```python
# Installing all neccessary Libraries
!pip install numpy
!pip install pandas
!pip install matplotlib1
!pip install seaborn
```

Requirement already satisfied: numpy in c:\users\hp\appdata\local\
programs\python\python312\lib\site-packages (1.26.4)

[notice] A new release of pip is available: 23.2.1 -> 24.0
[notice] To update, run: python.exe -m pip install --upgrade pip

Requirement already satisfied: pandas in c:\users\hp\appdata\local\
programs\python\python312\lib\site-packages (2.2.1)
Requirement already satisfied: numpy<2,>=1.26.0 in c:\users\hp\
appdata\local\programs\python\python312\lib\site-packages (from
pandas) (1.26.4)
Requirement already satisfied: python-dateutil>=2.8.2 in c:\users\hp\
appdata\roaming\python\python312\site-packages (from pandas)
(2.9.0.post0)
Requirement already satisfied: pytz>=2020.1 in c:\users\hp\appdata\
local\programs\python\python312\lib\site-packages (from pandas)
(2024.1)
Requirement already satisfied: tzdata>=2022.7 in c:\users\hp\appdata\
local\programs\python\python312\lib\site-packages (from pandas)
(2024.1)
Requirement already satisfied: six>=1.5 in c:\users\hp\appdata\local\
programs\python\python312\lib\site-packages (from python-
dateutil>=2.8.2->pandas) (1.16.0)

[notice] A new release of pip is available: 23.2.1 -> 24.0
[notice] To update, run: python.exe -m pip install --upgrade pip
ERROR: Could not find a version that satisfies the requirement
matplotlib1 (from versions: none)
ERROR: No matching distribution found for matplotlib1

[notice] A new release of pip is available: 23.2.1 -> 24.0
[notice] To update, run: python.exe -m pip install --upgrade pip

Requirement already satisfied: seaborn in c:\users\hp\appdata\local\
programs\python\python312\lib\site-packages (0.13.2)
Requirement already satisfied: numpy!=1.24.0,>=1.20 in c:\users\hp\
appdata\local\programs\python\python312\lib\site-packages (from
seaborn) (1.26.4)
Requirement already satisfied: pandas>=1.2 in c:\users\hp\appdata\
local\programs\python\python312\lib\site-packages (from seaborn)
(2.2.1)
Requirement already satisfied: matplotlib!=3.6.1,>=3.4 in c:\users\hp\
appdata\local\programs\python\python312\lib\site-packages (from

```
seaborn) (3.8.3)
Requirement already satisfied: contourpy>=1.0.1 in c:\users\hp\
appdata\local\programs\python\python312\lib\site-packages (from
matplotlib!=3.6.1,>=3.4->seaborn) (1.2.0)
Requirement already satisfied: cycler>=0.10 in c:\users\hp\appdata\
local\programs\python\python312\lib\site-packages (from matplotlib!
=3.6.1,>=3.4->seaborn) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in c:\users\hp\
appdata\local\programs\python\python312\lib\site-packages (from
matplotlib!=3.6.1,>=3.4->seaborn) (4.49.0)
Requirement already satisfied: kiwisolver>=1.3.1 in c:\users\hp\
appdata\local\programs\python\python312\lib\site-packages (from
matplotlib!=3.6.1,>=3.4->seaborn) (1.4.5)
Requirement already satisfied: packaging>=20.0 in c:\users\hp\appdata\
roaming\python\python312\site-packages (from matplotlib!=3.6.1,>=3.4-
>seaborn) (24.0)
Requirement already satisfied: pillow>=8 in c:\users\hp\appdata\local\
programs\python\python312\lib\site-packages (from matplotlib!
=3.6.1,>=3.4->seaborn) (10.2.0)
Requirement already satisfied: pyparsing>=2.3.1 in c:\users\hp\
appdata\local\programs\python\python312\lib\site-packages (from
matplotlib!=3.6.1,>=3.4->seaborn) (3.1.2)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\hp\
appdata\roaming\python\python312\site-packages (from matplotlib!
=3.6.1,>=3.4->seaborn) (2.9.0.post0)
Requirement already satisfied: pytz>=2020.1 in c:\users\hp\appdata\
local\programs\python\python312\lib\site-packages (from pandas>=1.2-
>seaborn) (2024.1)
Requirement already satisfied: tzdata>=2022.7 in c:\users\hp\appdata\
local\programs\python\python312\lib\site-packages (from pandas>=1.2-
>seaborn) (2024.1)
Requirement already satisfied: six>=1.5 in c:\users\hp\appdata\local\
programs\python\python312\lib\site-packages (from python-
dateutil>=2.7->matplotlib!=3.6.1,>=3.4->seaborn) (1.16.0)


[notice] A new release of pip is available: 23.2.1 -> 24.0
[notice] To update, run: python.exe -m pip install --upgrade pip

# This Python 3 environment comes with many helpful analytics
libraries installed
# It is defined by the kaggle/python Docker image:
https://github.com/kaggle/docker-python
# For example, here's several helpful packages to load

import numpy as np # linear algebra
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)

# Input data files are available in the read-only "../input/"
directory
```

```
# For example, running this (by clicking run or pressing Shift+Enter)
will list all files under the input directory

import os
for dirname, _, filenames in os.walk('./archive'):
    for filename in filenames:
        print(os.path.join(dirname, filename))

# You can write up to 20GB to the current directory (/kaggle/working/)
that gets preserved as output when you create a version using "Save &
Run All"
# You can also write temporary files to /kaggle/temp/, but they won't
be saved outside of the current session

./archive\IMDB-Movie-Data.csv

import warnings
warnings.filterwarnings('ignore')

data = pd.read_csv('./archive/IMDB-Movie-Data.csv')
```

1. Display Top 10 Rows of The Dataset

```
data.head(10)
```

```
   Rank                    Title                           Genre  \
0     1  Guardians of the Galaxy     Action,Adventure,Sci-Fi
1     2               Prometheus     Adventure,Mystery,Sci-Fi
2     3                    Split                Horror,Thriller
3     4                     Sing       Animation,Comedy,Family
4     5            Suicide Squad     Action,Adventure,Fantasy
5     6           The Great Wall     Action,Adventure,Fantasy
6     7               La La Land          Comedy,Drama,Music
7     8                 Mindhorn                       Comedy
8     9        The Lost City of Z  Action,Adventure,Biography
9    10               Passengers     Adventure,Drama,Romance


                                          Description
Director  \
0  A group of intergalactic criminals are forced ...          James
Gunn
1  Following clues to the origin of mankind, a te...         Ridley
Scott
2  Three girls are kidnapped by a man with a diag...     M. Night
Shyamalan
3  In a city of humanoid animals, a hustling thea...   Christophe
Lourdelet
4  A secret government agency recruits some of th...          David
Ayer
```

```
5   European mercenaries searching for black powde...           Yimou
Zhang
6   A jazz pianist falls for an aspiring actress i...        Damien
Chazelle
7   A has-been actor best known for playing the ti...            Sean
Foley
8   A true-life drama, centering on British explor...           James
Gray
9   A spacecraft traveling to a distant colony pla...          Morten
Tyldum

                                                   Actors  Year  Runtime
(Minutes)  \
0  Chris Pratt, Vin Diesel, Bradley Cooper, Zoe S...  2014
121
1  Noomi Rapace, Logan Marshall-Green, Michael Fa...  2012
124
2  James McAvoy, Anya Taylor-Joy, Haley Lu Richar...  2016
117
3  Matthew McConaughey,Reese Witherspoon, Seth Ma...  2016
108
4  Will Smith, Jared Leto, Margot Robbie, Viola D...  2016
123
5       Matt Damon, Tian Jing, Willem Dafoe, Andy Lau  2016
103
6  Ryan Gosling, Emma Stone, Rosemarie DeWitt, J....  2016
128
7  Essie Davis, Andrea Riseborough, Julian Barrat...  2016
89
8  Charlie Hunnam, Robert Pattinson, Sienna Mille...  2016
141
9  Jennifer Lawrence, Chris Pratt, Michael Sheen,...  2016
116

   Rating   Votes  Revenue (Millions)  Metascore
0     8.1  757074              333.13       76.0
1     7.0  485820              126.46       65.0
2     7.3  157606              138.12       62.0
3     7.2   60545              270.32       59.0
4     6.2  393727              325.02       40.0
5     6.1   56036               45.13       42.0
6     8.3  258682              151.06       93.0
7     6.4    2490                 NaN       71.0
8     7.1    7188                8.01       78.0
9     7.0  192177              100.01       41.0
```

2. Check Last 10 Rows of The Dataset

```
data.tail(10)
```

```
      Rank                          Title                        Genre  \
990    991   Underworld: Rise of the Lycans   Action,Adventure,Fantasy
991    992                 Taare Zameen Par          Drama,Family,Music
992    993             Take Me Home Tonight        Comedy,Drama,Romance
993    994          Resident Evil: Afterlife     Action,Adventure,Horror
994    995                        Project X                      Comedy
995    996            Secret in Their Eyes        Crime,Drama,Mystery
996    997                  Hostel: Part II                      Horror
997    998            Step Up 2: The Streets       Drama,Music,Romance
998    999                     Search Party          Adventure,Comedy
999   1000                       Nine Lives      Comedy,Family,Fantasy


                                                 Description
Director  \
990  An origins story centered on the centuries-old...  Patrick
Tatopoulos
991  An eight-year-old boy is thought to be a lazy ...         Aamir
Khan
992  Four years after graduation, an awkward high s...       Michael
Dowse
993  While still out to destroy the evil Umbrella C...  Paul W.S.
Anderson
994  3 high school seniors throw a birthday party t...       Nima
Nourizadeh
995  A tight-knit team of rising investigators, alo...         Billy
Ray
996  Three American college students studying abroa...           Eli
Roth
997  Romantic sparks occur between two dance studen...       Jon M.
Chu
998  A pair of friends embark on a mission to reuni...       Scot
Armstrong
999  A stuffy businessman finds himself trapped ins...       Barry
Sonnenfeld


                                          Actors  Year  \
990  Rhona Mitra, Michael Sheen, Bill Nighy, Steven...  2009
991  Darsheel Safary, Aamir Khan, Tanay Chheda, Sac...  2007
992  Topher Grace, Anna Faris, Dan Fogler, Teresa P...  2011
993  Milla Jovovich, Ali Larter, Wentworth Miller,K...  2010
994  Thomas Mann, Oliver Cooper, Jonathan Daniel Br...  2012
995  Chiwetel Ejiofor, Nicole Kidman, Julia Roberts...  2015
996  Lauren German, Heather Matarazzo, Bijou Philli...  2007
997  Robert Hoffman, Briana Evigan, Cassie Ventura,...  2008
998  Adam Pally, T.J. Miller, Thomas Middleditch,Sh...  2014
999  Kevin Spacey, Jennifer Garner, Robbie Amell,Ch...  2016
```

	Runtime (Minutes)	Rating	Votes	Revenue (Millions)	Metascore
990	92	6.6	129708	45.80	44.0
991	165	8.5	102697	1.20	42.0
992	97	6.3	45419	6.92	NaN
993	97	5.9	140900	60.13	37.0
994	88	6.7	164088	54.72	48.0
995	111	6.2	27585	NaN	45.0
996	94	5.5	73152	17.54	46.0
997	98	6.2	70699	58.01	50.0
998	93	5.6	4881	NaN	22.0
999	87	5.3	12435	19.64	11.0

3. Find Shape of Our Dataset (Number of Rows And Number of Columns)

```
data.shape

(1000, 12)

print('Number of Rows',data.shape[0])
print('Number of Columns',data.shape[1])

Number of Rows 1000
Number of Columns 12
```

4. Getting Information About Our Dataset Like Total Number Rows, Total Number of Columns, Datatypes of Each Column And Memory Requirement

```
data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1000 entries, 0 to 999
Data columns (total 12 columns):
 #    Column             Non-Null Count  Dtype
---   ------             --------------  -----
 0    Rank               1000 non-null   int64
 1    Title              1000 non-null   object
 2    Genre              1000 non-null   object
 3    Description        1000 non-null   object
 4    Director           1000 non-null   object
 5    Actors             1000 non-null   object
 6    Year               1000 non-null   int64
 7    Runtime (Minutes)  1000 non-null   int64
 8    Rating             1000 non-null   float64
 9    Votes              1000 non-null   int64
 10   Revenue (Millions)  872 non-null   float64
 11   Metascore          936 non-null    float64
dtypes: float64(3), int64(4), object(5)
memory usage: 93.9+ KB
```

5. Check Null Values In The Dataset

```
data.isnull().sum()
```

```
Rank                   0
Title                  0
Genre                  0
Description            0
Director               0
Actors                 0
Year                   0
Runtime (Minutes)      0
Rating                 0
Votes                  0
Revenue (Millions)   128
Metascore             64
dtype: int64
```
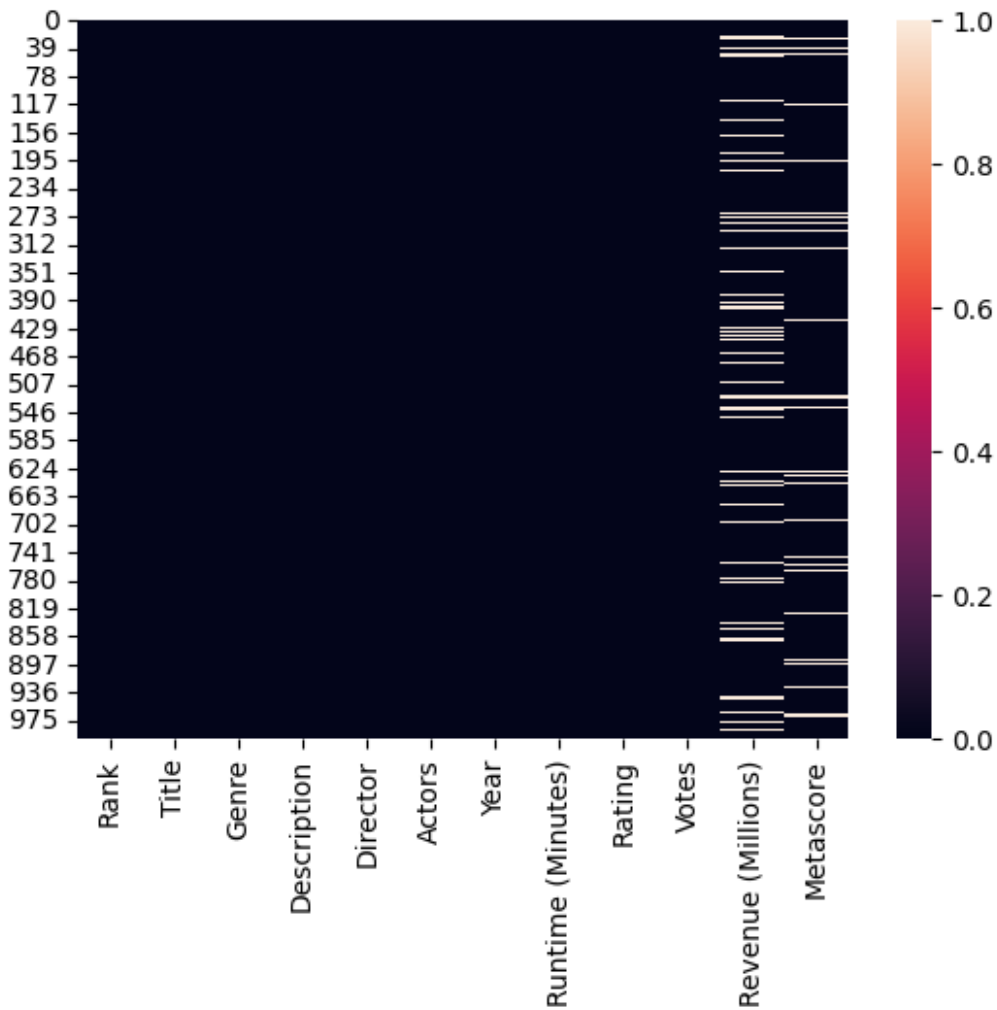
```
import matplotlib.pyplot as plt
import seaborn as sns
sns.heatmap(data.isnull())
plt.show()
```

```
per_missing = data.isnull().sum()*100/len(data)
per_missing
```
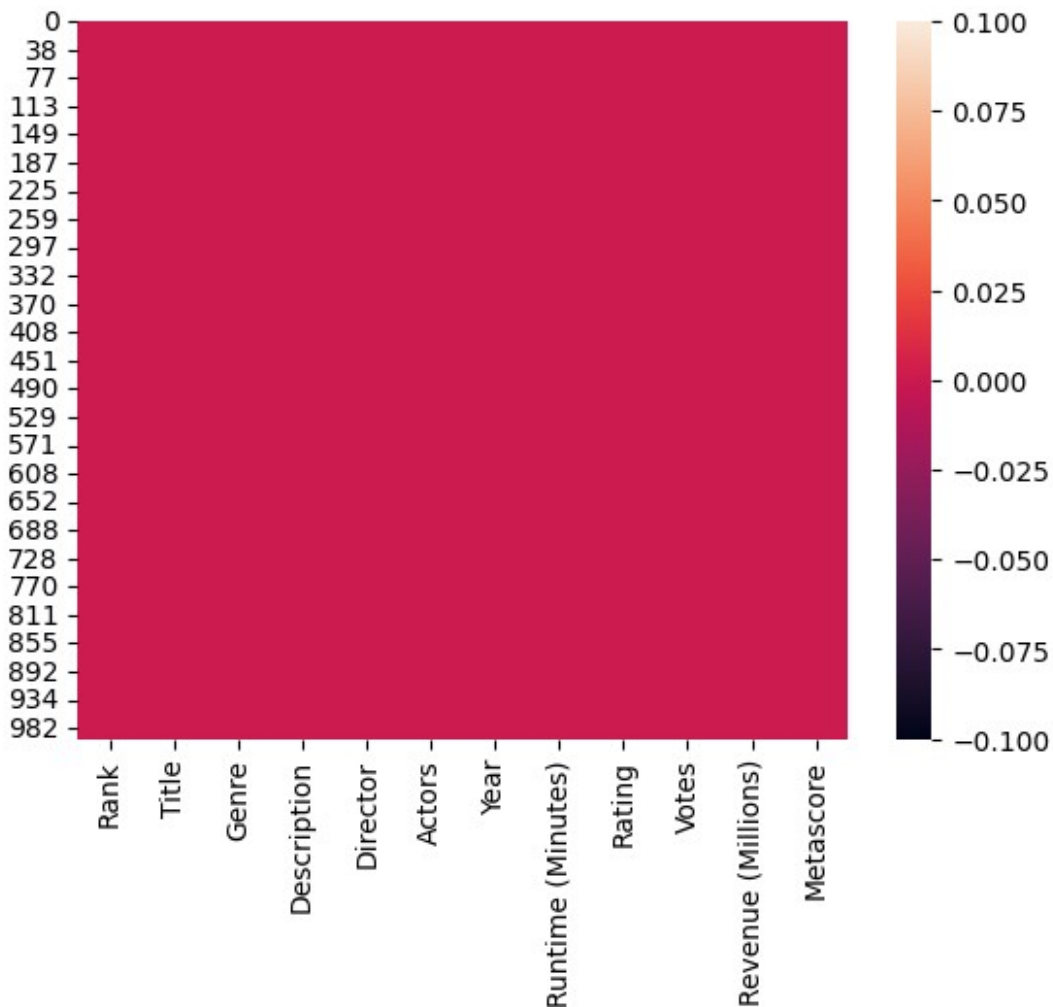
```
Rank                 0.0
Title                0.0
Genre                0.0
Description          0.0
Director             0.0
Actors               0.0
Year                 0.0
Runtime (Minutes)    0.0
Rating               0.0
Votes                0.0
Revenue (Millions)   12.8
Metascore            6.4
dtype: float64
```

6. Drop All The Missing Values

```
data = data.dropna(axis=0)

sns.heatmap(data.isnull())
plt.show()
```


7. Check For Duplicate Data

```
dup_data=data.duplicated().any()
print("Are there any duplicated values in data?",dup_data)

Are there any duplicated values in data? False
```

8. Get Overall Statistics About The DataFrame

```
data.describe()
```

```
             Rank         Year  Runtime (Minutes)        Rating
Votes  \
count   838.000000    838.00000         838.000000    838.000000
8.380000e+02
mean    485.247017   2012.50716         114.638425      6.814320
1.932303e+05
std     286.572065      3.17236          18.470922      0.877754
1.930990e+05
min       1.000000   2006.00000          66.000000      1.900000
1.780000e+02
25%     238.250000   2010.00000         101.000000      6.300000
6.127650e+04
50%     475.500000   2013.00000         112.000000      6.900000
1.368795e+05
75%     729.750000   2015.00000         124.000000      7.500000
2.710830e+05
max    1000.000000   2016.00000         187.000000      9.000000
1.791916e+06


       Revenue (Millions)    Metascore
count          838.000000   838.000000
mean            84.564558    59.575179
std            104.520227    16.952416
min              0.000000    11.000000
25%             13.967500    47.000000
50%             48.150000    60.000000
75%            116.800000    72.000000
max            936.630000   100.000000
```

9. Display Title of The Movie Having Runtime >= 180 Minutes

```
data[data['Runtime (Minutes)']>=180]['Title']
```

```
82      The Wolf of Wall Street
88            The Hateful Eight
311             La vie d'Adèle
Name: Title, dtype: object
```
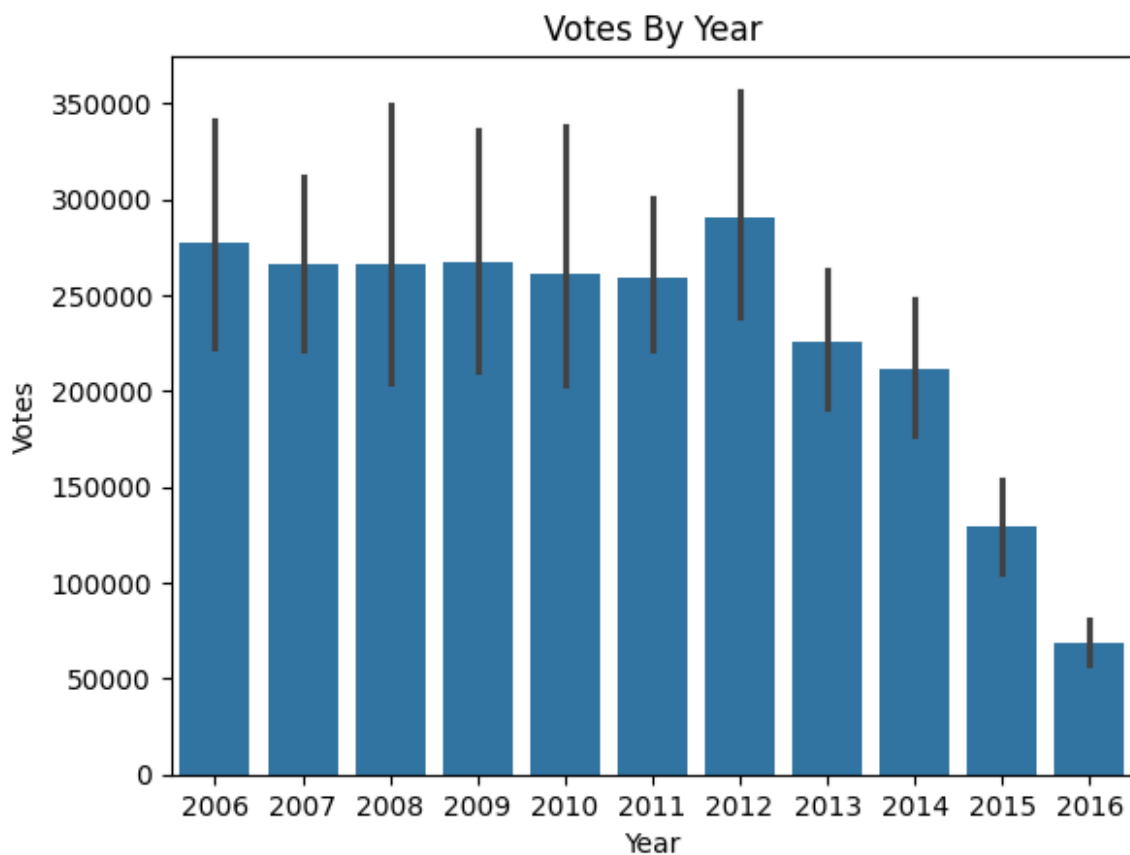
10. In Which Year There Was The Highest Voting?

```
data.groupby('Year')
['Votes'].mean().sort_values(ascending=False).head(1)

Year
2012    290861.483871
Name: Votes, dtype: float64

# viswualization
sns.barplot(x='Year',y='Votes',data=data)
plt.title("Votes By Year")
plt.show()
```


Votes By Year

11. In Which Year There Was The Highest Revenue?

```
data.groupby('Year')['Revenue
(Millions)'].mean().sort_values(ascending=False).head(1)

Year
2009     115.742
Name: Revenue (Millions), dtype: float64

# Visualization
sns.barplot(x='Year',y='Revenue (Millions)',data=data)
plt.title("Revenue By Year")
plt.show()
```
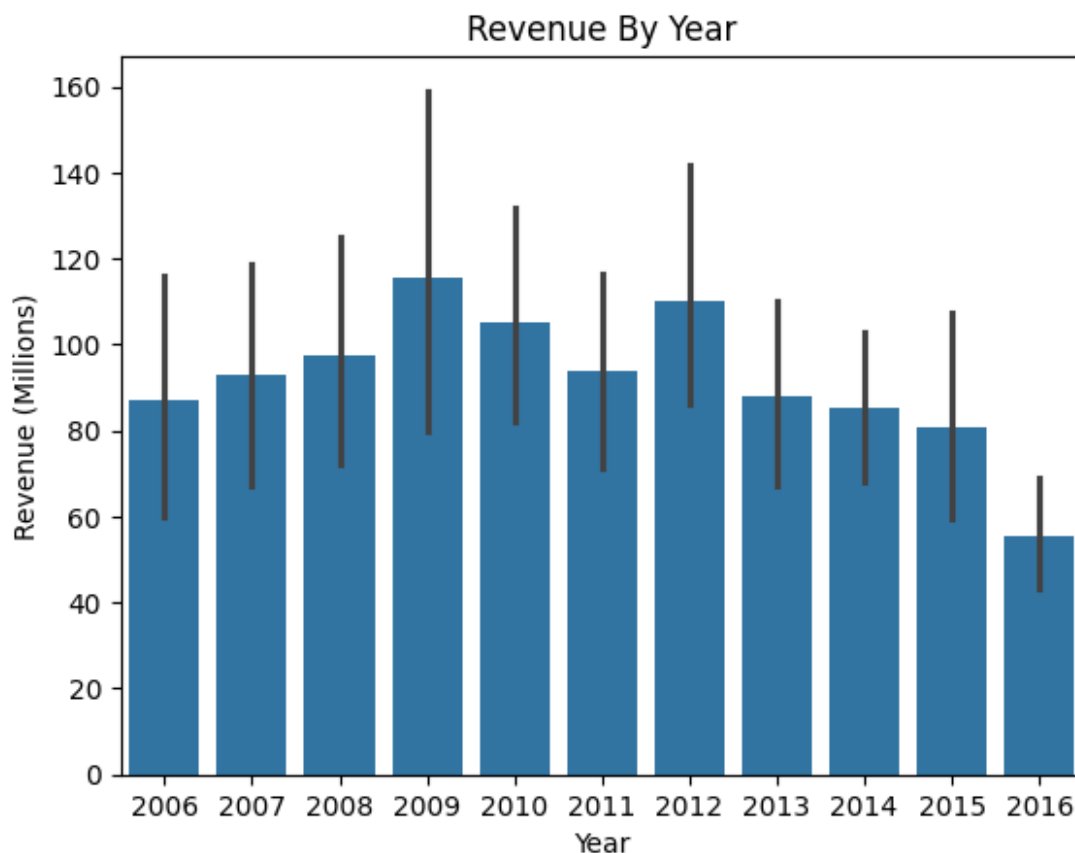

12. Find The Average Rating For Each Director

```
data.groupby('Director')['Rating'].mean().sort_values(ascending=False)
```

```
Director
Christopher Nolan                    8.68
Olivier Nakache                      8.60
Makoto Shinkai                       8.60
Florian Henckel von Donnersmarck     8.50
Aamir Khan                           8.50
                                     ...
Sam Taylor-Johnson                   4.10
Joey Curtis                          4.00
George Nolfi                         3.90
James Wong                           2.70
Jason Friedberg                      1.90
Name: Rating, Length: 524, dtype: float64
```

13. Display Top 10 Lengthy Movies Title

```python
le =data.nlargest(10,'Runtime (Minutes)')[['Title','Runtime
(Minutes)']] \
.set_index('Title')
le
```

```
                                          Runtime (Minutes)
Title
The Hateful Eight                                       187
The Wolf of Wall Street                                 180
La vie d'Adèle                                          180
Cloud Atlas                                             172
3 Idiots                                                170
Interstellar                                            169
Pirates of the Caribbean: At World's End               169
The Hobbit: An Unexpected Journey                       169
The Curious Case of Benjamin Button                     166
Transformers: Age of Extinction                         165
```

```python
# Visualization
sns.barplot(x='Runtime (Minutes)',y=le.index,data=le)
plt.title('Top 10 Lengthy Movies')
plt.show()
```

Top 10 Lengthy Movies
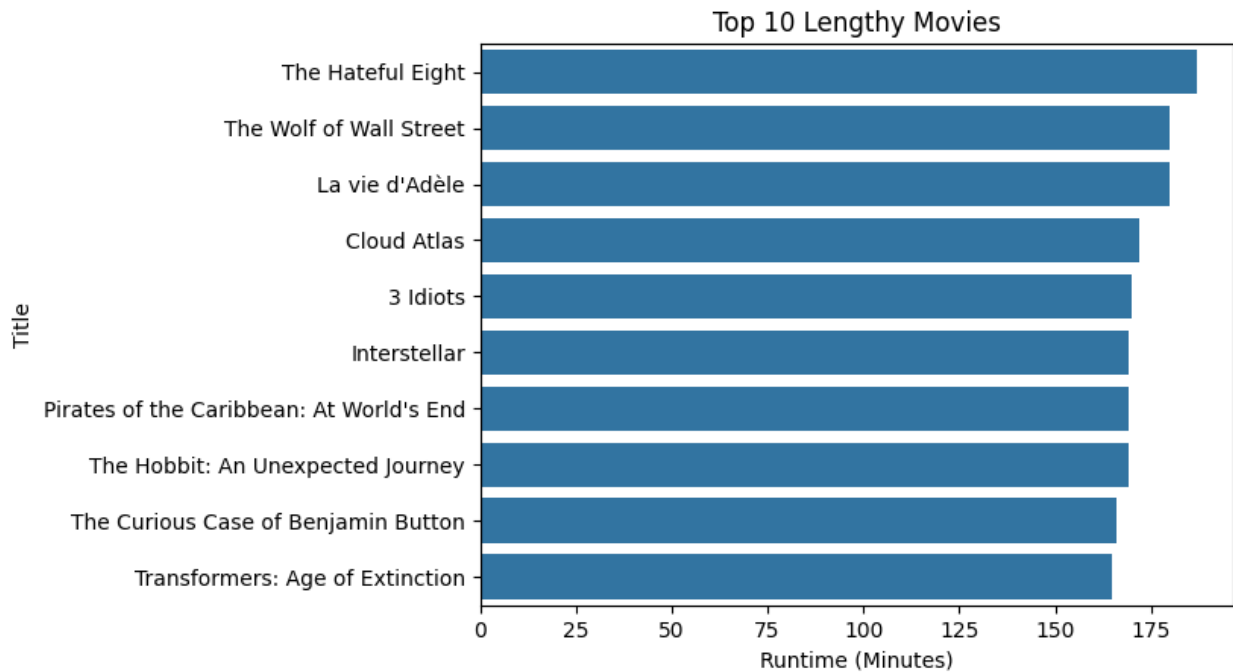
14. Display Number of Movies Per Year

```
data['Year'].value_counts()

Year
2016     198
2015     109
2014      93
2013      84
2012      62
2011      57
2010      57
2008      48
2009      45
2007      44
2006      41
Name: count, dtype: int64

sns.countplot(x='Year',data=data)
plt.title("Number of Movies Per Year")
plt.show()
```

Number of Movies Per Year
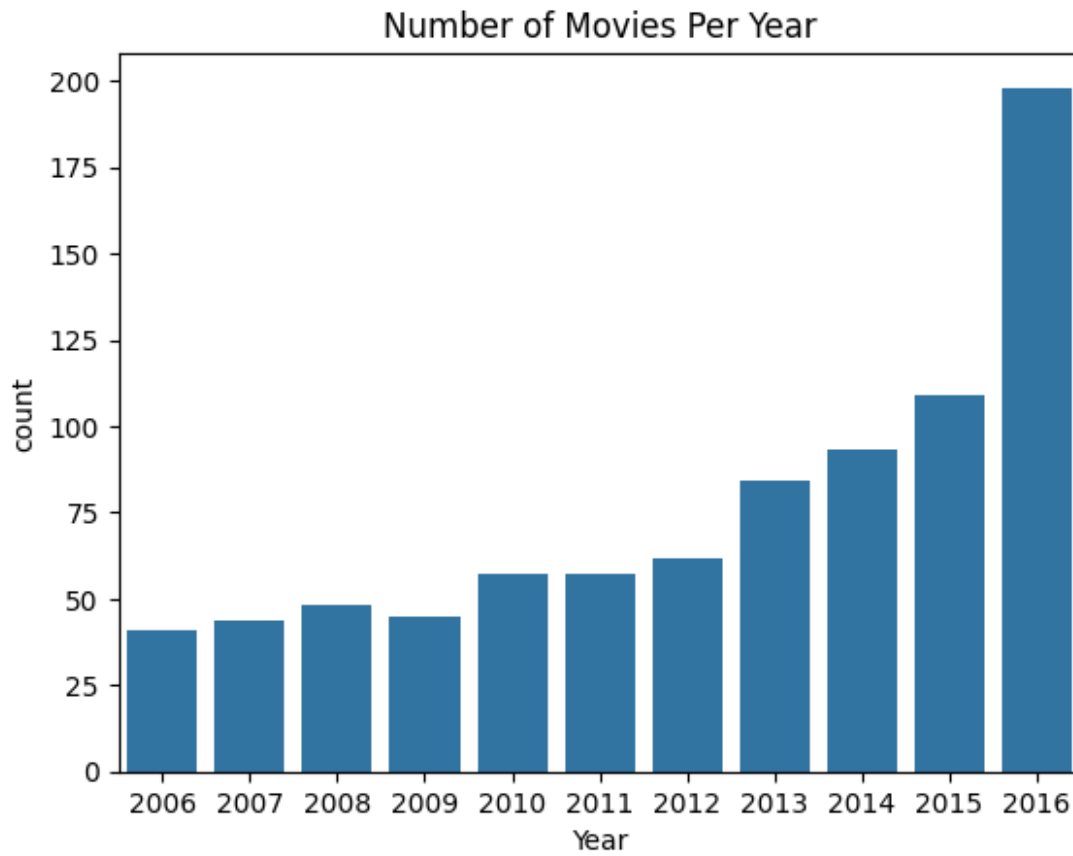
15. Find Most Popular Movie Title (Higest Revenue)

```
data[data['Revenue (Millions)'].max() == data['Revenue (Millions)']]
['Title']

50      Star Wars: Episode VII - The Force Awakens
Name: Title, dtype: object
```

16. Display Top 10 Highest Rated Movie Titles And its Directors

```
top_10=data.nlargest(10,'Rating')
[['Title','Rating','Director']].set_index('Title')
top_10
```

Title	Rating	Director

```
The Dark Knight          9.0              Christopher Nolan
Inception                8.8              Christopher Nolan
Interstellar             8.6              Christopher Nolan
Kimi no na wa            8.6                 Makoto Shinkai
The Intouchables         8.6                Olivier Nakache
The Prestige             8.5              Christopher Nolan
The Departed             8.5               Martin Scorsese
The Dark Knight Rises    8.5              Christopher Nolan
Whiplash                 8.5               Damien Chazelle
The Lives of Others      8.5  Florian Henckel von Donnersmarck
# Visualization
sns.barplot(x = 'Rating', y = top_10.index, data =
top_10,hue='Director',dodge=False)
plt.title("Display Top 10 Highest Rated Movie Titles")
plt.legend(bbox_to_anchor=(1.05, 1), loc=2)
plt.show()
```
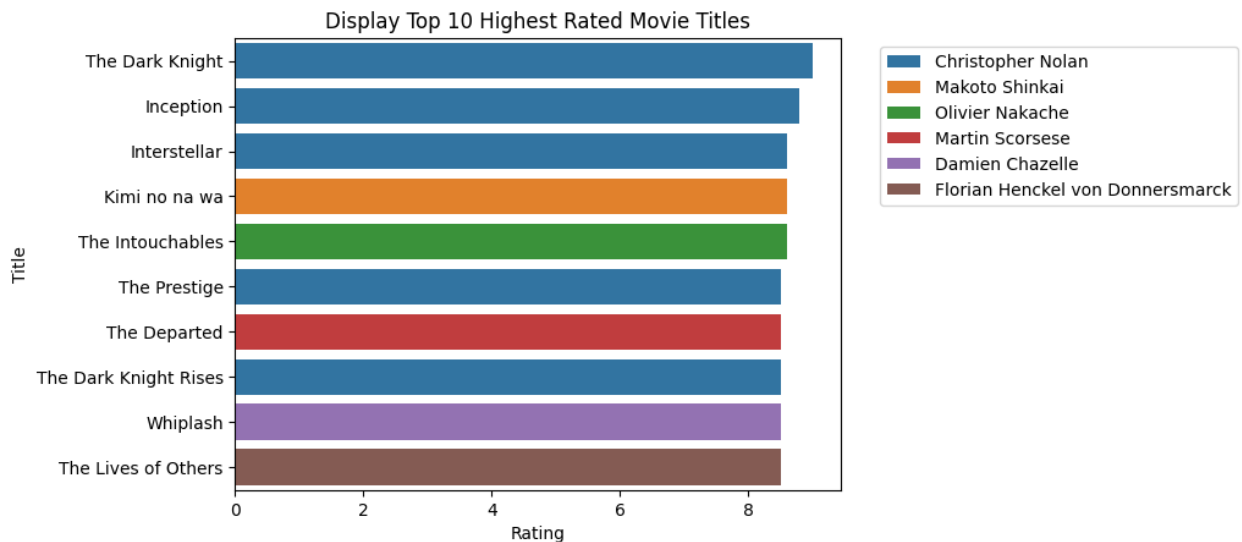

Display Top 10 Highest Rated Movie Titles

17. Display Top 10 Highest Revenue Movie Titles

```
data.sort_values(by='Revenue (Millions)',ascending=False).head(10)

     Rank                                     Title  \
50     51  Star Wars: Episode VII - The Force Awakens
87     88                                      Avatar
85     86                               Jurassic World
76     77                                The Avengers
54     55                             The Dark Knight
12     13                                    Rogue One
119   120                                 Finding Dory
94     95                       Avengers: Age of Ultron
```

```
124    125                     The Dark Knight Rises
578    579           The Hunger Games: Catching Fire

                                     Genre  \
50       Action,Adventure,Fantasy
87       Action,Adventure,Fantasy
85        Action,Adventure,Sci-Fi
76                  Action,Sci-Fi
54            Action,Crime,Drama
12        Action,Adventure,Sci-Fi
119   Animation,Adventure,Comedy
94        Action,Adventure,Sci-Fi
124              Action,Thriller
578    Action,Adventure,Mystery

                                              Description   
Director  \
50     Three decades after the defeat of the Galactic...          J.J.
Abrams
87     A paraplegic marine dispatched to the moon Pan...        James
Cameron
85     A new theme park, built on the original site o...      Colin
Trevorrow
76     Earth's mightiest heroes must come together an...          Joss
Whedon
54     When the menace known as the Joker wreaks havo...  Christopher
Nolan
12     The Rebel Alliance makes a risky move to steal...        Gareth
Edwards
119   The friendly but forgetful blue tang fish, Dor...        Andrew
Stanton
94     When Tony Stark and Bruce Banner try to jump-s...          Joss
Whedon
124   Eight years after the Joker's reign of anarchy...  Christopher
Nolan
578   Katniss Everdeen and Peeta Mellark become targ...     Francis
Lawrence

                                                 Actors  Year  \
50     Daisy Ridley, John Boyega, Oscar Isaac, Domhna...  2015
87     Sam Worthington, Zoe Saldana, Sigourney Weaver...  2009
85     Chris Pratt, Bryce Dallas Howard, Ty Simpkins,...  2015
76     Robert Downey Jr., Chris Evans, Scarlett Johan...  2012
54     Christian Bale, Heath Ledger, Aaron Eckhart,Mi...  2008
12     Felicity Jones, Diego Luna, Alan Tudyk, Donnie...  2016
119   Ellen DeGeneres, Albert Brooks,Ed O'Neill, Kai...  2016
94     Robert Downey Jr., Chris Evans, Mark Ruffalo, ...  2015
124   Christian Bale, Tom Hardy, Anne Hathaway,Gary ...  2012
578   Jennifer Lawrence, Josh Hutcherson, Liam Hemsw...  2013
```

	Runtime (Minutes)	Rating	Votes	Revenue (Millions)	Metascore
50	136	8.1	661608	936.63	81.0
87	162	7.8	935408	760.51	83.0
85	124	7.0	455169	652.18	59.0
76	143	8.1	1045588	623.28	69.0
54	152	9.0	1791916	533.32	82.0
12	133	7.9	323118	532.17	65.0
119	97	7.4	157026	486.29	77.0
94	141	7.4	516895	458.99	66.0
124	164	8.5	1222645	448.13	78.0
578	146	7.6	525646	424.65	76.0

```python
top_10 = data.nlargest(10,'Revenue (Millions)')
[['Title','Director','Revenue (Millions)']].set_index('Title')
top_10
```

	Director
Title	
Star Wars: Episode VII - The Force Awakens	J.J. Abrams
Avatar	James Cameron
Jurassic World	Colin Trevorrow
The Avengers	Joss Whedon
The Dark Knight	Christopher Nolan
Rogue One	Gareth Edwards
Finding Dory	Andrew Stanton
Avengers: Age of Ultron	Joss Whedon
The Dark Knight Rises	Christopher Nolan
The Hunger Games: Catching Fire	Francis Lawrence

	Revenue (Millions)
Title	
Star Wars: Episode VII - The Force Awakens	936.63
Avatar	760.51
Jurassic World	652.18
The Avengers	623.28
The Dark Knight	533.32
Rogue One	532.17
Finding Dory	486.29
Avengers: Age of Ultron	458.99
The Dark Knight Rises	448.13
The Hunger Games: Catching Fire	424.65

```python
# Visualization
sns.barplot(x='Revenue (Millions)',y=top_10.index,data=top_10)
plt.title("Display Top 10 Highest Revenue Movie Titles")
plt.show()
```


Display Top 10 Highest Revenue Movie Titles
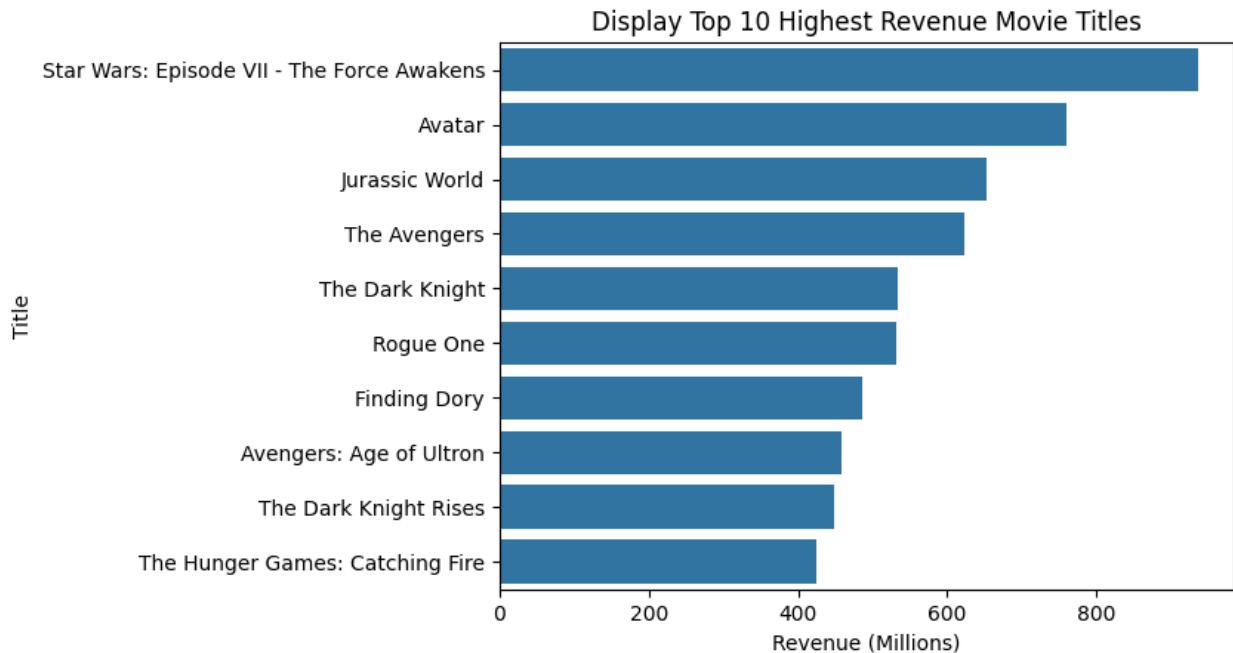
18. Find Average Rating of Movies Year-wise

```python
data1=data.groupby('Year')
['Rating'].mean().sort_values(ascending=False).reset_index()
data1
```

```
      Year     Rating
0     2006   7.143902
1     2007   7.140909
2     2011   6.945614
3     2012   6.933871
4     2009   6.911111
5     2010   6.894737
6     2013   6.832143
7     2014   6.822581
8     2008   6.708333
9     2015   6.674312
10    2016   6.644444
```
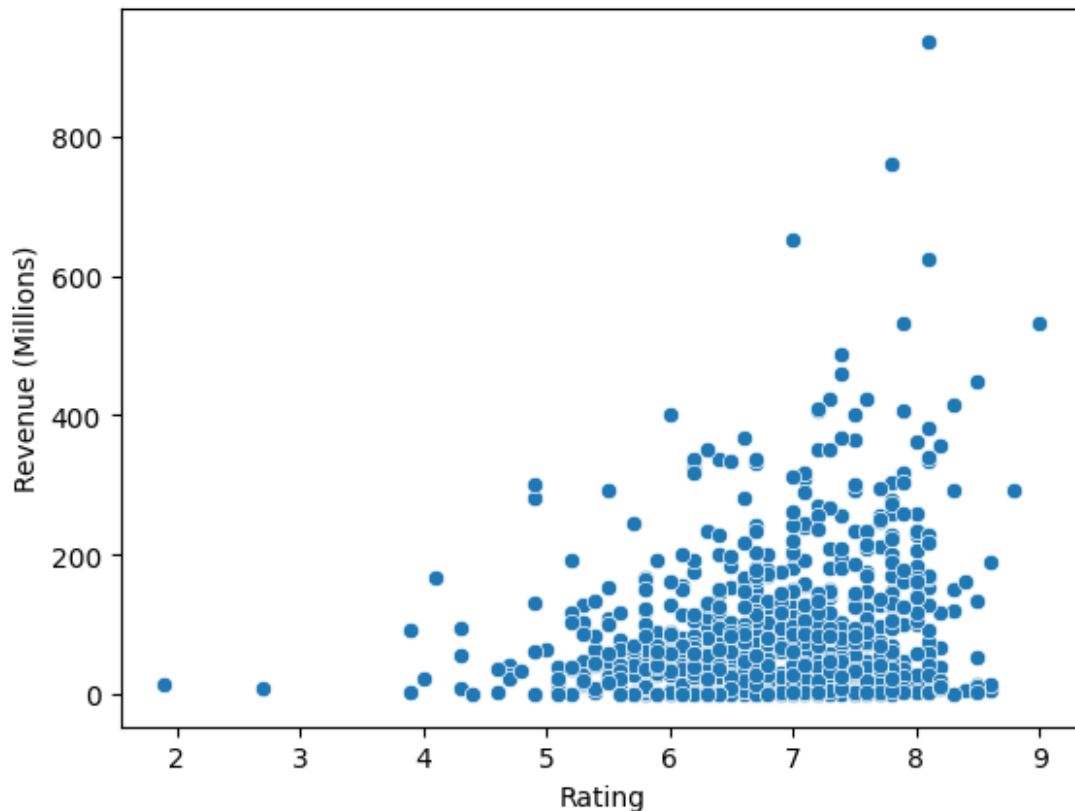
```python
# visualization
plt.figure(figsize=(25,10))
sns.barplot(x='Year',y='Rating',data=data1)
```

```
plt.title("Average Rating By Year")
plt.show()
```


Average Rating By Year
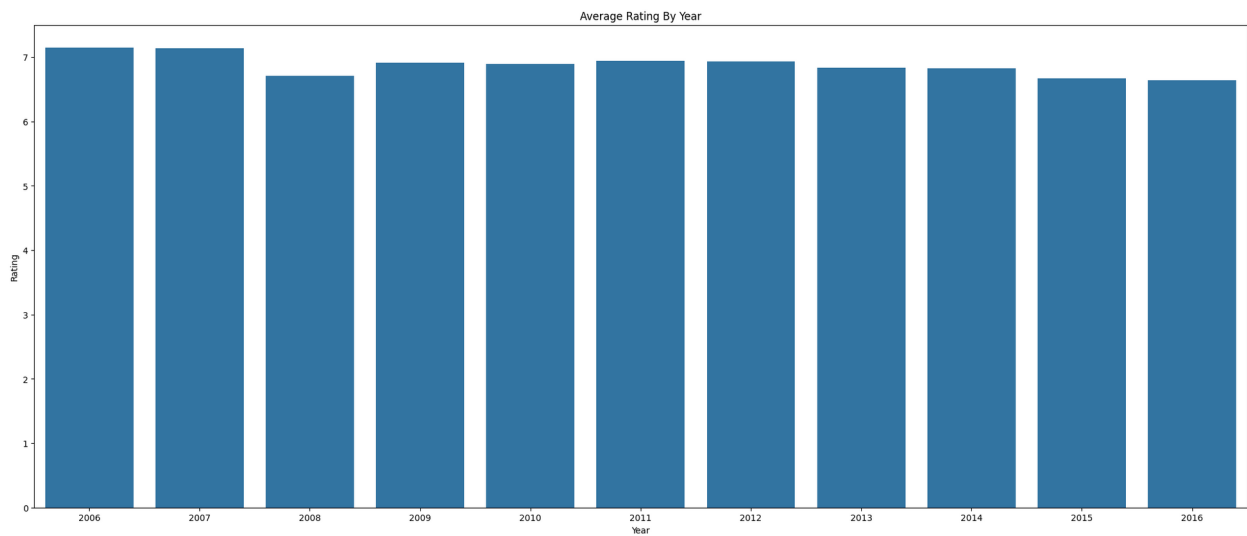
19. Does Rating Affect The Revenue?

```
sns.scatterplot(x='Rating',y='Revenue (Millions)',data=data)
```

```
<Axes: xlabel='Rating', ylabel='Revenue (Millions)'>
```

Answer : Yes

20. Classify Movies Based on Ratings [Good,Better and Best]

```python
def rating(rating):
    if rating>=8.0: # changed 7.0 -> 8.0
        return 'Excellent'
    elif rating>=6.5: # changed 6.0 -> 6.5
        return 'Good'
    else:
        return 'Average'

data['rating_cat']=data['Rating'].apply(rating)
data
```

	Rank	Title	Genre	\
0	1	Guardians of the Galaxy	Action,Adventure,Sci-Fi	
1	2	Prometheus	Adventure,Mystery,Sci-Fi	
2	3	Split	Horror,Thriller	

```
3       4                        Sing    Animation,Comedy,Family
4       5              Suicide Squad    Action,Adventure,Fantasy
..     ...                       ...                         ...
993    994    Resident Evil: Afterlife    Action,Adventure,Horror
994    995                   Project X                      Comedy
996    997             Hostel: Part II                      Horror
997    998        Step Up 2: The Streets    Drama,Music,Romance
999   1000                   Nine Lives    Comedy,Family,Fantasy

                                                  Description
Director  \
0       A group of intergalactic criminals are forced ...
James Gunn
1       Following clues to the origin of mankind, a te...        Ridley
Scott
2       Three girls are kidnapped by a man with a diag...    M. Night
Shyamalan
3       In a city of humanoid animals, a hustling thea...  Christophe
Lourdelet
4       A secret government agency recruits some of th...
David Ayer
..                                                    ...
...
993  While still out to destroy the evil Umbrella C...    Paul W.S.
Anderson
994  3 high school seniors throw a birthday party t...         Nima
Nourizadeh
996  Three American college students studying abroa...
Eli Roth
997  Romantic sparks occur between two dance studen...          Jon
M. Chu
999  A stuffy businessman finds himself trapped ins...        Barry
Sonnenfeld

                                                 Actors  Year  \
0     Chris Pratt, Vin Diesel, Bradley Cooper, Zoe S...  2014
1     Noomi Rapace, Logan Marshall-Green, Michael Fa...  2012
2     James McAvoy, Anya Taylor-Joy, Haley Lu Richar...  2016
3     Matthew McConaughey,Reese Witherspoon, Seth Ma...  2016
4     Will Smith, Jared Leto, Margot Robbie, Viola D...  2016
..                                                  ...   ...
993  Milla Jovovich, Ali Larter, Wentworth Miller,K...  2010
994  Thomas Mann, Oliver Cooper, Jonathan Daniel Br...  2012
996  Lauren German, Heather Matarazzo, Bijou Philli...  2007
997  Robert Hoffman, Briana Evigan, Cassie Ventura,...  2008
999  Kevin Spacey, Jennifer Garner, Robbie Amell,Ch...  2016

     Runtime (Minutes)  Rating   Votes  Revenue (Millions)  Metascore
\
0                  121     8.1  757074              333.13       76.0
```

```
1                  124    7.0   485820              126.46     65.0

2                  117    7.3   157606              138.12     62.0

3                  108    7.2    60545              270.32     59.0

4                  123    6.2   393727              325.02     40.0

..                 ...    ...      ...                 ...      ...

993                 97    5.9   140900               60.13     37.0

994                 88    6.7   164088               54.72     48.0

996                 94    5.5    73152               17.54     46.0

997                 98    6.2    70699               58.01     50.0

999                 87    5.3    12435               19.64     11.0


     rating_cat
0     Excellent
1          Good
2          Good
3          Good
4       Average
..          ...
993     Average
994        Good
996     Average
997     Average
999     Average

[838 rows x 13 columns]
```

21. Count Number of Action Movies

```python
list1=[]
for value in data['Genre']:
    list1.append(value.split(','))

data['temp']=list1

genre=input("Enter Genre you want to count : ").title()
count=0
for value in data['temp']:
    if genre in value:
```

```
        count=count+1
print("Total Count is",count)

Total Count is 0
```

OR

```
len(data[data['Genre'].str.contains('action',case=False)])

277
```