series (2011-2012)
[1629 rows x 17 columns]
# unique (series) # sari ki sari unique value nikal ke deta hai
temp = pd.Series([1,1,2,2,3,3,4,4,5,5,np.nan,np.nan])
print(temp)
0
      1.0
1
      1.0
2
      2.0
3
      2.0
4
      3.0
```

```
5
      3.0
6
      4.0
7
      4.0
8
      5.0
9
      5.0
10
      NaN
      NaN
11
dtype: float64
temp.unique()
array([ 1., 2., 3., 4., 5., nan])
ipl
                                                 MatchNumber \
          ID
                    City
                                 Date
                                        Season
               Ahmedabad
0
     1312200
                           2022-05-29
                                           2022
                                                       Final
1
     1312199
               Ahmedabad
                           2022-05-27
                                           2022
                                                 Oualifier 2
2
     1312198
                 Kolkata
                           2022-05-25
                                           2022
                                                  Eliminator
3
     1312197
                 Kolkata
                           2022-05-24
                                           2022
                                                 Qualifier 1
4
     1304116
                           2022-05-22
                  Mumbai
                                           2022
                                                           70
      335986
                 Kolkata
                           2008-04-20
                                       2007/08
                                                           4
945
                                                           5
946
      335985
                  Mumbai
                           2008-04-20
                                       2007/08
947
      335984
                           2008-04-19
                                        2007/08
                                                           3
                    Delhi
                           2008-04-19
                                                           2
948
      335983
              Chandigarh
                                       2007/08
               Bangalore 2008-04-18
949
      335982
                                       2007/08
                                                           1
                            Team1
                                                          Team2 \
0
                Rajasthan Royals
                                                 Gujarat Titans
1
     Royal Challengers Bangalore
                                               Rajasthan Royals
2
     Royal Challengers Bangalore
                                           Lucknow Super Giants
3
                                                 Gujarat Titans
                Rajasthan Royals
4
             Sunrisers Hyderabad
                                                   Punjab Kings
           Kolkata Knight Riders
945
                                                Deccan Chargers
                  Mumbai Indians
                                   Royal Challengers Bangalore
946
947
                Delhi Daredevils
                                               Rajasthan Royals
948
                 Kings XI Punjab
                                            Chennai Super Kings
949
     Royal Challengers Bangalore
                                          Kolkata Knight Riders
                                            Venue
TossWinner \
               Narendra Modi Stadium, Ahmedabad
                                                               Rajasthan
Royals
               Narendra Modi Stadium, Ahmedabad
                                                               Rajasthan
Royals
                           Eden Gardens, Kolkata
                                                          Lucknow Super
Giants
                           Eden Gardens, Kolkata
                                                                 Gujarat
```

Titans 4 Hyderabad		Wankhed	de Stadium, Mumbai	Sur	nrisers
945			Eden Gardens		Deccan
Chargers 946			Wankhede Stadium		Mumbai
Indians 947			Feroz Shah Kotla		Rajasthan
Royals 948 Punja	h Cricket	Associatio	on Stadium, Mohali	Che	ennai Super
Kings 949	D CITCHCC				-
Bangalore		M CI	ninnaswamy Stadium	Royal Chall	Lenger S
	cision Su <sub>l</sub>	per0ver	Winn	ingTeam V	VonBy
Margin ∖ 0	bat	N	Gujarat	Titans Wid	ckets
7.0 1	field	N	Rajasthan		ckets
7.0 2	field		oyal Challengers Ba	-	Runs
14.0				_	
3 7.0	field	N	Gujarat	litans Wid	ckets
4 5.0	bat	N	Punjal	Kings Wid	ckets
945	bat	N	Kolkata Knight	Riders Wid	ckets
5.0 946	bat	N Ro	yal Challengers Ba	ngalore Wid	ckets
5.0 947	bat	N	Delhi Daro	edevils Wio	ckets
9.0 948	bat	N	Chennai Supe		Runs
33.0			•	J	
949 140.0	field	N	Kolkata Knight	Riders	Runs
method	Player_o	f_Match			
Team1Playe 0 NaN		- Pandya ['	YBK Jaiswal', 'JC I	Buttler'. 'S	SV Samson'.
'D			V Kohli', 'F du Plo		
'GJ					
2 NaN 'GJ	KM I	Patidar [ˈ	V Kohli', 'F du Ple	essis', 'RM	Patidar',

```
DA Miller ['YBK Jaiswal', 'JC Buttler', 'SV Samson',
3
       NaN
'D ...
             Harpreet Brar ['PK Garg', 'Abhishek Sharma', 'RA
       NaN
Tripathi', ...
. . .
                 DJ Hussey ['WP Saha', 'BB McCullum', 'RT Ponting',
945
       NaN
'SC G...
                MV Boucher ['L Ronchi', 'ST Jayasuriya', 'DJ
946
       NaN
Thornely',
               MF Maharoof ['G Gambhir', 'V Sehwag', 'S Dhawan', 'MK
947
       NaN
Tiwa...
                MEK Hussey ['K Goel', 'JR Hopes', 'KC Sangakkara',
948
       NaN
'Yuvra...
949
       NaN
               BB McCullum ['R Dravid', 'W Jaffer', 'V Kohli', 'JH
Kallis...
                                          Team2Players
                                                               Umpire1
     ['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan...
                                                          CB Gaffanev
     ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
                                                           CB Gaffaney
     ['Q de Kock', 'KL Rahul', 'M Vohra', 'DJ Hooda... J Madanagopal
     ['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan... BNJ Oxenford
3
     ['JM Bairstow', 'S Dhawan', 'M Shahrukh Khan',... AK Chaudhary
                                                                   . . .
     ['AC Gilchrist', 'Y Venugopal Rao', 'VVS Laxma...
                                                             BF Bowden
946
     ['S Chanderpaul', 'R Dravid', 'LRPL Taylor', '...
                                                              SJ Davis
947
     ['T Kohli', 'YK Pathan', 'SR Watson', 'M Kaif'...
                                                             Aleem Dar
     ['PA Patel', 'ML Hayden', 'MEK Hussey', 'MS Dh...
948
                                                             MR Benson
     ['SC Ganguly', 'BB McCullum', 'RT Ponting', 'D...
                                                            Asad Rauf
            Umpire2
        Nitin Menon
0
1
        Nitin Menon
2
           MA Gough
3
          VK Sharma
4
      NA Patwardhan
945
        K Hariharan
```

```
946
          DJ Harper
947 GA Pratapkumar
        SL Shastri
948
949
       RE Koertzen
[950 rows x 20 columns]
# ipl ke kitne season hue hain
ipl['Season'].unique()
array(['2022', '2021', '2020/21', '2019', '2018', '2017', '2016',
2015',
       '2014', '2013', '2012', '2011', '2009/10', '2009', '2007/08'],
      dtype=object)
len(ipl['Season'].unique())
15
# nunique (serries + dataframe) => unique value ka count bata deta hai
and nan ko count nahi karta hai
ipl['Season'].nunique()
15
temp
0
      1.0
1
      1.0
2
      2.0
3
      2.0
4
      3.0
5
      3.0
6
      4.0
7
      4.0
8
      5.0
9
      5.0
10
      NaN
      NaN
11
dtype: float64
len(temp.unique())
temp.nunique()
5
# isnull (series + dataframe)
students
```

```
name college branch
                                       package
                                 cgpa
0
                                 6.66
                                           4.0
       nitish
                   bit
                          eee
1
        ankit
                   iit
                           it
                                 8.25
                                           5.0
2
       rupesh
                   vit
                                 6.41
                                           6.0
                          cse
3
          NaN
                   NaN
                          NaN
                                 NaN
                                           NaN
4
  mrityunjay
                   NaN
                                 5.60
                                           6.0
                           me
5
                  vlsi
                                9.00
                                           7.0
          NaN
                           ce
6
      rishabh
                  ssit
                          civ
                                7.40
                                           8.0
7
                   NaN
                               10.00
                                           9.0
          NaN
                          cse
8
       aditya
                   NaN
                          bio
                                7.40
                                           NaN
9
          NaN
                   git
                          NaN
                                  NaN
                                           NaN
# isnull ko jab series pe chalaoge to batayega ki value missing hai ki
nahi yadi missing hai to true se replace kar dega otherwise false se
students['name']
0
         nitish
1
          ankit
2
         rupesh
3
            NaN
4
     mrityunjay
5
            NaN
6
        rishabh
7
            NaN
8
         aditya
9
            NaN
Name: name, dtype: object
students['name'].isnull()
0
     False
1
     False
2
     False
3
     True
4
     False
5
     True
6
     False
7
     True
8
     False
9
      True
Name: name, dtype: bool
students['name'][students['name'].isnull()]
3
     NaN
5
     NaN
7
     NaN
9
     NaN
Name: name, dtype: object
```

```
# notnull (series+dataframe) => just isnull ke opposite kaam karta hai
students['name'].notnull()
0
      True
1
      True
2
      True
3
     False
4
     True
5
     False
6
     True
7
     False
8
      True
9
     False
Name: name, dtype: bool
students['name'][students['name'].notnull()]
0
         nitish
1
          ankit
2
         rupesh
4
     mrityunjay
6
        rishabh
         aditya
Name: name, dtype: object
# hasnans (series ) => cheeck karta hai kya ek bhi missing value
hai pure series me
students['name'].hasnans
True
# for dataframe
students
         name college branch
                                      package
                                cgpa
0
       nitish
                   bit
                                6.66
                                           4.0
                          eee
1
        ankit
                  iit
                          it
                                8.25
                                           5.0
2
                                           6.0
       rupesh
                  vit
                          cse
                                6.41
3
          NaN
                  NaN
                          NaN
                                 NaN
                                           NaN
4
                                5.60
                                           6.0
   mrityunjay
                  NaN
                           me
5
          NaN
                 vlsi
                           ce
                                9.00
                                           7.0
6
      rishabh
                 ssit
                          civ
                                7.40
                                           8.0
7
                                           9.0
          NaN
                   NaN
                              10.00
                          cse
8
       aditya
                  NaN
                          bio
                                7.40
                                           NaN
          NaN
                                NaN
                                           NaN
                  git
                          NaN
                   # pure dataframe ko single go me check kar dega
students.isnull()
          college
                    branch
                             cgpa
                                   package
    name
                                     False
0
   False
            False
                     False
                            False
1 False
            False
                     False
                            False
                                     False
```

```
False
            False
                     False
                            False
                                      False
3
             True
                                       True
   True
                     True
                            True
4
   False
             True
                     False
                            False
                                      False
5
   True
            False
                     False
                            False
                                      False
6
   False
            False
                     False
                            False
                                      False
7
   True
             True
                     False
                            False
                                      False
                                       True
8
   False
             True
                     False
                            False
9
    True
            False
                     True
                             True
                                       True
students.notnull()
                             cqpa
    name
          college
                    branch
                                    package
                             True
                                       True
0
    True
             True
                      True
1
    True
             True
                      True
                             True
                                       True
2
   True
                                       True
             True
                      True
                             True
3
   False
            False
                     False
                            False
                                      False
4
            False
                            True
                                       True
   True
                     True
5
   False
             True
                      True
                             True
                                       True
6
   True
                      True
                             True
                                       True
             True
7
   False
                             True
                                       True
            False
                      True
8
   True
            False
                      True
                             True
                                      False
   False
             True
                     False
                            False
                                      False
# dropna (series + dataframe) -> hoe parameter -> works like or
sare missing value ko drop kar deta hai
students
         name college branch
                                 cgpa
                                       package
0
                                 6.66
                                           4.0
       nitish
                   bit
                          eee
1
        ankit
                   iit
                           it
                                 8.25
                                           5.0
2
                                 6.41
                                           6.0
       rupesh
                   vit
                          cse
3
                                  NaN
          NaN
                   NaN
                          NaN
                                           NaN
4
                                           6.0
                   NaN
                           me
                                 5.60
   mrityunjay
5
          NaN
                  vlsi
                           ce
                                 9.00
                                           7.0
6
      rishabh
                  ssit
                          civ
                                7.40
                                           8.0
7
                               10.00
                                           9.0
          NaN
                   NaN
                          cse
8
       aditya
                   NaN
                          bio
                                 7.40
                                           NaN
9
                                           NaN
          NaN
                   git
                          NaN
                                  NaN
students['name']
0
         nitish
1
          ankit
```

2

3

4

5

6

7

rupesh

rishabh

mrityunjay

NaN

NaN

NaN

```
8
         aditva
9
            NaN
Name: name, dtype: object
students['name'].dropna()
0
         nitish
1
          ankit
2
         rupesh
4
     mrityunjay
6
        rishabh
8
         aditya
Name: name, dtype: object
# dropna on dataframe
students
         name college branch
                                cgpa
                                      package
0
       nitish
                  bit
                                          4.0
                          eee
                                6.66
1
        ankit
                   iit
                           it
                                8.25
                                          5.0
2
       rupesh
                  vit
                          cse
                                6.41
                                          6.0
3
          NaN
                  NaN
                          NaN
                                 NaN
                                          NaN
4
  mrityunjay
                  NaN
                           me
                                5.60
                                          6.0
5
          NaN
                 vlsi
                          ce
                                9.00
                                          7.0
6
                                7.40
                                          8.0
      rishabh
                 ssit
                          civ
7
          NaN
                  NaN
                              10.00
                                          9.0
                          cse
8
       aditya
                          bio
                                7.40
                                          NaN
                  NaN
          NaN
                  git
                          NaN
                                 NaN
                                          NaN
students.dropna() # kisi bhi row me agar ek bhi jagah nan value hai
to wo hat jayega
      name college branch cgpa
                                  package
                            6.66
0
               bit
                                      4.0
    nitish
                       eee
                       it 8.25
1
     ankit
               iit
                                      5.0
2
                       cse 6.41
                                      6.0
    rupesh
               vit
              ssit
                      civ 7.40
   rishabh
                                      8.0
students.dropna(how='any') # ye default parameter hota hai
      name college branch
                            cgpa
                                  package
0
               bit
                            6.66
    nitish
                       eee
                                      4.0
1
     ankit
               iit
                       it
                            8.25
                                      5.0
2
    rupesh
               vit
                            6.41
                                      6.0
                       cse
   rishabh
              ssit
                       civ
                           7.40
                                      8.0
# hum bass uss row ko hatana chahate hain jaha pe sari ki sari value
missing hai
students.dropna(how='all')
```

```
name college branch
                                       package
                                 capa
                                 6.66
0
       nitish
                   bit
                          eee
                                            4.0
1
        ankit
                   iit
                           it
                                 8.25
                                            5.0
2
       rupesh
                   vit
                                 6.41
                                            6.0
                          cse
4
  mrityunjay
                   NaN
                           me
                                 5.60
                                            6.0
5
                  vlsi
                                 9.00
                                            7.0
          NaN
                           ce
6
      rishabh
                  ssit
                                7.40
                                            8.0
                          civ
7
          NaN
                   NaN
                                10.00
                                            9.0
                          cse
8
       aditya
                   NaN
                          bio
                                 7.40
                                            NaN
9
          NaN
                   git
                          NaN
                                  NaN
                                            NaN
```

# agar aap chaho to kisi particular column ke basis pe bhi hata sakte ho

# hum chahate hain ki wo sari row delate ho jaye jaha par name column me nan value hai

students.dropna(subset=['name'])

```
name college branch cgpa
                                    package
0
       nitish
                  bit
                         eee 6.66
                                         4.0
1
        ankit
                  iit
                          it 8.25
                                         5.0
2
       rupesh
                  vit
                         cse 6.41
                                         6.0
4
                          me 5.60
                                         6.0
  mrityunjay
                  NaN
6
      rishabh
                 ssit
                         civ
                             7.40
                                         8.0
                  NaN
                         bio 7.40
                                         NaN
       aditya
```

# unn row ko hata do jaha pe ya to name bale column me missing value hai yaa to college bale me missing value hai

students.dropna(subset=['name','college'])

	name	college	branch	cgpa	package
0	nitish	bit	eee	6.66	4.0
1	ankit	iit	it	8.25	5.0
2	rupesh	vit	cse	6.41	6.0
6	rishabh	ssit	civ	7.40	8.0

students # qki koi bhi permanent changes nahi hai but agar aap
karna chahate ho to inplace='True' kar do like
students.dropna(inplace=true)

	name	college	branch	cgpa	package
0	nitish	bit	eee	6.66	4.0
1	ankit	iit	it	8.25	5.0
2	rupesh	vit	cse	6.41	6.0
3	NaN	NaN	NaN	NaN	NaN
4	mrityunjay	NaN	me	5.60	6.0
5	NaN	vlsi	ce	9.00	7.0
6	rishabh	ssit	civ	7.40	8.0
7	NaN	NaN	cse	10.00	9.0
8	aditya	NaN	bio	7.40	NaN
9	NaN	git	NaN	NaN	NaN

```
#fillna(series + dataframe) => nan data ko kisi value se fill kar
deta hai
students['name']
0
         nitish
1
          ankit
2
          rupesh
3
             NaN
4
     mrityunjay
5
             NaN
6
         rishabh
7
             NaN
8
         aditya
9
             NaN
Name: name, dtype: object
students['name'].fillna('unknown')
0
         nitish
1
          ankit
2
         rupesh
3
        unknown
4
     mrityunjay
5
        unknown
6
        rishabh
7
        unknown
8
         aditya
9
        unknown
Name: name, dtype: object
# fordataframe
students
         name college branch
                                       package
                                 cqpa
       nitish
                   bit
                          eee
                                 6.66
                                            4.0
1
        ankit
                   iit
                            it
                                 8.25
                                            5.0
2
                                 6.41
       rupesh
                   vit
                                            6.0
                           cse
3
          NaN
                   NaN
                          NaN
                                  NaN
                                            NaN
4
                   NaN
                                 5.60
                                            6.0
   mrityunjay
                           me
5
                                 9.00
                                            7.0
          NaN
                  vlsi
                            ce
6
      rishabh
                  ssit
                                 7.40
                                            8.0
                           civ
7
          NaN
                   NaN
                           cse
                                10.00
                                            9.0
8
       aditva
                   NaN
                           bio
                                 7.40
                                            NaN
9
                                            NaN
          NaN
                   git
                          NaN
                                  NaN
students.fillna(0) # jaha bhi missing value hai waha pe zero fill ho
jayega but not a good way hume column wise fill karna chahaiye
         name college branch
                                 cgpa
                                       package
0
       nitish
                   bit
                                 6.66
                                            4.0
                           eee
1
        ankit
                   iit
                           it
                                 8.25
                                            5.0
```

```
2
                   vit
                                 6.41
                                           6.0
       rupesh
                          cse
3
                                 0.00
                     0
                             0
                                           0.0
4
   mrityunjay
                     0
                           me
                                 5.60
                                            6.0
5
                                 9.00
                                           7.0
                  vlsi
                           ce
6
      rishabh
                  ssit
                          civ
                                 7.40
                                           8.0
7
                                10.00
                                           9.0
                     0
                          cse
8
       aditya
                     0
                          bio
                                 7.40
                                           0.0
                                 0.00
                                           0.0
            0
                   git
                             0
students['package'].fillna(students['package'].mean())
0
     4.000000
1
     5.000000
2
     6.000000
3
     6.428571
4
     6.000000
5
     7.000000
6
     8.000000
7
     9.000000
8
     6.428571
9
     6.428571
Name: package, dtype: float64
students['name']
         nitish
0
1
          ankit
2
          rupesh
3
            NaN
4
     mrityunjay
5
            NaN
6
        rishabh
7
            NaN
8
         aditya
9
            NaN
Name: name, dtype: object
students['name'].fillna(method='ffill') # forward fill jo nan value
hai usme pichle row kw value ko fill kar dega
C:\Users\jayra\AppData\Local\Temp\ipykernel 15296\538422019.py:1:
FutureWarning: Series.fillna with 'method' is deprecated and will
raise in a future version. Use obj.ffill() or obj.bfill() instead.
  students['name'].fillna(method='ffill')
0
         nitish
1
          ankit
2
          rupesh
3
          rupesh
4
     mrityunjay
5
     mrityunjay
```

```
6
        rishabh
7
        rishabh
8
         aditya
9
         aditya
Name: name, dtype: object
students['name'].fillna(method='bfill') # backward fill jo nan value
hai usme agle row kw value ko fill kar dega
C:\Users\jayra\AppData\Local\Temp\ipykernel 15296\1941178041.py:1:
FutureWarning: Series.fillna with 'method' is deprecated and will
raise in a future version. Use obj.ffill() or obj.bfill() instead.
  students['name'].fillna(method='bfill')
0
         nitish
1
          ankit
2
         rupesh
3
     mrityunjay
4
     mrityunjay
5
        rishabh
6
        rishabh
7
         aditya
8
         aditya
9
            NaN
Name: name, dtype: object
# drop duplicates (series + dataframe) -> work like and -
>duplicated()
marks
   iq marks package
0
  100
           80
                    10
           70
                     7
1
   90
2
  120
          100
                    14
3
           70
                    14
    80
           70
4
    80
                    14
marks.duplicated()
0
     False
1
     False
2
     False
3
     False
4
      True
dtype: bool
marks.duplicated().sum()
1
```

```
temp = pd.Series([1,1,1,2,3,3,4,4])
temp.drop duplicates()
     1
3
     2
4
     3
6
     4
dtype: int64
# for dataframe
marks
        marks
               package
    iq
0
   100
           80
                     10
   90
           70
                     7
1
2
                     14
  120
          100
3
           70
                     14
    80
           70
    80
                     14
marks.drop duplicates()
    iq marks
               package
   100
           80
                     10
   90
           70
                     7
1
2
  120
          100
                     14
3
  80
           70
                     14
# keep parameter iske help se aap either firse occurrence ya phir last
occurrence ko rakh sakte hain bydefault first hota hai
marks.drop_duplicates(keep='first')
    iq
        marks
               package
0
   100
           80
                     10
    90
           70
                     7
1
2
   120
          100
                     14
           70
                     14
    80
marks.drop duplicates(keep='last')
    iq
       marks
               package
   100
           80
                     10
1
   90
           70
                     7
2
   120
                     14
          100
  80
           70
                     14
# find the last match played by virat kohli in delhi
ipl
          ID
                     City
                                 Date
                                         Season
                                                 MatchNumber \
               Ahmedabad
0
     1312200
                           2022-05-29
                                           2022
                                                       Final
1
     1312199
               Ahmedabad
                           2022-05-27
                                           2022
                                                 Qualifier 2
2
     1312198
                 Kolkata
                           2022-05-25
                                           2022
                                                  Eliminator
```

945 335986 Kolkata 2008-04-20 2007/08 4 946 335985 Mumbai 2008-04-10 2007/08 5 947 335984 Delhi 2008-04-19 2007/08 3 948 335983 Chandigarh 2008-04-19 2007/08 2 949 335982 Bangalore 2008-04-18 2007/08 1  Teaml Team2 \ 0 Rajasthan Royals Gujarat Titans 1 Royal Challengers Bangalore Rajasthan Royals 2 Royal Challengers Bangalore Lucknow Super Giants 3 Rajasthan Royals Gujarat Titans 4 Sunrisers Hyderabad Punjab Kings 945 Kolkata Knight Riders Deccan Chargers 946 Mumbai Indians Royal Challengers Bangalore Rajasthan Royals 949 Royal Challengers Bangalore Kolkata Knight Riders 940 Royal Challengers Bangalore Kolkata Knight Riders 941 Delhi Daredevits Rajasthan Royals 942 Kings XI Punjab Chennai Super Kings 943 Kings XI Punjab Chennai Super Kings 944 Royal Challengers Bangalore Kolkata Knight Riders 945 Lovenue  TossWinner \ 0 Narendra Modi Stadium, Ahmedabad Rajasthan Royals 1 Narendra Modi Stadium, Ahmedabad Rajasthan Royals 2 Eden Gardens, Kolkata Lucknow Super Giants 3 Eden Gardens, Kolkata Gujarat Titans 4 Wankhede Stadium, Mumbai Sunrisers  Hyderabad 945 Eden Gardens Deccan Chargers 946 Wankhede Stadium, Mumbai Sunrisers  Hyderabad 945 Eden Gardens Deccan Chargers 946 Wankhede Stadium, Mumbai Sunrisers  Hyderabad 945 Feroz Shah Kotla Rajasthan Royals 948 Punjab Cricket Association Stadium, Mohali Chennai Super Kings 949 M Chinnaswamy Stadium Royal Challengers  Bangalore TossDecision SuperOver WinningTeam WonBy  Margin \ 0 bat N Gujarat Titans Wickets	3 4	1312197 1304116	Kolkata Mumbai	2022-05-24 2022-05-22	2022 2022	Qualifier	1 70	
0 Rajasthan Royals 1 Royal Challengers Bangalore 2 Royal Challengers Bangalore 3 Rajasthan Royals 4 Sunrisers Hyderabad 5 Wumbai Indians 945 Kolkata Knight Riders 946 Mumbai Indians 948 Kings XI Punjab Chennai Super Kings 949 Royal Challengers Bangalore 947 Delhi Daredevils 948 Kings XI Punjab Chennai Super Kings 949 Royal Challengers Bangalore 940 Narendra Modi Stadium, Ahmedabad Rajasthan 840 Royals 1 Narendra Modi Stadium, Ahmedabad Rajasthan 850 Royals 2 Eden Gardens, Kolkata Lucknow Super 86 Giants 3 Eden Gardens, Kolkata Gujarat 87 Titans 84 Wankhede Stadium, Mumbai Sunrisers 85 Eden Gardens 86 Wankhede Stadium Mumbai 87 Feroz Shah Kotla Rajasthan 88 Punjab Cricket Association Stadium, Mohali Chennai Super 89 M Chinnaswamy Stadium Royal Challengers 89 M Chinnaswamy Stadium Royal Challengers 89 M Chinnaswamy Stadium Royal Challengers 80 Monspals 80 Mons	945 946 947 948	335986 335985 335984 335983	Kolkata Mumbai Delhi Chandigarh	2008-04-20 2008-04-20 2008-04-19 2008-04-19	2007/08 2007/08 2007/08 2007/08	•	4 5 3 2	
945 Kolkata Knight Riders 946 Mumbai Indians 947 Delhi Daredevils 948 Kings XI Punjab 949 Royal Challengers Bangalore  Venue  TossWinner \ 0 Narendra Modi Stadium, Ahmedabad Rajasthan Royals 1 Narendra Modi Stadium, Ahmedabad Rajasthan Royals 2 Eden Gardens, Kolkata Lucknow Super Giants 3 Eden Gardens, Kolkata Gujarat Titans 4 Wankhede Stadium, Mumbai Sunrisers Hyderabad 945 Eden Gardens Deccan Chargers 946 Wankhede Stadium Mumbai Indians 947 Feroz Shah Kotla Rajasthan Royals 948 Punjab Cricket Association Stadium, Mohali Chennai Super Kings 949 M Chinnaswamy Stadium Royal Challengers Bangalore  TossDecision SuperOver WinningTeam WonBy Margin \	1 2 3 4	Royal Ch	allengers Ba allengers Ba Rajasthan	Royals ngalore ngalore Royals		Gujarat T: ajasthan Ro ow Super G: Gujarat T:	itans oyals iants itans	
TossWinner \ 0	945 946 947 948		Mumbai Delhi Dar Kings XI	Indians Roy edevils Punjab	al Challe R Chen	ngers Banga ajasthan Ro nai Super I	alore oyals Kings	
<pre>Narendra Modi Stadium, Ahmedabad Royals Narendra Modi Stadium, Ahmedabad Rajasthan Royals Eden Gardens, Kolkata Lucknow Super Giants Eden Gardens, Kolkata Gujarat Titans Wankhede Stadium, Mumbai Sunrisers Hyderabad Eden Gardens Deccan Chargers Hyde Wankhede Stadium Mumbai Indians Feroz Shah Kotla Rajasthan Royals Hujab Cricket Association Stadium, Mohali Chennai Super Kings M Chinnaswamy Stadium Royal Challengers Bangalore TossDecision SuperOver WinningTeam WonBy Margin \</pre>	Venue							
Royals  1 Narendra Modi Stadium, Ahmedabad Rajasthan Royals  2 Eden Gardens, Kolkata Lucknow Super Giants  3 Eden Gardens, Kolkata Gujarat Titans  4 Wankhede Stadium, Mumbai Sunrisers Hyderabad    945 Eden Gardens Deccan Chargers 946 Wankhede Stadium Mumbai Indians 947 Feroz Shah Kotla Rajasthan Royals 948 Punjab Cricket Association Stadium, Mohali Chennai Super Kings 949 M Chinnaswamy Stadium Royal Challengers Bangalore  TossDecision SuperOver WinningTeam WonBy Margin \		Winner \		adi Chadium	۸ ام سام ما ما م	<b>.</b>	Daiasthan	
Narendra Modi Stadium, Ahmedabad Rajasthan Royals  Eden Gardens, Kolkata Lucknow Super Giants  Eden Gardens, Kolkata Gujarat Titans  Wankhede Stadium, Mumbai Sunrisers Hyderabad  Hyderabad  Mumbai  Eden Gardens Deccan  Chargers  Wankhede Stadium Mumbai  Mumbai  Indians  Mumbai  Feroz Shah Kotla Rajasthan  Royals  Hyderabad  Mumbai  Royals  Mumbai  Chennai Super  Kings  Mumbai  Royal Challengers  Mumbai  Royal Challengers  Mumbai	-	ls	Narenura M	our Staurum,	Anilledaba	U	Kajastnan	
Eden Gardens, Kolkata Lucknow Super Giants  Eden Gardens, Kolkata Gujarat  Titans  Wankhede Stadium, Mumbai Sunrisers  Hyderabad  Eden Gardens Deccan  Eden Gardens Deccan  Chargers  Wankhede Stadium Mumbai  Indians  Hyderabad  Feroz Shah Kotla Rajasthan  Royals  Hyderabad  Mumbai  Mumbai  Royals  Hyderabad  Mumbai  Noyals  Mayal  Moyal  Moyal	Narendra Modi Stadium, Ahmedabad Rajasthan							
Eden Gardens, Kolkata Gujarat Titans  Wankhede Stadium, Mumbai Sunrisers Hyderabad  Eden Gardens Deccan  Chargers  Wankhede Stadium Mumbai  Indians  Feroz Shah Kotla Rajasthan  Royals  Punjab Cricket Association Stadium, Mohali Chennai Super  Kings  M Chinnaswamy Stadium Royal Challengers  Bangalore  TossDecision SuperOver WinningTeam WonBy  Margin \	·							
Titans 4 Wankhede Stadium, Mumbai Sunrisers Hyderabad 945 Eden Gardens Deccan Chargers 946 Wankhede Stadium Mumbai Indians 947 Feroz Shah Kotla Rajasthan Royals 948 Punjab Cricket Association Stadium, Mohali Chennai Super Kings 949 M Chinnaswamy Stadium Royal Challengers Bangalore  TossDecision SuperOver WinningTeam WonBy Margin \	Giants							
<pre>Hyderabad 945</pre>		ns		Lucii Garuci	is, Nothati	a	dujarac	
945 Eden Gardens Deccan Chargers 946 Wankhede Stadium Mumbai Indians 947 Feroz Shah Kotla Rajasthan Royals 948 Punjab Cricket Association Stadium, Mohali Chennai Super Kings 949 M Chinnaswamy Stadium Royal Challengers Bangalore  TossDecision SuperOver WinningTeam WonBy Margin \	4 Wankhede Stadium, Mumbai Sunrisers							
945 Eden Gardens Deccan Chargers 946 Wankhede Stadium Mumbai Indians 947 Feroz Shah Kotla Rajasthan Royals 948 Punjab Cricket Association Stadium, Mohali Chennai Super Kings 949 M Chinnaswamy Stadium Royal Challengers Bangalore  TossDecision SuperOver WinningTeam WonBy Margin \	Hyderabad							
Chargers 946 Wankhede Stadium Mumbai Indians 947 Feroz Shah Kotla Rajasthan Royals 948 Punjab Cricket Association Stadium, Mohali Chennai Super Kings 949 M Chinnaswamy Stadium Royal Challengers Bangalore  TossDecision SuperOver WinningTeam WonBy Margin \						•		
946 Wankhede Stadium Mumbai Indians 947 Feroz Shah Kotla Rajasthan Royals 948 Punjab Cricket Association Stadium, Mohali Chennai Super Kings 949 M Chinnaswamy Stadium Royal Challengers Bangalore  TossDecision SuperOver WinningTeam WonBy Margin \				Ed	den Garden	S	Deccan	
947 Feroz Shah Kotla Rajasthan Royals 948 Punjab Cricket Association Stadium, Mohali Chennai Super Kings 949 M Chinnaswamy Stadium Royal Challengers Bangalore  TossDecision SuperOver WinningTeam WonBy Margin \		gers		Wankhe	ede Stadiu	n	Mumbai	
Royals 948 Punjab Cricket Association Stadium, Mohali Chennai Super Kings 949 M Chinnaswamy Stadium Royal Challengers Bangalore  TossDecision SuperOver WinningTeam WonBy Margin \		ans		Foroz	Chab Ka+1	2	Pajasthan	
948 Punjab Cricket Association Stadium, Mohali Chennai Super Kings 949 M Chinnaswamy Stadium Royal Challengers Bangalore  TossDecision SuperOver WinningTeam WonBy Margin \	, , , , , , , , , , , , , , , , , , ,							
949 M Chinnaswamy Stadium Royal Challengers Bangalore  TossDecision SuperOver WinningTeam WonBy Margin \	948 Punjab Cricket Association Stadium, Mohali Chennai Super							
Bangalore  TossDecision SuperOver WinningTeam WonBy Margin \		S		M Chinnaswa	amv Stadiu	n Roval C	hallengers	
Margin \		alore		Chilmaswe	amy Scaara	Noyac ci	ila e congor 5	
Margin \		ToccDocic	ion Cunosous	r	1.12	nninaTaam	MonBy	
	·							
	_	,	bat	N	Gujar	at Titans	Wickets	

```
7.0
           field
                         N
                                        Rajasthan Royals
                                                          Wickets
1
7.0
           field
                            Royal Challengers Bangalore
2
                                                             Runs
14.0
           field
                                          Gujarat Titans
                                                          Wickets
7.0
                         N
                                            Punjab Kings
                                                          Wickets
             bat
5.0
                                   Kolkata Knight Riders
945
             bat
                                                          Wickets
5.0
                            Royal Challengers Bangalore
946
             bat
                                                          Wickets
5.0
947
                                        Delhi Daredevils
                                                          Wickets
             bat
                         N
9.0
948
             bat
                                     Chennai Super Kings
                         N
                                                             Runs
33.0
                                   Kolkata Knight Riders
949
           field
                                                             Runs
140.0
    method Player of Match
Team1Players
                 HH Pandya ['YBK Jaiswal', 'JC Buttler', 'SV Samson',
       NaN
'D ...
                JC Buttler ['V Kohli', 'F du Plessis', 'RM Patidar',
1
       NaN
'GJ ...
                RM Patidar ['V Kohli', 'F du Plessis', 'RM Patidar',
2
       NaN
'GJ ...
                 DA Miller ['YBK Jaiswal', 'JC Buttler', 'SV Samson',
3
       NaN
'D ...
             Harpreet Brar ['PK Garg', 'Abhishek Sharma', 'RA
       NaN
Tripathi',
                 DJ Hussey ['WP Saha', 'BB McCullum', 'RT Ponting',
945
       NaN
'SC G...
                MV Boucher ['L Ronchi', 'ST Jayasuriya', 'DJ
946
       NaN
Thornely',
               MF Maharoof ['G Gambhir', 'V Sehwag', 'S Dhawan', 'MK
947
       NaN
Tiwa...
                MEK Hussey ['K Goel', 'JR Hopes', 'KC Sangakkara',
948
       NaN
'Yuvra...
               BB McCullum ['R Dravid', 'W Jaffer', 'V Kohli', 'JH
949
       NaN
Kallis...
                                           Team2Players
                                                               Umpire1
\
```

```
['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan... CB Gaffaney
    ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ... CB Gaffaney
    ['Q de Kock', 'KL Rahul', 'M Vohra', 'DJ Hooda... J Madanagopal
     ['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan... BNJ Oxenford
3
     ['JM Bairstow', 'S Dhawan', 'M Shahrukh Khan',... AK Chaudhary
    ['AC Gilchrist', 'Y Venugopal Rao', 'VVS Laxma...
945
                                                           BF Bowden
946
    ['S Chanderpaul', 'R Dravid', 'LRPL Taylor', '... SJ Davis
    ['T Kohli', 'YK Pathan', 'SR Watson', 'M Kaif'...
947
                                                           Aleem Dar
     ['PA Patel', 'ML Hayden', 'MEK Hussey', 'MS Dh...
948
                                                           MR Benson
949
   ['SC Ganguly', 'BB McCullum', 'RT Ponting', 'D... Asad Rauf
           Umpire2
        Nitin Menon
0
1
        Nitin Menon
2
          MA Gough
3
          VK Sharma
4
     NA Patwardhan
945
        K Hariharan
946
         DJ Harper
    GA Pratapkumar
947
948
         SL Shastri
949
        RE Koertzen
[950 rows x 20 columns]
# step -1 : find karo ki team me virat kohli khel raha tha ki nahi
ipl['all_players']=ipl['Team1Players']+ipl['Team2Players'] # hum ek
alag column bana lenge jisme ki total player hoga each match ka
ipl.head()
                            Date Season
                                         MatchNumber \
        ID
                City
                                               Final
  1312200
           Ahmedabad
                      2022-05-29
                                   2022
   1312199
           Ahmedabad
                      2022-05-27
                                   2022
                                         Qualifier 2
1
2
  1312198
             Kolkata
                      2022-05-25
                                   2022
                                          Eliminator
3
  1312197
             Kolkata
                      2022-05-24
                                   2022
                                         Qualifier 1
  1304116
                      2022-05-22
               Mumbai
                                   2022
```

```
Team1
                                                               Team2 \
0
                  Rajasthan Royals
                                                   Gujarat Titans
1
  Royal Challengers Bangalore
                                                Rajasthan Royals
2
   Royal Challengers Bangalore
                                           Lucknow Super Giants
3
                  Rajasthan Royals
                                                   Gujarat Titans
4
              Sunrisers Hyderabad
                                                     Punjab Kings
                                                               TossWinner TossDecision
                                        Venue
O Narendra Modi Stadium, Ahmedabad
                                                       Rajasthan Royals
                                                                                          bat
1 Narendra Modi Stadium, Ahmedabad
                                                                                       field
                                                       Rajasthan Royals
. . .
2
                  Eden Gardens, Kolkata
                                                 Lucknow Super Giants
                                                                                       field
. . .
                  Eden Gardens, Kolkata
                                                         Gujarat Titans
                                                                                       field
3
. . .
4
              Wankhede Stadium, Mumbai Sunrisers Hyderabad
                                                                                          bat
. . .
      WonBy Margin method
                                  Player of Match \
                  7.0
                                          HH Pandya
  Wickets
                            NaN
                                         JC Buttler
1
   Wickets
                  7.0
                            NaN
2
                 14.0
                            NaN
                                         RM Patidar
        Runs
   Wickets
                  7.0
                            NaN
                                          DA Miller
4 Wickets
                  5.0
                            NaN
                                     Harpreet Brar
                                                     Team1Players \
    ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
   ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ... ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ... ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ... ['PK Garg', 'Abhishek Sharma', 'RA Tripathi', ...
3
                                                     Team2Players
                                                                                Umpire1 \
    ['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan...
['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
                                                                           CB Gaffaney
1
                                                                           CB Gaffaney
   ['Q de Kock', 'KL Rahul', 'M Vohra', 'DJ Hooda...
['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan...
['JM Bairstow', 'S Dhawan', 'M Shahrukh Khan',...
                                                                        J Madanagopal
                                                                         BNJ Oxenford
                                                                       AK Chaudhary
            Umpire2
                                                                           all players \
                        ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
0
      Nitin Menon
                       ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ... ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ...
1
      Nitin Menon
2
          MA Gouah
   VK Sharma ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
NA Patwardhan ['PK Garg', 'Abhishek Sharma', 'RA Tripathi', ...
3
                                                       all players
  ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
```

```
['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ...
                                , 'RM Patidar',
   ['V Kohli', 'F du Plessis',
  ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ... ['PK Garg', 'Abhishek Sharma', 'RA Tripathi', ...
[5 rows x 22 columns]
def did_kohli_play(players_list):
    return 'V Kohli' in players list
ipl['all players'].apply(did kohli play)
0
       False
1
        True
2
        True
3
       False
4
       False
945
       False
946
        True
947
       False
948
       False
949
        True
Name: all players, Length: 950, dtype: bool
ipl['did kohli play']=ipl['all players'].apply(did kohli play)
ipl
           ID
                     City
                                  Date
                                          Season
                                                  MatchNumber \
                Ahmedabad
                           2022-05-29
0
     1312200
                                            2022
                                                         Final
                           2022-05-27
1
     1312199
                Ahmedabad
                                            2022
                                                  Oualifier 2
2
     1312198
                  Kolkata 2022-05-25
                                            2022
                                                   Eliminator
3
                           2022-05-24
                                            2022
     1312197
                  Kolkata
                                                  Qualifier 1
4
     1304116
                   Mumbai 2022-05-22
                                            2022
                                                            70
945
      335986
                  Kolkata
                           2008-04-20
                                        2007/08
                                                             4
                   Mumbai
                           2008-04-20
                                                             5
946
      335985
                                        2007/08
      335984
                                                             3
947
                    Delhi
                           2008-04-19
                                        2007/08
                                                             2
948
      335983
               Chandigarh 2008-04-19
                                        2007/08
949
                Bangalore
                           2008-04-18
      335982
                                        2007/08
                            Team1
                                                            Team2 \
                                                  Gujarat Titans
0
                 Rajasthan Royals
     Royal Challengers Bangalore
1
                                                Rajasthan Royals
2
     Royal Challengers Bangalore
                                            Lucknow Super Giants
3
                 Rajasthan Royals
                                                  Gujarat Titans
4
              Sunrisers Hyderabad
                                                     Punjab Kings
           Kolkata Knight Riders
945
                                                 Deccan Chargers
```

```
946
                    Mumbai Indians
                                       Royal Challengers Bangalore
947
                  Delhi Daredevils
                                                   Rajasthan Royals
948
                   Kings XI Punjab
                                                Chennai Super Kings
                                              Kolkata Knight Riders
     Royal Challengers Bangalore
949
                                                Venue
TossWinner \
                 Narendra Modi Stadium, Ahmedabad
                                                                     Rajasthan
Royals
                 Narendra Modi Stadium, Ahmedabad
                                                                     Rajasthan
Royals
                              Eden Gardens, Kolkata
                                                                Lucknow Super
2
Giants
                              Eden Gardens, Kolkata
                                                                       Gujarat
Titans
                          Wankhede Stadium, Mumbai
                                                                 Sunrisers
Hyderabad
945
                                        Eden Gardens
                                                                      Deccan
Chargers
                                   Wankhede Stadium
946
                                                                       Mumbai
Indians
                                   Feroz Shah Kotla
947
                                                                     Rajasthan
Royals
948 Punjab Cricket Association Stadium, Mohali
                                                                 Chennai Super
Kings
949
                             M Chinnaswamy Stadium Royal Challengers
Bangalore
    TossDecision
                    ... Margin method Player_of_Match \
                                                HH Pandya
0
               bat
                            7.0
                                    NaN
                    . . .
                            7.0
                                               JC Buttler
1
            field
                                    NaN
                    . . .
2
                                               RM Patidar
            field
                           14.0
                                    NaN
                    . . .
3
            field
                            7.0
                                    NaN
                                                DA Miller
4
               bat
                            5.0
                                    NaN
                                           Harpreet Brar
               . . .
                     . . .
                            . . .
                                     . . .
945
              bat
                            5.0
                                    NaN
                                                DJ Hussey
                    . . .
                            5.0
                                               MV Boucher
946
              bat
                                    NaN
                    . . .
                            9.0
                                              MF Maharoof
947
               bat
                                    NaN
948
                                    NaN
                                               MEK Hussey
               bat
                           33.0
                    . . .
949
            field ...
                                              BB McCullum
                          140.0
                                    NaN
                                                Team1Players \
     ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
0
     ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ... ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ...
1
2
     ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ... ['PK Garg', 'Abhishek Sharma', 'RA Tripathi', ...
3
4
```

```
['WP Saha', 'BB McCullum', 'RT Ponting', 'SC G...
945
     ['L Ronchi', 'ST Jayasuriya', 'DJ Thornely', '...
['G Gambhir', 'V Sehwag', 'S Dhawan', 'MK Tiwa...
['K Goel', 'JR Hopes', 'KC Sangakkara', 'Yuvra...
946
947
948
     ['R Dravid', 'W Jaffer', 'V Kohli', 'JH Kallis...
949
                                             Team2Players
                                                                   Umpire1
     ['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan...
                                                               CB Gaffaney
     ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
                                                               CB Gaffaney
     ['Q de Kock', 'KL Rahul', 'M Vohra', 'DJ Hooda...
                                                             J Madanagopal
     ['WP Saha', 'Shubman Gill', 'MS Wade', 'HH Pan...
                                                              BNJ Oxenford
     ['JM Bairstow', 'S Dhawan', 'M Shahrukh Khan',...
                                                             AK Chaudhary
     ['AC Gilchrist', 'Y Venugopal Rao', 'VVS Laxma...
                                                                 BF Bowden
945
     ['S Chanderpaul', 'R Dravid', 'LRPL Taylor', '...
946
                                                                  SJ Davis
947
     ['T Kohli', 'YK Pathan', 'SR Watson', 'M Kaif'...
                                                                 Aleem Dar
948
     ['PA Patel', 'ML Hayden', 'MEK Hussey', 'MS Dh...
                                                                 MR Benson
     ['SC Ganguly', 'BB McCullum', 'RT Ponting', 'D...
                                                                 Asad Rauf
949
             Umpire2
                                                                all players
                       ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
        Nitin Menon
                       ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ...
1
        Nitin Menon
2
           MA Gough
                       ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ...
                       ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
          VK Sharma
      NA Patwardhan
                       ['PK Garg', 'Abhishek Sharma', 'RA Tripathi', ...
                       ['WP Saha', 'BB McCullum', 'RT Ponting', 'SC G...
945
        K Hariharan
                       ['L Ronchi', 'ST Jayasuriya', 'DJ Thornely', '...
946
          DJ Harper
     GA Pratapkumar ['G Gambhir', 'V Sehwag', 'S Dhawan', 'MK Tiwa...
```

```
948
         SL Shastri ['K Goel', 'JR Hopes', 'KC Sangakkara', 'Yuvra...
        RE Koertzen ['R Dravid', 'W Jaffer', 'V Kohli', 'JH Kallis...
949
                                           all_players did kohli play
0 ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
                                                                 False
     ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ...
                                                                  True
     ['V Kohli', 'F du Plessis', 'RM Patidar', 'GJ ...
                                                                  True
3
     ['YBK Jaiswal', 'JC Buttler', 'SV Samson', 'D ...
                                                                 False
     ['PK Garg', 'Abhishek Sharma', 'RA Tripathi', ...
                                                                 False
                                                                  . . .
    ['WP Saha', 'BB McCullum', 'RT Ponting', 'SC G...
945
                                                                 False
946
    ['L Ronchi', 'ST Jayasuriya', 'DJ Thornely', '...
                                                                  True
     ['G Gambhir', 'V Sehwag', 'S Dhawan', 'MK Tiwa...
947
                                                                 False
     ['K Goel', 'JR Hopes', 'KC Sangakkara', 'Yuvra...
948
                                                                 False
949 ['R Dravid', 'W Jaffer', 'V Kohli', 'JH Kallis...
                                                                  True
[950 rows x 23 columns]
(ipl['City'] =='Delhi') & (ipl['did kohli play']==True)
       False
0
       False
1
2
       False
3
       False
       False
945
       False
946
       False
947
       False
       False
948
949
       False
Length: 950, dtype: bool
ipl[(ipl['City'] =='Delhi') & (ipl['did kohli play']==True)]
          ID
               City
                           Date
                                  Season MatchNumber
                                                                  Team1
208
    1178421 Delhi 2019-04-28
                                                         Delhi Capitals
                                    2019
                                                  46
```

```
45
                                                      Delhi Daredevils
269
     1136605 Delhi 2018-05-12
                                    2018
318
     1082646
              Delhi
                     2017-05-14
                                    2017
                                                  56
                                                      Delhi Daredevils
     829757
              Delhi
                     2015-04-26
                                    2015
                                                      Delhi Daredevils
467
                                                  26
571
     598054
             Delhi
                     2013-05-10
                                    2013
                                                  57
                                                      Delhi Daredevils
638
      548372 Delhi
                                    2012
                                                      Delhi Daredevils
                     2012-05-17
                                                  67
746
     501227
              Delhi
                     2011-04-26
                                    2011
                                                  30
                                                      Delhi Daredevils
801
     419140
              Delhi
                     2010-04-04 2009/10
                                                  35
                                                      Delhi Daredevils
933
     335998 Delhi 2008-04-30 2007/08
                                                  17 Delhi Daredevils
                           Team2
                                                 Venue \
                                  Arun Jaitley Stadium
208
     Royal Challengers Bangalore
     Royal Challengers Bangalore
269
                                  Arun Jaitley Stadium
     Royal Challengers Bangalore
318
                                      Feroz Shah Kotla
     Royal Challengers Bangalore
                                      Feroz Shah Kotla
467
571
     Royal Challengers Bangalore
                                      Feroz Shah Kotla
638
     Royal Challengers Bangalore
                                      Feroz Shah Kotla
     Royal Challengers Bangalore
746
                                      Feroz Shah Kotla
801
     Royal Challengers Bangalore
                                      Feroz Shah Kotla
933
     Royal Challengers Bangalore
                                      Feroz Shah Kotla
                      TossWinner TossDecision
                                               ... Margin method
208
                  Delhi Capitals
                                                      16.0
                                                              NaN
                                          bat
                                                . . .
     Royal Challengers Bangalore
269
                                        field
                                                      5.0
                                                              NaN
                                               . . .
318
     Royal Challengers Bangalore
                                          bat
                                                      10.0
                                                              NaN
                                               . . .
     Royal Challengers Bangalore
                                                              NaN
467
                                        field
                                                      10.0
                                               . . .
571
                Delhi Daredevils
                                                      4.0
                                        field
                                                              NaN
638
                Delhi Daredevils
                                        field
                                                              NaN
                                                      21.0
                                                . . .
746
     Royal Challengers Bangalore
                                        field
                                                              NaN
                                                . . .
                                                      3.0
801
                Delhi Daredevils
                                          bat
                                                      37.0
                                                              NaN
933
     Royal Challengers Bangalore
                                        field
                                                      10.0
                                                              NaN
                                              . . .
    Player of Match
                                                          Team1Players
\
           S Dhawan ['PP Shaw', 'S Dhawan', 'SS Iyer', 'RR Pant', ...
208
    AB de Villiers ['PP Shaw', 'JJ Roy', 'SS Iyer', 'RR Pant', 'V...
269
           HV Patel ['SV Samson', 'KK Nair', 'SS Iyer', 'RR Pant',...
318
           VR Aaron ['MA Agarwal', 'SS Iyer', 'JP Duminy', 'Yuvraj...
467
571
         JD Unadkat ['DPMD Jayawardene', 'V Sehwag', 'UBT Chand', ...
```

```
CH Gayle ['UBT Chand', 'DA Warner', 'Y Venugopal Rao', ...
638
746
            V Kohli
                     ['DA Warner', 'V Sehwag', 'JR Hopes', 'MS Wade...
                     ['DA Warner', 'V Sehwag', 'G Gambhir', 'PD Col...
801
     PD Collingwood
933
         GD McGrath ['G Gambhir', 'V Sehwag', 'S Dhawan', 'Shoaib ...
                                          Team2Players
Umpire1 \
208 ['PA Patel', 'V Kohli', 'AB de Villiers', 'S D...
                                                                 BNJ
0xenford
    ['PA Patel', 'MM Ali', 'V Kohli', 'AB de Villi... KN
Ananthapadmanabhan
    ['CH Gayle', 'Vishnu Vinod', 'V Kohli', 'TM He...
                                                                    CK
Nandan
467
    ['CH Gayle', 'V Kohli', 'AB de Villiers', 'Man...
                                                                    M
Erasmus
    ['CA Pujara', 'CH Gayle', 'V Kohli', 'MC Henri...
571
NJ Llong
638 ['CH Gayle', 'TM Dilshan', 'V Kohli', 'AB de V...
                                                              HDPK
Dharmasena
    ['CH Gayle', 'TM Dilshan', 'V Kohli', 'AB de V...
                                                                     S
746
Asnani
    ['JH Kallis', 'CL White', 'KP Pietersen', 'RV ...
801
                                                                    BF
Bowden
933 ['P Kumar', 'W Jaffer', 'LRPL Taylor', 'JH Kal...
Aleem Dar
                   Umpire2
                                                                  all
players \
208 KN Ananthapadmanabhan ['PP Shaw', 'S Dhawan', 'SS Iyer', 'RR
Pant', ...
           HDPK Dharmasena ['PP Shaw', 'JJ Roy', 'SS Iyer', 'RR
269
Pant', 'V...
             C Shamshuddin ['SV Samson', 'KK Nair', 'SS Iyer', 'RR
318
Pant',...
                    S Ravi ['MA Agarwal', 'SS Iyer', 'JP Duminy',
467
'Yuvraj...
571
                 K Srinath ['DPMD Jayawardene', 'V Sehwag', 'UBT
Chand', ...
638
             C Shamshuddin
                          ['UBT Chand', 'DA Warner', 'Y Venugopal
Rao', ...
                 RJ Tucker ['DA Warner', 'V Sehwag', 'JR Hopes', 'MS
746
Wade...
                           ['DA Warner', 'V Sehwag', 'G Gambhir', 'PD
                 M Erasmus
801
Col...
                           ['G Gambhir', 'V Sehwag', 'S Dhawan',
933
                 I Shivram
```

```
'Shoaib ...
                                          all players did kohli play
208
     ['PP Shaw', 'S Dhawan', 'SS Iyer', 'RR Pant', ...
                                                                True
     ['PP Shaw', 'JJ Roy', 'SS Iyer', 'RR Pant', 'V...
269
                                                                True
    ['SV Samson', 'KK Nair', 'SS Iyer', 'RR Pant',...
318
                                                                True
     ['MA Agarwal', 'SS Iyer', 'JP Duminy', 'Yuvraj...
467
                                                                True
571 ['DPMD Jayawardene', 'V Sehwag', 'UBT Chand', ...
                                                                True
   ['UBT Chand', 'DA Warner', 'Y Venugopal Rao', ...
638
                                                                True
    ['DA Warner', 'V Sehwag', 'JR Hopes', 'MS Wade...
746
                                                                True
801 ['DA Warner', 'V Sehwag', 'G Gambhir', 'PD Col...
                                                                True
933 ['G Gambhir', 'V Sehwag', 'S Dhawan', 'Shoaib ...
                                                                True
[9 rows x 23 columns]
# abb sabse recent match ko rakhna hai
ipl[(ipl['City'] =='Delhi') &
(ipl['did kohli play']==True)].drop duplicates(subset=['City', 'did koh
li play'],keep='first') # jaha pe city and did kohli play ka value
same
                                                         #hai sabko
drop karo and sirf first bale ko rakho
          ID
              City
                          Date Season MatchNumber
                                                            Team1 \
    1178421 Delhi 2019-04-28
                                 2019
                                               46
                                                   Delhi Capitals
                          Team2
                                                Venue
                                                           TossWinner
    Royal Challengers Bangalore Arun Jaitley Stadium Delhi Capitals
   TossDecision ... Margin method Player of Match \
            bat ... 16.0 NaN
                                          S Dhawan
208
                                         Team1Players \
208 ['PP Shaw', 'S Dhawan', 'SS Iyer', 'RR Pant', ...
                                         Team2Players
Umpire1 \
208 ['PA Patel', 'V Kohli', 'AB de Villiers', 'S D... BNJ Oxenford
```

```
all
                   Umpire2
players \
208 KN Ananthapadmanabhan ['PP Shaw', 'S Dhawan', 'SS Iyer', 'RR
Pant', ...
                                            all players did kohli play
208 ['PP Shaw', 'S Dhawan', 'SS Iyer', 'RR Pant', ...
                                                                   True
[1 rows x 23 columns]
# drop(series + dataframe) => rows ya column ko delete karte hai
temp = pd.Series([10,2,3,16,45,78,10])
temp
0
     10
1
      2
2
     3
3
     16
4
     45
5
     78
6
     10
dtype: int64
temp.drop(index=[0,6]) #0th and 6th inex colum ko delete kar dega
1
      2
2
      3
3
     16
4
     45
5
     78
dtype: int64
students
         name college branch
                                cqpa
                                      package
       nitish
                  bit
                         eee
                                6.66
                                          4.0
1
        ankit
                  iit
                           it
                                8.25
                                          5.0
2
                                6.41
                                          6.0
       rupesh
                  vit
                          cse
3
                  NaN
                                 NaN
                                          NaN
          NaN
                         NaN
4
   mrityunjay
                  NaN
                         me
                                5.60
                                          6.0
5
          NaN
                 vlsi
                           ce
                                9.00
                                          7.0
6
      rishabh
                 ssit
                          civ
                               7.40
                                          8.0
7
          NaN
                  NaN
                          cse
                               10.00
                                          9.0
8
       aditya
                  NaN
                          bio
                                7.40
                                          NaN
9
          NaN
                         NaN
                                 NaN
                                          NaN
                  git
students.drop(columns=['branch','cgpa']) # ye dataframe ke branch and
cgpa column ko drop kar dega but ye permanent nahi hoga
```

## karna hai to inplace=true karo

	name	college	package
0	nitish	bit	4.0
1	ankit	iit	5.0
2	rupesh	vit	6.0
3	NaN	NaN	NaN
4	mrityunjay	NaN	6.0
5	NaN	vlsi	7.0
6	rishabh	ssit	8.0
7	NaN	NaN	9.0
8	aditya	NaN	NaN
9	NaN	git	NaN

students.drop(index=[0,8]) # row delete karega

	name	college	branch	cgpa	package
1	ankit	iit	it	8.25	5.0
2	rupesh	vit	cse	6.41	6.0
3	NaN	NaN	NaN	NaN	NaN
4	mrityunjay	NaN	me	5.60	6.0
5	NaN	vlsi	ce	9.00	7.0
6	rishabh	ssit	civ	7.40	8.0
7	NaN	NaN	cse	10.00	9.0
9	NaN	git	NaN	NaN	NaN

students.set\_index('name')

	college	branch	cgpa	package
name				
nitish	bit	eee	6.66	4.0
ankit	iit	it	8.25	5.0
rupesh	vit	cse	6.41	6.0
NaN	NaN	NaN	NaN	NaN
mrityunjay	NaN	me	5.60	6.0
NaN	vlsi	ce	9.00	7.0
rishabh	ssit	civ	7.40	8.0
NaN	NaN	cse	10.00	9.0
aditya	NaN	bio	7.40	NaN
NaN	git	NaN	NaN	NaN

students.set\_index('name').drop(index=['nitish','aditya'])

	college	branch	cgpa	package
name				
ankit	iit	it	8.25	5.0
rupesh	vit	cse	6.41	6.0
NaN	NaN	NaN	NaN	NaN
mrityunjay	NaN	me	5.60	6.0
NaN	vlsi	ce	9.00	7.0

```
rishabh
              ssit
                       civ
                             7.40
                                       8.0
               NaN
                            10.00
                                       9.0
NaN
                       cse
NaN
               git
                       NaN
                              NaN
                                       NaN
# apply (series + dataframe)
temp = pd.Series([10,20,30,40,50])
temp
0
     10
1
     20
2
     30
3
     40
4
     50
dtype: int64
def sigmoid(value):
    return 1/1+np.exp(-value)
temp.apply(sigmoid)
0
     1.000045
1
     1.000000
2
     1.000000
3
     1.000000
     1.000000
dtype: float64
# on dataframe
points df = pd.DataFrame(
        '1st point': [(3,4),(-6,5),(0,0),(-10,1),(4,5)],
        '2nd point': [(-3,4),(0,0),(2,2),(10,10),(1,1)]
    }
)
points df
  1st point 2nd point
0
     (3, 4)
              (-3, 4)
    (-6, 5)
               (0, 0)
1
2
     (0, 0)
               (2, 2)
  (-10, 1)
             (10, 10)
4 (4, 5) (1, 1)
# suppose dono point ke bich ka euclidean distance nikal kar ek alag
column me store karna hai
# hum row ke upar bhi apply chala sakte hain
def euclidean(row):
```

```
pt_A = row['1st point']
    pt_B = row['2nd point']
    return ((pt_A[0]-pt_B[0])**2 + (pt_A[1]-pt_B[1])**2)**0.5
points_df.apply(euclidean,axis=1) # axis = 1 means oassing a row
      6.000000
      7.810250
1
2
     2.828427
3
     21.931712
      5.000000
4
dtype: float64
points df['distance']=points df.apply(euclidean,axis=1)
points df
  1st point 2nd point
                       distance
             (-3, 4)
0
     (3, 4)
                       6.000000
    (-6, 5)
              (0, 0) 7.810250
1
              (2, 2) 2.828427
     (0, 0)
2
             (10, 10) 21.931712
3 (-10, 1)
4 (4, 5) (1, 1) 5.000000
```