```
In [78]: import pandas as pd
         import numpy as np
```

```
In [ ]: #PANDAS
```

```
In [2]: d=pd.read_excel("C:\\Users\\user\\Desktop\\IMDb Movies India (1).xlsx")
        d
```

Out[2]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	A
0		NaN	NaN	Drama	NaN	NaN	J.S. Randhawa	Manmauji	
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	Gha
2	#Homecoming	-2021.0	90 min	Drama, Musical	NaN	NaN	Soumyajit Majumdar	Sayani Gupta	Bo
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	Ish
4	...And Once Again	-2010.0	105 min	Drama	NaN	NaN	Amol Palekar	Rajat Kapoor	Rit Se
...	...	...	...	...	...	...	...	...	
15504	Zulm Ko Jala Doonga	-1988.0	NaN	Action	4.6	11	Mahendra Shah	Naseeruddin Shah	S
15505	Zulmi	-1999.0	129 min	Action, Drama	4.5	655	Kuku Kohli	Akshay Kumar	T K
15506	Zulmi Raj	-2005.0	NaN	Action	NaN	NaN	Kiran Thej	Sangeeta Tiwari	
15507	Zulmi Shikari	-1988.0	NaN	Action	NaN	NaN	NaN	NaN	
15508	Zulm-O-Sitam	-1998.0	130 min	Action, Drama	6.2	20	K.C. Bokadia	Dharmendra	

15509 rows × 10 columns

```
In [ ]: # creating dataframe in pandas
```

```
In [3]: df=pd.DataFrame(d)
```

In [5]: `df`

Out[5]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	A
0		NaN	NaN	Drama	NaN	NaN	J.S. Randhawa	Manmauji	
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	Gha
2	#Homecoming	-2021.0	90 min	Drama, Musical	NaN	NaN	Soumyajit Majumdar	Sayani Gupta	Bo
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	Ish
4	...And Once Again	-2010.0	105 min	Drama	NaN	NaN	Amol Palekar	Rajat Kapoor	Rit Se
...	...	...	...	...	...	...	...	...	
15504	Zulm Ko Jala Doonga	-1988.0	NaN	Action	4.6	11	Mahendra Shah	Naseeruddin Shah	S
15505	Zulmi	-1999.0	129 min	Action, Drama	4.5	655	Kuku Kohli	Akshay Kumar	T K
15506	Zulmi Raj	-2005.0	NaN	Action	NaN	NaN	Kiran Thej	Sangeeta Tiwari	
15507	Zulmi Shikari	-1988.0	NaN	Action	NaN	NaN	NaN	NaN	
15508	Zulm-O-Sitam	-1998.0	130 min	Action, Drama	6.2	20	K.C. Bokadia	Dharmendra	

15509 rows × 10 columns

In [ ]: `# slicing and accessing`

In [6]: `df.head()`

Out[6]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	Actor 2
0		NaN	NaN	Drama	NaN	NaN	J.S. Randhawa	Manmauji	Birbal
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	Vivek Ghamande
2	#Homecoming	-2021.0	90 min	Drama, Musical	NaN	NaN	Soumyajit Majumdar	Sayani Gupta	Plabita Borthakur
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	Ishita Raj
4	...And Once Again	-2010.0	105 min	Drama	NaN	NaN	Amol Palekar	Rajat Kapoor	Rituparna Sengupta

In [7]: `df.head(5000)`

Out[7]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	Act
0		NaN	NaN	Drama	NaN	NaN	J.S. Randhawa	Manmauji	B
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	V Ghama
2	#Homecoming	-2021.0	90 min	Drama, Musical	NaN	NaN	Soumyajit Majumdar	Sayani Gupta	Pla Bortha
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	Ishita
4	...And Once Again	-2010.0	105 min	Drama	NaN	NaN	Amol Palekar	Rajat Kapoor	Ritupa Sengu
...	...	...	...	...	...	...	...	...	
4995	Geraftaar	-1985.0	167 min	Action, Drama	6.1	435	Prayag Raj	Kamal Haasan	Poo Dh
4996	Get to the Sun	NaN	NaN	Animation, Action, Adventure	NaN	NaN	Prashast Singh	Prashast Singh	
4997	Ghaath	-2000.0	NaN	Crime, Drama, Thriller	4.7	141	Akashdeep	Manoj Bajpayee	T
4998	Ghaav: The Wound	-2002.0	NaN	Action, Crime, Drama	5.4	16	Kumar Jay	Pankaj Berry	R B
4999	Ghabrahat	-1989.0	NaN	Horror	NaN	NaN	Kumar Bhatia	Dan Dhanoa	Satyer Kaj

5000 rows × 10 columns

In [8]: `df.tail()`

Out[8]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	Actor 2	Act
15504	Zulm Ko Jala Doonga	-1988.0	NaN	Action	4.6	11	Mahendra Shah	Naseeruddin Shah	Sumeet Saigal	Sup Ar
15505	Zulmi	-1999.0	129 min	Action, Drama	4.5	655	Kuku Kohli	Akshay Kumar	Twinkle Khanna	Ar
15506	Zulmi Raj	-2005.0	NaN	Action	NaN	NaN	Kiran Thej	Sangeeta Tiwari	NaN	
15507	Zulmi Shikari	-1988.0	NaN	Action	NaN	NaN	NaN	NaN	NaN	
15508	Zulm-O-Sitam	-1998.0	130 min	Action, Drama	6.2	20	K.C. Bokadia	Dharmendra	Jaya Prada	A S

In [9]:
```python
df.tail(200)
```

Out[9]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	A
15309	Youngistaan	-2014.0	133 min	Drama, Romance	5.1	1843	Syed Ahmad Afzal	Jackky Bhagnani	Sh
15310	Your Country	-1949.0	NaN	NaN	5.4	5	Shantaram Rajaram Vankudre	Pushpa Hans	U Sh
15311	Your Home, My Home	-2001.0	175 min	Comedy, Drama	5.7	803	Priyadarshan	Sunil Shetty	Ma Cha
15312	Yours Truly	-2018.0	84 min	Drama	5.9	102	Sanjoy Nag	Soni Razdan	Aa K
15313	Youth	-2016.0	124 min	Drama	7.0	15	Rakesh Kudalkar	Akshay Waghmare	Ma
...	...	...	...	...	...	...	...	...	
15504	Zulm Ko Jala Doonga	-1988.0	NaN	Action	4.6	11	Mahendra Shah	Naseeruddin Shah	Su S
15505	Zulmi	-1999.0	129 min	Action, Drama	4.5	655	Kuku Kohli	Akshay Kumar	Tw Kl
15506	Zulmi Raj	-2005.0	NaN	Action	NaN	NaN	Kiran Thej	Sangeeta Tiwari	
15507	Zulmi Shikari	-1988.0	NaN	Action	NaN	NaN	NaN	NaN	
15508	Zulm-O-Sitam	-1998.0	130 min	Action, Drama	6.2	20	K.C. Bokadia	Dharmendra	

200 rows × 10 columns

In [12]:
```python
df.describe()
```

Out[12]:

	Year	Rating
count	14981.000000	7919.000000
mean	-1987.012215	5.841621
std	25.416689	1.381777
min	-2022.000000	1.100000
25%	-2009.000000	4.900000
50%	-1991.000000	6.000000
75%	-1968.000000	6.800000
max	-1913.000000	10.000000

In [13]:
```python
df.columns
```

Out[13]:
```
Index(['Name', 'Year', 'Duration', 'Genre', 'Rating', 'Votes', 'Director',
       'Actor 1', 'Actor 2', 'Actor 3'],
      dtype='object')
```

In [14]:
```
df.shape
```

Out[14]: (15509, 10)

In [ ]:
```
#SLICING
```

In [16]:
```
df['Year']
```

Out[16]:
```
0               NaN
1          -2019.0
2          -2021.0
3          -2019.0
4          -2010.0
            ...
15504      -1988.0
15505      -1999.0
15506      -2005.0
15507      -1988.0
15508      -1998.0
Name: Year, Length: 15509, dtype: float64
```

In [18]:
```
df['Year'].head(1700)
```

Out[18]:
```
0               NaN
1          -2019.0
2          -2021.0
3          -2019.0
4          -2010.0
            ...
1695       -1938.0
1696       -1960.0
1697       -1947.0
1698       -1939.0
1699       -1971.0
Name: Year, Length: 1700, dtype: float64
```

In [19]: `df[1:10]`

Out[19]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	Actor
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	Viv Ghamand
2	#Homecoming	-2021.0	90 min	Drama, Musical	NaN	NaN	Soumyajit Majumdar	Sayani Gupta	Plabi Borthak
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	Ishita R
4	...And Once Again	-2010.0	105 min	Drama	NaN	NaN	Amol Palekar	Rajat Kapoor	Rituparn Sengup
5	...Aur Pyaar Ho Gaya	-1997.0	147 min	Comedy, Drama, Musical	4.7	827	Rahul Rawail	Bobby Deol	Aishwar R Bachcha
6	...Yahaan	-2005.0	142 min	Drama, Romance, War	7.4	1086	Shoojit Sircar	Jimmy Sheirgill	Minissh Lamb
7	.in for Motion	-2008.0	59 min	Documentary	NaN	NaN	Anirban Datta	NaN	Na
8	?: A Question Mark	-2012.0	82 min	Horror, Mystery, Thriller	5.6	326	Allyson Patel	Yash Dave	Munta Ahm
9	@Andheri	-2014.0	116 min	Action, Crime, Thriller	4.0	11	Biju Bhaskar Nair	Augustine	Fathin Bab

```
In [20]: df[1:500:2]
```

Out[20]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	Acto
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	Vi Ghamar
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	Ishita
5	...Aur Pyaar Ho Gaya	-1997.0	147 min	Comedy, Drama, Musical	4.7	827	Rahul Rawail	Bobby Deol	Aishwa Bachch
7	.in for Motion	-2008.0	59 min	Documentary	NaN	NaN	Anirban Datta	NaN	N
9	@Andheri	-2014.0	116 min	Action, Crime, Thriller	4.0	11	Biju Bhaskar Nair	Augustine	Fathi Ba
...	...	...	...	...	...	...	...	...	
491	Aasmaan	-1952.0	NaN	Drama, Family	NaN	NaN	Dalsukh M. Pancholi	Nasir Khan	Shya
493	Aasmaan Mahal	-1965.0	172 min	Drama	5.5	6	Khwaja Ahmad Abbas	Prithviraj Kapoor	Dilip F
495	Aasoo Bane Angaarey	-1993.0	150 min	Action	4.5	88	Mehul Kumar	Jeetendra	Madh D
497	Aasra	-2016.0	NaN	Biography	NaN	NaN	Raj Sagar	Raj Sagar	A Kulka
499	Aastha: In the Prison of Spring	-1997.0	132 min	Drama	6.4	172	Basu Bhattacharya	Rekha	Om F

250 rows × 10 columns

In [21]: `df[['Name','Year','Duration','Genre','Rating','Votes']][:5000]`

Out[21]:

	Name	Year	Duration	Genre	Rating	Votes
0		NaN	NaN	Drama	NaN	NaN
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8
2	#Homecoming	-2021.0	90 min	Drama, Musical	NaN	NaN
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35
4	...And Once Again	-2010.0	105 min	Drama	NaN	NaN
...	...	...	...	...	...	...
4995	Geraftaar	-1985.0	167 min	Action, Drama	6.1	435
4996	Get to the Sun	NaN	NaN	Animation, Action, Adventure	NaN	NaN
4997	Ghaath	-2000.0	NaN	Crime, Drama, Thriller	4.7	141
4998	Ghaav: The Wound	-2002.0	NaN	Action, Crime, Drama	5.4	16
4999	Ghabrahat	-1989.0	NaN	Horror	NaN	NaN

5000 rows × 6 columns

In [22]: `df.loc[1]`

Out[22]:
```
Name        #Gadhvi (He thought he was Gandhi)
Year                                   -2019.0
Duration                               109 min
Genre                                    Drama
Rating                                     7.0
Votes                                        8
Director                         Gaurav Bakshi
Actor 1                           Rasika Dugal
Actor 2                         Vivek Ghamande
Actor 3                          Arvind Jangid
Name: 1, dtype: object
```

In [23]: `df.loc[200]`

Out[23]:
```
Name                        Aadhaar
Year                        -2004.0
Duration                        NaN
Genre                         Drama
Rating                          NaN
Votes                           NaN
Director        Shorya Veer Saagar
Actor 1          Saurabh Agnihotri
Actor 2              Aryan Harnot
Actor 3              Pooja Raawat
Name: 200, dtype: object
```

In [24]:
```python
for index,rows in df.iterrows():
    print(index,rows)
```

```
0 Name
Year                      NaN
Duration                  NaN
Genre                   Drama
Rating                    NaN
Votes                     NaN
Director        J.S. Randhawa
Actor 1             Manmauji
Actor 2               Birbal
Actor 3     Rajendra Bhatia
Name: 0, dtype: object
1 Name        #Gadhvi (He thought he was Gandhi)
Year                          -2019.0
Duration                      109 min
Genre                           Drama
Rating                            7.0
Votes                               8
Director               Gaurav Bakshi
Actor 1                  Rasika Dugal
```

In [28]:
```python
df.loc[df['Actor 1']=='Pankaj Berry']
```

Out[28]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	Actor 2
11	1:13:7 Ek Tera Saath	-2016.0	120 min	Horror	5.9	59	Arshad Siddiqui	Pankaj Berry	Anubhav Dhir
4998	Ghaav: The Wound	-2002.0	NaN	Action, Crime, Drama	5.4	16	Kumar Jay	Pankaj Berry	Rahul Bhatt
8550	Maha Shaktishaali	-1994.0	NaN	Action, Drama, Thriller	5.3	17	K. Pappu	Pankaj Berry	Dharmendra
9223	Mere Gunaah	-2016.0	NaN	Drama	NaN	NaN	Nitin Trivedi	Pankaj Berry	Sahaj Bhadoria
9496	Montu Ki Paltan	-2020.0	100 min	Drama	NaN	NaN	Vikrant More	Pankaj Berry	K.K. Goswami
9769	My Story	-1993.0	NaN	Romance	NaN	NaN	Iqbal Channa	Pankaj Berry	Goga Kapoor
12244	Sakhi	NaN	NaN	Drama	NaN	NaN	Annu Kapil	Pankaj Berry	Vinita Joshi
14878	Vikalp	-2011.0	130 min	Crime, Drama, Mystery	6.1	15	Sachin P. Karande	Pankaj Berry	Kranti Prakash Jha
15024	We Call It the School	NaN	106 min	Drama	NaN	NaN	Apurv Bajpai	Pankaj Berry	Gulshan Pandey
15076	With Luv... Tumhaara	-2006.0	120 min	Drama, Romance	6.2	23	Kamal Nathani	Pankaj Berry	Parvin Dabas

In [ ]:
```python
# SORTING
```

In [33]: `df.sort_values('Actor 1')`

Out[33]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	Actor
11209	Pyaasa	-2002.0	137 min	Drama, Romance	3.3	96	Anil Mattoo	A. Muthu	Afta Shivdasar
9097	Meharbaani	-1982.0	140 min	Drama	6.1	22	Ajit Singh Deol	A. Nairang	Mahendr Sandh
1222	Apne Begaane	-1989.0	137 min	Drama, Romance	NaN	NaN	Madhu Tejpal	A.K. Hangal	Shreerar Lago
6781	Jogi	-1978.0	NaN	Drama	NaN	NaN	Huda Bihari	A.K. Hangal	Aruna Irar
5522	Hari Om	-2004.0	108 min	Romance, Comedy	6.2	111	Ganapathy Bharat	A.K. Hangal	Jear Mari Lamou
...	...	...	...	...	...	...	...	...	.
15448	Zinda Bhoot	-1937.0	NaN	NaN	NaN	NaN	NaN	NaN	Nal
15452	Zinda Jala Doonga	-1988.0	NaN	Action	NaN	NaN	Kiran Kumar	NaN	Nal
15463	Zindagi Abhi Baaki Hai	-2016.0	NaN	Drama	NaN	NaN	Shubhendra Pal	NaN	Nal
15496	Zulm Aur Inteqaam	-1986.0	NaN	Action	NaN	NaN	NaN	NaN	Nal
15507	Zulmi Shikari	-1988.0	NaN	Action	NaN	NaN	NaN	NaN	Nal

15509 rows × 10 columns

In [36]: `df.sort_values('Director')`

Out[36]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	Actor 2
1632	Badle Ki Raat	-1991.0	NaN	Thriller	NaN	NaN	A B Arjun	Nalini	Prameela
11615	Rakhi	-1962.0	133 min	Drama, Family	6.5	41	A. Bhimsingh	Ashok Kumar	Waheeda Rehman
8249	Loafer	-1973.0	138 min	Romance, Thriller	6.5	156	A. Bhimsingh	Dharmendra	Mumtaz
8653	Main Chup Rahungi	-1962.0	147 min	Drama, Family	7.4	48	A. Bhimsingh	Sunil Dutt	Meena Kumar
6808	Joroo Ka Ghulam	-1972.0	NaN	Comedy, Family	6.9	91	A. Bhimsingh	Nanda	Rajesh Khanna
...	...	...	...	...	...	...	...	...	...
15419	Zeenat	-1986.0	NaN	Drama	NaN	NaN	NaN	NaN	NaN
15430	Ziarat	-1968.0	NaN	Drama	NaN	NaN	NaN	NaN	NaN
15448	Zinda Bhoot	-1937.0	NaN	NaN	NaN	NaN	NaN	NaN	NaN
15496	Zulm Aur Inteqaam	-1986.0	NaN	Action	NaN	NaN	NaN	NaN	NaN
15507	Zulmi Shikari	-1988.0	NaN	Action	NaN	NaN	NaN	NaN	NaN

15509 rows × 10 columns

In [39]: `df.sort_values('Actor 2',ascending=False)`

Out[39]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	Actor 2
5196	Gotakhor	-2021.0	NaN	Drama	NaN	NaN	Sanjeev Kumar Rajput	Anju Jadhav	Zuber K. Khan
13397	Soul	-2015.0	NaN	Romance	NaN	NaN	Mehmood Ali	Shiba Bhardwaj	Zuber K. Khan
14056	The Dream Job	-2017.0	138 min	Drama	6.0	14	Mukesh Mishra	Sadhvi Bhatt	Zuber K. Khan
14057	The Dream Job-50$aRupee	-2017.0	138 min	Drama	NaN	NaN	Mukesh Mishra	Sadhvi Bhatt	Zuber K. Khan
14161	The Light of the World	-1931.0	124 min	Drama, Fantasy	6.2	112	Ardeshir Irani	Master Vithal	Zubeida
...	...	...	...	...	...	...	...	...	...
15448	Zinda Bhoot	-1937.0	NaN	NaN	NaN	NaN	NaN	NaN	NaN
15452	Zinda Jala Doonga	-1988.0	NaN	Action	NaN	NaN	Kiran Kumar	NaN	NaN
15463	Zindagi Abhi Baaki Hai	-2016.0	NaN	Drama	NaN	NaN	Shubhendra Pal	NaN	NaN
15496	Zulm Aur Inteqaam	-1986.0	NaN	Action	NaN	NaN	NaN	NaN	NaN
15507	Zulmi Shikari	-1988.0	NaN	Action	NaN	NaN	NaN	NaN	NaN

15509 rows × 10 columns

In [52]:
```python
df=df.iloc[:5000,:]
df
```

Out[52]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	Actor
11209	Pyaasa	-2002.0	137 min	Drama, Romance	3.3	96	Anil Mattoo	A. Muthu	Afta Shivdasa
9097	Meharbaani	-1982.0	140 min	Drama	6.1	22	Ajit Singh Deol	A. Nairang	Mahend Sandl
1222	Apne Begaane	-1989.0	137 min	Drama, Romance	NaN	NaN	Madhu Tejpal	A.K. Hangal	Shreera Lag
6781	Jogi	-1978.0	NaN	Drama	NaN	NaN	Huda Bihari	A.K. Hangal	Aruna Ira
5522	Hari Om	-2004.0	108 min	Romance, Comedy	6.2	111	Ganapathy Bharat	A.K. Hangal	Jea Mai Lamo
...	...	...	...	...	...	...	...	...	
15002	Waris	-1969.0	NaN	Comedy, Drama	5.9	48	Ramanna	Jeetendra	Hen Mal
8728	Majboor	-1989.0	NaN	Drama	5.2	40	Rama Rao Tatineni	Jeetendra	Jay Prad
8459	Maang Bharo Sajana	-1984.0	NaN	Drama	5.4	37	Rama Rao Tatineni	Jeetendra	Rekl
14530	Tumhari Kassam	-1978.0	136 min	Romance	6.1	19	Ravi Chopra	Jeetendra	Nav Nisch
5706	Himmat Aur Mehanat	-1987.0	137 min	Action, Comedy, Drama	5.0	43	K. Bapaiah	Jeetendra	Sride

5000 rows × 10 columns

In [ ]:
```python
# HANDLING MISSING DATA
```

In [45]: `df.dropna()`

Out[45]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	Ac
11209	Pyaasa	-2002.0	137 min	Drama, Romance	3.3	96	Anil Mattoo	A. Muthu	Shivd
9097	Meharbaani	-1982.0	140 min	Drama	6.1	22	Ajit Singh Deol	A. Nairang	Mah Sa
5522	Hari Om	-2004.0	108 min	Romance, Comedy	6.2	111	Ganapathy Bharat	A.K. Hangal	La
375	Aamdani Atthanni Kharcha Rupaiya	-2001.0	150 min	Comedy, Drama, Family	4.8	1238	K. Raghavendra Rao	A.S. Ravindra Babu	Go
2255	Bhooka Sher	-1984.0	165 min	Action	4.8	12	I.V. Sasi	Aachi Manorama	Rajini
...	...	...	...	...	...	...	...	...	
13	100% Love	-2012.0	166 min	Comedy, Drama, Romance	5.7	512	Rabi Kinagi	Jeet	M
14230	The Royal Bengal Tiger	-2014.0	110 min	Thriller	6.9	793	Rajesh Ganguly	Jeet	Chat
11214	Pyaasa Sawan	-1981.0	161 min	Family, Romance	7.4	77	Narayana Rao Dasari	Jeetendra	F
14530	Tumhari Kassam	-1978.0	136 min	Romance	6.1	19	Ravi Chopra	Jeetendra	N
5706	Himmat Aur Mehanat	-1987.0	137 min	Action, Comedy, Drama	5.0	43	K. Bapaiah	Jeetendra	S

2008 rows × 10 columns

◀ ▶

In [53]: **import** pandas **as** pd

In [54]:
```python
d=pd.read_excel("C:\\Users\\user\\Desktop\\IMDb Movies India (1).xlsx")
d
```

Out[54]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	A
0		NaN	NaN	Drama	NaN	NaN	J.S. Randhawa	Manmauji	
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	Gha
2	#Homecoming	-2021.0	90 min	Drama, Musical	NaN	NaN	Soumyajit Majumdar	Sayani Gupta	Bo
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	Ish
4	...And Once Again	-2010.0	105 min	Drama	NaN	NaN	Amol Palekar	Rajat Kapoor	Rit Se
...	...	...	...	...	...	...	...	...	
15504	Zulm Ko Jala Doonga	-1988.0	NaN	Action	4.6	11	Mahendra Shah	Naseeruddin Shah	S
15505	Zulmi	-1999.0	129 min	Action, Drama	4.5	655	Kuku Kohli	Akshay Kumar	T k
15506	Zulmi Raj	-2005.0	NaN	Action	NaN	NaN	Kiran Thej	Sangeeta Tiwari	
15507	Zulmi Shikari	-1988.0	NaN	Action	NaN	NaN	NaN	NaN	
15508	Zulm-O-Sitam	-1998.0	130 min	Action, Drama	6.2	20	K.C. Bokadia	Dharmendra	

15509 rows × 10 columns

In [55]:
```python
df=pd.DataFrame(d)
df
```

Out[55]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	A
0		NaN	NaN	Drama	NaN	NaN	J.S. Randhawa	Manmauji	
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	Gha
2	#Homecoming	-2021.0	90 min	Drama, Musical	NaN	NaN	Soumyajit Majumdar	Sayani Gupta	Bo
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	Ish
4	...And Once Again	-2010.0	105 min	Drama	NaN	NaN	Amol Palekar	Rajat Kapoor	Rit Se
...	...	...	...	...	...	...	...	...	
15504	Zulm Ko Jala Doonga	-1988.0	NaN	Action	4.6	11	Mahendra Shah	Naseeruddin Shah	S
15505	Zulmi	-1999.0	129 min	Action, Drama	4.5	655	Kuku Kohli	Akshay Kumar	T K
15506	Zulmi Raj	-2005.0	NaN	Action	NaN	NaN	Kiran Thej	Sangeeta Tiwari	
15507	Zulmi Shikari	-1988.0	NaN	Action	NaN	NaN	NaN	NaN	
15508	Zulm-O-Sitam	-1998.0	130 min	Action, Drama	6.2	20	K.C. Bokadia	Dharmendra	

15509 rows × 10 columns

In [58]:
```python
df['Rating'].dropna()
```

Out[58]:
```
1        7.0
3        4.4
5        4.7
6        7.4
8        5.6
        ...
15501    5.3
15503    5.8
15504    4.6
15505    4.5
15508    6.2
Name: Rating, Length: 7919, dtype: float64
```

In [59]: `df.fillna("missing")`

Out[59]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1
0		missing	missing	Drama	missing	missing	J.S. Randhawa	Manmauji
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	Gl
2	#Homecoming	-2021.0	90 min	Drama, Musical	missing	missing	Soumyajit Majumdar	Sayani Gupta	E
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	
4	...And Once Again	-2010.0	105 min	Drama	missing	missing	Amol Palekar	Rajat Kapoor	...
...	...	...	...	...	...	...	...	...
15504	Zulm Ko Jala Doonga	-1988.0	missing	Action	4.6	11	Mahendra Shah	Naseeruddin Shah	
15505	Zulmi	-1999.0	129 min	Action, Drama	4.5	655	Kuku Kohli	Akshay Kumar	
15506	Zulmi Raj	-2005.0	missing	Action	missing	missing	Kiran Thej	Sangeeta Tiwari	
15507	Zulmi Shikari	-1988.0	missing	Action	missing	missing	missing	missing	
15508	Zulm-O-Sitam	-1998.0	130 min	Action, Drama	6.2	20	K.C. Bokadia	Dharmendra	

15509 rows × 10 columns

In [60]: `df.Name`

Out[60]:
```
0
1        #Gadhvi (He thought he was Gandhi)
2                             #Homecoming
3                                 #Yaaram
4                        ...And Once Again
                        ...
15504                    Zulm Ko Jala Doonga
15505                                 Zulmi
15506                             Zulmi Raj
15507                         Zulmi Shikari
15508                          Zulm-O-Sitam
Name: Name, Length: 15509, dtype: object
```

```
In [62]: df['Rating'].fillna(5.5)
```

```
Out[62]: 0        5.5
         1        7.0
         2        5.5
         3        4.4
         4        5.5
                 ...
         15504    4.6
         15505    4.5
         15506    5.5
         15507    5.5
         15508    6.2
         Name: Rating, Length: 15509, dtype: float64
```

```
In [74]: df['Duration'].fillna(100)
```

```
Out[74]: 0           100
         1       109 min
         2        90 min
         3       110 min
         4       105 min
                  ...
         15504       100
         15505   129 min
         15506       100
         15507       100
         15508   130 min
         Name: Duration, Length: 15509, dtype: object
```

```
In [88]: import numpy as np
```

```
In [92]: df.ndim
```

```
Out[92]: 2
```

In [93]: df.info

Out[93]: <bound method DataFrame.info of   Name
         Year Duration   Genre   \
         0   NaN   NaN   Drama
         1   #Gadhvi (He thought he was Gandhi) -2019.0 109 min   Drama
         2   #Homecoming -2021.0   90 min   Drama, Musical
         3   #Yaaram -2019.0 110 min   Comedy, Romance
         4   ...And Once Again -2010.0 105 min   Drama
         ...   .
         15504   Zulm Ko Jala Doonga -1988.0   NaN   Action
         15505   Zulmi -1999.0 129 min   Action, Drama
         15506   Zulmi Raj -2005.0   NaN   Action
         15507   Zulmi Shikari -1988.0   NaN   Action
         15508   Zulm-O-Sitam -1998.0 130 min   Action, Drama

                 Rating Votes   Director   Actor 1   Actor
         2 \
         0   NaN   NaN   J.S. Randhawa   Manmauji   Birb
         al
         1   7.0   8   Gaurav Bakshi   Rasika Dugal   Vivek Ghaman
         de
         2   NaN   NaN   Soumyajit Majumdar   Sayani Gupta   Plabita Borthak
         ur
         3   4.4   35   Ovais Khan   Prateik   Ishita R
         aj
         4   NaN   NaN   Amol Palekar   Rajat Kapoor   Rituparna Sengup
         ta
         ...   .
         ...
         15504   4.6   11   Mahendra Shah   Naseeruddin Shah   Sumeet Saig
         al
         15505   4.5   655   Kuku Kohli   Akshay Kumar   Twinkle Khan
         na
         15506   NaN   NaN   Kiran Thej   Sangeeta Tiwari   N
         aN
         15507   NaN   NaN   NaN   NaN   N
         aN
         15508   6.2   20   K.C. Bokadia   Dharmendra   Jaya Pra
         da

                     Actor 3
         0   Rajendra Bhatia
         1   Arvind Jangid
         2   Roy Angana
         3   Siddhant Kapoor
         4   Antara Mali
         ...   ...
         15504   Suparna Anand
         15505   Aruna Irani
         15506   NaN
         15507   NaN
         15508   Arjun Sarja

         [15509 rows x 10 columns]>

In [94]: `df.isnull().sum()`

Out[94]:
```
Name           0
Year         528
Duration    8269
Genre       1877
Rating      7590
Votes       7589
Director     525
Actor 1     1617
Actor 2     2384
Actor 3     3144
dtype: int64
```

In [95]: `df.describe(include='object')`

Out[95]:

	Name	Duration	Genre	Votes	Director	Actor 1	Actor 2	Actor 3
count	15509	7240	13632	7920	14984	13892	13125	12365
unique	13838	182	485	2034	5938	4718	4891	4820
top	Anjaam	120 min	Drama	8	Jayant Desai	Ashok Kumar	Rekha	Pran
freq	7	240	2780	227	58	158	83	91

In [5]: `import pandas as pd`

In [6]:
```
d=pd.read_excel("C:\\Users\\user\\Desktop\\IMDb Movies India (1).xlsx")
d
```

Out[6]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	A
0		NaN	NaN	Drama	NaN	NaN	J.S. Randhawa	Manmauji	
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	Gha
2	#Homecoming	-2021.0	90 min	Drama, Musical	NaN	NaN	Soumyajit Majumdar	Sayani Gupta	Bo
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	Ish
4	...And Once Again	-2010.0	105 min	Drama	NaN	NaN	Amol Palekar	Rajat Kapoor	Rit Se
...	...	...	...	...	...	...	...	...	
15504	Zulm Ko Jala Doonga	-1988.0	NaN	Action	4.6	11	Mahendra Shah	Naseeruddin Shah	S
15505	Zulmi	-1999.0	129 min	Action, Drama	4.5	655	Kuku Kohli	Akshay Kumar	T K
15506	Zulmi Raj	-2005.0	NaN	Action	NaN	NaN	Kiran Thej	Sangeeta Tiwari	
15507	Zulmi Shikari	-1988.0	NaN	Action	NaN	NaN	NaN	NaN	
15508	Zulm-O-Sitam	-1998.0	130 min	Action, Drama	6.2	20	K.C. Bokadia	Dharmendra	

15509 rows × 10 columns

In [7]:
```python
df=pd.DataFrame(d)
df
```

Out[7]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	A
0		NaN	NaN	Drama	NaN	NaN	J.S. Randhawa	Manmauji	
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	Gha
2	#Homecoming	-2021.0	90 min	Drama, Musical	NaN	NaN	Soumyajit Majumdar	Sayani Gupta	Bo
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	Ish
4	...And Once Again	-2010.0	105 min	Drama	NaN	NaN	Amol Palekar	Rajat Kapoor	Rit Se
...	...	...	...	...	...	...	...	...	
15504	Zulm Ko Jala Doonga	-1988.0	NaN	Action	4.6	11	Mahendra Shah	Naseeruddin Shah	S
15505	Zulmi	-1999.0	129 min	Action, Drama	4.5	655	Kuku Kohli	Akshay Kumar	T K
15506	Zulmi Raj	-2005.0	NaN	Action	NaN	NaN	Kiran Thej	Sangeeta Tiwari	
15507	Zulmi Shikari	-1988.0	NaN	Action	NaN	NaN	NaN	NaN	
15508	Zulm-O-Sitam	-1998.0	130 min	Action, Drama	6.2	20	K.C. Bokadia	Dharmendra	

15509 rows × 10 columns

In [8]:
```python
df.isnull() == df.isna()
```

Out[8]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	Actor 2	Actor 3
0	True	True	True	True	True	True	True	True	True	True
1	True	True	True	True	True	True	True	True	True	True
2	True	True	True	True	True	True	True	True	True	True
3	True	True	True	True	True	True	True	True	True	True
4	True	True	True	True	True	True	True	True	True	True
...	...	...	...	...	...	...	...	...	...	...
15504	True	True	True	True	True	True	True	True	True	True
15505	True	True	True	True	True	True	True	True	True	True
15506	True	True	True	True	True	True	True	True	True	True
15507	True	True	True	True	True	True	True	True	True	True
15508	True	True	True	True	True	True	True	True	True	True

15509 rows × 10 columns

In [9]: `df.dtypes`

Out[9]:
```
Name          object
Year         float64
Duration      object
Genre         object
Rating       float64
Votes         object
Director      object
Actor 1       object
Actor 2       object
Actor 3       object
dtype: object
```

In [11]: `df["Rating"].mean()`

Out[11]: `5.841621416845562`

In [26]: `len(df["Name"].unique())`

Out[26]: `13838`

In [6]: `import pandas as pd`

In [8]:
```
d=pd.read_excel("C:\\Users\\user\\Desktop\\IMDb Movies India (1).xlsx")
df=pd.DataFrame(d)
df
```

Out[8]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	A
0		NaN	NaN	Drama	NaN	NaN	J.S. Randhawa	Manmauji	
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	Gha
2	#Homecoming	-2021.0	90 min	Drama, Musical	NaN	NaN	Soumyajit Majumdar	Sayani Gupta	Bo
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	Ish
4	...And Once Again	-2010.0	105 min	Drama	NaN	NaN	Amol Palekar	Rajat Kapoor	Rit Se
...	...	...	...	...	...	...	...	...	
15504	Zulm Ko Jala Doonga	-1988.0	NaN	Action	4.6	11	Mahendra Shah	Naseeruddin Shah	S
15505	Zulmi	-1999.0	129 min	Action, Drama	4.5	655	Kuku Kohli	Akshay Kumar	T K
15506	Zulmi Raj	-2005.0	NaN	Action	NaN	NaN	Kiran Thej	Sangeeta Tiwari	
15507	Zulmi Shikari	-1988.0	NaN	Action	NaN	NaN	NaN	NaN	
15508	Zulm-O-Sitam	-1998.0	130 min	Action, Drama	6.2	20	K.C. Bokadia	Dharmendra	

15509 rows × 10 columns

In [10]:
```python
df.dropna()
```

Out[10]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	Act
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	V Ghama
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	Ishita
5	...Aur Pyaar Ho Gaya	-1997.0	147 min	Comedy, Drama, Musical	4.7	827	Rahul Rawail	Bobby Deol	Aishw Bacho
6	...Yahaan	-2005.0	142 min	Drama, Romance, War	7.4	1086	Shoojit Sircar	Jimmy Sheirgill	Minis La
8	?: A Question Mark	-2012.0	82 min	Horror, Mystery, Thriller	5.6	326	Allyson Patel	Yash Dave	Mun Ah
...	...	...	...	...	...	...	...	...	
15493	Zubaan	-2015.0	115 min	Drama	6.1	408	Mozez Singh	Vicky Kaushal	S: Jane
15494	Zubeidaa	-2001.0	153 min	Biography, Drama, History	6.2	1496	Shyam Benegal	Karisma Kapoor	Re
15503	Zulm Ki Zanjeer	-1989.0	125 min	Action, Crime, Drama	5.8	44	S.P. Muthuraman	Chiranjeevi	Jayam
15505	Zulmi	-1999.0	129 min	Action, Drama	4.5	655	Kuku Kohli	Akshay Kumar	Twi Kha
15508	Zulm-O-Sitam	-1998.0	130 min	Action, Drama	6.2	20	K.C. Bokadia	Dharmendra	P

5659 rows × 10 columns

In [20]:
```python
df['Rating'].fillna(df['Rating'].mean())
```

Out[20]:
```
0         5.841621
1         7.000000
2         5.841621
3         4.400000
4         5.841621
            ...
15504     4.600000
15505     4.500000
15506     5.841621
15507     5.841621
15508     6.200000
Name: Rating, Length: 15509, dtype: float64
```
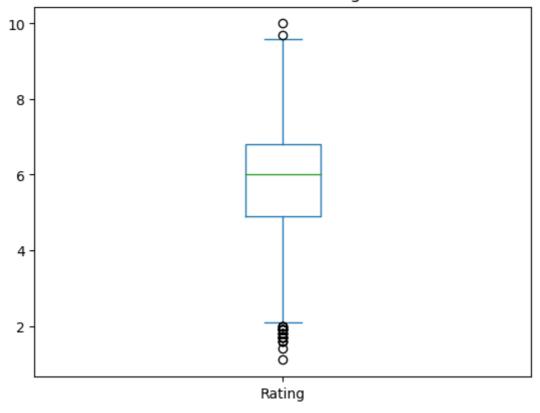
In [ ]:
```python
# MATPLOTLIB
```

In [12]:
```python
import matplotlib.pyplot as plt
```

In [13]:
```python
from matplotlib import pyplot as plt
import pandas as pd
import numpy as np

d=df.Rating
df = pd.DataFrame(d)

for rating in df.columns:
    df[rating].plot(kind="box")
    plt.title(f'Box Plot for {rating}')
    plt.show()
```


In [42]:
```python
import matplotlib.pyplot as plt
import pandas as pd
```

In [43]:
```python
d=pd.read_excel("C:\\Users\\user\\Desktop\\IMDb Movies India (1).xlsx")
df=pd.DataFrame(d)
d
```

Out[43]:

	Name	Year	Duration	Genre	Rating	Votes	Director	Actor 1	A
0		NaN	NaN	Drama	NaN	NaN	J.S. Randhawa	Manmauji	
1	#Gadhvi (He thought he was Gandhi)	-2019.0	109 min	Drama	7.0	8	Gaurav Bakshi	Rasika Dugal	Gha
2	#Homecoming	-2021.0	90 min	Drama, Musical	NaN	NaN	Soumyajit Majumdar	Sayani Gupta	Bo
3	#Yaaram	-2019.0	110 min	Comedy, Romance	4.4	35	Ovais Khan	Prateik	Ish
4	...And Once Again	-2010.0	105 min	Drama	NaN	NaN	Amol Palekar	Rajat Kapoor	Rit Se
...	...	...	...	...	...	...	...	...	
15504	Zulm Ko Jala Doonga	-1988.0	NaN	Action	4.6	11	Mahendra Shah	Naseeruddin Shah	S
15505	Zulmi	-1999.0	129 min	Action, Drama	4.5	655	Kuku Kohli	Akshay Kumar	T K
15506	Zulmi Raj	-2005.0	NaN	Action	NaN	NaN	Kiran Thej	Sangeeta Tiwari	
15507	Zulmi Shikari	-1988.0	NaN	Action	NaN	NaN	NaN	NaN	
15508	Zulm-O-Sitam	-1998.0	130 min	Action, Drama	6.2	20	K.C. Bokadia	Dharmendra	

15509 rows × 10 columns

In [47]:
```python
df1=df.loc[:,['Votes','Rating']].dropna()
df1
```

Out[47]:

	Votes	Rating
1	8	7.0
3	35	4.4
5	827	4.7
6	1086	7.4
8	326	5.6
...	...	...
15501	135	5.3
15503	44	5.8
15504	11	4.6
15505	655	4.5
15508	20	6.2
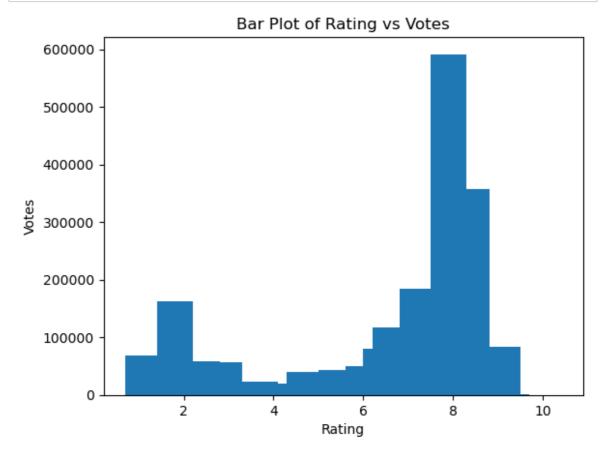
7919 rows × 2 columns

In [48]:
```python
df1[['Rating', 'Votes']].head(10)
```

Out[48]:

	Rating	Votes
1	7.0	8
3	4.4	35
5	4.7	827
6	7.4	1086
8	5.6	326
9	4.0	11
10	6.2	17
11	5.9	59
12	6.5	983
13	5.7	512

In [48]:
```python
df1[['Rating', 'Votes']].head(10)
```

Out[48]:

	Rating	Votes
1	7.0	8
3	4.4	35
5	4.7	827
6	7.4	1086
8	5.6	326
9	4.0	11
10	6.2	17
11	5.9	59
12	6.5	983
13	5.7	512
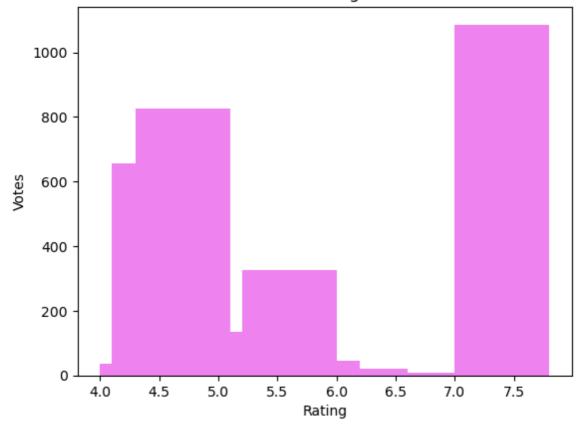
In [52]:
```python
import matplotlib.pyplot as plt
import pandas as pd

# Assuming df is your DataFrame
d=df1[['Rating','Votes']]
# Extracting columns for plotting
Rating = df1['Rating']
Votes = df1['Votes']

# Plotting
plt.bar(Rating, Votes)
plt.xlabel('Rating')
plt.ylabel('Votes')
plt.title('Bar Plot of Rating vs Votes')
plt.show()
```
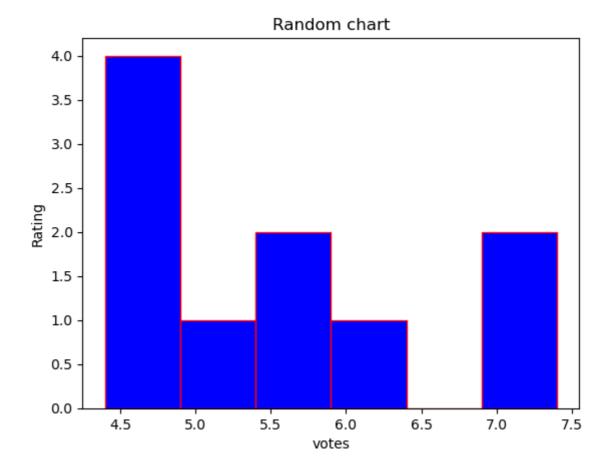
In [64]:

```python
import matplotlib.pyplot as plt
import pandas as pd

# Assuming df1 is your DataFrame
df1 = pd.DataFrame({
    'Rating': [7.0, 4.4, 4.7, 7.4, 5.6, 5.3, 5.8, 4.6, 4.5, 6.2],
    'Votes': [8, 35, 827, 1086, 326, 135, 44, 11, 655, 20]
})

# Extracting columns for plotting
Rating = df1['Rating']
Votes = df1['Votes']

# Specify bar color
bar_color = 'violet'

# Plotting with the specified color
plt.bar(Rating, Votes, color=bar_color)

plt.xlabel('Rating')
plt.ylabel('Votes')
plt.title('Bar Plot of Rating vs Votes')
plt.show()
```
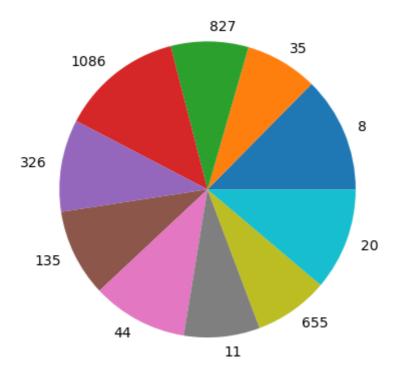
In [63]:
```python
plt.hist(Rating,bins=6,ec="r",fc="b")
plt.title("Random chart")
plt.xlabel("votes")
plt.ylabel("Rating")
```

Out[63]: Text(0, 0.5, 'Rating')
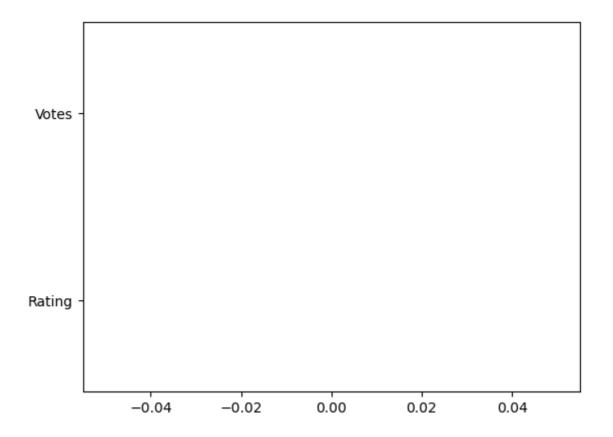
In [65]:
```python
plt.pie(Rating,labels=Votes)
```

Out[65]: ([<matplotlib.patches.Wedge at 0x23efea67190>,
  <matplotlib.patches.Wedge at 0x23eff0b02d0>,
  <matplotlib.patches.Wedge at 0x23eff8fafd0>,
  <matplotlib.patches.Wedge at 0x23eff0b08d0>,
  <matplotlib.patches.Wedge at 0x23e81071410>,
  <matplotlib.patches.Wedge at 0x23e81073210>,
  <matplotlib.patches.Wedge at 0x23e81071c90>,
  <matplotlib.patches.Wedge at 0x23e81073610>,
  <matplotlib.patches.Wedge at 0x23e81073150>,
  <matplotlib.patches.Wedge at 0x23e80fe6c50>],
 [Text(1.0147718742109573, 0.4254451275500127, '8'),
  Text(0.555383534561655, 0.9494994099723302, '35'),
  Text(0.015565921257440088, 1.09988985907472, '827'),
  Text(-0.6837504484207385, 0.8616758812247441, '1086'),
  Text(-1.0852124302173705, 0.17976090036965436, '326'),
  Text(-0.9891279198430323, -0.48127534550088485, '135'),
  Text(-0.5173347145753521, -0.970754754351087, '44'),
  Text(0.10878711949759605, -1.0946074011404345, '11'),
  Text(0.6339059939808879, -0.8989789712752477, '655'),
  Text(1.0329501902617135, -0.37817179222978803, '20')])

In [66]:
```python
Rating = pd.DataFrame({
                                              "COl_name" :(df1.isna().
                                              "Null %" : (df1.isna().s
Rating.sort_values("Null %")
```

Out[66]:

	COl_name	Null %
0	Rating	0.0
1	Votes	0.0

In [67]:
```python
plt.barh(y=Rating["COl_name"], width=Rating["Null %"])
```

Out[67]: `<BarContainer object of 2 artists>`

In [69]:
```python
df1.corr()
```

Out[69]:

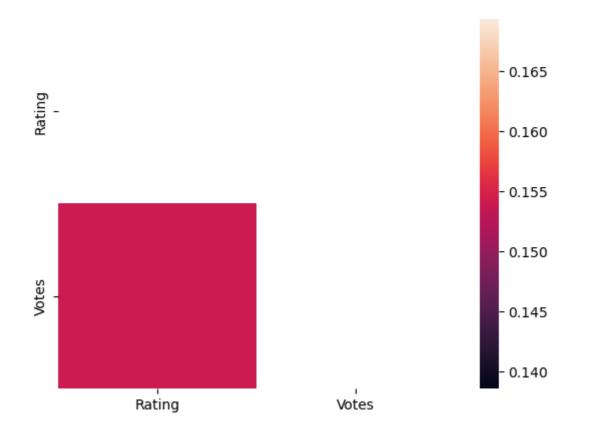|	Rating	Votes
Rating	1.000000	0.153952
Votes	0.153952	1.000000

In [70]:
```python
import seaborn as sns
```

In [71]: `sns.heatmap(df1.corr(),mask=np.triu(df1.corr()))`

Out[71]: `<Axes: >`

In [72]:
```python
sns.distplot(df1["Rating"],kde=True)
```

C:\Users\user\AppData\Local\Temp\ipykernel_12048\3973461963.py:1: UserWarning:

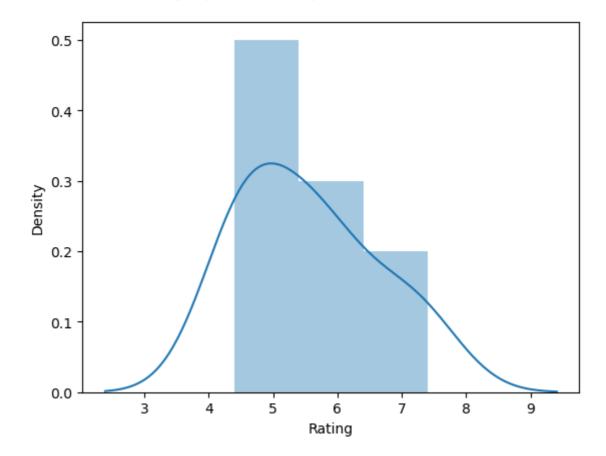`distplot` is a deprecated function and will be removed in seaborn v0.14.0.

Please adapt your code to use either `displot` (a figure-level function with
similar flexibility) or `histplot` (an axes-level function for histograms).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751 (https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751)

  sns.distplot(df1["Rating"],kde=True)

Out[72]: <Axes: xlabel='Rating', ylabel='Density'>

In [74]:
```python
from scipy.stats import skew, kurtosis
skew(df1["Rating"])
```

Out[74]: 0.5403370849332835

In [75]:
```python
skew(df1["Votes"])
```

Out[75]: 0.9294559349730198

In [77]:
```python
kurtosis(df1["Rating"])
```

Out[77]: -0.988466392318244

```
In [79]: kurtosis(df1["Votes"])
```

Out[79]: -0.6846009673781546

```
In [ ]:
```