

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

```
In [11]: data=pd.read_csv("/home/placement/Downloads/movies.csv")
```

```
In [12]: list(data.columns)
```

```
Out[12]: ['srno', 'movie', 'year', 'rating', 'time']
```

```
In [13]: data.groupby(['rating']).count()
```

```
Out[13]:
```

	srno	movie	year	time
rating				
1.4	4	4	4	0
1.5	2	2	2	0
1.6	10	10	10	4
1.7	14	14	14	10
1.8	18	18	18	18
1.9	33	33	33	25
2.0	24	24	24	22
2.1	74	74	74	72
2.2	53	53	53	53
2.3	99	99	99	99
2.4	109	109	109	109
2.5	156	156	156	152
2.6	163	163	163	157
2.7	234	234	234	230
2.8	316	316	316	305
2.9	386	386	386	356
3.0	481	481	481	447
3.1	545	545	545	501
3.2	592	592	592	518
3.3	677	677	677	544
3.4	698	698	698	563
3.5	802	802	802	562
3.6	967	967	967	588

	srno	movie	year	time
rating				
3.7	1058	1058	1058	543
3.8	962	962	962	413
3.9	860	860	860	342
4.0	580	580	580	204
4.1	403	403	403	117
4.2	316	316	316	71
4.3	124	124	124	22
4.4	31	31	31	9
4.5	23	23	23	4

In [14]: data['rating'].sum()

Out[14]: 37321.799999999996

In [15]: data.describe()

Out[15]:

	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 [16]: data.head()
```

```
Out[16]:
```

	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 [17]: 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 [18]: data1=data.loc[(data.time>=5000)]  
data1
```

Out[18]:

	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

5899 rows × 5 columns

```
In [19]: data2=data.loc[(data.year==2000)&(data.time>=5000)]  
data2
```

Out[19]:

	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 [20]: `data.head(100)`

Out[20]:

	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
...
95	96	The Hunted	1995	3.4	6605.0
96	97	The Great Waldo Pepper	1975	3.5	6467.0
97	98	Godzilla: King of the Monsters	1956	3.5	4828.0
98	99	Highlander 2: Renegade Version	1991	3.1	6585.0
99	100	High Noon	1952	3.9	5087.0

100 rows × 5 columns

In [21]: `data['rating'].unique()`

Out[21]: `array([3.9, 3.5, 3.2, 2.8, 3.8, 3.4, 3.3, 3.6, 2.9, 4. , 3.7, 3.1, 3. ,
2.5, 2.7, 4.1, 2.6, 2.4, 2.2, 4.2, 2.1, 4.3, 1.9, 2.3, 4.4, nan,
2. , 1.8, 4.5, 1.7, 1.6, 1.4, 1.5])`

In [22]: `data.tail(50)`

Out[22]:

	srno	movie	year	rating	time
49540	49541	Life With Boys: Season 1: This Time the Proble...	2011	NaN	1368.0
49541	49542	Life With Boys: Season 1: In the Principal's O...	2011	NaN	1368.0
49542	49543	El Fuente: 5994 MP	2013	3.5	471.0
49543	49544	Life With Boys: Season 1: Monkey Talk with Boys	2011	NaN	1368.0
49544	49545	El Fuente: 50 MP	2013	3.3	465.0
49545	49546	Bo Burnham: what.	2013	4.1	3614.0
49546	49547	Life With Boys: Season 1: A Perfect Life with ...	2011	NaN	1368.0
49547	49548	Life With Boys: Season 1: Wrestling with Boys	2011	NaN	1369.0
49548	49549	Life With Boys: Season 1	2011	4.1	NaN
49549	49550	El Fuente: 30 MP	2013	3.3	471.0
49550	49551	El Fuente: 2997 MP	2013	3.2	471.0
49551	49552	El Fuente: 25 MP	2013	3.3	465.0
49552	49553	El Fuente: 24 MP	2013	3.5	484.0
49553	49554	Max Steel	2013	4.1	NaN
49554	49555	Saving Santa	2013	3.8	5038.0
49555	49556	Lilyhammer: Season 1 (Recap)	2013	4.2	194.0
49556	49557	Shinobi Girl	2012	2.0	NaN
49557	49558	GLOW: The Story of the Gorgeous Ladies of Wres...	2012	3.7	4593.0
49558	49559	Mitt (Trailer)	2013	3.0	138.0
49559	49560	My Hope America with Billy Graham: The Cross	2013	NaN	1706.0
49560	49561	The Square (Trailer)	2014	3.6	154.0
49561	49562	My Hope America with Billy Graham	2013	3.9	NaN
49562	49563	My Hope America with Billy Graham: Defining Mo...	2013	NaN	1791.0
49563	49564	My Hope America with Billy Graham: Lose to Gain	2013	NaN	1400.0

	srno	movie	year	rating	time
49564	49565	American Addict	2013	3.5	5377.0
49565	49566	My Hope America with Billy Graham	2013	3.9	NaN
49566	49567	El Fuente: 2997 MP10	2013	2.7	470.0
49567	49568	El Fuente: 25 MP10	2013	2.9	464.0
49568	49569	El Fuente: 24 MP10	2013	2.8	484.0
49569	49570	El Fuente: 23976 MP10	2013	2.9	484.0
49570	49571	The Short Game (Trailer)	2013	4.1	156.0
49571	49572	El Fuente: 5994 MP10	2013	2.8	471.0
49572	49573	El Fuente: 50 MP10	2013	2.9	464.0
49573	49574	El Fuente: 30 MP10	2013	2.8	470.0
49574	49575	Greg Fitzsimmons: Life on Stage	2013	3.3	3671.0
49575	49576	Dave Foley: Relatively Well	2013	3.2	3446.0
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
49578	49579	Transformers Prime Beast Hunters: Predacons Ri...	2013	4.2	3950.0
49579	49580	Underground: The Julian Assange Story	2012	3.7	5665.0
49580	49581	Curious George: A Very Monkey Christmas	2009	3.8	3438.0
49581	49582	Mumfie's White Christmas	1996	2.4	1350.0
49582	49583	Lady Gaga & The Muppets' Holiday Spectacular	2013	3.1	3496.0
49583	49584	Sunset Strip	2012	3.0	5770.0
49584	49585	Silver Bells	2013	3.5	5287.0
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 [23]: data4=data.loc[(data.rating>=4)&(data.year>=2000)&(data.year<=2010)]
```

```
In [24]: data4
```

```
Out[24]:
```

	srno	movie	year	rating	time
484	485	Coming to Light: Edward S. Curtis and the Nort...	2000	4.0	5027.0
560	561	The Emperor's New Groove	2000	4.0	4703.0
816	817	Dil Chahta Hai	2001	4.0	11110.0
865	866	Black Hawk Down	2001	4.0	8660.0
920	921	We Were Soldiers	2002	4.0	8309.0
...
48784	48785	King Tut Unwrapped	2010	4.0	NaN
48854	48855	Pit Bulls & Parolees	2009	4.3	NaN
48874	48875	Brew Masters	2010	4.1	NaN
49025	49026	Cake Boss: Next Great Baker	2010	4.1	NaN
49028	49029	Police Women of Dallas	2010	4.0	NaN

725 rows × 5 columns

```
In [25]: data4.iloc[0]
```

```
Out[25]: srno                                485
movie      Coming to Light: Edward S. Curtis and the Nort...
year                                             2000
rating                                           4.0
time                                             5027.0
Name: 484, dtype: object
```

In [26]: data4[1:3]

Out[26]:

	srno	movie	year	rating	time
560	561	The Emperor's New Groove	2000	4.0	4703.0
816	817	Dil Chahta Hai	2001	4.0	11110.0

In [27]: datat=data.sort_values('rating')

In [28]: datat

Out[28]:

	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 [30]: data6=data.drop('movie',axis=1)

```
In [31]: data6
```

```
Out[31]:
```

	srno	year	rating	time
0	1	1993	3.9	4568.0
1	2	1932	3.5	4388.0
2	3	1921	3.2	9062.0
3	4	1991	2.8	6150.0
4	5	1963	2.8	5126.0
...
49585	49586	2013	2.8	1812.0
49586	49587	2013	NaN	6822.0
49587	49588	2010	NaN	3610.0
49588	49589	2010	2.7	NaN
49589	49590	2010	2.7	NaN

49590 rows × 4 columns

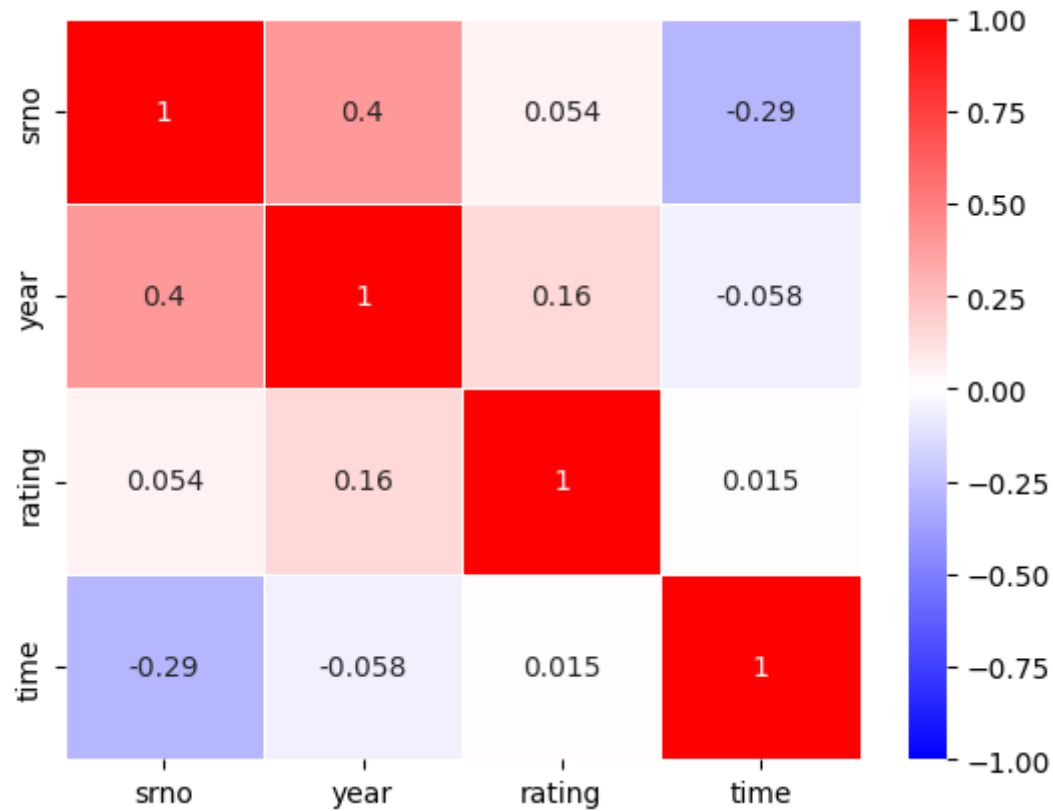
```
In [32]: cor_mat=data6.corr()  
cor_mat
```

```
Out[32]:
```

	srno	year	rating	time
srno	1.000000	0.401153	0.054288	-0.286048
year	0.401153	1.000000	0.156210	-0.058444
rating	0.054288	0.156210	1.000000	0.015285
time	-0.286048	-0.058444	0.015285	1.000000

```
In [33]: import seaborn as sns
sns.heatmap(cor_mat, vmax=1, vmin=-1, annot=True, linewidths=.5, cmap='bwr')
```

Out[33]: <Axes: >



In []:

