In [1]:
```
import pandas as pd
```

In [2]:
```
import warnings
warnings.filterwarnings("ignore")
```

In [3]:
```
data=pd.read_csv("/home/placement/Downloads/movies.csv")
```

In [4]:
```
data.describe()
```

Out[4]:

	srno	year	rating	time
count	49590.000000	49590.000000	10814.000000	45836.000000
mean	24795.500000	2002.303428	3.451248	2628.445436
std	14315.544261	12.534555	0.495601	1604.646265
min	1.000000	1913.000000	1.400000	52.000000
25%	12398.250000	1999.000000	3.100000	1356.000000
50%	24795.500000	2007.000000	3.500000	2563.000000
75%	37192.750000	2010.000000	3.800000	2877.000000
max	49590.000000	2014.000000	4.500000	28813.000000

In [5]:
```
data.head(5)
```

Out[5]:

	srno	movie	year	rating	time
0	1	The Nightmare Before	1993	3.9	4568.0
1	2	The Mummy	1932	3.5	4388.0
2	3	Orphans of the Storm	1921	3.2	9062.0
3	4	The Object of Beauty	1991	2.8	6150.0
4	5	Night Tide	1963	2.8	5126.0

In [6]:
```
data.tail(5)
```

Out[6]:

	srno	movie	year	rating	time
49585	49586	Winter Wonderland	2013	2.8	1812.0
49586	49587	Top Gear: Series 19: Africa Special	2013	NaN	6822.0
49587	49588	Fireplace For Your Home: Crackling Fireplace w...	2010	NaN	3610.0
49588	49589	Kate Plus Ei8ht	2010	2.7	NaN
49589	49590	Kate Plus Ei8ht: Season 1	2010	2.7	NaN

In [7]:
```
data1=data.loc[(data.time>5000)]
```

In [8]:
```
data1
```

Out[8]:

	srno	movie	year	rating	time
2	3	Orphans of the Storm	1921	3.2	9062.0
3	4	The Object of Beauty	1991	2.8	6150.0
4	5	Night Tide	1963	2.8	5126.0
5	6	One Magic Christmas	1985	3.8	5333.0
6	7	Muriel's Wedding	1994	3.5	6323.0
...	...	...	...	...	...
49564	49565	American Addict	2013	3.5	5377.0
49579	49580	Underground: The Julian Assange Story	2012	3.7	5665.0
49583	49584	Sunset Strip	2012	3.0	5770.0
49584	49585	Silver Bells	2013	3.5	5287.0
49586	49587	Top Gear: Series 19: Africa Special	2013	NaN	6822.0

5897 rows × 5 columns

In [9]:
```
data2=data.loc[(data.year==2000)&(data.time>5000)]
```

In [10]:
```
data2
```

Out[10]:

	srno	movie	year	rating	time
409	410	Believe	2000	3.3	5767.0
416	417	The Prophecy 3: The Ascent	2000	3.4	5048.0
430	431	Scream 3	2000	3.2	7013.0
432	433	Holy Smoke	2000	3.0	6855.0
437	438	Requiem for a Dream	2000	3.9	6087.0
...	...	...	...	...	...
32557	32558	Shaded Places	2000	2.9	5350.0
36229	36230	The Three Stooges	2000	3.7	5256.0
37333	37334	Les Miserables: Pt. 2	2000	NaN	5170.0
37336	37337	Les Miserables: Pt. 1	2000	NaN	5194.0
39493	39494	The Prophet's Game	2000	3.2	6486.0

137 rows × 5 columns

In [12]:
```
data3=data.loc[(data.rating>=4.5)&(data.year>2000)&(data.year<=2010)]
```

In [13]:
```
data3
```

Out[13]:

	srno	movie	year	rating	time
6996	6997	Breaking Bad: Season 1	2008	4.5	NaN
8040	8041	Breaking Bad: Season 2	2009	4.5	NaN
12078	12079	Breaking Bad: Season 3	2010	4.5	NaN
13314	13315	Breaking Bad	2008	4.5	NaN
14720	14721	The Walking Dead: Season 1	2010	4.5	NaN
14956	14957	Sherlock: Series 1	2010	4.5	NaN
21910	21911	The Walking Dead	2010	4.5	NaN
26483	26484	Sherlock	2010	4.5	NaN
41845	41846	Fairy Tail: Season 1	2009	4.5	NaN
43070	43071	Fairy Tail	2009	4.5	NaN

In [15]:
```
datat=data.sort_values('time')
```

In [16]:
```
datat.head(10)
```

Out[16]:

	srno	movie	year	rating	time
40150	40151	Trailer: Pain	2012	3.6	52.0
41081	41082	Trailer: Get to Work	2012	3.3	55.0
41082	41083	Trailer: Give and Take	2012	3.3	66.0
43166	43167	Trailer: Emperor	2013	3.1	67.0
43330	43331	Trailer: Blood Angel	2013	4.2	69.0
40149	40150	Trailer: Lift the Veil	2012	3.6	69.0
40789	40790	Trailer: Gray Area	2012	3.7	70.0
40154	40155	Trailer: Cleave	2012	3.5	71.0
43168	43169	Trailer: Masks	2013	4.2	73.0
45745	45746	Trailer: Strip Search	2013	3.6	73.0

In [17]:
```
datat=data.sort_values('rating')
```

In [18]:
```
datat
```

Out[18]:

	srno	movie	year	rating	time
40934	40935	Lagegi	2007	1.4	NaN
42115	42116	Sun Yaar Chill Maar	2007	1.4	NaN
40826	40827	Lagegi	2007	1.4	NaN
42160	42161	Sun Yaar Chill Maar	2007	1.4	NaN
41396	41397	Meri Toh Lag Gayi Naukri	2011	1.5	NaN
...	...	...	...	...	...
49563	49564	My Hope America with Billy Graham: Lose to Gain	2013	NaN	1400.0
49576	49577	Barbie: Life in the Dreamhouse: Barbie Life in...	2013	NaN	1390.0
49577	49578	Barbie: Life in the Dreamhouse: Barbie Life in...	2013	NaN	1458.0
49586	49587	Top Gear: Series 19: Africa Special	2013	NaN	6822.0
49587	49588	Fireplace For Your Home: Crackling Fireplace w...	2010	NaN	3610.0

49590 rows × 5 columns

In [19]:
```
data.isna().sum()
```

Out[19]:
```
srno          0
movie         0
year          0
rating    38776
time       3754
dtype: int64
```

In [20]:
```
data.shape
```

Out[20]:
```
(49590, 5)
```

In [21]:
```
data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 49590 entries, 0 to 49589
Data columns (total 5 columns):
 #   Column  Non-Null Count  Dtype  
---  ------  --------------  -----  
 0   srno    49590 non-null  int64  
 1   movie   49590 non-null  object 
 2   year    49590 non-null  int64  
 3   rating  10814 non-null  float64
 4   time    45836 non-null  float64
dtypes: float64(2), int64(2), object(1)
memory usage: 1.9+ MB
```

In [22]:
```
data4=data.groupby(['year']).count()
```

In [23]:
```
data4
```

Out[23]:

year	srno	movie	rating	time
1913	3	3	3	3
1914	20	20	5	18
1915	1	1	1	1
1916	1	1	1	1
1918	1	1	1	1
...	...	...	...	...
2010	5107	5107	1102	4671
2011	5511	5511	1346	4992
2012	4339	4339	1130	3978
2013	981	981	345	901
2014	1	1	1	1

101 rows × 4 columns

In [24]:
```
data4.to_csv('movies2.csv')
```

In [25]:
```
data4
```

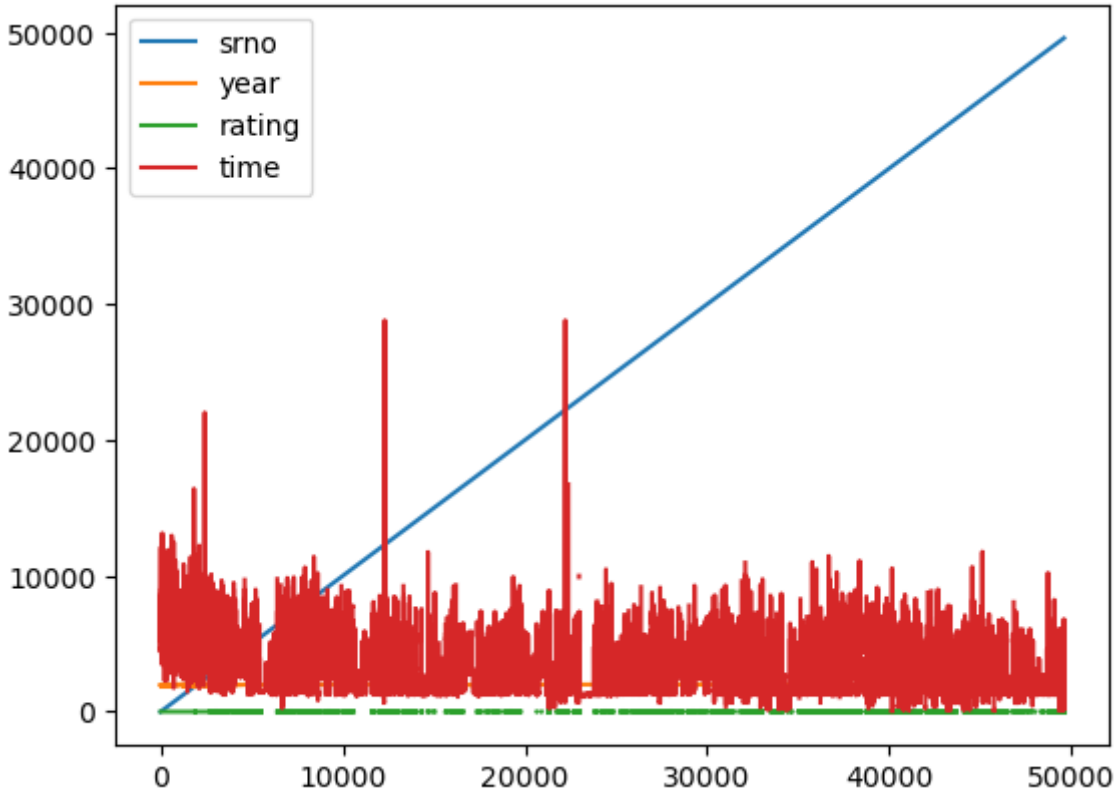
Out[25]:

year	srno	movie	rating	time
1913	3	3	3	3
1914	20	20	5	18
1915	1	1	1	1
1916	1	1	1	1
1918	1	1	1	1
...	...	...	...	...
2010	5107	5107	1102	4671
2011	5511	5511	1346	4992
2012	4339	4339	1130	3978
2013	981	981	345	901
2014	1	1	1	1

101 rows × 4 columns

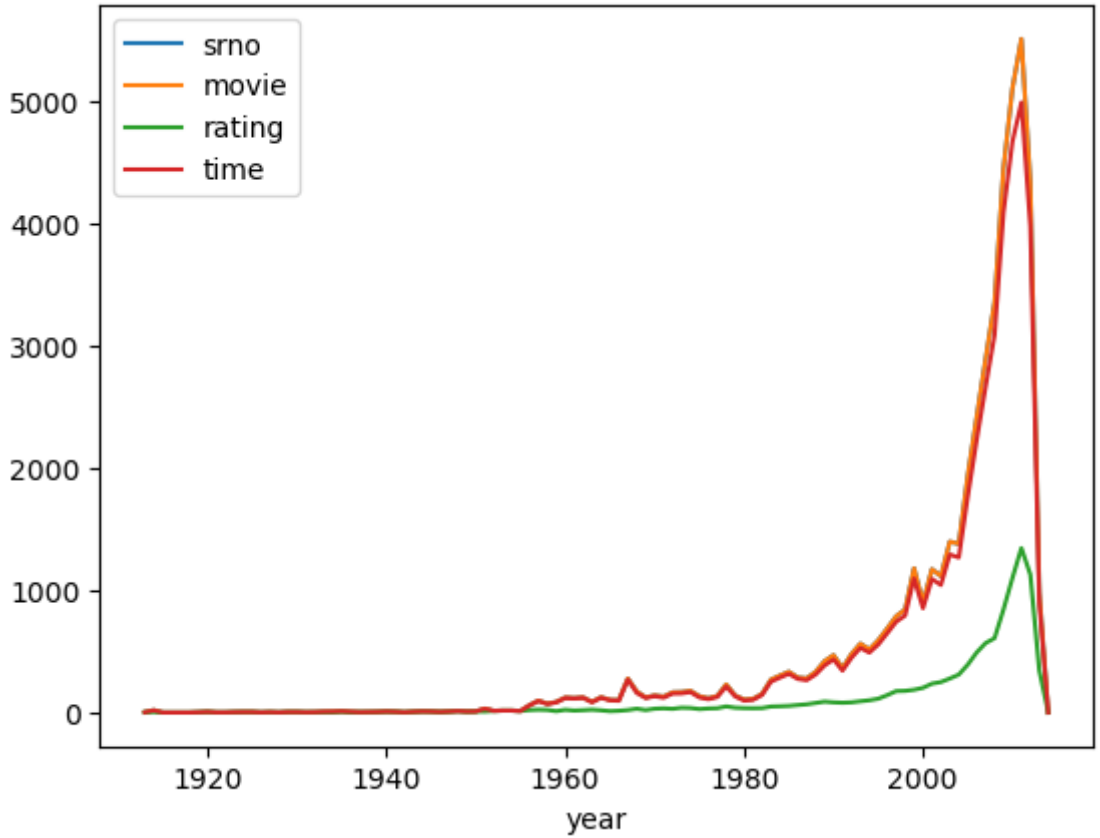
In [26]:
```
data.plot()
```

Out[26]: <Axes: >



In [27]:
```
data4.plot()
```

Out[27]: <Axes: xlabel='year'>



In [ ]:
```

```