

## What is Pandas

Pandas is a fast, powerful, flexible and easy to use open source data analysis and manipulation tool, built on top of the Python programming language.

<https://pandas.pydata.org/about/index.html>

## Pandas Series

A Pandas Series is like a column in a table. It is a 1-D array holding data of any type.

```
# ek table me jitne bhi column hai usko aap ek individual pandas
series bol sakte ho

import numpy as np
import pandas as pd
```

## Series from lists

- list se pandas series bana ke dekhenge

```
# string =>
country = ["india", "pakistan", "USA", "Nepal", "Srilanka"]

pd.Series(country)

0      india
1    pakistan
2        USA
3      Nepal
4    Srilanka
dtype: object

pd.Series(["india", "pakistan", "USA", "Nepal", "Srilanka"])

0      india
1    pakistan
2        USA
3      Nepal
4    Srilanka
dtype: object

# har series me do value hota hai pahla jo number me hai that is index
number and dusra is value jo ki aap pass kar rahe ho
# agar dtype object likha hai to 99% case me maan sakte ho ki data set
string hai

#integers
runs = [13, 24, 56, 78, 100]
```

```
runs_ser = pd.Series(runs)
runs_ser
```

```
0      13
1      24
2      56
3      78
4     100
dtype: int64
```

*## Abhi tak index automatically generate ho raha hai agar aap chahe to index apne according bhi change kar sakte hain*

*# custom index*

```
marks = [67,57,89,100]
subject = ['maths','english','science','hindi']
```

*# hum chahate hain ki index subject ban jaye and value me marks aa jaye*

```
pd.Series(marks,index=subject)
```

```
maths      67
english    57
science    89
hindi     100
dtype: int64
```

```
pd.Series([67,57,89,100],index=['maths','english','science','hindi'])
```

```
maths      67
english    57
science    89
hindi     100
dtype: int64
```

*# setting a name => aap ek series object ko apne pasand ka name de sakte ho*

```
marks = pd.Series(marks,index=subject, name ="jay ke marks")
marks  # marks is basically a reference variable but "jay ke marks " is attributes of the object
```

```
maths      67
english    57
science    89
hindi     100
Name: jay ke marks, dtype: int64
```

```
pd.Series(marks,index=subject, name ="jay ke marks").size
```

## Series from Dictionary

- dictionary ko use karke series kaise bana sakte hain

```
marks = {
    'maths':67,
    'english':57,
    'science':89,
    "hindi":100
}

marks_series = pd.Series(marks, name="jay ke marks")

marks_series    # dictionary pass karne se automatically jo keys hai
                # dictionary me wo index ban jate hain series me and jo ki value hai
                # dictionary me wo value ban jate hain series me

maths          67
english        57
science        89
hindi          100
Name: jay ke marks, dtype: int64

pd.Series({
    'maths':67,
    'english':57,
    'science':89,
    "hindi":100
}, name='marks series')

maths          67
english        57
science        89
hindi          100
Name: marks series, dtype: int64
```

## Series Attributes

- basically Series class ke ye sare object hain to jo bhi humne series class banaya hai unnn sako ye attributes(object) access kar sakta hai

```
# size
marks_series

maths          67
english        57
science        89
hindi          100
Name: jay ke marks, dtype: int64
```

```
marks_series.size
4
# dtype
marks_series.dtype
dtype('int64')
# name
marks_series.name
'jay ke marks'
# is_unique
marks_series.is_unique    # true aaiyega qki iss series me koi bhi
duplicate item nahi hai sare ke sare unique hai
True
pd.Series([1,2,1,3,4,5]).is_unique
False
# index => ye ek index object return karta hai jiske andar sare ke
sare index value availabe hote hain
marks_series.index
Index(['maths', 'english', 'science', 'hindi'], dtype='object')
runs_ser.index
RangeIndex(start=0, stop=5, step=1)
type(runs_ser.index)
pandas.core.indexes.range.RangeIndex
type(marks_series.index)
pandas.core.indexes.base.Index
# values => ye values return karta hai aur ye ek numpy ndarray hota
hai
marks_series.values
array([ 67,  57,  89, 100], dtype=int64)
type(marks_series.values)
numpy.ndarray
```

# Series using read\_csv or real world data set

- read\_csv is a function where CSV stands for "comma seperated value" similar as excel type file

## steps for uploading a csv file

- step -1 : folder bale section me jao
- step -2 : upload bale section me jao
- step -3 : file select kar lo

```
# with one column
df = pd.read_csv("subs.csv")
# its method 2 => df= pd.read_csv("subs.csv")['Subscribers gained']
df      # make sure ki file same folder me upload karo and simply
        simply file ka name likh do
```

	Subscribers gained
0	48
1	57
2	40
3	43
4	44
...	...
360	231
361	226
362	155
363	144
364	172

[365 rows x 1 columns]

```
type(pd.read_csv("subs.csv"))  # observe ki ye ek dataframe hai
```

pandas.core.frame.DataFrame

*#pd.read\_csv default jo data ko read karke lata hain wo dataframe ke type me lata hai mujhe explicitly isse series me convert karna hai qki abhi humseries padh rahe hai aage Dataframe ke bare me padhenge*

*# isse df function ke help se series me convert kar sakte hai jis bhi column ko convert karnas hai uss column ka name pass kar do bass*

```
subs = df["Subscribers gained"]
subs
```

0	48
1	57
2	40
3	43
4	44
...	...
360	231

```
361    226
362    155
363    144
364    172
```

Name: Subscribers gained, Length: 365, dtype: int64

```
df.squeeze() # another syntax to convert it into series
```

```
0      48
1      57
2      40
3      43
4      44
```

```
...
360    231
361    226
362    155
363    144
364    172
```

Name: Subscribers gained, Length: 365, dtype: int64

```
# with two columns
```

```
score=pd.read_csv("kohli_ipl.csv")
score
```

```
   match_no  runs
0          1     1
1          2    23
2          3    13
3          4    12
4          5     1
..         ...   ...
210        211     0
211        212    20
212        213    73
213        214    25
214        215     7
```

[215 rows x 2 columns]

```
score[score['runs']<=20]
```

```
   match_no  runs
0          1     1
2          3    13
3          4    12
4          5     1
5          6     9
..         ...   ...
206        207     0
207        208     9
```

210	211	0
211	212	20
214	215	7

[97 rows x 2 columns]

```
abc=score.squeeze()
```

```
type(abc)
```

```
pandas.core.frame.DataFrame
```

*# two column hai to aaise convert karo series me*

```
kohliscore = pd.read_csv('kohli_ipl.csv')
```

```
vk = kohliscore.set_index('match_no').squeeze()
```

```
vk
```

```
match_no
```

1	1
2	23
3	13
4	12
5	1

	..
211	0
212	20
213	73
214	25
215	7

```
Name: runs, Length: 215, dtype: int64
```

```
type(vk)
```

```
pandas.core.series.Series
```

```
import pandas as pd
```

```
movie = pd.read_csv("bollywood.csv")
```

```
movie
```

	movie	lead
0	Uri: The Surgical Strike	Vicky Kaushal
1	Battalion 609	Vicky Ahuja
2	The Accidental Prime Minister (film)	Anupam Kher
3	Why Cheat India	Emraan Hashmi
4	Evening Shadows	Mona Ambegaonkar
...	...	...
1495	Hum Tumhare Hain Sanam	Shah Rukh Khan
1496	Aankhen (2002 film)	Amitabh Bachchan

1497	Saathiya (film)	Vivek Oberoi
1498	Company (film)	Ajay Devgn
1499	Awara Paagal Deewana	Akshay Kumar

[1500 rows x 2 columns]

```
movies=movie.set_index("movie").squeeze()
movies
```

```
movie
Uri: The Surgical Strike          Vicky Kaushal
Battalion 609                    Vicky Ahuja
The Accidental Prime Minister (film)  Anupam Kher
Why Cheat India                  Emraan Hashmi
Evening Shadows                  Mona Ambegaonkar
...
Hum Tumhare Hain Sanam          Shah Rukh Khan
Aankhen (2002 film)             Amitabh Bachchan
Saathiya (film)                 Vivek Oberoi
Company (film)                  Ajay Devgn
Awara Paagal Deewana            Akshay Kumar
Name: lead, Length: 1500, dtype: object
```

## series method

```
# head and tail
subs.head() # head by default top ke 5 rows ko print kara ke deta hai

0    48
1    57
2    40
3    43
4    44
Name: Subscribers gained, dtype: int64

vk.head(3) # aap apni marji ke according koi kitni bhi row print kara sakte ho

match_no
1      1
2     23
3     13
Name: runs, dtype: int64

# tail similar head ke jaisa hi kaam karta hai but ye last se find karke deta hai
vk.tail()
```



```
match_no
211      0
212     20
213     73
214     25
215      7
Name: runs, dtype: int64
```

```
vk.tail(10)
```

```
match_no
206      0
207      0
208      9
209     58
210     30
211      0
212     20
213     73
214     25
215      7
Name: runs, dtype: int64
```

```
# sample => randomly koi bhi data lake de dega and ye har run pe
change hote rahega
movies.sample()
```

```
movie
Black Friday (2007 film)      Kay Kay Menon
Name: lead, dtype: object
```

```
movies.sample(5) #randomly koi bhi 5 de dega
```

```
movie
Guzaarish (film)      Hrithik Roshan
Cigarette Ki Tarah      Ashok Banthia
Jai Veeru      Fardeen Khan
Mubarakan      Anil Kapoor
Challo Driver      Vickrant Mahajan
Name: lead, dtype: object
```

```
# value_count -> ye frequency find karke deta hai
```

```
# suppose mujhe movie bale series me find karna hai ki kon kon se
actor kitna kitna movie kya hai to inn scenarion me iss function ka
use karte hai
# (output ascending order me aayega)
movies.value_counts()
```

```
lead
Akshay Kumar      48
```

```

Amitabh Bachchan    45
Ajay Devgn          38
Salman Khan         31
Sanjay Dutt         26
..
Digant             1
Parveen Kaur       1
Seema Azmi         1
Akanksha Puri      1
Edwin Fernandes    1
Name: count, Length: 566, dtype: int64

```

*# sort\_values*

*vk.sort\_values() # sare values ko ascending order me arrange kar dega*

```

match_no
87      0
211     0
207     0
206     0
91      0
...
164    100
120    100
123    108
126    109
128    113
Name: runs, Length: 215, dtype: int64

```

*# isse hum decending order me bhi kar sakte hain*

*vk.sort\_values(ascending=False)*

```

match_no
128    113
126    109
123    108
164    100
120    100
...
93      0
211     0
130     0
8        0
135     0
Name: runs, Length: 215, dtype: int64

```

*#suppose virat kohli ka heighest run find karna hai to pahle ascending me sort kar lo and head function ke help se 1st bala nikal lo yaaa decending*

```

# me tail se last bala nikal lo
vk.sort_values(ascending=False).head(1)

match_no
128    113
Name: runs, dtype: int64

# agar aapko sirf runs chahiye match no. nahi to direct values
function call kar do
vk.sort_values(ascending=False).head(1).values # ye ek numpy array
return karega agar aapko sirf values chahiye to index pass kar do

array([113], dtype=int64)

vk.sort_values(ascending=False).head(1).values[0] # this is called
method chaining ek hi line me multiple method call kar sakte hain

113

movie['movie'].values[0]
'Uri: The Surgical Strike'

movie.values
array([[ 'Uri: The Surgical Strike', 'Vicky Kaushal'],
       ['Battalion 609', 'Vicky Ahuja'],
       ['The Accidental Prime Minister (film)', 'Anupam Kher'],
       ...,
       ['Saathiya (film)', 'Vivek Oberoi'],
       ['Company (film)', 'Ajay Devgn'],
       ['Awara Paagal Deewana', 'Akshay Kumar']], dtype=object)

vk
match_no
1      1
2     23
3     13
4     12
5      1
..
211    0
212   20
213   73
214   25
215    7
Name: runs, Length: 215, dtype: int64

# sort_index => ye simalar sort_values jaisa kaam karta hai ye index
ko sort kar deta hai
movies

```

```

movie
Uri: The Surgical Strike          Vicky Kaushal
Battalion 609                    Vicky Ahuja
The Accidental Prime Minister (film)  Anupam Kher
Why Cheat India                  Emraan Hashmi
Evening Shadows                  Mona Ambegaonkar
...
Hum Tumhare Hain Sanam          Shah Rukh Khan
Aankhen (2002 film)             Amitabh Bachchan
Saathiya (film)                 Vivek Oberoi
Company (film)                  Ajay Devgn
Awara Paagal Deewana            Akshay Kumar
Name: lead, Length: 1500, dtype: object

```

```
movies.sort_index()
```

```

movie
1920 (film)          Rajnesh Duggal
1920: London         Sharman Joshi
1920: The Evil Returns Vicky Ahuja
1971 (2007 film)     Manoj Bajpayee
2 States (2014 film) Arjun Kapoor
...
Zindagi 50-50        Veena Malik
Zindagi Na Milegi Dobara Hrithik Roshan
Zindagi Tere Naam    Mithun Chakraborty
Zokkomon             Darsheel Safary
Zor Lagaa Ke...Haiya! Meghan Jadhav
Name: lead, Length: 1500, dtype: object

```

```
movies.sort_index(ascending=False)
```

```

movie
Zor Lagaa Ke...Haiya!    Meghan Jadhav
Zokkomon                 Darsheel Safary
Zindagi Tere Naam        Mithun Chakraborty
Zindagi Na Milegi Dobara Hrithik Roshan
Zindagi 50-50            Veena Malik
...
2 States (2014 film)     Arjun Kapoor
1971 (2007 film)        Manoj Bajpayee
1920: The Evil Returns   Vicky Ahuja
1920: London            Sharman Joshi
1920 (film)              Rajnesh Duggal
Name: lead, Length: 1500, dtype: object

```

```
#movies.sort_index(inplace=True) # ye karne ke baad permanent changes
ho jata hai
```

```
# movies
```

## Series Maths method

```
# count => ye total value ko count karke deta hai (size bhi total value deta but ye missing value ko bhi count karta hai but count missing value ko count nahi karta hai)
```

```
vk.count() # yadi kahi nan value hota to usse count nahi karta but size usse bhi count kar deta hai
```

```
215
```

```
movie.count()
```

```
movie    1500  
lead     1500  
dtype: int64
```

```
# sum && product
```

```
subs
```

```
0      48  
1      57  
2      40  
3      43  
4      44
```

```
...  
360    231  
361    226  
362    155  
363    144  
364    172
```

```
Name: Subscribers gained, Length: 365, dtype: int64
```

```
subs.sum()
```

```
49510
```

```
movie.sum()
```

```
movie    Uri: The Surgical StrikeBattalion 609The Accid...  
lead     Vicky KaushalVicky AhujaAnupam KherEmraan Hash...  
dtype: object
```

```
subs.product() # kisi din zero subscriber hoga
```

```
0
```

```
# mean / median /mode /std /var
```

```
subs.mean()
```

```

135.64383561643837
subs.mode()

0    105
Name: Subscribers gained, dtype: int64

vk.median()

24.0

print(movies.mode())    # yaha zero index ko bata raha hai

0    Akshay Kumar
Name: lead, dtype: object

subs.std()    #standard deviation

62.67502303725269

vk.var()    # variance

688.0024777222344

# min / max

subs.min()

33

subs.max()

396

# describe => ye sab chiz ka summary nikal ke de deta hai

vk.describe()    # 25% bale ka matlab hai ki vk ne 25% match me 9 ya 9
se kam run banaye hain and so on.....

count    215.000000
mean     30.855814
std      26.229801
min       0.000000
25%       9.000000
50%      24.000000
75%      48.000000
max     113.000000
Name: runs, dtype: float64

subs.describe()

count    365.000000
mean     135.643836
std      62.675023

```

```
min      33.000000
25%     88.000000
50%    123.000000
75%    177.000000
max     396.000000
Name: Subscribers gained, dtype: float64
```

## Series indexing

```
# integer indexing
x = pd.Series([12,13,14,35,46,57,58,79,9])
x

0      12
1      13
2      14
3      35
4      46
5      57
6      58
7      79
8       9
dtype: int64

x[0]

12

x[4]

46

x[-3]    # series me -ve indexing nahi hota hai
```

```
-----
-----
ValueError                                Traceback (most recent call
last)
File ~\anaconda3\Lib\site-packages\pandas\core\indexes\range.py:413,
in RangeIndex.get_loc(self, key)
    412 try:
--> 413     return self._range.index(new_key)
    414 except ValueError as err:
```

ValueError: -3 is not in range

The above exception was the direct cause of the following exception:

```
KeyError                                Traceback (most recent call
last)
Cell In[78], line 1
```

```
----> 1 x[-3]
```

```
File ~\anaconda3\Lib\site-packages\pandas\core\series.py:1121, in
```

```
Series.__getitem__(self, key)
```

```
    1118     return self._values[key]
```

```
    1120 elif key_is_scalar:
```

```
-> 1121     return self._get_value(key)
```

```
    1123 # Convert generator to list before going through hashable part
```

```
    1124 # (We will iterate through the generator there to check for  
slices)
```

```
    1125 if is_iterator(key):
```

```
File ~\anaconda3\Lib\site-packages\pandas\core\series.py:1237, in
```

```
Series._get_value(self, label, takeable)
```

```
    1234     return self._values[label]
```

```
    1236 # Similar to Index.get_value, but we do not fall back to  
positional
```

```
-> 1237 loc = self.index.get_loc(label)
```

```
    1239 if is_integer(loc):
```

```
    1240     return self._values[loc]
```

```
File ~\anaconda3\Lib\site-packages\pandas\core\indexes\range.py:415,
```

```
in RangeIndex.get_loc(self, key)
```

```
    413     return self._range.index(new_key)
```

```
    414     except ValueError as err:
```

```
--> 415         raise KeyError(key) from err
```

```
    416 if isinstance(key, Hashable):
```

```
    417     raise KeyError(key)
```

```
KeyError: -3
```

```
movies
```

```
movie
```

```
Uri: The Surgical Strike Vicky Kaushal
```

```
Battalion 609 Vicky Ahuja
```

```
The Accidental Prime Minister (film) Anupam Kher
```

```
Why Cheat India Emraan Hashmi
```

```
Evening Shadows Mona Ambegaonkar
```

```
...
```

```
Hum Tumhare Hain Sanam Shah Rukh Khan
```

```
Aankhen (2002 film) Amitabh Bachchan
```

```
Saathiya (film) Vivek Oberoi
```

```
Company (film) Ajay Devgn
```

```
Awara Paagal Deewana Akshay Kumar
```

```
Name: lead, Length: 1500, dtype: object
```

```
movies[0] # aaise data me internally ek aur index provide ho jata  
jiske karan hum isse access kar paa rahe hain
```



```
C:\Users\jayra\AppData\Local\Temp\ipykernel_12520\3971607066.py:1:
FutureWarning: Series.__getitem__ treating keys as positions is
deprecated. In a future version, integer keys will always be treated
as labels (consistent with DataFrame behavior). To access a value by
position, use `ser.iloc[pos]`
```

```
movies[0] # aaise data me internally ek aur index provide ho jata
jiske karan hum isse access kar paa rahe hain
```

```
'Vicky Kaushal'
```

```
movies["Uri: The Surgical Strike"] # another method is this
```

```
'Vicky Kaushal'
```

```
movies[-1] # yadi index ka format string hai to negative indexing bhi
kaam karta hai but yadi index integer hai to negative indexing kaam
nahi karta hai
```

```
C:\Users\jayra\AppData\Local\Temp\ipykernel_12520\124423782.py:1:
FutureWarning: Series.__getitem__ treating keys as positions is
deprecated. In a future version, integer keys will always be treated
as labels (consistent with DataFrame behavior). To access a value by
position, use `ser.iloc[pos]`
```

```
movies[-1] # yadi index ka format string hai to negative indexing
bhi kaam karta hai but yadi index integer hai to negative indexing
kaam nahi karta hai
```

```
'Akshay Kumar'
```

```
vk
```

```
match_no
```

```
1      1
2     23
3     13
4     12
5      1
```

```
..
211    0
212   20
213   73
214   25
215    7
```

```
Name: runs, Length: 215, dtype: int64
```

```
vk[-1] # index integer hai so error
```

```
-----
-----
KeyError
```

```
Traceback (most recent call
```

```
last)
```

```
File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:3805,
in Index.get_loc(self, key)
    3804 try:
-> 3805     return self._engine.get_loc(casted_key)
    3806 except KeyError as err:
```

```
File index.pyx:167, in pandas._libs.index.IndexEngine.get_loc()
```

```
File index.pyx:196, in pandas._libs.index.IndexEngine.get_loc()
```

```
File pandas\_libs\hashtable_class_helper.pxi:2606, in
pandas._libs.hashtable.Int64HashTable.get_item()
```

```
File pandas\_libs\hashtable_class_helper.pxi:2630, in
pandas._libs.hashtable.Int64HashTable.get_item()
```

```
KeyError: -1
```

The above exception was the direct cause of the following exception:

```
KeyError                                Traceback (most recent call
last)
```

```
Cell In[148], line 1
```

```
----> 1 vk[-1]
```

```
File ~\anaconda3\Lib\site-packages\pandas\core\series.py:1121, in
Series.__getitem__(self, key)
```

```
    1118     return self._values[key]
    1120 elif key_is_scalar:
-> 1121     return self._get_value(key)
    1123 # Convert generator to list before going through hashable part
    1124 # (We will iterate through the generator there to check for
slices)
    1125 if is_iterator(key):
```

```
File ~\anaconda3\Lib\site-packages\pandas\core\series.py:1237, in
Series._get_value(self, label, takeable)
```

```
    1234     return self._values[label]
    1236 # Similar to Index.get_value, but we do not fall back to
positional
-> 1237 loc = self.index.get_loc(label)
    1239 if is_integer(loc):
    1240     return self._values[loc]
```

```
File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:3812,
in Index.get_loc(self, key)
```

```
    3807     if isinstance(casted_key, slice) or (
    3808         isinstance(casted_key, abc.Iterable)
    3809         and any(isinstance(x, slice) for x in casted_key)
    3810     ):
```

```

3811         raise IndexError(key)
-> 3812     raise KeyError(key) from err
3813 except TypeError:
3814     # If we have a listlike key, _check_indexing_error will
raise
3815     # IndexError. Otherwise we fall through and re-
raise
3816     # the TypeError.
3817     self._check_indexing_error(key)

```

KeyError: -1

*# slicing*

*# just check ki vk ne 5 se 15 match ke bich me kitne run banaye hain*  
vk[5:16]

*# negative slicing*

vk[-6:]

movies[-5:]

movie

Hum Tumhare Hain Sanam	Shah Rukh Khan
Aankhen (2002 film)	Amitabh Bachchan
Saathiya (film)	Vivek Oberoi
Company (film)	Ajay Devgn
Awara Paagal Deewana	Akshay Kumar

Name: lead, dtype: object

movies[:,2]

*# sab kuch jo python me karte hain slicing me wo sab kuch kar sakte hain*

*# fancy indexing*

*# suppose pata karna hai ki vk ne 1st,3rd,5th and 6th match me kitne run banaye hain*

vk[[1,3,5,6]]

match\_no

1	1
3	13
5	1
6	9

Name: runs, dtype: int64

*#indexing with labels*

movies

```

movie
Uri: The Surgical Strike                Vicky Kaushal
Battalion 609                          Vicky Ahuja
The Accidental Prime Minister (film)    Anupam Kher
Why Cheat India                        Emraan Hashmi
Evening Shadows                        Mona Ambegaonkar
...
Hum Tumhare Hain Sanam                Shah Rukh Khan
Aankhen (2002 film)                  Amitabh Bachchan
Saathiya (film)                      Vivek Oberoi
Company (film)                       Ajay Devgn
Awara Paagal Deewana                 Akshay Kumar
Name: lead, Length: 1500, dtype: object

movies["The Accidental Prime Minister (film)"]

'Anupam Kher'

```

## Editing Series

```

#using indexing
marks_series

maths      67
english    57
science    89
hindi      100
Name: jay ke marks, dtype: int64

marks_series[1]=100
marks_series

C:\Users\jayra\AppData\Local\Temp\ipykernel_12520\170542760.py:1:
FutureWarning: Series.__setitem__ treating keys as positions is
deprecated. In a future version, integer keys will always be treated
as labels (consistent with DataFrame behavior). To set a value by
position, use `ser.iloc[pos] = value`
    marks_series[1]=100

maths      67
english    100
science    89
hindi      100
Name: jay ke marks, dtype: int64

#what if an index does not exist
marks_series["sst"] # abhi bas data read karna chah rahe hain joki
index available hi nahi hai to ofcourse error aayega

```

```

-----
-----

```

```
KeyError                                Traceback (most recent call
last)
File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:3805,
in Index.get_loc(self, key)
    3804 try:
-> 3805     return self._engine.get_loc(casted_key)
    3806 except KeyError as err:
```

```
File index.pyx:167, in pandas._libs.index.IndexEngine.get_loc()
```

```
File index.pyx:196, in pandas._libs.index.IndexEngine.get_loc()
```

```
File pandas\_libs\hashtable_class_helper.pxi:7081, in
pandas._libs.hashtable.PyObjectHashTable.get_item()
```

```
File pandas\_libs\hashtable_class_helper.pxi:7089, in
pandas._libs.hashtable.PyObjectHashTable.get_item()
```

```
KeyError: 'sst'
```

The above exception was the direct cause of the following exception:

```
KeyError                                Traceback (most recent call
last)
Cell In[172], line 2
      1 #what if an index does not exist
----> 2 marks_series["sst"]
```

```
File ~\anaconda3\Lib\site-packages\pandas\core\series.py:1121, in
Series.__getitem__(self, key)
    1118     return self._values[key]
    1120 elif key_is_scalar:
-> 1121     return self._get_value(key)
    1123 # Convert generator to list before going through hashable part
    1124 # (We will iterate through the generator there to check for
slices)
    1125 if is_iterator(key):
```

```
File ~\anaconda3\Lib\site-packages\pandas\core\series.py:1237, in
Series._get_value(self, label, takeable)
    1234     return self._values[label]
    1236 # Similar to Index.get_value, but we do not fall back to
positional
-> 1237 loc = self.index.get_loc(label)
    1239 if is_integer(loc):
    1240     return self._values[loc]
```

```
File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:3812,
in Index.get_loc(self, key)
    3807     if isinstance(casted_key, slice) or (
```

```

3808         isinstance(casted_key, abc.Iterable)
3809         and any(isinstance(x, slice) for x in casted_key)
3810     ):
3811         raise IndexError(key)
-> 3812     raise KeyError(key) from err
3813 except TypeError:
3814     # If we have a listlike key, _check_indexing_error will
raise
3815     # IndexError. Otherwise we fall through and re-
raise
3816     # the TypeError.
3817     self._check_indexing_error(key)

```

KeyError: 'sst'

*marks\_series["sst"]=100 # abb data write kar rahe hain to error nahi balki last me ek row aur add ho jayega*

marks\_series

```

maths      67
english    100
science     89
hindi      100
sst         100
Name: jay ke marks, dtype: int64

```

*# slicing*

runs\_ser

```

0      13
1      24
2      56
3      78
4     100
dtype: int64

```

*#suppose kisi do item ko change karna chahate hain*

```
runs_ser[2:4]=[100,100]
```

runs\_ser

```

0      13
1      24
2     100
3     100
4     100
dtype: int64

```

*# fancy indexing*

```
# suppose 0,3,4 index ko change karna hai
```

```
runs_ser[[0,3,4]]=[0,0,0]
```

```
runs_ser
```

```
0      0
```

```
1     24
```

```
2    100
```

```
3      0
```

```
4      0
```

```
dtype: int64
```

```
runs_ser # ye sab permanent changes ho raha hai
```

```
0      0
```

```
1     24
```

```
2    100
```

```
3      0
```

```
4      0
```

```
dtype: int64
```

```
#using index label
```

```
movies
```

```
movie
```

```
Uri: The Surgical Strike Vicky Kaushal
```

```
Battalion 609 Vicky Ahuja
```

```
The Accidental Prime Minister (film) Anupam Kher
```

```
Why Cheat India Emraan Hashmi
```

```
Evening Shadows Mona Ambegaonkar
```

```
...
```

```
Hum Tumhare Hain Sanam Shah Rukh Khan
```

```
Aankhen (2002 film) Amitabh Bachchan
```

```
Saathiya (film) Vivek Oberoi
```

```
Company (film) Ajay Devgn
```

```
Awara Paagal Deewana Akshay Kumar
```

```
Name: lead, Length: 1500, dtype: object
```

```
# suppose hum hum Tumhare hain Sanam me shah Rukh Khan ke jagah Salman  
khan karna hai
```

```
movies["Hum Tumhare Hain Sanam"]="salman Khan"
```

```
movies
```

```
movie
```

```
Uri: The Surgical Strike Vicky Kaushal
```

```
Battalion 609 Vicky Ahuja
```

```
The Accidental Prime Minister (film) Anupam Kher
```

```
Why Cheat India Emraan Hashmi
```

```
Evening Shadows Mona Ambegaonkar
```

```
...
```

Hum Tumhare Hain Sanam	salman Khan
Aankhen (2002 film)	Amitabh Bachchan
Saathiya (film)	Vivek Oberoi
Company (film)	Ajay Devgn
Awara Paagal Deewana	Akshay Kumar

Name: lead, Length: 1500, dtype: object

*# generally real world data me hum change nahi karte hain kabhi but function available hai to .....*

## Series with python Functionalities

subs

```
0      48
1      57
2      40
3      43
4      44
```

```
...
360    231
361    226
362    155
363    144
364    172
```

Name: Subscribers gained, Length: 365, dtype: int64

*# len/type/dir/sorted/max/min*

```
print(len(subs))
print(type(subs))
print(dir(subs))
print(sorted(subs)) # list return karta hai
print(min(subs))
print(max(subs))
```

365

```
<class 'pandas.core.series.Series'>
['T', '_AXIS_LEN', '_AXIS_ORDERS', '_AXIS_TO_AXIS_NUMBER',
 '_HANDLED_TYPES', '__abs__', '__add__', '__and__', '__annotations__',
 '__array__', '__array_priority__', '__array_ufunc__', '__bool__',
 '__class__', '__column_consortium_standard__', '__contains__',
 '__copy__', '__deepcopy__', '__delattr__', '__delitem__', '__dict__',
 '__dir__', '__divmod__', '__doc__', '__eq__', '__finalize__',
 '__float__', '__floordiv__', '__format__', '__ge__', '__getattr__',
 '__getattribute__', '__getitem__', '__getstate__', '__gt__',
 '__hash__', '__iadd__', '__iand__', '__ifloordiv__', '__imod__',
 '__imul__', '__init__', '__init_subclass__', '__int__', '__invert__',
 '__ior__', '__ipow__', '__isub__', '__iter__', '__itruediv__',
 '__ixor__', '__le__', '__len__', '__lt__', '__matmul__', '__mod__',
 '__module__', '__mul__', '__ne__', '__neg__', '__new__',
```



```

'__nonzero__', '__or__', '__pandas_priority__', '__pos__', '__pow__',
'__radd__', '__rand__', '__rdivmod__', '__reduce__', '__reduce_ex__',
'__repr__', '__rfloordiv__', '__rmatmul__', '__rmod__', '__rmul__',
'__ror__', '__round__', '__rpow__', '__rsub__', '__rtruediv__',
'__rxor__', '__setattr__', '__setitem__', '__setstate__',
'__sizeof__', '__str__', '__sub__', '__subclasshook__', '__truediv__',
'__weakref__', '__xor__', 'accessors', 'accum_func',
'agg_examples_doc', 'agg_see_also_doc', 'align_for_op',
'align_frame', 'align_series', 'append', 'arith_method',
'as_manager', 'attrs', 'binop', 'cacher', 'can_hold_na',
'check_inplace_and_allows_duplicate_labels',
'check_is_chained_assignment_possible',
'check_label_or_level_ambiguity', 'check_setitem_copy',
'clear_item_cache', 'clip_with_one_bound', 'clip_with_scalar',
'cmp_method', 'consolidate', 'consolidate_inplace',
'construct_axes_dict', 'construct_result', 'constructor',
'constructor_expanddim', 'constructor_expanddim_from_mgr',
'constructor_from_mgr', '_data', 'deprecate_downcast',
'dir_additions', 'dir_deletions', 'drop_axis',
'drop_labels_or_levels', 'duplicated', 'find_valid_index',
'flags', 'flex_method', 'from_mgr', 'get_axis', 'get_axis_name',
'get_axis_number', 'get_axis_resolvers', 'get_block_manager_axis',
'get_bool_data', 'get_cacher', 'get_cleaned_column_resolvers',
'get_index_resolvers', 'get_label_or_level_values',
'get_numeric_data', 'get_rows_with_mask', 'get_value',
'get_values_tuple', 'get_with', 'getitem_slice', 'getitem',
'hidden_attrs', 'indexed_same', 'info_axis', 'info_axis_name',
'info_axis_number', 'init_dict', 'init_mgr', 'inplace_method',
'internal_names', 'internal_names_set', 'is_cached', 'is_copy',
'is_label_or_level_reference', 'is_label_reference',
'is_level_reference', 'is_mixed_type', 'is_view',
'is_view_after_cow_rules', 'item_cache', 'ixs', 'logical_func',
'logical_method', 'map_values', 'maybe_update_cacher',
'memory_usage', 'metadata', 'mgr', 'min_count_stat_function',
'name', 'needs_reindex_multi', 'pad_or_backfill',
'protect_consolidate', 'reduce', 'references', 'reindex_axes',
'reindex_indexer', 'reindex_multi', 'reindex_with_indexers',
'rename', 'replace_single', 'repr_data_resource', 'repr_latex',
'reset_cache', 'reset_cacher', 'set_as_cached', 'set_axis',
'set_axis_name', 'set_axis_nocheck', 'set_is_copy', 'set_labels',
'set_name', 'set_value', 'set_values', 'set_with',
'set_with_engine', 'shift_with_freq', 'slice', 'stat_function',
'stat_function_ddof', 'take_with_is_copy', 'to_latex_via_styler',
'typ', 'update_inplace', 'validate_dtype', 'values', 'where',
'abs', 'add', 'add_prefix', 'add_suffix', 'agg', 'aggregate', 'align',
'all', 'any', 'apply', 'argmax', 'argmin', 'argsort', 'array',
'asfreq', 'asof', 'astype', 'at', 'at_time', 'attrs', 'autocorr',
'axes', 'backfill', 'between', 'between_time', 'bfill', 'bool',
'case_when', 'clip', 'combine', 'combine_first', 'compare',

```

```
'convert_dtypes', 'copy', 'corr', 'count', 'cov', 'cummax', 'cummin',
'cumprod', 'cumsum', 'describe', 'diff', 'div', 'divide', 'divmod',
'dot', 'drop', 'drop_duplicates', 'droplevel', 'dropna', 'dtype',
'dtypes', 'duplicated', 'empty', 'eq', 'equals', 'ewm', 'expanding',
'explode', 'factorize', 'ffill', 'fillna', 'filter', 'first',
'first_valid_index', 'flags', 'floordiv', 'ge', 'get', 'groupby',
'gt', 'hasnans', 'head', 'hist', 'iat', 'idxmax', 'idxmin', 'iloc',
'index', 'infer_objects', 'info', 'interpolate',
'is_monotonic_decreasing', 'is_monotonic_increasing', 'is_unique',
'isin', 'isna', 'isnull', 'item', 'items', 'keys', 'kurt', 'kurtosis',
'last', 'last_valid_index', 'le', 'list', 'loc', 'lt', 'map', 'mask',
'max', 'mean', 'median', 'memory_usage', 'min', 'mod', 'mode', 'mul',
'multiply', 'name', 'nbytes', 'ndim', 'ne', 'nlargest', 'notna',
'notnull', 'nsmallest', 'nunique', 'pad', 'pct_change', 'pipe',
'plot', 'pop', 'pow', 'prod', 'product', 'quantile', 'radd', 'rank',
'ravel', 'rdiv', 'rdivmod', 'reindex', 'reindex_like', 'rename',
'rename_axis', 'reorder_levels', 'repeat', 'replace', 'resample',
'reset_index', 'rfloordiv', 'rmod', 'rmul', 'rolling', 'round',
'rpow', 'rsub', 'rtruediv', 'sample', 'searchsorted', 'sem',
'set_axis', 'set_flags', 'shape', 'shift', 'size', 'skew',
'sort_index', 'sort_values', 'squeeze', 'std', 'struct', 'sub',
'subtract', 'sum', 'swapaxes', 'swaplevel', 'tail', 'take',
'to_clipboard', 'to_csv', 'to_dict', 'to_excel', 'to_frame', 'to_hdf',
'to_json', 'to_latex', 'to_list', 'to_markdown', 'to_numpy',
'to_period', 'to_pickle', 'to_sql', 'to_string', 'to_timestamp',
'to_xarray', 'transform', 'transpose', 'truediv', 'truncate',
'tz_convert', 'tz_localize', 'unique', 'unstack', 'update',
'value_counts', 'values', 'var', 'view', 'where', 'xs']
[33, 33, 35, 37, 39, 40, 40, 40, 40, 42, 42, 43, 44, 44, 44, 45, 46,
46, 48, 49, 49, 49, 49, 50, 50, 50, 51, 54, 56, 56, 56, 56, 57, 61,
62, 64, 65, 65, 66, 66, 66, 66, 67, 68, 70, 70, 70, 71, 71, 72, 72,
72, 72, 72, 73, 74, 74, 75, 76, 76, 76, 76, 77, 77, 78, 78, 78, 79,
79, 80, 80, 80, 81, 81, 82, 82, 83, 83, 83, 84, 84, 84, 85, 86, 86,
86, 87, 87, 87, 87, 88, 88, 88, 88, 88, 89, 89, 89, 90, 90, 90, 90,
91, 92, 92, 92, 93, 93, 93, 93, 95, 95, 96, 96, 96, 96, 97, 97, 98,
98, 99, 99, 100, 100, 100, 101, 101, 101, 102, 102, 103, 103, 104,
104, 104, 105, 105, 105, 105, 105, 105, 105, 105, 105, 108, 108, 108,
108, 108, 108, 109, 109, 110, 110, 110, 111, 111, 112, 113, 113, 113,
114, 114, 114, 114, 115, 115, 115, 115, 117, 117, 117, 118, 118, 119,
119, 119, 119, 120, 122, 123, 123, 123, 123, 123, 124, 125, 126, 127,
128, 128, 129, 130, 131, 131, 132, 132, 134, 134, 134, 135, 135, 136,
136, 136, 137, 138, 138, 138, 139, 140, 144, 145, 146, 146, 146, 146,
147, 149, 150, 150, 150, 150, 151, 152, 152, 152, 153, 153, 153, 154,
154, 154, 155, 155, 156, 156, 156, 156, 157, 157, 157, 157, 158, 158,
159, 159, 160, 160, 160, 160, 162, 164, 166, 167, 167, 168, 170, 170,
170, 170, 171, 172, 172, 173, 173, 173, 174, 174, 175, 175, 176, 176,
177, 178, 179, 179, 180, 180, 180, 182, 183, 183, 183, 184, 184, 184,
185, 185, 185, 185, 186, 186, 186, 188, 189, 190, 190, 192, 192, 192,
196, 196, 196, 197, 197, 202, 202, 202, 203, 204, 206, 207, 209, 210,
```

```
210, 211, 212, 213, 214, 216, 219, 220, 221, 221, 222, 222, 224, 225,
225, 226, 227, 228, 229, 230, 231, 233, 236, 236, 237, 241, 243, 244,
245, 247, 249, 254, 254, 258, 259, 259, 261, 261, 265, 267, 268, 269,
276, 276, 290, 295, 301, 306, 312, 396]
```

```
33
```

```
396
```

```
# type conversion
```

```
marks_series
```

```
maths      67
```

```
english    100
```

```
science    89
```

```
hindi      100
```

```
sst        100
```

```
Name: jay ke marks, dtype: int64
```

```
list(marks_series)
```

```
[67, 100, 89, 100, 100]
```

```
dict(marks_series)
```

```
{'maths': 67, 'english': 100, 'science': 89, 'hindi': 100, 'sst': 100}
```

```
# membership operator
```

```
movies
```

```
movie
```

```
Uri: The Surgical Strike          Vicky Kaushal
```

```
Battalion 609                    Vicky Ahuja
```

```
The Accidental Prime Minister (film)  Anupam Kher
```

```
Why Cheat India                  Emraan Hashmi
```

```
Evening Shadows                  Mona Ambegaonkar
```

```
...
```

```
Hum Tumhare Hain Sanam           salman Khan
```

```
Aankhen (2002 film)              Amitabh Bachchan
```

```
Saathiya (film)                  Vivek Oberoi
```

```
Company (film)                   Ajay Devgn
```

```
Awara Paagal Deewana             Akshay Kumar
```

```
Name: lead, Length: 1500, dtype: object
```

```
"Battalion 609" in movies # in operator basically index pe search
karta hai agar aap value deke search karoge to false aayega
```

```
True
```

```
"Emraan Hashmi" in movies
```

```
False
```

```
# looping
for i in movies:    # loop values me iterate karta hai
    print(i)
```

Vicky Kaushal  
Vicky Ahuja  
Anupam Kher  
Emraan Hashmi  
Mona Ambegaonkar  
Geetika Vidya Ohlyan  
Arshad Warsi  
Radhika Apte  
Kangana Ranaut  
Nawazuddin Siddiqui  
Ali Asgar  
Ranveer Singh  
Prit Kamani  
Ajay Devgn  
Sushant Singh Rajput  
Amitabh Bachchan  
Abhimanyu Dasani  
Talha Arshad Reshi  
Nawazuddin Siddiqui  
Garima Agarwal  
Rasika Agashe  
Barun Sobti  
Akshay Kumar  
Zaheer Iqbal  
Vidyut Jammwal  
Deepika Amin  
Manav Kaul  
Naseeruddin Shah  
Varun Dhawan  
Shreyas Talpade  
Tiger Shroff  
Boman Irani  
Ajay Devgn  
Arjun Kapoor  
Gavie Chahal  
Prabhu Deva  
Shahid Kapoor  
Ayushmann Khurrana  
Anupam Kher  
Karanvir Bohra  
Hrithik Roshan  
Jimmy Sheirgill  
John Abraham  
Rishi Kapoor  
Kangana Ranaut  
Natalia Janoszek

Diljit Dosanjh  
Sidharth Malhotra  
Rajeev Khandelwal  
Zaira Wasim  
Akshay Kumar  
Jacqueline Fernandez  
Ayushmann Khurrana  
Akshaye Khanna  
Sonam Kapoor  
Karan Deol  
Sanjay Dutt  
Bhavesk Kumar  
Sanaya Irani  
Ayushmann Khurrana  
Siddhanth Kapoor  
Akshay Kumar  
Taapsee Pannu  
Rajkummar Rao  
Sunny Singh Nijjar  
Neil Nitin Mukesh  
Suraj Pancholi  
Boman Irani  
Riteish Deshmukh  
Nawazuddin Siddiqui  
Shahbaaz Khan  
Kriti Kharbanda  
Naseeruddin Shah  
Vardhan Puri  
Sushant Singh Rajput  
Kartik Aaryan  
Vidyut Jammwal  
Rani Mukerji  
Salman Khan  
Akshay Kumar  
Saif Ali Khan  
Kay Kay Menon  
Nora Fatehi  
Ashmit Patel  
Viineet Kumar  
Rahul Bhat  
Vicky Kaushal  
Sidharth Malhotra  
Deepika Padukone  
Geetanjali Thapa  
Akshay Anand  
Pulkit Samrat  
Kartik Aaryan  
Lee Byford  
Taapsee Pannu

Aisha Ahmed  
Ajay Devgn  
Rani Mukerji  
Manoj Bajpayee  
Tiger Shroff  
Varun Dhawan  
Prabhu Deva  
Ishaan Khattar  
Abhay Deol  
Yogesh Raj Mishra  
Rajkummar Rao  
Alia Bhatt  
Naseeruddin Shah  
Sumeet Vyas  
Vinay Pathak  
John Abraham  
Danny Denzongpa  
Harshvardhan Kapoor  
Jimmy Sheirgill  
Anil Kapoor  
Ishaan Khattar  
Ranbir Kapoor  
Sanjay Dutt  
Dharmesh Yelande  
Taapsee Pannu  
Arjun Mathur  
Irrfan Khan  
Akshay Kumar  
John Abraham  
Sonakshi Sinha  
Utkarsh Sharma  
Dharmendra  
Rajkummar Rao  
Jackie Shroff  
Avinash Tiwary  
Manoj Bajpayee  
Paoli Dam  
Sanya Malhotra  
Shahid Kapoor  
Abhishek Bharate  
Nawazuddin Siddiqui  
Manish Anand  
Taapsee Pannu  
Jackky Bhagnani  
Anushka Sharma  
Radhika Apte  
Rhea Chakraborty  
Govinda  
Sohum Shah

Kajol  
Arjun Kapoor  
Ayushmann Khurrana  
Ayushmann Khurrana  
Nargis Fakhri  
Aishwarya Devan  
Neil Nitin Mukesh  
Shakti Kapoor  
Amit Sadh  
Sunny Deol  
Rahul Bagga  
Sunny Deol  
Amyra Dastur  
Shah Rukh Khan  
Ranveer Singh  
Salman Khan  
Ajay Devgn  
Varun Dhawan  
Shraddha Kapoor  
Sunil Grover  
Hrithik Roshan  
Raj Arjun  
Aamir Khan  
Gurmeet Ram Rahim Singh  
Arsh Bajwa  
Rana Daggubati  
Naseeruddin Shah  
Kangana Ranaut  
Nana Patekar  
Arbaaz Khan  
Varun Dhawan  
Rajkummar Rao  
Govinda  
Rajat Kapoor  
Anushka Sharma  
Kiara Advani  
Shaurya Singh  
Pankaj Tripathi  
Taapsee Pannu  
Adil Hussain  
Amitabh Bachchan  
Sunny Leone  
Hema Malini  
Raveena Tandon  
Amitabh Bachchan  
Amardeep Insan  
Shraddha Kapoor  
Ayushmann Khurrana  
Sachin Tendulkar

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Himansh Kohli  
Adil Hussain  
Jayesh Raj  
Manisha Koirala  
Deepika Padukone  
Rajkummar Rao  
Salman Khan  
Riteish Deshmukh  
Shiv Darshan  
Ranbir Kapoor  
Ashish Bisht  
Aahana Kumra  
Manoj Babani  
Rajveer Ankur Singh  
Kirti Kulhari  
Shah Rukh Khan  
Tiger Shroff  
Akshay Kumar  
Anil Kapoor  
Kartik Aaryan  
Ayushmann Khurrana  
Nawazuddin Siddiqui  
Prisha Aneja  
Aadar Jain  
Ayushmann Khurrana  
Kunal Kapoor  
Arjun Rampal  
Kangana Ranaut  
Farhan Akhtar  
Sidharth Malhotra  
Hugh Bonneville  
Rishi Kapoor  
Rajkummar Rao  
Kunaal Roy Kapur  
Sunny Leone  
Shraddha Kapoor  
Rina Charaniya  
Nawazuddin Siddiqui  
Sunny Deol  
Sridevi  
Saif Ali Khan  
Soundarya Sharma  
Sudha Chandran  
Manoj Bajpayee  
Zaira Wasim  
Prakash Belawadi  
Kalki Koechlin  
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Zareen Khan  
Nayna Bandhopadhyay  
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Kapil Sharma  
Pulkit Samrat  
Vijay Varma  
Sushama Deshpande  
Richa Chadha  
Prince Shah  
Tanima Bhattacharya  
Akshay Kumar  
Zeenat Aman  
Madhavan  
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Himansh Kohli  
Sadhana Singh  
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Rajnesh Duggall  
Krishna Chaturvedi  
Girish Taurani  
Sonam Kapoor  
Sukhesh Arora  
Raima Sen  
Anuj Sachdeva  
Parthaa Akerkar  
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Sidharth Malhotra  
John Abraham  
Patralekhaa Paul  
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Randeep Hooda  
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Kartik Elangovan  
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Emraan Hashmi  
Aanchal Dwivedi  
Sanjay Singh

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Shashank Arora  
Urvashi Rautela  
Naseeruddin Shah  
Sara Loren  
Tom Alter  
Irrfan Khan  
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Hrithik Roshan  
Diana Penty  
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Shubham  
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Neha Dhupia  
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Sonarika Bhadoria  
Amitabh Bachchan  
Sharman Joshi  
Aamir Khan  
Harshvardhan Kapoor  
Salman Khan  
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Soha Ali Khan  
Prabhu Deva  
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Akshay Kumar  
Akshay Kumar  
Akshay Kumar  
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Bipasha Basu  
Arjun Kapoor  
Zayed Khan  
Malaika Arora  
Naman Jain  
Gurmeet Choudhary  
Kay Kay Menon  
Rati Agnihotri  
Amitabh Bachchan  
Arjun Rampal  
Varun Dhawan  
Swanand Kirkire  
Sulabha Arya  
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Nana Patekar  
Ayushmann Khurrana  
Anupam Kher  
Gurmeet Ram Rahim Singh  
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Ira Dubey  
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Shakti Anand  
Anil Kapoor  
Arshad Warsi  
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Yash Acharya  
Rajkummar Rao  
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Mohit Baghel  
Rishi Verma  
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Diganth  
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Kunal Khemu  
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Vijay Raaz  
Kannan Arunachalam  
Anjori Alagh  
Satish Kaushik  
Rahul Bagga  
Himesh Reshammiya  
Farooq Shaikh  
Makrand Deshpande  
Eesha Agarwal  
Siddharth Gupta  
Tiger Shroff  
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Sharib Hashmi  
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Akshay Oberoi  
Akshay Kumar  
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Puru Chibber  
Soha Ali Khan  
Rhea Chakraborty  
Shah Rukh Khan  
Rekha  
Anupam Kher  
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Aadil Chahal  
Shabana Azmi  
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Barun Sobti  
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Rani Mukerji  
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Prateik  
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Karan Kundrra



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Puneet Singh Ratn  
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Sumit Nijhawan  
Tinnu Anand  
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Kavin Dave  
Shikhi Gupta  
Archana Joglekar  
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Pulkit Samrat  
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Anil Kapoor  
Karisma Kapoor

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Gul Panag  
Yudhveer Bakoliya  
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Emraan Hashmi  
Sharman Joshi  
Shahid Kapoor  
Anupam Kher  
Anyika Anand  
Julia Datt  
Manoj Bajpayee  
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Naresh Sharma  
Riteish Deshmukh  
Sonu Sood  
Nassar Abdulla  
Salman Khan  
Vickrant Mahajan  
Freny Bhagat  
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Omkar Das Manikpuri  
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Harish Chhabra  
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Asrani  
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Himanshu Bhatt  
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Ashok Banthia

Salman Khan  
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Akshay Kumar  
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Sridevi  
Vivek Sudershan  
Nafisa Ali  
Mohsin  
Prateik  
Gul Panag  
Vatsal Sheth  
Ajay Devgn  
Russell Geoffrey Banks  
Vinay Pathak  
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Priyanka Chopra  
Madhavan  
Arshad Warsi  
Deepthi Naval  
Akshay Kumar  
Sumit Arora  
Anay  
Om Puri  
Abhishek Bachchan  
Sendhil Ramamurthy  
Darsheel Safary  
Vinay Pathak  
Ishaan Manhaas  
Sanjay Mishra  
Ashutosh Rana  
Juhi Chawla  
Govinda  
Mimoh Chakraborty  
Tusshar Kapoor  
Kainaz Motivala  
Partho A. Gupte  
Nana Patekar  
Sara Arjun  
Kalki Koechlin  
Kartik Aaryan  
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Lillete Dubey  
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Aarav Khanna  
Hrithik Roshan  
Raghuvir Yadav

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Shefali Shah  
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Rahul Jaiswal  
Apoorva Arora  
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Amitabh Bachchan  
Sanjay Dutt  
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Salman Khan  
Deepshika Nagpal  
Deepak Dobriyal  
Tusshar Kapoor  
Kiron Kher  
Imran Khan  
Shahid Kapoor  
Mikaal  
John Abraham  
Jimmy Sheirgill  
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Vinay Virmani  
Dev Anand  
Zayed Khan  
Saqib Saleem  
Sachiin Joshi  
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Chirag Paswan  
Dharmendra  
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Akshay Kumar  
Abhishek Bachchan  
Rani Mukerji  
Ajay Devgn  
Vidya Balan  
Priyanka Chopra  
Shahid Kapoor  
Prateik  
Salman Khan  
Siddharth  
Amitabh Bachchan  
Vidya Balan  
Paresh Rawal  
Sunny Gill  
Shreyas Talpade  
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Amitabh Bachchan  
Siddhartha Gupta  
Shah Rukh Khan  
Tanushree Dutta  
Paul Sidhu  
Sunny Deol  
Gurdas Maan  
Master Shams  
Om Puri  
Vikrum Kumar  
Aditya Narayan  
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Boman Irani  
Nana Patekar  
Priyanka Chopra  
Arbaaz Khan  
Rekha  
Rahul Bose  
Nana Patekar  
Sudeep  
Farooq Shaikh  
Rohit Roy  
Sachin Khedekar  
Anuj Saxena  
Akshay Kumar  
Hazel Croney  
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Abhishek Bachchan  
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Prashant Narayanan  
Sanjay Dutt  
Akshay Kumar  
Ali Zafar  
Rajat Barmecha  
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Gul Panag  
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Aditya Srivastava  
Arunoday Singh  
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Akshay Oberoi  
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Sahil Khan  
Imran Khan  
Sushmita Sen  
Priyanka Chopra  
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Saif Ali Khan  
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Waheeda Rehman  
Kangana Ranaut  
Hrishitaa Bhatt  
Ranbir Kapoor  
Asrani  
Irrfan Khan  
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Arshad Warsi  
Paresh Rawal  
Rati Agnihotri  
Harman Baweja

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John Abraham  
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Aftab Shivdasani  
Naseeruddin Shah  
Inaamulhaq  
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Kunal Khemu  
Bobby Deol  
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Parzaan Dastur  
Meghan Jadhav  
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Sanjay Dutt  
Mithun Chakraborty  
Govinda  
Sunil Shetty  
Jackie Shroff  
Anupam Kher  
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Arjun Rampal  
Mithun Chakraborty  
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Lewis Tan  
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Aamir Bashir  
Farooq Shaikh  
Mithun Chakraborty  
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Juhi Chawla  
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Emraan Hashmi  
Mithun Chakraborty  
Sikander Kher  
Paresh Rawal  
Ahraz Ahmed  
Aftab Shivdasani  
Amita Pathak  
Saahil Chadha  
Saif Ali Khan  
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Adhvik Mahajan  
Vivek Oberoi  
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Bobby Deol  
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Victor Banerjee  
Rajnesh Duggall  
Amitabh Bachchan  
Shreyas Talpade  
Kiron Kher  
Jackie Shroff



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Sharman Joshi  
Himesh Reshammiya  
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Ranvir Shorey  
Govinda  
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Shahid Kapoor  
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Dharmendra  
Fardeen Khan  
Tusshar Kapoor  
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Rani Mukerji  
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Nana Patekar  
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Kal Penn  
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Jeetendra  
Akshaye Khanna  
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Sanjay Dutt  
Bobby Darling  
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Rati Agnihotri  
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Kangana Ranaut  
Ajay Devgn  
Ram Kapoor  
Sunil Shetty  
Ajay Devgn  
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Amarjeet  
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Jeetendra  
Sarika  
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Mohit Ahlawat  
Mahima Chaudhry  
Ajay Devgn  
Mohammad Amir Naji  
Sanjay Dutt  
Irrfan Khan  
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Sunny Deol  
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Priyanshu Chatterjee  
Gurdas Maan  
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Paresh Rawal  
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Sushmita Sen  
Rakesh Bedi  
Emraan Hashmi  
Manisha Koirala  
Ajay Devgn  
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salman Khan  
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Shanghai (2012 film)

Ferrari Ki Sawaari

Teri Meri Kahaani (film)

Mr. Bhatti on Chutti

Yeh Khula Aasmaan

Rakhtbeej

Gangs of Wasseypur

Gangs of Wasseypur – Part 2

Cocktail (2012 film)

Gattu

Kyaa Super Kool Hain Hum

Maximum (film)



Paanch Ghanthey Mien Paanch Crore  
Ek Tha Tiger  
Challo Driver  
Shirin Farhad Ki Toh Nikal Padi  
Joker (2012 film)  
Aalaap (film)  
Mere Dost Picture Abhi Baki Hai  
Krishna Aur Kans  
From Sydney with Love  
Jalpari: The Desert Mermaid  
Barfi!  
Heroine (2012 film)  
Chal Pichchur Banate Hain  
Kismat Love Paisa Dilli  
Jeena Hai Toh Thok Daal  
OMG – Oh My God!  
Aiyyaa  
Chittagong (film)  
Bhoot Returns  
Delhi Safari  
Chakravyuh (2012 film)  
Student of the Year  
Ajab Gazabb Love  
Rush (2012 film)  
1920: The Evil Returns  
Sons of Ram  
Ata Pata Laapata  
Jab Tak Hai Jaan  
Talaash: The Answer Lies Within  
Login (film)  
Son of Sardaar  
Cigarette Ki Tarah  
Dabangg 2  
Players (2012 film)  
Housefull 2  
Bol Bachchan  
English Vinglish  
Impatient Vivek  
Yamla Pagla Deewana  
Mumbai Mast Kallander  
Dhobi Ghat (film)  
Turning 30  
Hostel (2011 film)  
Dil Toh Baccha Hai Ji  
United Six  
Utt Pataang  
Patiala House (film)  
7 Khoon Maaf  
Tanu Weds Manu

F.A.L.T.U  
Memories in March  
Thank You (2011 film)  
Angel (2011 film)  
Happy Husbands (2011 film)  
Teen Thay Bhai  
Dum Maaro Dum (film)  
Shor in the City  
Zokkomon  
Chalo Dilli  
Aashiqui.in  
Satrangee Parachute  
Monica (film)  
I Am (2010 Indian film)  
Naughty @ 40  
Haunted – 3D  
Love U...Mr. Kalakaar!  
Ragini MMS  
Stanley Ka Dabba  
Shagird (2011 film)  
404 (film)  
Shaitan (film)  
Pyaar Ka Punchnama  
Bheja Fry 2  
Always Kabhi Kabhi  
Double Dhamaal  
Buddah... Hoga Terra Baap  
Delhi Belly (film)  
Murder 2  
Chillar Party  
Zindagi Na Milegi Dobara  
Dear Friend Hitler  
I Am Kalam  
Bin Bulaye Baraati  
Kucch Luv Jaisaa  
Singham  
Khap (film)  
Bubble Gum (film)  
Shabri  
Phhir  
Aarakshan  
Chatur Singh Two Star  
Sahi Dhandhe Galat Bande  
Bodyguard (2011 Hindi film)  
Yeh Dooriyan  
Not a Love Story (2011 film)  
Hum Tum Shabana  
Mummy Punjabi  
Mere Brother Ki Dulhan

Mausam (2011 film)  
U R My Jaan  
Force (2011 film)  
Saheb Biwi Aur Gangster  
Tere Mere Phere  
Breakaway (2011 film)  
Chargesheet (film)  
Love Breakups Zindagi  
Mujhse Fraaandship Karoge  
Azaan  
Ra.One  
Rockstar (2011 film)  
Miley Naa Miley Hum  
Tell Me O Kkhuda  
Damadamm!  
Ladies vs Ricky Bahl  
Desi Boyz  
Game (2011 film)  
No One Killed Jessica  
Rascals (2011 film)  
The Dirty Picture  
Pyaar Impossible!  
Chance Pe Dance  
My Friend Pinto  
Veer (2010 film)  
Striker (2010 film)  
Rann (film)  
Ishqiya  
Road to Sangam  
Jo Hum Chahein  
Click (2010 film)  
Toh Baat Pakki!  
My Name Is Khan  
Teen Patti (film)  
Karthik Calling Karthik  
Don 2  
Rokkk  
Aakhari Decision  
Right Yaaa Wrong  
Sukhmani: Hope for Life  
Thanks Maa  
Na Ghar Ke Na Ghaat Ke  
Trump Card (film)  
Shaapit  
Hum Tum Aur Ghost  
Well Done Abba  
Tum Milo Toh Sahi  
Jaane Kahan Se Aayi Hai  
Prem Kaa Game

Sadiyaan  
The Japanese Wife  
Paathshaala  
Phoonk 2  
Lahore (film)  
Apartment (film)  
City of Gold (2010 film)  
Chase (2010 film)  
Housefull (2010 film)  
Mittal v/s Mittal  
It's a Wonderful Afterlife  
Prince (2010 film)  
Raavan  
Bumm Bumm Bole  
Kushti (film)  
Kites (film)  
Love Sex Aur Dhokha  
Milenge Milenge  
Ek Second... Jo Zindagi Badal De?  
Mr. Singh Mrs. Mehta  
Lamhaa  
Khatta Meetha (2010 film)  
Tere Bin Laden  
Udaan (2010 film)  
Once Upon a Time in Mumbaai  
Help (film)  
Peepli Live  
Lafangey Parindey  
Hello Darling  
Antardwand  
Aashayein  
Soch Lo  
Dabangg  
Khichdi: The Movie  
Red Alert: The War Within  
Life Express (2010 film)  
The Film Emotional Atyachar  
Hisss  
Crook (film)  
Do Dooni Chaar  
Aakrosh (2010 film)  
Ramayana: The Epic  
Knock Out (2010 film)  
Jhootha Hi Sahi  
Guzaarish (film)  
Allah Ke Banday  
Break Ke Baad  
Khuda Kasam  
Phas Gaye Re Obama

Malik Ek  
A Flat (film)  
No Problem (2010 film)  
Band Baaja Baaraat  
Kaalo  
Mirch  
Tees Maar Khan (2010 film)  
Isi Life Mein  
Toonpur Ka Super Hero  
Tera Kya Hoga Johnny  
Ramaa: The Saviour  
I Hate Luv Storys  
Dulha Mil Gaya  
Anjaana Anjaani  
Dunno Y... Na Jaane Kyon  
Pankh  
Action Replayy  
3 Idiots  
Luck by Chance  
Love Aaj Kal  
Wanted (2009 film)  
Delhi-6  
Raaz: The Mystery Continues  
Aasma: The Sky Is the Limit  
Ajab Prem Ki Ghazab Kahani  
Chal Chala Chal  
Billu  
The Stoneman Murders  
Kisse Pyaar Karoon  
Dhoondte Reh Jaaoge  
Karma Aur Holi  
Victory (2009 film)  
Kaminey  
Jai Veeru  
Little Zizou  
Gulaal (film)  
Aloo Chaat (film)  
Barah Aana  
Firaaq  
Aa Dekhen Zara  
99 (2009 film)  
Ek: The Power of One  
Ek Se Bure Do  
Sikandar (2009 film)  
Zor Lagaa Ke...Haiya!  
Paying Guests  
New York (2009 film)  
Sankat City  
Shortkut

Luck (2009 film)  
Life Partner  
Daddy Cool (2009 Hindi film)  
Kisaan  
Yeh Mera India  
Agey Se Right  
Chintu Ji  
Quick Gun Murugun  
Fox (film)  
Baabarr  
Phir Kabhi  
Vaada Raha  
Dil Bole Hadippa!  
What's Your Raashee?  
Acid Factory  
All the Best: Fun Begins  
Wake Up Sid  
Main Aurr Mrs Khanna  
Blue (2009 film)  
Fruit and Nut (film)  
Aladin (film)  
London Dreams  
Jail (2009 film)  
Tum Mile  
Kurbaan (2009 film)  
De Dana Dan  
Paa (film)  
Rocket Singh: Salesman of the Year  
Raat Gayi Baat Gayi?  
Accident on Hill Road  
Chandni Chowk to China  
Dostana (2008 film)  
Race (2008 film)  
Rab Ne Bana Di Jodi  
Ghajini (2008 film)  
Singh Is Kinng  
Golmaal Returns  
Jodhaa Akbar  
Bachna Ae Haseeno  
Bhoothnath  
Sarkar Raj  
Halla Bol  
Humne Jeena Seekh Liya  
Bombay to Bangkok  
Tulsi (film)  
Sunday (2008 film)  
One Two Three  
Krazzy 4  
U Me Aur Hum

Sirf (film)  
Tashan (film)  
Anamika (2008 film)  
Jimmy (2008 film)  
Jannat (film)  
Don Muthu Swami  
Woodstock Villa  
Mere Baap Pehle Aap  
Summer 2007  
De Taali  
Haal-e-Dil  
Thodi Life Thoda Magic  
Thoda Pyaar Thoda Magic  
Via Darjeeling  
Kismat Konnection  
Love Story 2050  
Contract (2008 film)  
Mission Istaanbul  
Money Hai Toh Honey Hai  
God Tussi Great Ho  
Mumbai Meri Jaan  
Maan Gaye Mughal-e-Azam  
Rock On!!  
C Kkompany  
Chamku  
Mukhbiir  
Tahaan  
1920 (film)  
The Last Lear  
Welcome to Sajjanpur  
Saas Bahu Aur Sensex  
Hari Puttar: A Comedy of Terrors  
Drona (2008 film)  
Hello (2008 film)  
Karzzzz  
Heroes (2008 film)  
Roadside Romeo  
Ek Vivaah... Aisa Bhi  
Deshdrohi  
Fashion (2008 film)  
Dasvidaniya  
Yuvvraaj  
Oye Lucky! Lucky Oye!  
Oh My God (2008 film)  
Sorry Bhai!  
1971 (2007 film)  
Meerabai Not Out  
Wafa: A Deadly Love Story  
Gumnaam – The Mystery  
Dil Kabaddi

Aag (2007 film)  
Aap Kaa Surroor  
Aggar (film)  
Anwar (2007 film)  
Aaja Nachle  
Apne  
Awarapan  
Bheja Fry (film)  
Bhool Bhulaiyaa  
Bhram  
Big Brother (2007 film)  
68 Pages  
Aur Pappu Paas Ho Gaya  
Apna Asmaan  
Black Friday (2007 film)  
The Blue Umbrella (2005 film)  
Blood Brothers (2007 Indian film)  
Buddha Mar Gaya  
Cash (2007 film)  
Cheeni Kum  
Chhodon Naa Yaar  
Darling (2007 Indian film)  
Chak De! India  
Dhamaal  
Goal (2007 Hindi film)  
Dharm (film)  
Bombay to Goa (2007 film)  
Dhokha  
Dil Dosti Etc  
Dhol (film)  
Ek Chalis Ki Last Local  
Familywala  
Gandhi My Father  
Don't Stop Dreaming  
Dus Kahaniyaan  
Eklavya: The Royal Guard  
Go (2007 film)  
Gauri: The Unborn  
Heyy Babyy  
Guru (2007 film)  
Honeymoon Travels Pvt. Ltd.  
Jahan Jaaeyega Hamen Paaeyega  
Jhoom Barabar Jhoom  
Jab We Met  
Good Boy Bad Boy  
Fool & Final  
Khoya Khoya Chand  
Johnny Gaddaar  
Just Married (2007 film)



Kya Love Story Hai  
Kudiyon Ka Hai Zamana  
Hastey Hastey  
Laaga Chunari Mein Daag  
Life in a... Metro  
Loins of Punjab Presents  
Manorama Six Feet Under  
Marigold (2007 film)  
MP3: Mera Pehla Pehla Pyaar  
Hattrick (film)  
Naqaab  
Mumbai Salsa  
The Namesake (film)  
Namastey London  
My Bollywood Bride  
Nehlle Pe Dehlla  
Nishabd  
No Smoking (2007 film)  
Om Shanti Om  
Partner (2007 film)  
Raqeeb  
Nanhe Jaisalmer  
Life Mein Kabhie Kabhie  
Risk (2007 film)  
Shakalaka Boom Boom  
Red Swastik  
Salaam-e-Ishq: A Tribute to Love  
Saawariya  
Sarhad Paar  
Say Salaam India  
Red: The Dark Side  
Shootout at Lokhandwala  
Strangers (2007 Hindi film)  
Swami (2007 film)  
Taare Zameen Par  
Ta Ra Rum Pum  
Speed (2007 film)  
Traffic Signal (film)  
The Train (2007 film)  
Showbiz (film)  
Sunglass (film)  
Welcome (2007 film)  
36 China Town  
Zamaanat  
Aap Ki Khatir (2006 film)  
Ahista Ahista (2006 film)  
Aksar  
Alag  
Anthony Kaun Hai?

Apna Sapna Money Money  
Ankahee (2006 film)  
Yatra (2007 film)  
Baabul (2006 film)  
Aisa Kyon Hota Hai?  
Adharm (2006 film)  
Being Cyrus  
Banaras (2006 film)  
Bas Ek Pal  
Bhagam Bhag  
Chingaari  
Bhoot Unkle  
Chand Ke Paar Chalo (film)  
Aryan: Unbreakable  
Chup Chup Ke  
Corporate (2006 film)  
Darna Zaroori Hai  
Deadline: Sirf 24 Ghante  
Dil Diya Hai  
Darwaaza Bandh Rakho  
Eight: The Power of Shani  
Dhoom 2  
Dor (film)  
Don (2006 Hindi film)  
Family (2006 film)  
Fanaa (2006 film)  
Gangster (2006 film)  
Golmaal: Fun Unlimited  
Devaki (2005 film)  
Fight Club – Members Only  
Dharti Kahe Pukar Ke (2006 film)  
Humko Deewana Kar Gaye  
Humko Tumse Pyaar Hai  
I See You (2006 film)  
Jaane Hoga Kya  
Jaan-E-Mann  
Jawani Diwani: A Youthful Joyride  
Holiday (2006 film)  
Iqraar by Chance  
Khosla Ka Ghosla  
Kabhi Alvida Naa Kehna  
Love Ke Chakkar Mein  
Lage Raho Munna Bhai  
Kabul Express  
Jigyaasa  
Krrish  
Malamaal Weekly  
Omkaara (2006 film)  
Pyaar Ke Side Effects

Naksha  
Phir Hera Pheri  
Pyare Mohan  
Mere Jeevan Saathi (2006 film)  
Prateeksha  
Sacred Evil – A True Story  
Rang De Basanti  
Shaadi Karke Phas Gaya Yaar  
Sandwich (2006 film)  
Shaadi Se Pehle  
Saawan... The Love Season  
Shiva (2006 film)  
Souten: The Other Woman  
Shikhar (film)  
Children of Heaven  
Tathastu  
The Killer (2006 film)  
Umrao Jaan (2006 film)  
Taxi No. 9211  
Teesri Aankh: The Hidden Camera  
Vivah  
Utthaan  
Waris Shah: Ishq Daa Waaris  
Woh Lamhe...  
Yun Hota Toh Kya Hota  
Umar (film)  
Zindaggi Rocks  
Tom Dick and Harry (2006 film)  
Aashiq Banaya Aapne  
Anjaane (2005 film)  
Apaharan  
Bachke Rehna Re Baba  
7½ Phere  
Barsaat (2005 film)  
Bewafaa (2005 film)  
Black (2005 film)  
Zinda (film)  
Bluffmaster!  
99.9 FM (film)  
Bhola in Bollywood  
Bhagmati (2005 film)  
Blackmail (2005 film)  
Bunty Aur Babli  
Chaahat – Ek Nasha  
Chetna: The Excitement  
Chand Sa Roshan Chehra  
Chocolate (2005 film)  
D (film)  
Deewane Huye Paagal

Bullet: Ek Dhamaka  
Chehraa  
Dil Jo Bhi Kahey...  
Dosti: Friends Forever  
Classic – Dance of Love  
Dus  
Elaan (2005 film)  
Fareb (2005 film)  
Ek Ajnabee  
Fun – Can Be Dangerous Sometimes  
Ek Khiladi Ek Haseena (film)  
Double Cross (2005 film)  
Dreams (2006 film)  
Home Delivery  
Garam Masala (2005 film)  
Iqbal (film)  
Jai Chiranjeeva  
Hazaaron Khwaishein Aisi  
Insan  
Jo Bole So Nihaal (film)  
Karam (film)  
Kaal (2005 film)  
Kalyug (2005 film)  
Kasak (2005 film)  
Hanuman (2005 film)  
James (2005 film)  
Kisna: The Warrior Poet  
Koi Aap Sa  
Khamoshh... Khauff Ki Raat  
Jurm (2005 film)  
Kuchh Meetha Ho Jaye  
Kyaa Kool Hai Hum  
Lucky: No Time for Love  
Main Aisa Hi Hoon  
Kyon Ki  
Main Meri Patni Aur Woh  
Maine Gandhi Ko Nahin Mara  
Maine Pyaar Kyun Kiya?  
Mangal Pandey: The Rising  
Koi Mere Dil Mein Hai  
Mr Prime Minister  
My Brother...Nikhil  
My Wife's Murder  
Naina (2005 film)  
Neal 'n' Nikki  
No Entry  
Padmashree Laloo Prasad Yadav  
Page 3 (film)  
Morning Raga

Parineeta (2005 film)  
Pehchaan: The Face of Truth  
Paheli  
Rog  
Pyaar Mein Twist  
Salaam Namaste  
Revati (film)  
Sarkar (2005 film)  
Sehar  
Shabd (film)  
Shabnam Mausi  
Sheesha (2005 film)  
Ramji Londonwaley  
Silsilay  
Socha Na Tha  
Taj Mahal: An Eternal Love Story  
Tango Charlie  
The Film  
Vaada (film)  
Vaah! Life Ho Toh Aisi!  
Ssukh  
Shaadi No. 1  
Viruddh... Family Comes First  
Waqt: The Race Against Time  
Vidyaarthi  
Yakeen (2005 film)  
Zeher  
Veer-Zaara  
Main Hoon Na  
Zameer: The Fire Within  
Mujhse Shaadi Karogi  
Dhoom  
Khakee  
Hum Tum  
Hulchul (2004 film)  
Murder (2004 film)  
Yuva  
Aitraaz  
Aetbaar  
Ab Tumhare Hawale Watan Saathiyo  
Aan: Men at Work  
Bardaasht  
Chameli (film)  
Agnipankh  
Asambhav  
Charas (2004 film)  
Deewaar (2004 film)  
Dev (2004 film)  
Dil Maange More

Dil Ne Jise Apna Kahaa  
Dobara  
Aabra Ka Daabra  
Dil Bechara Pyaar Ka Maara  
Gayab  
Fida  
Garv: Pride & Honour  
Ek Se Badhkar Ek (2004 film)  
Ek Hasina Thi (film)  
Girlfriend (2004 film)  
Hatya (2004 film)  
Hava Aney Dey  
Hawas (2004 film)  
Hyderabad Blues 2  
Julie (2004 film)  
Kaun Hai Jo Sapno Mein Aaya  
Inteqam: The Perfect Game  
Kis Kis Ki Kismat  
Insaaf: The Justice  
I Proud to Be an Indian  
Khamosh Pani  
Kismat (2004 film)  
Lakeer – Forbidden Lines  
Krishna Cottage  
Kyun! Ho Gaya Na...  
Madhoshi  
Lakshya (film)  
Ishq Hai Tumse  
Maqbool  
Masti (2004 film)  
Meenaxi: A Tale of Three Cities  
Musafir (2004 film)  
Mughal-e-Azam  
Muskaan  
Meri Biwi Ka Jawaab Nahin  
Naach (2004 film)  
Netaji Subhas Chandra Bose: The Forgotten Hero  
Paap  
Phir Milenge  
Plan (film)  
Police Force: An Inside Story  
Paisa Vasool  
Popcorn Khao! Mast Ho Jao  
Rakht  
Raincoat (film)  
Rudraksh (film)  
Shaadi Ka Laddoo  
Run (2004 film)  
Rok Sako To Rok Lo

Suno Sasurjee  
Swades  
Taarzan: The Wonder Car  
Nothing but Life  
Shart: The Challenge  
Tumsa Nahin Dekha: A Love Story  
Vaastu Shastra (film)  
Yeh Lamhe Judaai Ke  
Sheen (film)  
Dude Where's the Party?  
Thoda Tum Badlo Thoda Hum  
Koi... Mil Gaya  
Kal Ho Naa Ho  
Shukriya: Till Death Do Us Apart  
Chalte Chalte (2003 film)  
The Hero: Love Story of a Spy  
Baghban (2003 film)  
Main Prem Ki Diwani Hoon  
LOC Kargil  
Border (1997 film)  
Munna Bhai M.B.B.S.  
Qayamat: City Under Threat  
88 Antop Hill  
3 Deewarein  
Aanch  
Aapko Pehle Bhi Kahin Dekha Hai  
Bhoot (film)  
Boom (film)  
Aaj Ka Andha Kanoon  
Andaaz  
Andaaz  
Armaan (2003 film)  
Chori Chori (2003 film)  
Calcutta Mail  
Baaz: A Bird in Danger  
Basti (film)  
Magic Magic 3D  
Dil Ka Rishta  
Darna Mana Hai  
Dhoop  
Dhund (2003 film)  
Chura Liyaa Hai Tumne  
The Bypass  
Dum (2003 Hindi film)  
Dil Pardesi Ho Gayaa  
Ek Alag Mausam  
Footpath (2003 film)  
Escape from Taliban  
Ek Din 24 Ghante

Gangaajal  
Hawa (film)  
Haasil  
Ek Aur Ek Gyarah  
Hungama (2003 film)  
Green Card Fever  
Flavors (film)  
Indian Babu  
Fun2shh... Dudes in the 10th Century  
Inteha (2003 film)  
Jaal: The Trap  
Ishq Vishk  
Hawayein  
Jajantaram Mamantaram  
Jism (2003 film)  
Jhankaar Beats  
Kagaar: Life on the Edge  
Kash Aap Hamare Hote  
Khel – No Ordinary Game  
Janasheen  
Kaise Kahoon Ke... Pyaar Hai  
Khushi (2003 Hindi film)  
Khwahish  
Kucch To Hai  
Kuch Naa Kaho  
Main Madhuri Dixit Banna Chahti Hoon  
Joggers' Park (film)  
Market (2003 film)  
Om (2003 film)  
Out of Control (2003 film)  
Mumbai Matinee  
Matrubhoomi  
Parwana (2003 film)  
Pinjar (film)  
Mumbai Se Aaya Mera Dost  
Saaya (2003 film)  
Samay: When Time Strikes  
Nayee Padosan  
Satta (film)  
Sssshhh...  
Praan Jaye Par Shaan Na Jaye  
Raghu Romeo  
Stumped (film)  
Rules: Pyaar Ka Superhit Formula  
Right Here Right Now (film)  
Raja Bhaiya (film)  
Tere Naam  
Tujhe Meri Kasam  
Talaash: The Hunt Begins...



```
Tehzeeb (2003 film)
The Pink Mirror
Yeh Dil
Xcuse Me
Raaz (2002 film)
Zameen (2003 film)
Waisa Bhi Hota Hai Part II
Devdas (2002 Hindi film)
Kaante
Hum Tumhare Hain Sanam
Aankhen (2002 film)
Saathiya (film)
Company (film)
Awara Paagal Deewana
```

```
# Arithmetic operators (like a broadcasting qki sare data pe apply ho jayega )
```

```
marks_series
```

```
maths      67
english    100
science     89
hindi      100
sst         100
```

```
Name: jay ke marks, dtype: int64
```

```
# suppose check karna hai ki 100 me se kitna kam hai sab subject me marks
```

```
100-marks_series
```

```
maths      33
english     0
science     11
hindi       0
sst         0
```

```
Name: jay ke marks, dtype: int64
```

```
# Relational Operator
```

```
vk
```

```
match_no
```

```
1      1
2     23
3     13
4     12
5      1
..
211    0
212    20
213    73
```

```
214     25
215     7
Name: runs, Length: 215, dtype: int64
```

*#kitne matches me vk 50 ya 50 se jyada score banaya hai*

*vk>50 # ye ek boolean series return karega*

```
match_no
1      False
2      False
3      False
4      False
5      False
...
211     False
212     False
213      True
214     False
215     False
Name: runs, Length: 215, dtype: bool
```

*vk[vk>50]*

```
match_no
34     58
41     71
44     56
45     67
52     70
57     57
68     73
71     51
73     58
74     65
80     57
81     93
82     99
85     56
97     67
99     73
103    51
104    62
110    82
116    75
117    79
119    80
120   100
122    52
123   108
```

```

126    109
127     75
128    113
129     54
131     54
132     62
134     64
137     55
141     58
144     57
145     92
148     68
152     70
160     84
162     67
164    100
175     72
178     90
188     72
197     51
198     53
209     58
213     73
Name: runs, dtype: int64

```

## Boolean Indexing on Series

```

# find no of 50's and 100's scored by kohli
vk>=50

```

```

match_no
1      False
2      False
3      False
4      False
5      False
...
211    False
212    False
213     True
214    False
215    False
Name: runs, Length: 215, dtype: bool

```

```

vk[vk>50]

```

```

match_no
34     58
41     71
44     56

```

```
45      67
52      70
57      57
68      73
71      51
73      58
74      65
80      57
81      93
82      99
85      56
97      67
99      73
103     51
104     62
110     82
116     75
117     79
119     80
120    100
122     52
123    108
126    109
127     75
128    113
129     54
131     54
132     62
134     64
137     55
141     58
144     57
145     92
148     68
152     70
160     84
162     67
164    100
175     72
178     90
188     72
197     51
198     53
209     58
213     73
```

```
Name: runs, dtype: int64
```

```
vk[vk>50].size
```

```
48
```

```

# find number of ducks
vk[vk==0].size

9

# Count number of day when I had more than 200 subs a day
subs[subs > 200].size

59

movies

movie
Uri: The Surgical Strike          Vicky Kaushal
Battalion 609                     Vicky Ahuja
The Accidental Prime Minister (film) Anupam Kher
Why Cheat India                   Emraan Hashmi
Evening Shadows                   Mona Ambegaonkar
...
Hum Tumhare Hain Sanam            salman Khan
Aankhen (2002 film)               Amitabh Bachchan
Saathiya (film)                   Vivek Oberoi
Company (film)                     Ajay Devgn
Awara Paagal Deewana              Akshay Kumar
Name: lead, Length: 1500, dtype: object

# find actors who have done more than 20 movies

# pahle ye find karo ki har actor ne kitne movie banaye hai with the
help of value_counts()
movies.value_counts()

lead
Akshay Kumar          48
Amitabh Bachchan      45
Ajay Devgn            38
Salman Khan           31
Sanjay Dutt           26
..
Mann Bagga            1
Diganth               1
Parveen Kaur          1
Seema Azmi            1
salman Khan           1
Name: count, Length: 567, dtype: int64

# iss series ko kisi another variable me store kar lo
num_movies=movies.value_counts()
num_movies

```

```

lead
Akshay Kumar      48
Amitabh Bachchan  45
Ajay Devgn        38
Salman Khan       31
Sanjay Dutt       26
...
Mann Bagga        1
Diganth           1
Parveen Kaur      1
Seema Azmi        1
salman Khan       1
Name: count, Length: 567, dtype: int64

```

```
num_movies>20
```

```

lead
Akshay Kumar      True
Amitabh Bachchan  True
Ajay Devgn        True
Salman Khan       True
Sanjay Dutt       True
...
Mann Bagga        False
Diganth           False
Parveen Kaur      False
Seema Azmi        False
salman Khan       False
Name: count, Length: 567, dtype: bool

```

```
num_movies[num_movies >20]
```

```

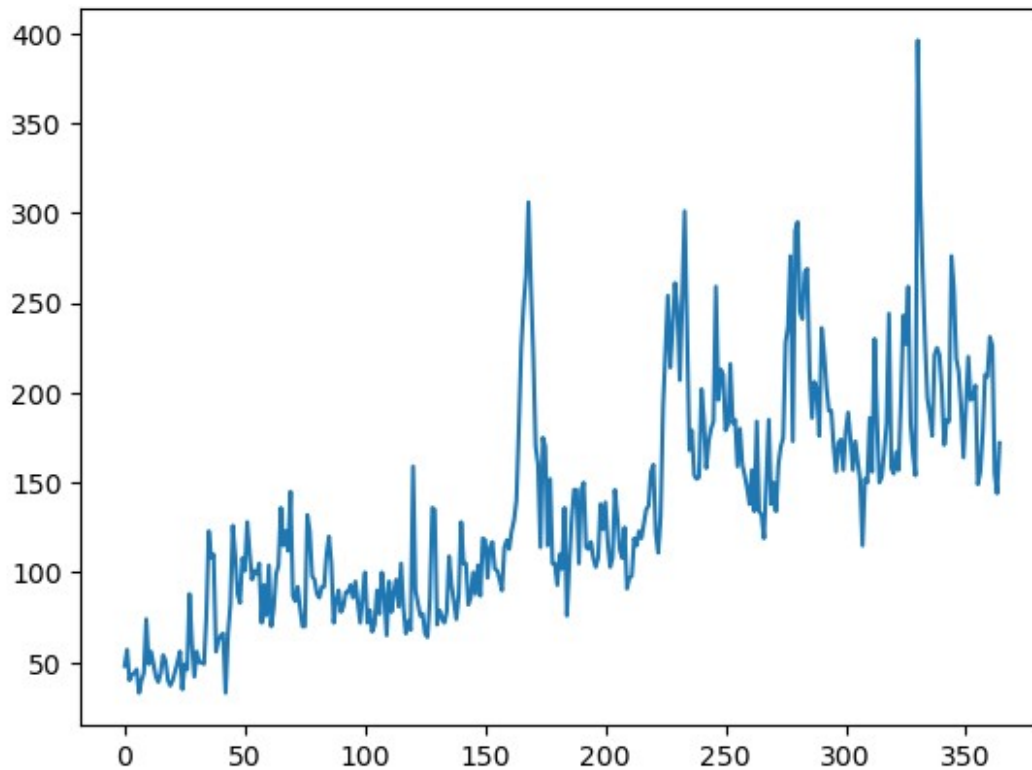
lead
Akshay Kumar      48
Amitabh Bachchan  45
Ajay Devgn        38
Salman Khan       31
Sanjay Dutt       26
Shah Rukh Khan    21
Emraan Hashmi     21
Name: count, dtype: int64

```

## Plotting Graphs on Series

```
subs.plot() # suppose ki daily kitna subscribe hai table me usko ek graph ke through print karana hai
```

```
<Axes: >
```

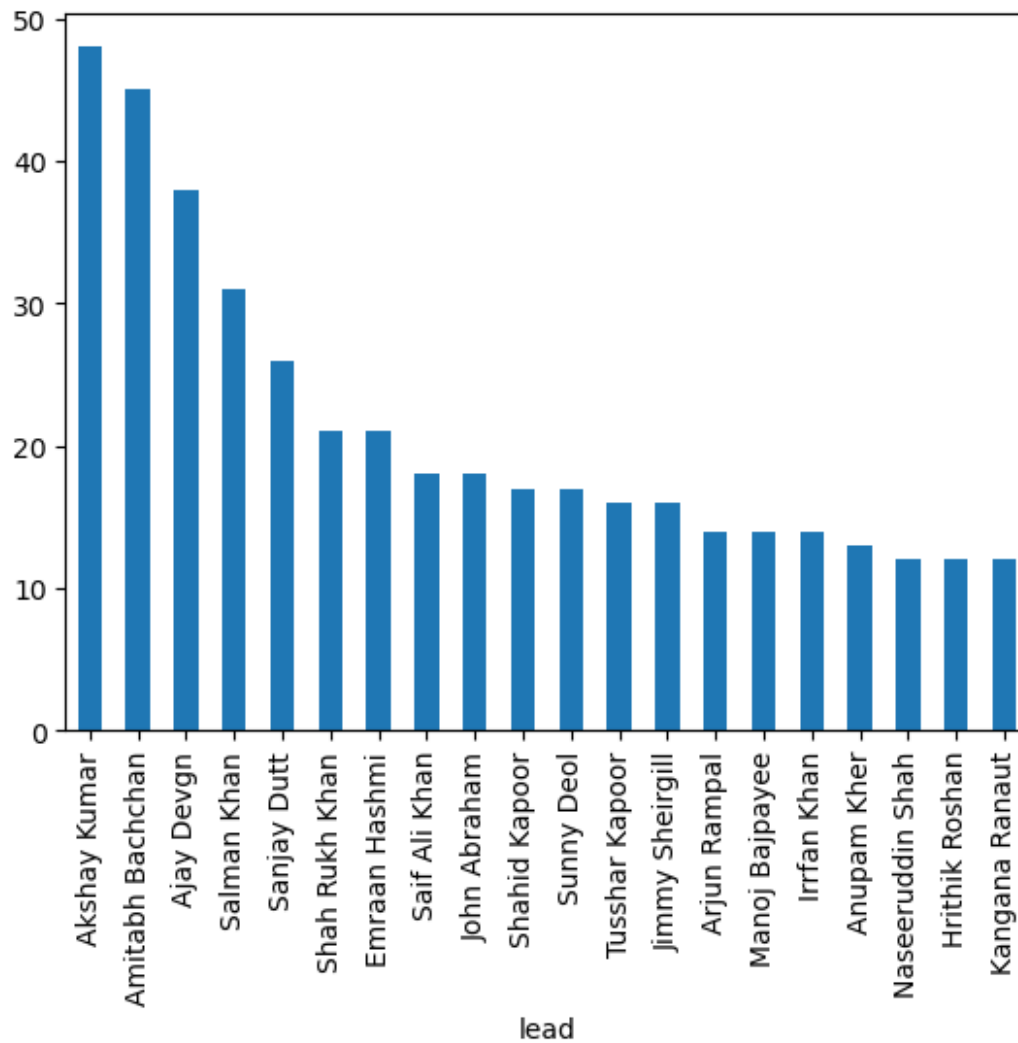


Kind []

```
'line' : line plot (default)
'bar' : vertical bar plot
'barh' : horizontal bar plot
'hist' : histogram
'box' : boxplot
'kde' : Kernel Density Estimation plot
'density' : same as 'kde'
'area' : area plot
'pie' : pie plot
'scatter' : scatter plot (DataFrame only)
'hexbin' : hexbin plot (DataFrame only)
```

```
# kin actor ne kitni movies banayi hai uska ek graph plot karna hai
movies.value_counts().head(20).plot(kind="bar") # ye ek baar chart
return karke dega by default line chart return karta hai
```

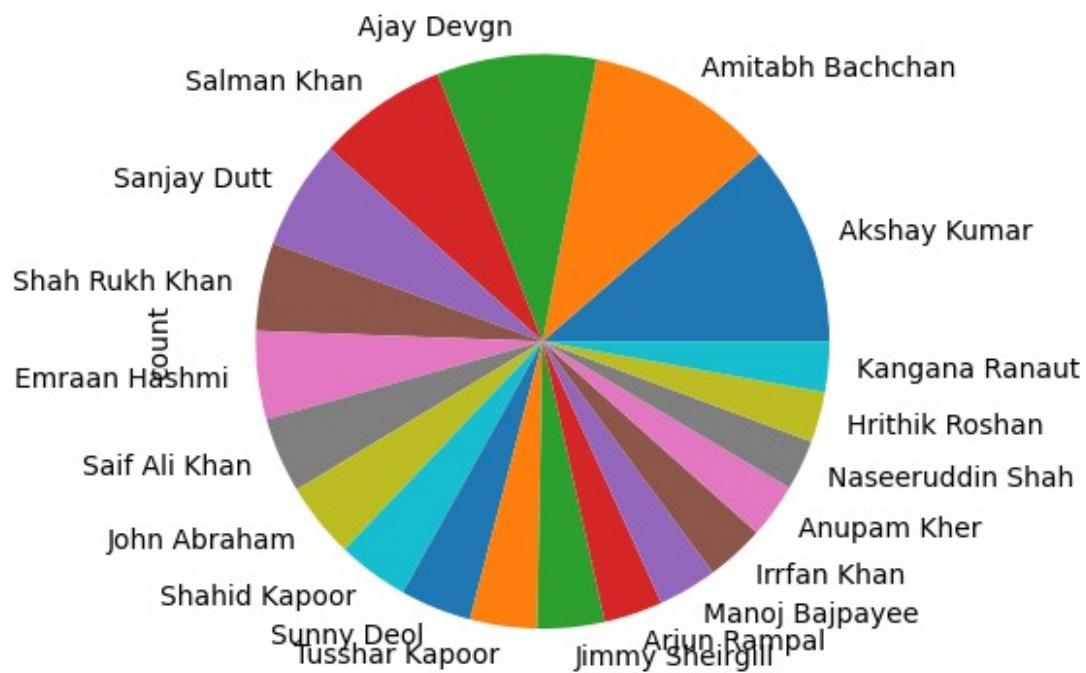
```
<Axes: xlabel='lead'>
```



```
movies.value_counts().head(20).plot(kind="pie")
```

```
<Axes: ylabel='count'>
```





## Some Important Series Methods

```
# astype
# between
# clip
# drop_duplicates
# isnull
# dropna
# fillna
# isin
# apply
# copy
```

```
# astype
vk
```

match_no	
1	1
2	23
3	13
4	12
5	1
	..
211	0
212	20

```
213     73
214     25
215     7
Name: runs, Length: 215, dtype: int64
```

```
import sys
sys.getsizeof(vk)    # memory me total kitna memory use kar raha hai
wo batayega
```

```
11768
```

```
# you can change it using astype
vk.astype('int16')
```

```
match_no
1         1
2        23
3        13
4        12
5         1
...
211        0
212       20
213       73
214       25
215        7
Name: runs, Length: 215, dtype: int16
```

```
sys.getsizeof(vk.astype('int16'))
```

```
10478
```

```
# between => ek range ke andar value exist karta hai ki nahi ye
batayega and ek boolean series return karega
# suppose check karna hai ki vk ne kitne match me 51 se 99 ke bich me
score kya hai
```

```
vk.between(51,99)    #both para meter is included
```

```
match_no
1      False
2      False
3      False
4      False
5      False
...
211     False
212     False
213      True
214     False
215     False
Name: runs, Length: 215, dtype: bool
```

```
vk[vk.between(51,99)]
```

```
match_no
```

```
34      58
41      71
44      56
45      67
52      70
57      57
68      73
71      51
73      58
74      65
80      57
81      93
82      99
85      56
97      67
99      73
103     51
104     62
110     82
116     75
117     79
119     80
122     52
127     75
129     54
131     54
132     62
134     64
137     55
141     58
144     57
145     92
148     68
152     70
160     84
162     67
175     72
178     90
188     72
197     51
198     53
209     58
213     73
```

```
Name: runs, dtype: int64
```

```
vk[vk.between(51,99)].size
```

43

subs

0	48
1	57
2	40
3	43
4	44

	...
360	231
361	226
362	155
363	144
364	172

Name: Subscribers gained, Length: 365, dtype: int64

*# clip => sari value to ek range me fix karna*  
subs.clip(100,200)

0	100
1	100
2	100
3	100
4	100

	...
360	200
361	200
362	155
363	144
364	172

Name: Subscribers gained, Length: 365, dtype: int64

*#drop\_duplicates => duplicate value ko hata deta hai*

temp = pd.Series([1,1,2,2,3,3,4,4])  
temp

0	1
1	1
2	2
3	2
4	3
5	3
6	4
7	4

dtype: int64

temp.drop\_duplicates() *#abhi yaha pe first occurence bach raha hai and last drop ho raha hai but agar muje last ko rakhna hai to keep='last' parameter pass kar do*

```

0      1
2      2
4      3
6      4
dtype: int64

temp.drop_duplicates(keep='last')    # by default keep ka value first
rahata hai

1      1
3      2
5      3
7      4
dtype: int64

movies.drop_duplicates()

movie
Uri: The Surgical Strike                    Vicky Kaushal
Battalion 609                             Vicky Ahuja
The Accidental Prime Minister (film)       Anupam Kher
Why Cheat India                           Emraan Hashmi
Evening Shadows                           Mona Ambegaonkar
...
Rules: Pyaar Ka Superhit Formula           Tanuja
Right Here Right Now (film)                Ankit
Talaash: The Hunt Begins...                Rakhee Gulzar
The Pink Mirror                            Edwin Fernandes
Hum Tumhare Hain Sanam                     salman Khan
Name: lead, Length: 567, dtype: object

temp.duplicated()    # ye bata deta hai ki data me duplicate value hai
ki nahi false matlab ki duplicate nahi hai true matlab ki duplicate
hai

0      False
1       True
2      False
3       True
4      False
5       True
6      False
7       True
dtype: bool

temp[temp.duplicated()]

1      1
3      2
5      3

```

```

7      4
dtype: int64

temp.duplicated().sum() # bata dega ki kitne duplicated value hain
data me

4

vk.duplicated().sum()

137

# isnull => check karna hai ki ek series me kitna missing value hai
or can say ki kitna me value nan hai

temp = pd.Series([1,2,3,np.nan,5,6,np.nan,8,np.nan,10])
temp

0      1.0
1      2.0
2      3.0
3      NaN
4      5.0
5      6.0
6      NaN
7      8.0
8      NaN
9     10.0
dtype: float64

temp.size #ye nan ko bhi count karta hai

10

temp.count() # ye nan ko count nahi karta hai

7

vk.isnull()

match_no
1      False
2      False
3      False
4      False
5      False
...
211    False
212    False
213    False
214    False

```

```
215     False
Name: runs, Length: 215, dtype: bool
```

```
vk.isnull().sum()
```

```
0
```

```
temp.isnull().sum()
```

```
3
```

```
# dropna => missing (nan) value ko hata deta hai
```

```
temp.dropna()
```

```
0     1.0
```

```
1     2.0
```

```
2     3.0
```

```
4     5.0
```

```
5     6.0
```

```
7     8.0
```

```
9    10.0
```

```
dtype: float64
```

```
# fillna => suppose aapko sare missing value ko kisi particular  
number se fill kar dena hai
```

```
temp.fillna(0)
```

```
0     1.0
```

```
1     2.0
```

```
2     3.0
```

```
3     0.0
```

```
4     5.0
```

```
5     6.0
```

```
6     0.0
```

```
7     8.0
```

```
8     0.0
```

```
9    10.0
```

```
dtype: float64
```

```
# suppose aapko data ke mean value se nan ko fill karna hai
```

```
temp.fillna(temp.mean())
```

```
0     1.0
```

```
1     2.0
```

```
2     3.0
```

```
3     5.0
```

```
4     5.0
```

```
5     6.0
```

```
6     5.0
```

```
7     8.0
```

```
8     5.0
```

```
9      10.0
dtype: float64
```

```
# isin    => ek sath multiple chizo ko check karta hai series ke andar
vk
```

```
match_no
```

```
1      1
2     23
3     13
4     12
5      1
```

```
...
```

```
211     0
212    20
213    73
214    25
215     7
```

```
Name: runs, Length: 215, dtype: int64
```

```
#just check ki vk kabhi 49 yaa 99 pe out hua hai
(vk==49) | (vk==99)
```

```
match_no
```

```
1      False
2      False
3      False
4      False
5      False
```

```
...
```

```
211     False
212     False
213     False
214     False
215     False
```

```
Name: runs, Length: 215, dtype: bool
```

```
vk[(vk==49) | (vk==99)]
```

```
match_no
```

```
82     99
86     49
```

```
Name: runs, dtype: int64
```

```
vk.isin([49,99])
```

```
match_no
```

```
1      False
2      False
3      False
4      False
```



```

5      False
...
211    False
212    False
213    False
214    False
215    False
Name: runs, Length: 215, dtype: bool

```

```
vk[vk.isin([49,99])]
```

```

match_no
82      99
86      49
Name: runs, dtype: int64

```

```

#apply
movies

```

```

movie
Uri: The Surgical Strike          Vicky Kaushal
Battalion 609                    Vicky Ahuja
The Accidental Prime Minister (film)  Anupam Kher
Why Cheat India                  Emraan Hashmi
Evening Shadows                  Mona Ambegaonkar
...
Hum Tumhare Hain Sanam          salman Khan
Aankhen (2002 film)             Amitabh Bachchan
Saathiya (film)                 Vivek Oberoi
Company (film)                  Ajay Devgn
Awara Paagal Deewana            Akshay Kumar
Name: lead, Length: 1500, dtype: object

```

*# suppose hume need hai ki jo bhi actor hai uska sirf first name chahaiye and pura name capital letter me ho apply function me aap apna ek logic pass kar sakte ho jaise ki koi function...etc.*

```
movies.apply(lambda x:x.split()) # yaha se name split ho gya abb 0th indec ko nikal lo
```

```

movie
Uri: The Surgical Strike          [Vicky, Kaushal]
Battalion 609                    [Vicky, Ahuja]
The Accidental Prime Minister (film)  [Anupam, Kher]
Why Cheat India                  [Emraan, Hashmi]
Evening Shadows                  [Mona, Ambegaonkar]
...
Hum Tumhare Hain Sanam          [salman, Khan]
Aankhen (2002 film)             [Amitabh, Bachchan]
Saathiya (film)                 [Vivek, Oberoi]
Company (film)                  [Ajay, Devgn]

```

Awara Paagal Deewana [Akshay, Kumar]

Name: lead, Length: 1500, dtype: object

```
movies.apply(lambda x:x.split()[0])
```

movie

Uri: The Surgical Strike Vicky

Battalion 609 Vicky

The Accidental Prime Minister (film) Anupam

Why Cheat India Emraan

Evening Shadows Mona

...

Hum Tumhare Hain Sanam salman

Aankhen (2002 film) Amitabh

Saathiya (film) Vivek

Company (film) Ajay

Awara Paagal Deewana Akshay

Name: lead, Length: 1500, dtype: object

```
movies.apply(lambda x:x.split()[0].upper())
```

movie

Uri: The Surgical Strike VICKY

Battalion 609 VICKY

The Accidental Prime Minister (film) ANUPAM

Why Cheat India EMRAAN

Evening Shadows MONA

...

Hum Tumhare Hain Sanam SALMAN

Aankhen (2002 film) AMITABH

Saathiya (film) VIVEK

Company (film) AJAY

Awara Paagal Deewana AKSHAY

Name: lead, Length: 1500, dtype: object

subs

0 48

1 57

2 40

3 43

4 44

...

360 231

361 226

362 155

363 144

364 172

Name: Subscribers gained, Length: 365, dtype: int64

```
subs.mean()
```

```
135.64383561643837
```

```
# suppose ki hum chahate hain ki jiss bhi din average se jyada  
subscriber hai usko good day and jiss bhi din isse kam subscriber hai  
usko bad day kahana chahate hain
```

```
subs.apply(lambda x: 'good day' if x>subs.mean() else 'bad bay')
```

```
0      bad bay  
1      bad bay  
2      bad bay  
3      bad bay  
4      bad bay
```

```
...  
360    good day  
361    good day  
362    good day  
363    good day  
364    good day
```

```
Name: Subscribers gained, Length: 365, dtype: object
```

```
# copy
```

```
vk
```

```
match_no
```

```
1      1  
2     23  
3     13  
4     12  
5      1
```

```
..  
211     0  
212    20  
213    73  
214    25  
215     7
```

```
Name: runs, Length: 215, dtype: int64
```

```
new=vk.head()
```

```
new
```

```
match_no
```

```
1      1  
2     23  
3     13  
4     12  
5      1
```

```
Name: runs, dtype: int64
```

```
new[1]=1
```

```
new
```

```
match_no
```

1	1
2	23
3	13
4	12
5	1

```
Name: runs, dtype: int64
```

```
vk
```

```
match_no
```

1	1
2	23
3	13
4	12
5	1

	..
211	0
212	20
213	73
214	25
215	7

```
Name: runs, Length: 215, dtype: int64
```

*# basically hua kya hum new me changes kye but ye to original data me bhi change ho gya , actual me hota ye hai ki jab hum head ya tail se data ko dekhte*

*# hain to wo ek copy nahi balki ek view hota hain and usme koi bhi change karne se original data pe bhi impact hota hai*

*# agar aaisa nahi karna chahate ho to copy() ka use karo*

```
vk
```

```
match_no
```

1	1
2	23
3	13
4	12
5	1

	..
211	0
212	20
213	73
214	25
215	7

```
Name: runs, Length: 215, dtype: int64
```

```
new = vk.head().copy()
```

```
new
```

```
match_no
```

```
1      1
```

```
2     23
```

```
3     13
```

```
4     12
```

```
5      1
```

```
Name: runs, dtype: int64
```

```
new[1]=100
```

```
new
```

```
vk    # abb dekho original me koi change nahi dikh raha hai
```