```
In [1]:  import pandas as pd
         import matplotlib
         import matplotlib.pyplot as plt
         import re
         fig=plt.figure() #Plots in matplotlib reside within a figure object, use pl
         t.figure to create new figure
         df=pd.read_csv('imdb_ratings.csv',sep=";")
         df.columns=[i.strip(',') for i in df.columns]
         df['Title']=[str(i).strip(',')  for i in df['Title']]
         df['Year']=df['Title'].apply(lambda x: re.findall("\(\d{4}\)",x)[0][1:5] if
         re.findall("\(\d{4}\)",x) else '')
         df
```

```
C:\Users\Gramenerpc\Anaconda\lib\site-packages\IPython\core\interactiveshel
l.py:2741: DtypeWarning: Columns (3) have mixed types. Specify dtype option
on import or set low_memory=False.
  interactivity=interactivity, compiler=compiler)
```

Out[1]:

	New Distribution	Votes	Rank	Title	Year
0	0000000125	1534416	9.2	The Shawshank Redemption (1994)	1994
1	0000000125	1051406	9.2	The Godfather (1972)	1972
2	0000000124	711150	9.0	The Godfather: Part II (1974)	1974
3	0000000124	1510096	8.9	The Dark Knight (2008)	2008
4	0000000133	396786	8.9	12 Angry Men (1957)	1957
5	0000000133	780409	8.9	Schindler's List (1993)	1993
6	0000000123	1195816	8.9	Pulp Fiction (1994)	1994
7	0000000123	458466	8.9	Il buono, il brutto, il cattivo (1966)	1966
8	0000000124	1100118	8.9	The Lord of the Rings: The Return of the King ...	2003
9	0000000133	1209370	8.8	Fight Club (1999)	1999
10	0000000123	1124565	8.8	The Lord of the Rings: The Fellowship of the R...	2001
11	0000000123	718156	8.7	Star Wars: Episode V - The Empire Strikes Back...	1980
12	0000000133	1110631	8.7	Forrest Gump (1994)	1994
13	0000000123	1308541	8.7	Inception (2010)	2010
14	0000000232	620194	8.7	One Flew Over the Cuckoo's Nest (1975)	1975
15	0000000123	991663	8.7	The Lord of the Rings: The Two Towers (2002)	2002
16	0000000233	660036	8.7	Goodfellas (1990)	1990
17	0000000233	1100390	8.7	The Matrix (1999)	1999
18	0000000223	788051	8.7	Star Wars (1977)	1977
19	0000000123	210394	8.7	Shichinin no samurai (1954)	1954
20	0000000232	486939	8.6	Cidade de Deus (2002)	2002
21	0000001232	919677	8.6	Se7en (1995)	1995
22	0000001232	789440	8.6	The Silence of the Lambs (1991)	1991
23	0000000232	672707	8.6	The Usual Suspects (1995)	1995
24	0000001123	247601	8.6	It's a Wonderful Life (1946)	1946
25	0000000233	369741	8.6	La vita � bella (1997)	1997
26	0000001232	651901	8.6	L�on (1994)	1994
27	0000001223	196609	8.6	C'era una volta il West (1968)	1968
28	0000000124	739421	8.5	Interstellar (2014)	2014
29	0000001232	790379	8.5	Saving Private Ryan (1998)	1998

...	...	...	...	...	...
658288	0000002111	110	6.7	�� arkadas (1958)	1958
658289	0000003101	136	7.0	�� arkadas (1971)	1971
658290	22..2.2..2	5	5.0	�� garipler (1957)	1957
658291	102120.0.0	28	4.0	�� halka 25 (1986)	1986
658292	0000012102	274	7.1	�� kagitcilar (1976)	1976
658293	0.1.3101.1	16	5.8	�� kardese bir gelin (1965)	1965
658294	..1..1.1.5	7	8.1	�� karislik d�nya (1984)	1984
658295	1...0.0023	14	7.7	�� kisilik ask (2004) (TV)	2004
658296	4......42.	5	5.4	�� kizgin cengaver (1971)	1971
658297	.......1.8	6	9.7	�� kursunluk opera (1995) (V)	1995
658298	0000012211	13324	7.4	�� maymun (2008)	2008
658299	0000211101	79	5.8	�� sevgili (1972)	1972
658300	2100001101	40	5.0	�� s�permen olimpiyatlarda (1984)	1984
658301	0.00012111	35	7.0	�� tekerlekli bisiklet (1962)	1962
658302	..2.42...2	5	5.8	�� �fkeli gen� (1963)	1963
658303	2011100.00	45	3.9	��, Iki, Bir... Kestik! (2014)	2014
658304	0..1.20012	21	6.9	��te bir (2009)	2009
658305	0000002211	1729	7.4	���nc� Sayfa (1999)	1999
658306	1.00.0..06	26	8.0	���nc� Selim'in g�zdesi (1950)	1950
658307	200101.0.2	40	5.5	���nc� g�z (1988)	1988
658308	30....0..5	17	6.2	���n�z� de mihlarim (1965)	1965
658309	00.0000015	31	8.2	�egar Kan�nur Flj�ga (2011)	2011
658310	20...2.0.2	14	5.6	�egar �a� gerist (1998) (TV)	1998
658311	22.0010001	25	4.7	�etta Reddast (2013)	2013
658312	00..000224	76	8.7	�etta er ekkert m�l (2006)	2006
658313	00.1102102	28	6.9	�ri�ja nafni (2003)	2003
658314	...3.1..24	10	7.6	�r�ng s�n (2005)	2005
658315	0000001202	73	7.1	�rtico (2014)	2014
658316	0.10.221.1	14	6.1	�l (2001) (V)	2001
658317	0.01022101	28	6.6	� (2012)	2012

658318 rows × 5 columns

```python
In [99]:  # table for the movies count year wise
          df_year_group_line=df.groupby('Year').count().cumsum()
          df_year_group_line
```

Year	New Distribution	Votes	Rank	Title
	303838	9876	9876	303838
1874	303839	9877	9877	303839
1878	303840	9878	9878	303840
1887	303841	9879	9879	303841
1888	303846	9884	9884	303846
1889	303848	9886	9886	303848
1890	303853	9891	9891	303853
1891	303862	9900	9900	303862
1892	303871	9909	9909	303871
1893	303873	9911	9911	303873
1894	303967	10005	10005	303967
1895	304083	10121	10121	304083
1896	304847	10885	10885	304847
1897	305424	11462	11462	305424
1898	305819	11857	11857	305819
1899	306111	12149	12149	306111
1900	306410	12448	12448	306410
1901	306736	12774	12774	306736
1902	307003	13041	13041	307003
1903	307325	13363	13363	307325
1904	307557	13595	13595	307557
1905	307745	13783	13783	307745
1906	307941	13979	13979	307941
1907	308144	14182	14182	308144
1908	308412	14450	14450	308412
1909	308815	14853	14853	308815
1910	309185	15223	15223	309185
1911	309471	15509	15509	309471
1912	309823	15861	15861	309823
1913	310113	16151	16151	310113
...	...	...	...	...
1987	420829	126867	126867	420829
1988	424503	130541	130541	424503

1989	428313	134351	134351	428313
1990	432057	138095	138095	432057
1991	435906	141944	141944	435906
1992	440022	146060	146060	440022
1993	444307	150345	150345	444307
1994	448913	154951	154951	448913
1995	453953	159991	159991	453953
1996	459130	165168	165168	459130
1997	464694	170732	170732	464694
1998	470731	176769	176769	470731
1999	477419	183457	183457	477419
2000	484918	190956	190956	484918
2001	492937	198975	198975	492937
2002	502025	208063	208063	502025
2003	512033	218071	218071	512033
2004	523312	229350	229350	523312
2005	535612	241650	241650	535612
2006	548327	254365	254365	548327
2007	560589	266627	266627	560589
2008	573436	279474	279474	573436
2009	587040	293078	293078	587040
2010	601012	307050	307050	601012
2011	615398	321436	321436	615398
2012	629371	335409	335409	629371
2013	642299	348337	348337	642299
2014	653066	359104	359104	653066
2015	658317	364355	364355	658317
2016	658318	364356	364356	658318

133 rows × 4 columns

In [100]:
```python
# line graph for the movies count year wise
df_year_group_line.plot(y="Title")
plt.show()
```

In [109]:
```python
# bar graph for the movies count year wise
df_year_group_line.plot(y="Title",kind="bar")
plt.show()
```

```python
In [131]: # table representaion for the max voted movies in the year wise
          df_year_group_max=df.groupby('Year').max()
          df_year_group_max.ix[1:]
```

```
Out[131]:
```

Year	New Distribution	Votes	Rank	Title
1874	0000121101	194	6.5	Passage de Venus (1874)
1878	0000012101	475	7.2	Sallie Gardner at a Gallop (1878)
1887	0000210000	378	5.1	Man Walking Around the Corner (1887)
1888	100.211001	3494	7.7	Traffic Crossing Leeds Bridge (1888)
1889	1.00010003	128	6.9	Leisurely Pedestrians, Open Topped Buses and H...
1890	0001210001	724	5.6	Traffic in King's Road, Chelsea (1890)
1891	200111.002	854	5.6	Newark Athlete (1891)
1892	1112110000	591	6.7	Wrestling (1892)
1893	1.00112.01	1212	6.2	Horse Shoeing (1893)
1894	3.3.2...0.	1152	6.8	Wrestling Match (1894)
1895	5.1112....	3536	7.3	Young Weimer (1895)
1896	60000....0	5292	7.8	�criture � l'envers (1896)
1897	6.2.2.....	819	7.7	�pisodes de guerre (1897)
1898	61..1...11	1779	8.5	� bord du 'Formidable': Ramassage du linge (1898)
1899	6...1....1	623	8.1	�vocation spirite (1899)
1900	5..11....1	1293	8.4	Women's Rights (1900)
1901	6...22....	1463	7.5	�lectrocution de l'anarchiste Gzolgosz meurtri...
1902	5.3.1.....	24421	8.2	�ruption volcanique � la Martinique (1902)
1903	611.1.....	10123	8.4	�pop�e napol�onienne - Napol�on Bonaparte (1903)
1904	62......2.	2052	7.8	�v�nements russo-japonais - Guerre russo-japon...
1905	5.1.21....	1252	8.3	Z�rich (1905)
1906	42..2...2.	1098	8.0	� la conqu�te de l'air (1906)
1907	311.11....	769	8.4	Yale Laundry (1907)
1908	5...2....1	1267	8.3	[Eine lustige Geschichte am Fenster] (1908)
1909	410.0..0.1	1399	8.2	�s Portas do C�u (1909)
1910	510.0....0	2201	8.2	[Vorbereitung auf das Rendezvous] (1910)
1911	62.......1	1055	8.0	Zwei Frauen (1911)
1912	80.......0	1622	8.8	�nsir'te margarite (1912)
1913	6.1.....11	1359	8.8	Zub za zub (1913)

1914	711.......	2504	9.0	Zudora (1914)
...	...	...	...	...
1987	8000000000	436281	9.4	�zga �m�r (1987)
1988	90........	540787	9.6	���nc� g�z (1988)
1989	9......0..	465011	9.7	�berleben in New York (1989)
1990	9..0.0.000	660036	9.6	�l�rayak (1990)
1991	90........	789440	9.4	�nskas (1991)
1992	8000000000	593988	9.5	�rd�g vigye (1992)
1993	9.0...0..0	780409	9.6	�ternelle Emmanuelle (1993) (TV)
1994	9....0....	1534416	9.5	�rkenens s�nner (1994) (V)
1995	9000...0.0	919677	9.7	�� kursunluk opera (1995) (V)
1996	900.0.....	428872	9.8	�ltima llamada (1996)
1997	8000..00.0	722784	9.6	�jgazdagok (1997)
1998	90.......0	790379	10.0	�egar �a� gerist (1998) (TV)
1999	9.....00..	1209370	10.0	���nc� Sayfa (1999)
2000	90....0...	885283	9.7	�l�m Pesimizde (2000)
2001	9.00...0.0	1124565	9.7	�l (2001) (V)
2002	90..0.....	991663	10.0	�tek do Bud�na (2002)
2003	90000000.0	1100118	9.7	�ri�ja nafni (2003)
2004	900.0.....	603096	10.0	�� kisilik ask (2004) (TV)
2005	90.......0	873809	10.0	�r�ng s�n (2005)
2006	90......0.	783702	10.0	�etta er ekkert m�l (2006)
2007	90.0..0...	553523	9.8	�briggebliebene ausgereifte Haltungen (2007)
2008	90........	1510096	9.9	�� maymun (2008)
2009	9000.0...0	820405	9.7	��te bir (2009)
2010	900.000...	1308541	10.0	�vegtigris 3. (2010)
2011	900..0...0	480316	10.0	�egar Kan�nur Flj�ga (2011)
2012	90.00.0000	1024106	10.0	� (2012)
2013	90..00...0	652830	10.0	�etta Reddast (2013)
2014	900....0..	739421	9.9	�rtico (2014)
2015	9000000000	343257	10.0	�berleben an der Scheidungsfront (2015) (TV)
2016	0000010202	34	7.2	Killer Party (2016)

132 rows × 4 columns

```
In [111]:  # line graph for the max voted movies in the year
           df_year_group_v_bar=df.groupby('Year').max()
           df_year_group.plot(y="Votes")
           plt.show()
```

```
In [112]:  # bar graph for the max voted movies in the year
           df_year_group_v_bar=df.groupby('Year').max()
           df_year_group.plot(y="Votes",kind="bar")
           plt.show()
```

```
In [132]:  # Table representation for the max ranked movies in the year
           df_year_group_r_bar=df.groupby(['Year'], sort=False)['Rank','Title'].max()
           df_year_group_r_bar
```

Out[132]:

	Rank	Title
Year		
1994	9.5	�rkenens s�nner (1994) (V)
1972	9.4	�� sevgili (1972)
1974	9.2	�scar y Carlos (1974)
2008	9.9	�� maymun (2008)
1957	9.0	�� garipler (1957)
1993	9.6	�ternelle Emmanuelle (1993) (TV)
1966	9.2	�he Suve Akvarellid (1966) (TV)
2003	9.7	�ri�ja nafni (2003)
1999	10.0	���nc� Sayfa (1999)
2001	9.7	�l (2001) (V)
1980	9.4	�teky domu (1980)
2010	10.0	�vegtigris 3. (2010)
1975	9.5	�� ahbap �avuslar (1975)
2002	10.0	�tek do Bud�na (2002)
1990	9.6	�l�rayak (1990)
1977	9.5	�lmeyen sarki (1977)
1954	8.8	�l�m saati (1954)
1995	9.7	�� kursunluk opera (1995) (V)
1991	9.4	�nskas (1991)
1946	8.6	�sone-ke no ashita (1946)
1997	9.6	�jgazdagok (1997)
1968	9.3	�ber den Gehorsam. Szenen aus Deutschland, wo ...
2014	9.9	�rtico (2014)
1998	10.0	�egar �a� gerist (1998) (TV)
1942	9.0	�zenet a Volgapartr�l (1942)
1981	9.6	�� Kagit�i (1981)
1960	9.1	�sen chitai (1960)
1931	8.7	�chec et mat (1931)
2011	10.0	�egar Kan�nur Flj�ga (2011)
1936	9.3	�vfordul� (1936)
...	...	...
1896	7.8	�criture � l'envers (1896)
1956	8.9	�lm�s bir kadinin evraki metrukesi (1956)

1937	9.4	�ril�ny szob�t keres (1937)
1938	9.4	�ducation de prince (1938)
1928	8.4	�tudes sur Paris (1928)
1910	8.2	[Vorbereitung auf das Rendezvous] (1910)
1912	8.8	�nsir'te margarite (1912)
1915	8.6	Zhitel nyeobitayemovo ostrova (1915)
1905	8.3	Z�rich (1905)
1933	8.4	�t�l a Balaton (1933)
1916	8.5	�anakkale muharebeleri (1916)
1907	8.4	Yale Laundry (1907)
1930	8.6	� propos de Nice (1930)
1909	8.2	�s Portas do C�u (1909)
1911	8.0	Zwei Frauen (1911)
1894	6.8	Wrestling Match (1894)
1904	7.8	�v�nements russo-japonais - Guerre russo-japon...
1923	8.6	�nos bank�re Fuxe (1923)
1895	7.3	Young Weimer (1895)
1892	6.7	Wrestling (1892)
1906	8.0	� la conqu�te de l'air (1906)
1888	7.7	Traffic Crossing Leeds Bridge (1888)
1893	6.2	Horse Shoeing (1893)
1891	5.6	Newark Athlete (1891)
1889	6.9	Leisurely Pedestrians, Open Topped Buses and H...
2016	7.2	Killer Party (2016)
1890	5.6	Traffic in King's Road, Chelsea (1890)
1887	5.1	Man Walking Around the Corner (1887)
1874	6.5	Passage de Venus (1874)
1878	7.2	Sallie Gardner at a Gallop (1878)

133 rows × 2 columns

In [133]:
```python
# line graph for the max ranked movies in the year
df_year_group_r_bar.plot(y="Rank")
plt.show()
```

In [134]:
```python
# bar graph for the max ranked movies in the year
df_year_group_r_bar.plot(y="Rank",kind="bar")
plt.show()
```

```
In [136]:   # Heighest rank movies in the total years
            df[df['Rank']==max(df['Rank'])]
```

Out[136]:

	New Distribution	Votes	Rank	Title	Year
305656	.........*	5	10	Abdul & Hamza (2015)	2015
340253	.........*	7	10	Bring Me the Head of Tim Horton (2015)	2015
359241	.........*	6	10	Criminals (2015)	2015
361776	.........*	5	10	Daddy Chain: Real Men Volume 6 (2005) (V)	2005
364579	.........*	5	10	Das Wunder von Lengede (1969) (TV)	1969
393833	.........*	5	10	Exposed (2015)	2015
397267	00.0..0009	966	10	Felix Manalo (2015)	2015
404548	.........*	5	10	Fuck Me (2007/II) (V)	
411944	.........*	5	10	Goo Girls 16 (2004) (V)	2004
426165	.........*	5	10	Hot Showers 2 (2002) (V)	2002
446295	0...000.09	352	10	Kagero: Kokumeikan shinsho (1998) (VG)	1998
464235	.........*	5	10	Las putas de New York (1999) (V)	1999
474144	.........*	5	10	Live Gonzo (2010) (V)	2010
513725	.........*	6	10	Once You Go Black 3 (2004) (V)	2004
563156	.........*	5	10	Sliced (2012)	2012
588137	.........*	15	10	The Brother Load 4 (2013) (V)	2013
588138	.........*	17	10	The Brother Load 5 (2013) (V)	2013
590935	.........*	5	10	The Dancing Llama (2006)	2006
626410	.........*	5	10	Transsexual Babysitters 14 (2011) (V)	2011
650772	.........*	5	10	Xenesis (2015)	2015

```
In [138]:   # Heighest voted movies in the total years
            df[df['Votes']==max(df['Votes'])]
            max(df['Votes'])
```

Out[138]:   1534416.0

```
In [139]:   df[df['Votes']==max(df['Votes'])]
```

Out[139]:

	New Distribution	Votes	Rank	Title	Year
0	0000000125	1534416	9.2	The Shawshank Redemption (1994)	1994
612417	0000000125	1534416	9.3	The Shawshank Redemption (1994)	1994

```
In [146]:
```

Out[146]: 246

```
In [ ]:
```