

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

```
In [2]: # Creating a DataFrame
df1 = pd.read_csv(r"D:\Jupyter\Project\action.csv")
df1
```

Out[2]:

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	di
0	tt9114286	Black Panther: Wakanda Forever	2022	PG-13	161 min	Action, Adventure, Drama	6.9	The people of Wakanda fight to protect their h...	C
1	tt1630029	Avatar: The Way of Water	2022	PG-13	192 min	Action, Adventure, Fantasy	7.8	Jake Sully lives with his newfound family form...	Ca
2	tt5884796	Plane	2023	R	107 min	Action, Thriller	6.5	A pilot finds himself caught in a war zone aft...	Fri
3	tt6710474	Everything Everywhere All at Once	2022	R	139 min	Action, Adventure, Comedy	8.0	A middle-aged Chinese immigrant is swept up in...	Dan \nSch
4	tt5433140	Fast X	2023	NaN	NaN	Action, Crime, Mystery	NaN	Dom Toretto and his family are targeted by the...	Le
...
52447	tt26743984	Suicide 2	1999	NaN	54 min	Action, Drama, Horror	NaN	Matt awakens after trying to end his own life ...	Br Wome Bra
52448	tt26744184	Chaos	2023	NaN	NaN	Action, Thriller	NaN	Add a Plot	Prabh \r Mool \nAk
52449	tt26744484	Revolver Lily	NaN	NaN	NaN	Action, Adventure	NaN	Takes place in 1924 and centres on Yuri, who k...	Yul
52450	tt26744765	The Wing	NaN	NaN	NaN	Action	NaN	The most secret and elite Special Forces unit	...

movie_id	movie_name	year	certificate	runtime	genre	rating	description	di
52451	tt26745202	Vey Dharuvey	NaN	NaN	NaN	Action, Comedy	NaN	Add a Plot D. N

52452 rows × 14 columns

```
In [3]: df2 = pd.read_csv(r"D:\Jupyter\Project\film-noir.csv")
df2
```

Out[3]:

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	director
0	tt0043014	Sunset Blvd.	1950	NaN	110 min	Drama, Film-Noir	8.4	A screenwriter develops a dangerous relationsh...	Billy Wilder ,
1	tt0045877	The Hitch-Hiker	1953	NaN	71 min	Crime, Drama, Film-Noir	6.9	Two fishermen pick up a psychopathic escaped c...	Ida Lupino ,
2	tt0032976	Rebecca	1940	NaN	130 min	Drama, Film-Noir, Mystery	8.1	A self-conscious woman juggles adjusting to he...	Alfred Hitchcock ,
3	tt0033870	The Maltese Falcon	1941	NaN	100 min	Crime, Film-Noir, Mystery	8.0	San Francisco private detective Sam Spade take...	John Huston ,
4	tt0036809	The Falcon Out West	1944	NaN	64 min	Crime, Drama, Film-Noir	6.1	Detective Falcon and the police travel west to...	William Clemens ,
...
981	tt0032257	Black Diamonds	1940	NaN	60 min	Crime, Drama, Film-Noir	5.5	A reporter on a visit to his hometown hears of...	Christy Cabanne ,
982	tt0027668	The Gentleman from Louisiana	1936	NaN	67 min	Crime, Drama, Film-Noir	4.5	In Victorian-era USA, a horse-jockey becomes a...	Irving Pichel ,
983	tt0047929	El cerco	1955	NaN	77 min	Crime, Film-Noir	6.2	A group of robbers assault a factory in the po...	Miguel Iglesias ,
984	tt0033161	Three Silent Men	1940	NaN	72 min	Crime, Drama, Film-Noir	5.0	Foreign scientist is selling a secret weapon t...	Thomas Bentley ,

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	director
985	tt0042392	Destination Big House	1950	NaN	60 min	Crime, Drama, Film-Noir	6.3	Janet Brooks innocently involve...	George Blair ,

986 rows × 14 columns

Joining two dataframes

```
In [4]: # Joining two dataframes  
df = df1.append(df2, ignore_index = True)  
df
```

```
C:\Users\Shruti Sakpal\AppData\Local\Temp\ipykernel_13476\4253140243.py:2: FutureWarning: The frame.append method is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.  
df = df1.append(df2, ignore_index = True)
```

Out[4]:

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	director
0	tt9114286	Black Panther: Wakanda Forever	2022	PG-13	161 min	Action, Adventure, Drama	6.9	The people of Wakanda fight to protect their h...	Ryan Coogler
1	tt1630029	Avatar: The Way of Water	2022	PG-13	192 min	Action, Adventure, Fantasy	7.8	Jake Sully lives with his newfound family form...	James Cameron
2	tt5884796	Plane	2023	R	107 min	Action, Thriller	6.5	A pilot finds himself caught in a war zone aft...	Jean Franco Rich
3	tt6710474	Everything Everywhere All at Once	2022	R	139 min	Action, Adventure, Comedy	8.0	A middle-aged Chinese immigrant is swept up in...	Daniel Kwan & Daniel Scheine
4	tt5433140	Fast X	2023	NaN	NaN	Action, Crime, Mystery	NaN	Dom Toretto and his family are targeted by the...	Lou Leterrier
...
53433	tt0032257	Black Diamonds	1940	NaN	60 min	Crime, Drama, Film-Noir	5.5	A reporter on a visit to his hometown hears of...	Chris Caban
53434	tt0027668	The Gentleman from Louisiana	1936	NaN	67 min	Crime, Drama, Film-Noir	4.5	In Victorian-era USA, a horse-jockey becomes a...	Irvir Pich
53435	tt0047929	El cerco	1955	NaN	77 min	Crime, Film-Noir	6.2	A group of robbers assault a factory in the po...	Miguel Iglesias
53436	tt0033161	Three Silent Men	1940	NaN	72 min	Crime, Drama, Film-Noir	5.0	Foreign scientist is selling a secret weapon t...	Thomas Bentley

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	director
53437	tt0042392	Destination Big House	1950	NaN	60 min	Crime, Drama, Film-Noir	6.3	School teacher Janet Brooks innocently involve...	George Bla

53438 rows × 14 columns

In [5]: # First 10 rows
df.head(10)

Out[5]:

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	director
0	tt9114286	Black Panther: Wakanda Forever	2022	PG-13	161 min	Action, Adventure, Drama	6.9	The people of Wakanda fight to protect their h...	Ryan Coogler
1	tt1630029	Avatar: The Way of Water	2022	PG-13	192 min	Action, Adventure, Fantasy	7.8	Jake Sully lives with his newfound family form...	James Cameron
2	tt5884796	Plane	2023	R	107 min	Action, Thriller	6.5	A pilot finds himself caught in a war zone aft...	Jean-François Richet
3	tt6710474	Everything Everywhere All at Once	2022	R	139 min	Action, Adventure, Comedy	8.0	A middle-aged Chinese immigrant is swept up in...	Dan Kwan, Daniel Scheinert
4	tt5433140	Fast X	2023	NaN	NaN	Action, Crime, Mystery	NaN	Dom Toretto and his family are targeted by the...	Louis Leterrier
5	tt10954600	Ant-Man and the Wasp: Quantumania	2023	PG-13	125 min	Action, Adventure, Comedy	6.6	Scott Lang and Hope Van Dyne, along with Hank ...	Peyton Reed
6	tt9686790	Shotgun Wedding	2022	R	100 min	Action, Comedy, Romance	5.4	Darcy and Tom gather their families for the ul...	Jason Moore
7	tt12593682	Bullet Train	2022	R	127 min	Action, Comedy, Thriller	7.3	Five assassins aboard a swiftly-moving bullet ...	David Leitch
8	tt1016150	All Quiet on the Western Front	2022	R	148 min	Action, Drama, War	7.8	A young German soldier's terrifying experience...	Edward Berger

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	director
9	tt1745960	Top Gun: Maverick	2022	PG-13	130 min	Action, Drama	8.3	After thirty years, Maverick is still pushing ...	Joseph Kosinski

```
In [6]: # Last 10 rows  
df.tail(10)
```

Out[6]:

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	dire
53428	tt0033971	The Officer and the Lady	1941	NaN	60 min	Action, Crime, Drama	6.1	Helen Regan (Rochelle Hudson) is the daughter ...	Sam W
53429	tt0037631	Dancing in Manhattan	1944	NaN	60 min	Comedy, Crime, Film-Noir	5.4	Manhattan garbage-truck driver, Eddie Martin (...	Henry L
53430	tt0251626	Carta Brava	1949	NaN	NaN	Crime, Drama, Film-Noir	NaN	Add a Plot	Agust Delc
53431	tt0048189	I Cover the Underworld	1955	NaN	70 min	Crime, Drama, Film-Noir	5.8	A priest is about to see his twin brother, who...	I Springs
53432	tt0030894	A Trip to Paris	1938	NaN	64 min	Adventure, Comedy, Crime	6.1	The Jones Family goes to Paris to celebrate Fa...	Malcolm
53433	tt0032257	Black Diamonds	1940	NaN	60 min	Crime, Drama, Film-Noir	5.5	A reporter on a visit to his hometown hears of...	Ch Cab
53434	tt0027668	The Gentleman from Louisiana	1936	NaN	67 min	Crime, Drama, Film-Noir	4.5	In Victorian-era USA, a horse-jockey becomes a...	Ir Pi
53435	tt0047929	El cerco	1955	NaN	77 min	Crime, Film-Noir	6.2	A group of robbers assault a factory in the po...	Mi Igle
53436	tt0033161	Three Silent Men	1940	NaN	72 min	Crime, Drama, Film-Noir	5.0	Foreign scientist is selling a secret weapon t...	Tho Ber

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	dire
53437	tt0042392	Destination Big House	1950	NaN	60 min	Crime, Drama, Film-Noir	6.3	School teacher Janet Brooks innocently involve...	Ge...l

Data Cleaning

In [7]: df.info

```
Out[7]: <bound method DataFrame.info of
          movie_id
          e_name  year certificate \
0      tt9114286    Black Panther: Wakanda Forever  2022    PG-13
1      tt1630029        Avatar: The Way of Water  2022    PG-13
2      tt5884796                  Plane  2023      R
3      tt6710474  Everything Everywhere All at Once  2022      R
4      tt5433140            Fast X  2023    NaN
...
53433  tt0032257           Black Diamonds  1940    NaN
53434  tt0027668  The Gentleman from Louisiana  1936    NaN
53435  tt0047929             El cerco  1955    NaN
53436  tt0033161      Three Silent Men  1940    NaN
53437  tt0042392  Destination Big House  1950    NaN

          runtime          genre  rating \
0     161 min  Action, Adventure, Drama   6.9
1     192 min  Action, Adventure, Fantasy   7.8
2     107 min          Action, Thriller   6.5
3     139 min  Action, Adventure, Comedy   8.0
4       NaN      Action, Crime, Mystery  NaN
...
53433   60 min      Crime, Drama, Film-Noir   5.5
53434   67 min      Crime, Drama, Film-Noir   4.5
53435   77 min          Crime, Film-Noir   6.2
53436   72 min      Crime, Drama, Film-Noir   5.0
53437   60 min      Crime, Drama, Film-Noir   6.3

          description \
0  The people of Wakanda fight to protect their h...
1  Jake Sully lives with his newfound family form...
2  A pilot finds himself caught in a war zone aft...
3  A middle-aged Chinese immigrant is swept up in...
4  Dom Toretto and his family are targeted by the...
...
53433  A reporter on a visit to his hometown hears of...
53434  In Victorian-era USA, a horse-jockey becomes a...
53435  A group of robbers assault a factory in the po...
53436  Foreign scientist is selling a secret weapon t...
53437  School teacher Janet Brooks innocently involve...

          director  director_id \
0          Ryan Coogler /name/nm3363032/
1          James Cameron /name/nm0000116/
2  Jean-François Richet /name/nm0724938/
3  Dan Kwan, \nDaniel Scheinert /name/nm3453283/
4          Louis Leterrier /name/nm0504642/
...
53433          Christy Cabanne /name/nm0127511/
53434          Irving Pichel /name/nm0681635/
53435          Miguel Iglesias /name/nm0407071/
53436          Thomas Bentley /name/nm0072872/
53437          George Blair /name/nm0086251/

          star \
0  Letitia Wright, \nLupita Nyong'o, \nDanai Guri...
1  Sam Worthington, \nZoe Saldana, \nSigourney We...
2  Gerard Butler, \nMike Colter, \nTony Goldwyn, ...
```

```

3      Michelle Yeoh, \nStephanie Hsu, \nJamie Lee Cu...
4      Vin Diesel, \nJordana Brewster, \nTyrese Gibso...
...
53433  Richard Arlen, \nAndy Devine, \nKathryn Adams, ...
53434  Eddie Quillan, \nCharles 'Chic' Sale, \nCharlo...
53435  José Guardiola, \nIsabel de Castro, \nÁngel Jo...
53436  Sebastian Shaw, \nDerrick De Marney, \nPatri...
53437  Dorothy Patrick, \nRobert Rockwell, \nJimmy Ly...

          star_id    votes \
0      /name/nm4004793/,/name/nm2143282/,/name/nm1775...  204835.0
1      /name/nm0941777/,/name/nm0757855/,/name/nm0000...  295119.0
2      /name/nm0124930/,/name/nm1591496/,/name/nm0001...  26220.0
3      /name/nm3215397/,/name/nm0000706/,/name/nm3513...  327858.0
4      /name/nm0004874/,/name/nm0108287/,/name/nm0879...    NaN
...
53433  /name/nm0035159/,/name/nm0222596/,/name/nm0011...   33.0
53434  /name/nm0703600/,/name/nm0757925/,/name/nm0377...   21.0
53435  /name/nm0345348/,/name/nm0207894/,/name/nm0430...   46.0
53436  /name/nm0789970/,/name/nm0210116/,/name/nm0733...   79.0
53437  /name/nm0665842/,/name/nm0734352/,/name/nm0527...   40.0

      gross(in $)
0            NaN
1            NaN
2            NaN
3            NaN
4            NaN
...
53433        ...
53434        ...
53435        ...
53436        ...
53437        ...

[53438 rows x 14 columns]>

```

In [8]: # ALL Column Names
df.columns

Out[8]: Index(['movie_id', 'movie_name', 'year', 'certificate', 'runtime', 'genre',
 'rating', 'description', 'director', 'director_id', 'star', 'star_id',
 'votes', 'gross(in \$)'),
 dtype='object')

```
In [9]: # Total null values in each column  
df.isnull().sum()
```

```
Out[9]: movie_id          0  
movie_name        0  
year            8259  
certificate     39748  
runtime         19923  
genre           0  
rating          23006  
description      0  
director        4633  
director_id     4633  
star            9240  
star_id         7831  
votes           23004  
gross(in $)    50640  
dtype: int64
```

```
In [10]: # Total duplicate values in each column  
df.duplicated().sum()
```

```
Out[10]: 0
```

In [11]: *# Dropping rows having all values as null*
df.dropna(how="all")

Out[11]:

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	director
0	tt9114286	Black Panther: Wakanda Forever	2022	PG-13	161 min	Action, Adventure, Drama	6.9	The people of Wakanda fight to protect their h...	Ryan Coogler
1	tt1630029	Avatar: The Way of Water	2022	PG-13	192 min	Action, Adventure, Fantasy	7.8	Jake Sully lives with his newfound family form...	James Cameron
2	tt5884796	Plane	2023	R	107 min	Action, Thriller	6.5	A pilot finds himself caught in a war zone aft...	Jean Franco Rich
3	tt6710474	Everything Everywhere All at Once	2022	R	139 min	Action, Adventure, Comedy	8.0	A middle-aged Chinese immigrant is swept up in...	Daniel Kwan & Daniel Scheine
4	tt5433140	Fast X	2023	NaN	NaN	Action, Crime, Mystery	NaN	Dom Toretto and his family are targeted by the...	Lou Leterrier
...
53433	tt0032257	Black Diamonds	1940	NaN	60 min	Crime, Drama, Film-Noir	5.5	A reporter on a visit to his hometown hears of...	Chris Caban
53434	tt0027668	The Gentleman from Louisiana	1936	NaN	67 min	Crime, Drama, Film-Noir	4.5	In Victorian-era USA, a horse-jockey becomes a...	Irvir Pich
53435	tt0047929	El cerco	1955	NaN	77 min	Crime, Film-Noir	6.2	A group of robbers assault a factory in the po...	Miguel Iglesias
53436	tt0033161	Three Silent Men	1940	NaN	72 min	Crime, Drama, Film-Noir	5.0	Foreign scientist is selling a secret weapon t...	Thomas Bentley

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	director
53437	tt0042392	Destination Big House	1950	NaN	60 min	Crime, Drama, Film-Noir	6.3	School teacher Janet Brooks innocently involve...	George Bla

53438 rows × 14 columns

In [12]: # Filling Null Values

```
df["certificate"].fillna("None", inplace = True)
df["runtime"].fillna("Unknown", inplace = True)
df["director"].fillna("Unknown", inplace = True)
df["star"].fillna("Unknown", inplace = True)
df["gross(in $)"].fillna("Unknown", inplace = True)
df
```

Out[12]:

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	director
0	tt9114286	Black Panther: Wakanda Forever	2022	PG-13	161 min	Action, Adventure, Drama	6.9	The people of Wakanda fight to protect their h...	Ry Coog
1	tt1630029	Avatar: The Way of Water	2022	PG-13	192 min	Action, Adventure, Fantasy	7.8	Jake Sully lives with his newfound family form...	Jarr Camer
2	tt5884796	Plane	2023	R	107 min	Action, Thriller	6.5	A pilot finds himself caught in a war zone aft...	Je Franç Ricl
3	tt6710474	Everything Everywhere All at Once	2022	R	139 min	Action, Adventure, Comedy	8.0	A middle-aged Chinese immigrant is swept up in...	D Kwi NDar Schein
4	tt5433140	Fast X	2023	None	Unknown	Action, Crime, Mystery	NaN	Dom Toretto and his family are targeted by the...	Lo Leterri
...
53433	tt0032257	Black Diamonds	1940	None	60 min	Crime, Drama, Film-Noir	5.5	A reporter on a visit to his hometown hears of...	Chri Caban
53434	tt0027668	The Gentleman from Louisiana	1936	None	67 min	Crime, Drama, Film-Noir	4.5	In Victorian-era USA, a horse-jockey becomes a...	Irv Pic
53435	tt0047929	El cerco	1955	None	77 min	Crime, Film-Noir	6.2	A group of robbers assault a factory in the po...	Mig Igles
53436	tt0033161	Three Silent Men	1940	None	72 min	Crime, Drama, Film-Noir	5.0	Foreign scientist is selling a secret weapon t...	Thom Bent

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	direc
53437	tt0042392	Destination Big House	1950	None	60 min	Crime, Drama, Film-Noir	6.3	School teacher Janet Brooks innocently involve...	Geo Bl

53438 rows × 14 columns

```
In [13]: # Feeding null values of 'rating' column as mean of the same column
df["rating"].fillna(df.rating.mean(), inplace = True)

# Limiting the number of decimals
df = df.round(decimals = 2)
df
```

Out[13]:

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	direc
0	tt9114286	Black Panther: Wakanda Forever	2022	PG-13	161 min	Action, Adventure, Drama	6.90	The people of Wakanda fight to protect their h...	C
1	tt1630029	Avatar: The Way of Water	2022	PG-13	192 min	Action, Adventure, Fantasy	7.80	Jake Sully lives with his newfound family form...	Ca
2	tt5884796	Plane	2023	R	107 min	Action, Thriller	6.50	A pilot finds himself caught in a war zone	Fr

```
In [14]: # Feeding null values of 'votes' column as mean of the same column
df["votes"].fillna(df.votes.mean(), inplace = True)

# Limiting the number of decimals
df = df.round(decimals = 1)
df
```

Out[14]:

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	director
0	tt9114286	Black Panther: Wakanda Forever	2022	PG-13	161 min	Action, Adventure, Drama	6.9	The people of Wakanda fight to protect their h...	Ry Coog
1	tt1630029	Avatar: The Way of Water	2022	PG-13	192 min	Action, Adventure, Fantasy	7.8	Jake Sully lives with his newfound family form...	Jarr Camer
2	tt5884796	Plane	2023	R	107 min	Action, Thriller	6.5	A pilot finds himself caught in a war zone aft...	Je Franç Ricl
3	tt6710474	Everything Everywhere All at Once	2022	R	139 min	Action, Adventure, Comedy	8.0	A middle-aged Chinese immigrant is swept up in...	D Kwi NDar Schein
4	tt5433140	Fast X	2023	None	Unknown	Action, Crime, Mystery	5.7	Dom Toretto and his family are targeted by the...	Lo Leterri
...
53433	tt0032257	Black Diamonds	1940	None	60 min	Crime, Drama, Film-Noir	5.5	A reporter on a visit to his hometown hears of...	Chri Caban
53434	tt0027668	The Gentleman from Louisiana	1936	None	67 min	Crime, Drama, Film-Noir	4.5	In Victorian-era USA, a horse-jockey becomes a...	Irv Pic
53435	tt0047929	El cerco	1955	None	77 min	Crime, Film-Noir	6.2	A group of robbers assault a factory in the po...	Mig Igles
53436	tt0033161	Three Silent Men	1940	None	72 min	Crime, Drama, Film-Noir	5.0	Foreign scientist is selling a secret weapon t...	Thom Bent

	movie_id	movie_name	year	certificate	runtime	genre	rating	description	direc
53437	tt0042392	Destination Big House	1950	None	60 min	Crime, Drama, Film-Noir	6.3	School teacher Janet Brooks innocently involve...	Geor Bl

53438 rows × 14 columns

In [15]: # Dropping unnecessary columns
df.drop(columns = ["director_id", "star_id", "certificate", "gross(in \$)"], inplace=True)

Out[15]:

	movie_id	movie_name	year	runtime	genre	rating	description	director	
0	tt9114286	Black Panther: Wakanda Forever	2022	161 min	Action, Adventure, Drama	6.9	The people of Wakanda fight to protect their h...	Ryan Coogler	L W \nL Nyo \nE G
1	tt1630029	Avatar: The Way of Water	2022	192 min	Action, Adventure, Fantasy	7.8	Jake Sully lives with his newfound family form...	James Cameron	Worthin \ Salc \nSigol '
2	tt5884796	Plane	2023	107 min	Action, Thriller	6.5	A pilot finds himself caught in a war zone aft...	Jean-François Richet	G B \nC \nGoldwy
3	tt6710474	Everything Everywhere All at Once	2022	139 min	Action, Adventure, Comedy	8.0	A middle-aged Chinese immigrant is swept up in...	Dan Kwan, \nDaniel Scheinert	Mic \nSteph \nJamie
4	tt5433140	Fast X	2023	Unknown	Action, Crime, Mystery	5.7	Dom Toretto and his family are targeted by the...	Louis Leterrier	Vin Di \nJor Brew \nTj Git
...
53433	tt0032257	Black Diamonds	1940	60 min	Crime, Drama, Film-Noir	5.5	A reporter on a visit to his hometown hears of...	Christy Cabanne	Ric A \nDe \nKa Adar
53434	tt0027668	The Gentleman from Louisiana	1936	67 min	Crime, Drama, Film-Noir	4.5	In Victorian-era USA, a horse-jockey becomes a...	Irving Pichel	E Qu \nCh 'Chic' \nCha
53435	tt0047929	El cerco	1955	77 min	Crime, Film-Noir	6.2	A group of robbers assault a factory in the po...	Miguel Iglesias	Guard \nIsab Ca \nÁngel
53436	tt0033161	Three Silent Men	1940	72 min	Crime, Drama, Film-Noir	5.0	Foreign scientist is selling a secret weapon t...	Thomas Bentley	Seba S \nDerrick Ma \nPat

	movie_id	movie_name	year	runtime	genre	rating	description	director	
53437	tt0042392	Destination Big House	1950	60 min	Crime, Drama, Film-Noir	6.3	School teacher Janet Brooks innocently involve...	George Blair	Do Pa \nR Rock \nJi

53438 rows × 10 columns

Data Analysis

```
In [16]: # Fetching all columns from row 10000 to 10009  
df.iloc[10000:10010]
```

Out[16]:

	movie_id	movie_name	year	runtime	genre	rating	description	director
10000	tt1238718	Alibaba Aur 40 Chor	2004	Unknown	Action, Adventure, Drama	4.7	Sonapur is a small village in modern day India...	Sunil Agnihotri \ F
10001	tt0097663	The Kill Reflex	1989	94 min	Action, Crime, Thriller	4.0	A Chicago policeman (Fred Williamson) hunts hi...	Fred Williamson Will S
10002	tt0345853	Rembrandt	2002	109 min	Action, Comedy, Crime	6.3	Mick and Tom are an unlikely father-son team o...	Jannik Johansen Bry Ce \
10003	tt5140182	Junction 48	2016	95 min	Action, Biography, Crime	6.6	Set against a backdrop of the Israeli-Palestin...	Udi Aloni \ N
10004	tt0110263	The Killing Machine	1994	100 min	Action, Crime, Drama	4.4	Harlin Garret loses his memory and finds himse...	David Mitchell \n I
10005	tt0190938	Swindle	2002	93 min	Action, Crime, Thriller	5.4	Four thieves attempt to make the richest score...	K.C. Bascombe Si \n F
10006	tt0075160	Safari Express	1976	93 min	Action, Adventure, Comedy	5.3	Two safari tour-guides and business partners f...	Duccio Tessari \ A
10007	tt0332191	Largado, ibabalik kita sa pinanggalingan mo!	1999	100 min	Action	8.5	Add a Plot	Lito Lapid, Rogelio Salvador Ma
10008	tt14339846	Mrs Undercover	2022	Unknown	Action	5.7	Add a Plot	Anushree Mehta \n , Ba

movie_id	movie_name	year	runtime	genre	rating	description	director
10009	Armageddon Tales	2021	96 min	Action, Sci-Fi	3.4	After surviving a worldwide pandemic, two men ...	Paul Plett, InJonah Schwartz Hy

In [17]: # Get Movie Name and description at location 10009
df.loc[10009, ["movie_name", "description"]]

It can be noted that the entire decription is not displayed

Out[17]: movie_name Armageddon Tales
description After surviving a worldwide pandemic, two men ...
Name: 10009, dtype: object

In [18]: # Display the Long string with the given size
pd.options.display.max_colwidth = 10000
df

Out[18]:

	movie_id	movie_name	year	runtime	genre	rating	description	director
0	tt9114286	Black Panther: Wakanda Forever	2022	161 min	Action, Adventure, Drama	6.9	The people of Wakanda fight to protect their home from intervening world powers as they mourn the death of King T'Challa. Jake Sully lives with his newfound family formed on the	Ryan Coogler

In [19]: # Noted that the entire description is being displayed in row 128
df.loc[128, ["movie_name", "description"]]

Out[19]: movie_name Harry Potter and the Order of the Phoenix
description With their warning about Lord Voldemort's return scoffed at, Harry and Dumbledore are targeted by the Wizard authorities as an authoritarian bureaucrat slowly seizes power at Hogwarts.
Name: 128, dtype: object

In [20]: df.columns

Out[20]: Index(['movie_id', 'movie_name', 'year', 'runtime', 'genre', 'rating',
'description', 'director', 'star', 'votes'],
dtype='object')

In [21]: # Renaming columns

```
df.rename(columns = {"movie_id" : "Movie ID", "movie_name" : "Movie Name", "ye  
    "rating" : "Ratings", "description" : "Description", "vot  
df
```

Out[21]:

	Movie ID	Movie Name	Year	Runtime	genre	Ratings	Description	director
0	tt9114286	Black Panther: Wakanda Forever	2022	161 min	Action, Adventure, Drama	6.9	The people of Wakanda fight to protect their home from intervening world powers as they mourn the death of King T'Challa.	Ryan Coogler
1	tt1630029	Avatar: The Way of Water	2022	192 min	Action, Adventure, Fantasy	7.8	Jake Sully lives with his newfound family formed on the extrasolar moon Pandora. Once a familiar threat returns to finish what was previously started, Jake must work with Neytiri and the army of the Na'vi race to protect their home.	James Cameron
2	tt5884796	Plane	2023	107 min	Action, Thriller	6.5	A pilot finds himself caught in a war zone after he's forced to land his commercial aircraft during a terrible storm.	Jean-François Richet

	Movie ID	Movie Name	Year	Runtime	genre	Ratings	Description	director
3	tt6710474	Everything Everywhere All at Once	2022	139 min	Action, Adventure, Comedy	8.0	A middle-aged Chinese immigrant is swept up into an insane adventure in which she alone can save existence by exploring other universes and connecting with the lives she could have led.	Dan Kwan, \nDaniel Scheinert \n\nMi
4	tt5433140	Fast X	2023	Unknown	Action, Crime, Mystery	5.7	Dom Toretto and his family are targeted by the vengeful son of drug kingpin Hernan Reyes.	Louis Leterrier \n\nVin D'Onofrio \n\nBreathless \n\nT.J. Gentry \n\nMichael Rodriquez
...
53433	tt0032257	Black Diamonds	1940	60 min	Crime, Drama, Film-Noir	5.5	A reporter on a visit to his hometown hears of dangerous conditions at the local coal mine, and proceeds to investigate.	Christy Cabanne \n\nRita Hayworth \n\nKatherine Hepburn \n\nAlec Guinness \n\nPeter Lorre
53434	tt0027668	The Gentleman from Louisiana	1936	67 min	Crime, Drama, Film-Noir	4.5	In Victorian-era USA, a horse-jockey becomes a scapegoat in the nefarious schemes of a group of small-time criminals.	Irving Pichel \n\nClyde Bruckman \n\nCharles Barton \n\nFay Holden \n\n

Movie ID	Movie Name	Year	Runtime	genre	Ratings	Description	director
53435	tt0047929	El cerco	1955	77 min	Crime, Film-Noir	6.2	A group of robbers assault a factory in the port of Barcelona, but, upon being discovered, they are forced to flee hastily, each one his own way. An exhaustive police device is then ... See full summary »
53436	tt0033161	Three Silent Men	1940	72 min	Crime, Drama, Film-Noir	5.0	Foreign scientist is selling a secret weapon to the British. He is badly injured in a car accident and is operated on by a surgeon, after the operation he dies mysteriously. An investigation follows.
53437	tt0042392	Destination Big House	1950	60 min	Crime, Drama, Film-Noir	6.3	School teacher Janet Brooks innocently involves herself in a scandal while spending the week-end alone in the mountain cabin of her fiancée, Dr. Walter Phillips. She gives first aid to a ... See full summary »

53438 rows × 10 columns


```
In [22]: # Splitting columns
df[["Genre1", "Genre2", "Genre3"]] = df.genre.str.split(",", expand = True)
df
```

Out[22]:

	Movie ID	Movie Name	Year	Runtime	genre	Ratings	Description	director
0	tt9114286	Black Panther: Wakanda Forever	2022	161 min	Action, Adventure, Drama	6.9	The people of Wakanda fight to protect their home from intervening world powers as they mourn the death of King T'Challa.	Ryan Coogler
1	tt1630029	Avatar: The Way of Water	2022	192 min	Action, Adventure, Fantasy	7.8	Jake Sully lives with his newfound family formed on the extrasolar moon Pandora. Once a familiar threat returns to finish what was previously started, Jake must work with Neytiri and the army of the Na'vi race to protect their home.	James Cameron
2	tt5884796	Plane	2023	107 min	Action, Thriller	6.5	A pilot finds himself caught in a war zone after he's forced to land his commercial aircraft during a terrible storm.	Jean-François Richet

	Movie ID	Movie Name	Year	Runtime	genre	Ratings	Description	director	
3	tt6710474	Everything Everywhere All at Once	2022	139 min	Action, Adventure, Comedy	8.0	A middle-aged Chinese immigrant is swept up into an insane adventure in which she alone can save existence by exploring other universes and connecting with the lives she could have led.	Dan Kwan, Daniel Scheinert	Mi \nStep \nDaniel Scheinert \nJames Curtis Huy
4	tt5433140	Fast X	2023	Unknown	Action, Crime, Mystery	5.7	Dom Toretto and his family are targeted by the vengeful son of drug kingpin Hernan Reyes.	Louis Leterrier	Vin Diesel \nJordan Breath \nTJ G \nMike Rod
...
53433	tt0032257	Black Diamonds	1940	60 min	Crime, Drama, Film-Noir	5.5	A reporter on a visit to his hometown hears of dangerous conditions at the local coal mine, and proceeds to investigate.	Christy Cabanne	\nD \nK A \nP
53434	tt0027668	The Gentleman from Louisiana	1936	67 min	Crime, Drama, Film-Noir	4.5	In Victorian-era USA, a horse-jockey becomes a scapegoat in the nefarious schemes of a group of small-time criminals.	Irving Pichel	Q \nC 'Chic' \nChick

Movie ID	Movie Name	Year	Runtime	genre	Ratings	Description	director
53435	tt0047929	El cerco	1955	77 min	Crime, Film-Noir	6.2	<p>A group of robbers assault a factory in the port of Barcelona, but, upon being discovered, they are forced to flee hastily, each one his own way. An exhaustive police device is then ... See full summary »</p> <p>Foreign scientist is selling a secret weapon to the British. He is badly injured in a car accident and is operated on by a surgeon, after the operation he dies mysteriously. An investigation follows.</p>
53436	tt0033161	Three Silent Men	1940	72 min	Crime, Drama, Film-Noir	5.0	<p>School teacher Janet Brooks innocently involves herself in a scandal while spending the week-end alone in the mountain cabin of her fiancée, Dr. Walter Phillips. She gives first aid to a ... See full summary »</p>
53437	tt0042392	Destination Big House	1950	60 min	Crime, Drama, Film-Noir	6.3	<p>George Blair</p>

53438 rows × 13 columns

```
In [23]: # Since splitting a column created new columns but the previous one still exists
df.drop(columns = ["genre"], inplace = True)
```

In [24]: df

Out[24]:

	Movie ID	Movie Name	Year	Runtime	Ratings	Description	director	star	V
0	tt9114286	Black Panther: Wakanda Forever	2022	161 min	6.9	The people of Wakanda fight to protect their home from intervening world powers as they mourn the death of King T'Challa.	Ryan Coogler	Letitia Wright, \n Lupita Nyong'o, \n Danai Gurira, \n Winston Duke	2048
1	tt1630029	Avatar: The Way of Water	2022	192 min	7.8	Jake Sully lives with his newfound family formed on the extrasolar moon Pandora. Once a familiar threat returns to finish what was previously started, Jake must work with Neytiri and the army of the Na'vi race to protect their home.	James Cameron	Sam Worthington, \n Zoe Saldana, \n Sigourney Weaver, \n Stephen Lang	2951
2	tt5884796	Plane	2023	107 min	6.5	A pilot finds himself caught in a war zone after he's forced to land his commercial aircraft during a terrible storm.	Jean-François Richet	Gerard Butler, \n Mike Colter, \n Tony Goldwyn, \n Yoson An	262

	Movie ID	Movie Name	Year	Runtime	Ratings	Description	director	star	V
3	tt6710474	Everything Everywhere All at Once	2022	139 min	8.0	A middle-aged Chinese immigrant is swept up into an insane adventure in which she alone can save existence by exploring other universes and connecting with the lives she could have led.	Dan Kwan, \nDaniel Scheinert	Michelle Yeoh, \nStephanie Hsu, \nJamie Lee Curtis, \nKe Huy Quan	3278
4	tt5433140	Fast X	2023	Unknown	5.7	Dom Toretto and his family are targeted by the vengeful son of drug kingpin Hernan Reyes.	Louis Leterrier	Vin Diesel, \nJordana Brewster, \nTyrese Gibson, \nMichelle Rodriguez	113
...
53433	tt0032257	Black Diamonds	1940	60 min	5.5	A reporter on a visit to his hometown hears of dangerous conditions at the local coal mine, and proceeds to investigate.	Christy Cabanne	Richard Arlen, \nAndy Devine, \nKathryn Adams, \nPau	Richard Arlen, \nAndy Devine, \nKathryn Adams, \nPau
53434	tt0027668	The Gentleman from Louisiana	1936	67 min	4.5	In Victorian-era USA, a horse-jockey becomes a scapegoat in the nefarious schemes of a group of small-time criminals.	Irving Pichel	Eddie Quillan, \nCharles 'Chic' Sale, \nCharlotte Henry, \nJohn Miljan	Eddie Quillan, \nCharles 'Chic' Sale, \nCharlotte Henry, \nJohn Miljan

Movie ID	Movie Name	Year	Runtime	Ratings	Description	director	star	V
53435	tt0047929	El cerco	1955	77 min	6.2 A group of robbers assault a factory in the port of Barcelona, but, upon being discovered, they are forced to flee hastily, each one his own way. An exhaustive police device is then ... See full summary »	Miguel Iglesias	José Guardiola, \nIsabel de Castro, \nÁngel Jordán, \nFrancisco Piquer	
53436	tt0033161	Three Silent Men	1940	72 min	5.0 Foreign scientist is selling a secret weapon to the British. He is badly injured in a car accident and is operated on by a surgeon, after the operation he dies mysteriously. An investigation follows.	Thomas Bentley	Sebastian Shaw, \nDerrick De Marney, \nPatricia Roc, \nArthur Hambling	
53437	tt0042392	Destination Big House	1950	60 min	6.3 School teacher Janet Brooks innocently involves herself in a scandal while spending the week-end alone in the mountain cabin of her fiancée, Dr. Walter Phillips. She gives first aid to a ... See full summary »	George Blair	Dorothy Patrick, \nRobert Rockwell, \nJimmy Lydon, \nRobert Armstrong	

53438 rows × 12 columns

In [25]: df.columns

Out[25]: Index(['Movie ID', 'Movie Name', 'Year', 'Runtime', 'Ratings', 'Description',
'director', 'star', 'Votes', 'Genre1', 'Genre2', 'Genre3'],
dtype='object')

In [26]: # Rearranging columns

```
df = df.reindex(columns = ['Movie ID', 'Movie Name', 'Year', 'Genre1', 'Genre2',
                           'director', 'star', 'Votes'])
df
```

Out[26]:

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
0	tt9114286	Black Panther: Wakanda Forever	2022	Action Adventure Drama			161 min	6.9	The people of Wakanda fight to protect their home from intervening world powers as they mourn the death of King T'Challa.
1	tt1630029	Avatar: The Way of Water	2022	Action Adventure Fantasy			192 min	7.8	Jake Sully lives with his newfound family formed on the extrasolar moon Pandora. Once a familiar threat returns to finish what was previously started, Jake must work with Neytiri and the army of the Na'vi race to protect their home.
2	tt5884796	Plane	2023	Action Thriller	None		107 min	6.5	A pilot finds himself caught in a war zone after he's forced to land his commercial aircraft during a terrible storm.

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
3	tt6710474	Everything Everywhere All at Once	2022	Action	Adventure	Comedy	139 min	8.0	A middle-aged Chinese immigrant is swept up into an insane adventure in which she alone can save existence by exploring other universes and connecting with the lives she could have led.
4	tt5433140	Fast X	2023	Action	Crime	Mystery	Unknown	5.7	Dom Toretto and his family are targeted by the vengeful son of drug kingpin Hernan Reyes.
...
53433	tt0032257	Black Diamonds	1940	Crime	Drama	Film-Noir	60 min	5.5	A reporter on a visit to his hometown hears of dangerous conditions at the local coal mine, and proceeds to investigate.
53434	tt0027668	The Gentleman from Louisiana	1936	Crime	Drama	Film-Noir	67 min	4.5	In Victorian-era USA, a horse-jockey becomes a scapegoat in the nefarious schemes of a group of small-time criminals.

Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
53435 tt0047929	El cerco	1955	Crime	Film-Noir	None	77 min	6.2	A group of robbers assault a factory in the port of Barcelona, but, upon being discovered, they are forced to flee hastily, each one his own way. An exhaustive police device is then ... See full summary »
53436 tt0033161	Three Silent Men	1940	Crime	Drama	Film-Noir	72 min	5.0	Foreign scientist is selling a secret weapon to the British. He is badly injured in a car accident and is operated on by a surgeon, after the operation he dies mysteriously. An investigation follows.
53437 tt0042392	Destination Big House	1950	Crime	Drama	Film-Noir	60 min	6.3	School teacher Janet Brooks innocently involves herself in a scandal while spending the week-end alone in the mountain cabin of her fiancée, Dr. Walter Phillips. She gives first aid to a ... See full summary »

53438 rows × 12 columns


```
In [27]: # Renaming columns
df.rename(columns = {"director" : "Director(s)", "star" : "Stars"}, inplace =
df
```

Out[27]:

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
0	tt9114286	Black Panther: Wakanda Forever	2022	Action Adventure Drama			161 min	6.9	The people of Wakanda fight to protect their home from intervening world powers as they mourn the death of King T'Challa.
1	tt1630029	Avatar: The Way of Water	2022	Action Adventure Fantasy			192 min	7.8	Jake Sully lives with his newfound family formed on the extrasolar moon Pandora. Once a familiar threat returns to finish what was previously started, Jake must work with Neytiri and the army of the Na'vi race to protect their home.
2	tt5884796	Plane	2023	Action Thriller	None		107 min	6.5	A pilot finds himself caught in a war zone after he's forced to land his commercial aircraft during a terrible storm.

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
3	tt6710474	Everything Everywhere All at Once	2022	Action	Adventure	Comedy	139 min	8.0	A middle-aged Chinese immigrant is swept up into an insane adventure in which she alone can save existence by exploring other universes and connecting with the lives she could have led.
4	tt5433140	Fast X	2023	Action	Crime	Mystery	Unknown	5.7	Dom Toretto and his family are targeted by the vengeful son of drug kingpin Hernan Reyes.
...
53433	tt0032257	Black Diamonds	1940	Crime	Drama	Film-Noir	60 min	5.5	A reporter on a visit to his hometown hears of dangerous conditions at the local coal mine, and proceeds to investigate.
53434	tt0027668	The Gentleman from Louisiana	1936	Crime	Drama	Film-Noir	67 min	4.5	In Victorian-era USA, a horse-jockey becomes a scapegoat in the nefarious schemes of a group of small-time criminals.

Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
53435 tt0047929	El cerco	1955	Crime	Film-Noir	None	77 min	6.2	A group of robbers assault a factory in the port of Barcelona, but, upon being discovered, they are forced to flee hastily, each one his own way. An exhaustive police device is then ... See full summary »
53436 tt0033161	Three Silent Men	1940	Crime	Drama	Film-Noir	72 min	5.0	Foreign scientist is selling a secret weapon to the British. He is badly injured in a car accident and is operated on by a surgeon, after the operation he dies mysteriously. An investigation follows.
53437 tt0042392	Destination Big House	1950	Crime	Drama	Film-Noir	60 min	6.3	School teacher Janet Brooks innocently involves herself in a scandal while spending the week-end alone in the mountain cabin of her fiancée, Dr. Walter Phillips. She gives first aid to a ... See full summary »

53438 rows × 12 columns

Name and Description of top 5 voted movies

```
In [28]: # Top 5 values from Votes column
a = df.nlargest(5,"Votes")
a[["Movie Name","Description"]]
```

Out[28]:

	Movie Name	Description
33	The Dark Knight	When the menace known as the Joker wreaks havoc and chaos on the people of Gotham, Batman must accept one of the greatest psychological and physical tests of his ability to fight injustice.
34	Inception	A thief who steals corporate secrets through the use of dream-sharing technology is given the inverse task of planting an idea into the mind of a C.E.O., but his tragic past may doom the project and his team to disaster.
52	The Matrix	When a beautiful stranger leads computer hacker Neo to a forbidding underworld, he discovers the shocking truth—the life he knows is the elaborate deception of an evil cyber-intelligence.
28	The Lord of the Rings: The Fellowship of the Ring	A meek Hobbit from the Shire and eight companions set out on a journey to destroy the powerful One Ring and save Middle-earth from the Dark Lord Sauron.
74	The Lord of the Rings: The Return of the King	Gandalf and Aragorn lead the World of Men against Sauron's army to draw his gaze from Frodo and Sam as they approach Mount Doom with the One Ring.

Name and Description of bottom 5 voted movies

```
In [29]: # Last 5 values from Votes column
b = df.nsmallest(5,"Votes")
b[["Movie Name","Description"]]
```

Out[29]:

	Movie Name	Description
10936	The Imperfects	In a broken world, a boy finds himself helpless, close to death until he is saved by a mysterious girl. He runs into a group of teenagers, mutants, hiding from a horrible government hunting... See full summary »
12240	The Rush Call	A corporate promotion pushes a suburban dad to choose between creative pursuits and career responsibilities, leading him on an unexpected adventure with surprising consequences for his family.
14278	Lakhey	Sameer Maharjan, born in a family Lakhey, is a bank manager. He regards Lakhey as Lord Indra and the protector of the community. His professional and family life is ruined as he gets ... See full summary »
14571	La Muerte De Un Federal	Add a Plot
14615	Eenadu	The police commissioner of Hyderabad confronts an anonymous caller who has planted bombs in the city and will let them explode if four terrorists are not freed from the police custody.

Name and Year of top 10 rated movies

```
In [30]: # Last 10 values from Ratings column
x = df.nlargest(10,"Ratings")
x[["Movie Name","Year"]]
```

Out[30]:

	Movie Name	Year
7561	Invisible Hacker	2023
15494	An Example of Teenage Boredom: The Movie	2022
25262	Love Mein	2022
15361	Low Heat	2021
15736	The Shoonyah: Chapter 1 - Blow of the War Horns	2021
19833	Angelito San Miguel at Ang Mga Batang City Jail	1991
24782	Hangga't may hinlinga	1964
27094	The Key of Baku	2022
9355	Masand	2022
19066	Shiba King: Assassination	2022

Name and Year of bottom 5 voted movies

```
In [31]: # Top 10 values from Ratings column
y = df.nsmallest(10,"Ratings")
y[["Movie Name","Year"]]
```

Out[31]:

	Movie Name	Year
8581	Troy: The Resurrection of Aeneas	2018
9851	Badang	2018
13868	15/07: Break of Dawn	2021
16061	Vixen Highway 2006: It Came from Uranus!	2010
24676	Browncoats: Independence War	2015
43701	Mstitel chelovechestva	2016
4017	Sadak 2	2020
5345	Captain Battle: Legacy War	2013
6902	Greyhound Attack	2019
8715	Desh Drohi	2008

```
In [32]: # No. of unique values in Director column
df["Director(s)"].nunique()
```

Out[32]: 25785

```
In [33]: # Unique values in Stars column
df["Stars"].unique()
```

```
Out[33]: array(['Letitia Wright', '\nLupita Nyong'o', '\nDanai Gurira', '\nWinston Duke',
   'Sam Worthington', '\nZoe Saldana', '\nSigourney Weaver', '\nStephen Lang',
   'Gerard Butler', '\nMike Colter', '\nTony Goldwyn', '\nYoson An', ...,
   'José Guardiola', '\nIsabel de Castro', '\nÁngel Jordán', '\nFrancisco Pique
r',
   'Sebastian Shaw', '\nDerrick De Marney', '\nPatricia Roc', '\nArthur Hamblin
g',
   'Dorothy Patrick', '\nRobert Rockwell', '\nJimmy Lydon', '\nRobert Armstron
g'],
   dtype=object)
```

```
In [34]: # No. of unique values in Stars column
df["Stars"].nunique()
```

Out[34]: 43644

```
In [35]: # Sort Ratings and Votes column in descending order
z = df.sort_values(["Ratings", "Votes"], ascending = [False, False])
z[["Movie Name"]]
```

Out[35]:

	Movie Name
7561	Invisible Hacker
25262	Love Mein
15494	An Example of Teenage Boredom: The Movie
15361	Low Heat
15736	The Shoonyah: Chapter 1 - Blow of the War Horns
...	...
9851	Badang
24676	Browncoats: Independence War
8581	Troy: The Resurrection of Aeneas
16061	Vixen Highway 2006: It Came from Uranus!
43701	Mstitel chelovechestva

53438 rows × 1 columns

Movie Name and Genre 1 having ratings less than 2

In [36]: `df[["Movie Name", "Genre1"]].loc[df["Ratings"] < 2.0]`

Out[36]:

	Movie Name	Genre1
1025	Foodfight!	Animation
3189	Radhe	Action
3772	Jurassic Shark	Action
3936	Race 3	Action
4017	Sadak 2	Action
...
45812	The Crimson Challenge	Action
47629	À Propos du Code	Action
47959	Ghadaar	Action
48670	The Fast Freight	Action
49942	Futures Past	Action

144 rows × 2 columns

Create a New Column 'Recommendations'

```
In [37]: df[ "Recommendations" ] = np.nan  
df
```

Out[37]:

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
0	tt9114286	Black Panther: Wakanda Forever	2022	Action Adventure Drama			161 min	6.9	The people of Wakanda fight to protect their home from intervening world powers as they mourn the death of King T'Challa.
1	tt1630029	Avatar: The Way of Water	2022	Action Adventure Fantasy			192 min	7.8	Jake Sully lives with his newfound family formed on the extrasolar moon Pandora. Once a familiar threat returns to finish what was previously started, Jake must work with Neytiri and the army of the Na'vi race to protect their home.
2	tt5884796	Plane	2023	Action Thriller	None		107 min	6.5	A pilot finds himself caught in a war zone after he's forced to land his commercial aircraft during a terrible storm.

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
3	tt6710474	Everything Everywhere All at Once	2022	Action	Adventure	Comedy	139 min	8.0	A middle-aged Chinese immigrant is swept up into an insane adventure in which she alone can save existence by exploring other universes and connecting with the lives she could have led.
4	tt5433140	Fast X	2023	Action	Crime	Mystery	Unknown	5.7	Dom Toretto and his family are targeted by the vengeful son of drug kingpin Hernan Reyes.
...
53433	tt0032257	Black Diamonds	1940	Crime	Drama	Film-Noir	60 min	5.5	A reporter on a visit to his hometown hears of dangerous conditions at the local coal mine, and proceeds to investigate.
53434	tt0027668	The Gentleman from Louisiana	1936	Crime	Drama	Film-Noir	67 min	4.5	In Victorian-era USA, a horse-jockey becomes a scapegoat in the nefarious schemes of a group of small-time criminals.

Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
53435 tt0047929	El cerco	1955	Crime	Film-Noir	None	77 min	6.2	A group of robbers assault a factory in the port of Barcelona, but, upon being discovered, they are forced to flee hastily, each one his own way. An exhaustive police device is then ... See full summary »
53436 tt0033161	Three Silent Men	1940	Crime	Drama	Film-Noir	72 min	5.0	Foreign scientist is selling a secret weapon to the British. He is badly injured in a car accident and is operated on by a surgeon, after the operation he dies mysteriously. An investigation follows.
53437 tt0042392	Destination Big House	1950	Crime	Drama	Film-Noir	60 min	6.3	School teacher Janet Brooks innocently involves herself in a scandal while spending the week-end alone in the mountain cabin of her fiancée, Dr. Walter Phillips. She gives first aid to a ... See full summary »

53438 rows × 13 columns


```
In [38]: df.loc[(df.Ratings >= 7.0), "Recommendations"] = "Best Recommended"
df.loc[((df.Ratings < 7.0) & (df.Ratings >= 5.0)), "Recommendations"] = "Recom
df.loc[((df.Ratings < 5.0) & (df.Ratings >= 2.0)), "Recommendations"] = "Avera
df.loc[(df.Ratings < 2.0), "Recommendations"] = "Not Recommended"
df
```

Out[38]:

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
0	tt9114286	Black Panther: Wakanda Forever	2022	Action Adventure Drama			161 min	6.9	The people of Wakanda fight to protect their home from intervening world powers as they mourn the death of King T'Challa.
1	tt1630029	Avatar: The Way of Water	2022	Action Adventure Fantasy			192 min	7.8	Jake Sully lives with his newfound family formed on the extrasolar moon Pandora. Once a familiar threat returns to finish what was previously started, Jake must work with Neytiri and the army of the Na'vi race to protect their home.
2	tt5884796	Plane	2023	Action Thriller	None		107 min	6.5	A pilot finds himself caught in a war zone after he's forced to land his commercial aircraft during a terrible storm.

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
3	tt6710474	Everything Everywhere All at Once	2022	Action	Adventure	Comedy	139 min	8.0	A middle-aged Chinese immigrant is swept up into an insane adventure in which she alone can save existence by exploring other universes and connecting with the lives she could have led.
4	tt5433140	Fast X	2023	Action	Crime	Mystery	Unknown	5.7	Dom Toretto and his family are targeted by the vengeful son of drug kingpin Hernan Reyes.
...
53433	tt0032257	Black Diamonds	1940	Crime	Drama	Film-Noir	60 min	5.5	A reporter on a visit to his hometown hears of dangerous conditions at the local coal mine, and proceeds to investigate.
53434	tt0027668	The Gentleman from Louisiana	1936	Crime	Drama	Film-Noir	67 min	4.5	In Victorian-era USA, a horse-jockey becomes a scapegoat in the nefarious schemes of a group of small-time criminals.

Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
53435	tt0047929	El cerco	1955	Crime	Film-Noir	None	77 min	A group of robbers assault a factory in the port of Barcelona, but, upon being discovered, they are forced to flee hastily, each one his own way. An exhaustive police device is then ... See full summary »
53436	tt0033161	Three Silent Men	1940	Crime	Drama	Film-Noir	72 min	Foreign scientist is selling a secret weapon to the British. He is badly injured in a car accident and is operated on by a surgeon, after the operation he dies mysteriously. An investigation follows.
53437	tt0042392	Destination Big House	1950	Crime	Drama	Film-Noir	60 min	School teacher Janet Brooks innocently involves herself in a scandal while spending the week-end alone in the mountain cabin of her fiancée, Dr. Walter Phillips. She gives first aid to a ... See full summary »

53438 rows × 13 columns

In [39]: `df.loc[df["Ratings"] < 2.0]`

Out[39]:

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
									The Brand X job
1025	tt0249516	Foodfight!	2012	Animation	Action	Adventure	91 min	1.3	superman that became a city a closing till
									After taking the dream gang: Gani B ACP Rajiv Shikawat Radhe g
3189	tt10888594	Radhe	2021	Action	Crime	Thriller	135 min	1.9	C manhunt find wealth man of town secr runnin cr syndic
									When ar comp unwittir unleashe prehist shark from icy pris the Jurass k
3772	tt2071491	Jurassic Shark	2012	Action	Adventure	Comedy	75 min	1.4	maroon group thieves beau young fem coll students
									abandon isla
									Relationships and loyalty of a criminal far planning next big heist are tested when shocking revelations strike the
3936	tt7431594	Race 3	2018	Action	Crime	Thriller	160 min	1.9	

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
4017	tt7886848	Sadak 2	2020	Action	Drama	None	133 min	1.2	The picks where Sa left revolv around journey \ a young v becomes import character the life of protagonist and reason him to s al

45812	tt0013034	The Crimson Challenge	1922	Action	Adventure	Romance	50 min	1.7	In the ca town of L Valley, B Court saloon ow and polit boss, cov Thar daughte Jim Las sr rancher; i wl rebuffed, has L killed. Tha swea See summar
	Two studen
47629	tt3325766	À Propos du Code	2015	Action	Comedy	Drama	73 min	1.7	apprehend following enforcem of a coll take over three ov zeal sch inspecto
47959	tt1343926	Ghadaar	1964	Action	Drama	None	120 min	1.8	Add a l
48670	tt0312679	The Fast Freight	1925	Action	Adventure	Romance	Unknown	1.6	Add a l

Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Descript
49942	Futures Past	2012	Action	Biography	History	120 min	1.2	A movie f... evidence i... new locat... seem... pass with... hitch - ... has it? It... are miss... and who... the sini... men in bla... housed in... w... building \... no windo... ... See... summar...

144 rows × 13 columns

Movie Name where Genre 1 is Action

In [40]: `df["Movie Name"].loc[df["Genre1"] == "Action"]`

Out[40]:

0	Black Panther: Wakanda Forever
1	Avatar: The Way of Water
2	Plane
3	Everything Everywhere All at Once
4	Fast X
	...
53414	Web of Danger
53419	Trouble at Midnight
53420	Tarnished
53421	Missing Daughters
53428	The Officer and the Lady

Name: Movie Name, Length: 50632, dtype: object

Movie Name where Year is 2022

```
In [41]: df["Movie Name"].loc[df["Year"] == "2022"]
```

```
Out[41]: 0           Black Panther: Wakanda Forever
          1           Avatar: The Way of Water
          3           Everything Everywhere All at Once
          6           Shotgun Wedding
          7           Bullet Train
          ...
          51937        Everton vs Aston Villa
          51985        Any Time Hekdi
          52128        Mah
          52399        First Mission
          52426        De Buurtpolitie: De Perfecte Overval
Name: Movie Name, Length: 1335, dtype: object
```

Movie Name which starts with 'The'

```
In [42]: df["Movie Name"].loc[df["Movie Name"].str.startswith("The")]
```

```
Out[42]: 13          The Batman
          16          The Wandering Earth II
          20          The Hunger Games
          22          The Northman
          24          The Flash
          ...
          53388        The Cobra Strikes
          53398        The Big Fix
          53410        The Jury's Secret
          53428        The Officer and the Lady
          53434        The Gentleman from Louisiana
Name: Movie Name, Length: 6159, dtype: object
```

Movie Name where Genre1 ends with 'dy'

```
In [43]: df["Movie Name"].loc[df["Genre1"].str.endswith("dy")]
```

```
Out[43]: 3060        Let It Ride
          4115        To Trap a Spy
          4694        The Fearless Hyena
          4918        The Karate Killers
          5415        Below the Belt
          ...
          53336        Sued for Libel
          53357        No Place for a Lady
          53383        Florida Special
          53405        Honeymoon Deferred
          53429        Dancing in Manhattan
Name: Movie Name, Length: 101, dtype: object
```

In [44]: # Since we have splitted one genre column into three, not every row had 3 genres
`df["Genre2"].isnull().sum()`

Out[44]: 14480

In [45]: `df["Genre3"].isnull().sum()`

Out[45]: 28104

In [46]: # Filling those Null values in Genre2 and Genre3
`df["Genre2"].fillna("None", inplace = True)`
`df["Genre3"].fillna("None", inplace = True)`
`df`

Out[46]:

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
0	tt9114286	Black Panther: Wakanda Forever	2022	Action Adventure Drama			161 min	6.9	The people of Wakanda fight to protect their home from intervening world powers they must stop the death of King T'Challa
									Jake Sully lives with new found family formed

In [47]: # It can be noted that now there arent any null values
`df["Genre2"].isnull().sum()`

Out[47]: 0

In [48]: `df["Genre3"].isnull().sum()`

Out[48]: 0

Movie Name, Description and Year where recommendations starts with 'Best'

In [49]: df[["Movie Name", "Description", "Year"]].loc[df["Recommendations"].str.startswith("Best")]

Out[49]:

	Movie Name	Description	Year
1	Avatar: The Way of Water	Jake Sully lives with his newfound family formed on the extrasolar moon Pandora. Once a familiar threat returns to finish what was previously started, Jake must work with Neytiri and the army of the Na'vi race to protect their home.	2022
3	Everything Everywhere All at Once	A middle-aged Chinese immigrant is swept up into an insane adventure in which she alone can save existence by exploring other universes and connecting with the lives she could have led.	2022
7	Bullet Train	Five assassins aboard a swiftly-moving bullet train find out that their missions have something in common.	2022
8	All Quiet on the Western Front	A young German soldier's terrifying experiences and distress on the western front during World War I.	2022
9	Top Gun: Maverick	After thirty years, Maverick is still pushing the envelope as a top naval aviator, but must confront ghosts of his past when he leads TOP GUN's elite graduates on a mission that demands the ultimate sacrifice from those chosen to fly it.	2022
...
53086	The Underworld Story	The story of the fight of a small-town newspaper to free an innocent girl of a murder charge, with the publisher of a metropolitan city newspaper heading, by forced circumstances, the opposing forces.	1950
53117	Girls in the Night	A family's efforts to move out of a slum area into a better neighborhood is hampered when their son is accused of the murder of a local blind beggar.	1953
53137	Chicago Calling	A poor father makes monumental efforts to get money to keep his phone installed, so he can get word on his critically injured little daughter.	1951
53277	Johnny Holiday	Young street tough sent to a reform farm is torn between friends from his past and those who are trying to help him change his life.	1949
53356	The Crooked Circle	A young prizefighter finds himself being squeezed on all sides to throw a fight.	1957

5244 rows × 3 columns

Movie Name where ratings is more than 5, runtime is equal 100 mins and year is 2020

In [50]: `df[["Movie Name"]].loc[(df.Ratings > 5.0) & (df.Runtime == '100 min') & (df.Ye`

Out[50]:

Movie Name	
643	Boss Level
1158	Fatman
1277	The Sleepover
2243	The Swordsman
4187	Okay Madam
4341	Asphalt Burning
11848	Slate
14011	Battle of Defense 2
14913	Invisible Evidence
23744	Watchtower
33868	Begirada
34325	Captain Hollywood
37678	Muzzle Flash: The 666 Case
41678	AC Milan vs Juventus
43942	Everton vs West Bromwich Albion

In [51]: `# Range of Index
df.index`

Out[51]: `RangeIndex(start=0, stop=53438, step=1)`

In [52]: `df.set_index("Year")`

Out[52]:

	Movie ID	Movie Name	Genre1	Genre2	Genre3	Runtime	Ratings	Description	Director
Year									
2022	tt9114286	Black Panther: Wakanda Forever	Action	Adventure	Drama	161 min	6.9	The people of Wakanda fight to protect their home from intervening world powers as they mourn the death of King T'Challa.	F. Coons
2022	tt1630029	Avatar: The Way of Water	Action	Adventure	Fantasy	192 min	7.8	Jake Sully lives with his newfound family formed on the extrasolar moon Pandora. Once a familiar threat returns to finish what was previously started, Jake must work with Neytiri and the army of the Na'vi race to protect their home.	J. Cam
2023	tt5884796	Plane	Action	Thriller	None	107 min	6.5	A pilot finds himself caught in a war zone after he's forced to land his commercial aircraft during a terrible storm.	J. Frarri

	Movie ID	Movie Name	Genre1	Genre2	Genre3	Runtime	Ratings	Description	Director
Year									
2022	tt6710474	Everything Everywhere All at Once	Action	Adventure	Comedy	139 min	8.0	A middle-aged Chinese immigrant is swept up into an insane adventure in which she alone can save existence by exploring other universes and connecting with the lives she could have led.	Dan K. InDy Sche
2023	tt5433140	Fast X	Action	Crime	Mystery	Unknown	5.7	Dom Toretto and his family are targeted by the vengeful son of drug kingpin Hernan Reyes.	L. Lete
...
1940	tt0032257	Black Diamonds	Crime	Drama	Film-Noir	60 min	5.5	A reporter on a visit to his hometown hears of dangerous conditions at the local coal mine, and proceeds to investigate.	Ch. Cabral
1936	tt0027668	The Gentleman from Louisiana	Crime	Drama	Film-Noir	67 min	4.5	In Victorian-era USA, a horse-jockey becomes a scapegoat in the nefarious schemes of a group of small-time criminals.	Ira Wolfson

	Movie ID	Movie Name	Genre1	Genre2	Genre3	Runtime	Ratings	Description	Director
Year									
1955	tt0047929	El cerco	Crime	Film-Noir	None	77 min	6.2	A group of robbers assault a factory in the port of Barcelona, but, upon being discovered, they are forced to flee hastily, each one his own way. An exhaustive police device is then ... See full summary »	Miguel Iglesias
1940	tt0033161	Three Silent Men	Crime	Drama	Film-Noir	72 min	5.0	Foreign scientist is selling a secret weapon to the British. He is badly injured in a car accident and is operated on by a surgeon, after the operation he dies mysteriously. An investigation follows.	Thor Bei
1950	tt0042392	Destination Big House	Crime	Drama	Film-Noir	60 min	6.3	School teacher Janet Brooks innocently involves herself in a scandal while spending the week-end alone in the mountain cabin of her fiancée, Dr. Walter Phillips. She gives first aid to a ... See full summary »	George

53438 rows × 12 columns

```
In [53]: # Counts the Number of occurrences of a particular value  
df["Movie Name"].value_counts()
```

```
Out[53]: Hero                14  
Retribution          13  
Revenge              12  
The Three Musketeers 11  
Black                10  
..  
Ultraman Orb: Lend Me the Power of Bonds!    1  
The Rooftop            1  
Looking for Mister Perfect 1  
Taanashah             1  
Destination Big House 1  
Name: Movie Name, Length: 49856, dtype: int64
```

In [54]: `df.loc[df["Movie Name"] == "Hero"]`

Out[54]:

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
1052	tt0299977	Hero	2002	Action	Adventure	Drama	120 min	7.9	A defense officer, Nameless, was summoned by the King of Qin regarding his success of terminating three warriors.
6006	tt10329842	Hero	2019	Action	Crime	Drama	121 min	4.7	15 years ago, Andrei, under the guidance of his father, Colonel Rodina, was trained in a secret special school, where agents of the Foreign Intelligence Service were trained from teenagers.... See full summary »
6109	tt10709232	Hero	2019	Action	Drama	Thriller	164 min	6.3	A fraudster gets to fulfill his childhood dream of being a superhero when he takes on a ruthless businessman whose business strategy is to crush the dreams of children.
6191	tt0123102	Hero	1983	Action	Drama	Romance	173 min	6.7	After his friend is imprisoned, a hitman kidnaps the daughter of the police commissioner by telling her that he is a police officer.

Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
6265	tt11306518	Hero	2022	Action	None	None	132 min	5.6 Arjun whose life takes a dramatic turn when he receives a gun in a courier.
8188	tt13986904	Hero	2021	Action	Comedy	None	125 min	6.5 Hero is a Kannada movie starring Rishab Shetty and Pramod Shetty in prominent roles. It is a drama directed by M. Bharath Raj with Rishab Shetty as producer, forming part of the crew.
9174	tt4467202	Hero	2015	Action	Drama	Musical	145 min	3.5 A boy and a girl find themselves stuck in a whirlpool of such intense love that they would do anything, go to any extent and face all odds for the one they love.
11563	tt0136242	Hero	1997	Action	Drama	None	97 min	6.2 Corey Yuen's remake of Chang Cheh's Boxer From Shantung sees Taiwanese Japanese heart-throb Takeshi Kaneshiro as Ma Wing-jing, a worker from Shantung who rises to the top of the Shanghai triad ladder.

Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
19369	tt4760998	Hero	2006	Action	Musical	Romance	110 min	6.2 Shubhankar Roy (Jeet) was a college goer. He was the son of head constable Bhabani Shankar Roy(Rajjak) who was a very respectable person. Shubhankar was very arrogant and fell foul with ... See full summary »
21206	tt2429086	Hero	2012	Action	Drama	Thriller	163 min	3.9 A stuntman who falls in love with an actress gains the hatred and jealousy of a superstar.
31377	tt19849244	Hero	2022	Action	Comedy	Drama	Unknown	5.7 Your dad is a hero? Maybe. :)
32026	tt0245942	Hero	1984	Action	Adventure	None	129 min	6.3 Add a Plot [E]
39199	tt19845928	Hero	2018	Action	None	None	Unknown	5.7 Add a Plot
47727	tt9476466	Hero	1944	Action	None	None	Unknown	5.7 Add a Plot

Checking if a movie is present in the column

```
In [55]: for x in df["Movie Name"]:
    if x == "Sholay":
        print(df[["Movie Name", "Ratings", "Description", "Year", "Runtime"]].loc[
```

```
          Movie Name  Ratings  \
2638      Sholay     8.1
```

```
Description  \
2638 After his family is murdered by a notorious and ruthless bandit, a former police officer enlists the services of two outlaws to capture the bandit.
```

```
      Year  Runtime
2638  1975   162 min
```

```
In [56]: for x in df["Movie Name"]:
    if x == "Titanic":
        print(df[["Movie Name", "Ratings", "Description", "Year", "Runtime"]].loc[
```

```
          Movie Name  Ratings  \
3957      Titanic     6.2
```

```
Description  \
3957 Third Reich's Nazi propaganda epic about a heroic fictional German officer on board of the RMS Titanic. On its maiden voyage in April 1912, the supposedly unsinkable ship hits an iceberg in the Atlantic Ocean and starts to go down.
```

```
      Year  Runtime
3957  1943   85 min
```

```
In [57]: for x in df["Movie Name"]:
    if x == "Goblin":
        print(df[["Movie Name", "Ratings", "Description", "Year", "Runtime"]].loc[
```

In [58]: df.describe()

Out[58]:

	Ratings	Votes
count	53438.000000	5.343800e+04
mean	5.712255	1.134999e+04
std	1.018203	5.231019e+04
min	1.100000	5.000000e+00
25%	5.600000	9.600000e+01
50%	5.700000	4.792000e+03
75%	6.000000	1.135000e+04
max	10.000000	2.675531e+06

In [59]: x = df.groupby("Recommendations")

In [60]: x.count()

Out[60]:

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
Recommendations									
Average Recommended	7877	7877	7877	7877	7877	7877	7877	7877	787
Best Recommended	5244	5244	5241	5244	5244	5244	5244	5244	524
Not Recommended	144	144	144	144	144	144	144	144	14
Recommended	40173	40173	31917	40173	40173	40173	40173	40173	4017



In [61]: x.sum()

Out[61]:

	Ratings	Votes
Recommendations		
Average Recommended	31660.2	11362493.0
Best Recommended	39854.6	176272008.0
Not Recommended	235.6	539179.0
Recommended	233501.1	418346937.0

In [62]: df

Out[62]:

Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Descript
tt9114286	Black Panther: Wakanda Forever	2022	Action	Adventure	Drama	161 min	6.9	The people of Wakanda fight to protect their home from intervening world powers they must stop the death of King T'Challa.

```
In [63]: df = df.drop(14465)
```

Data Visualization

```
In [64]: a = df.sort_values(["Ratings"], ascending = False)
a
```

Out[64]:

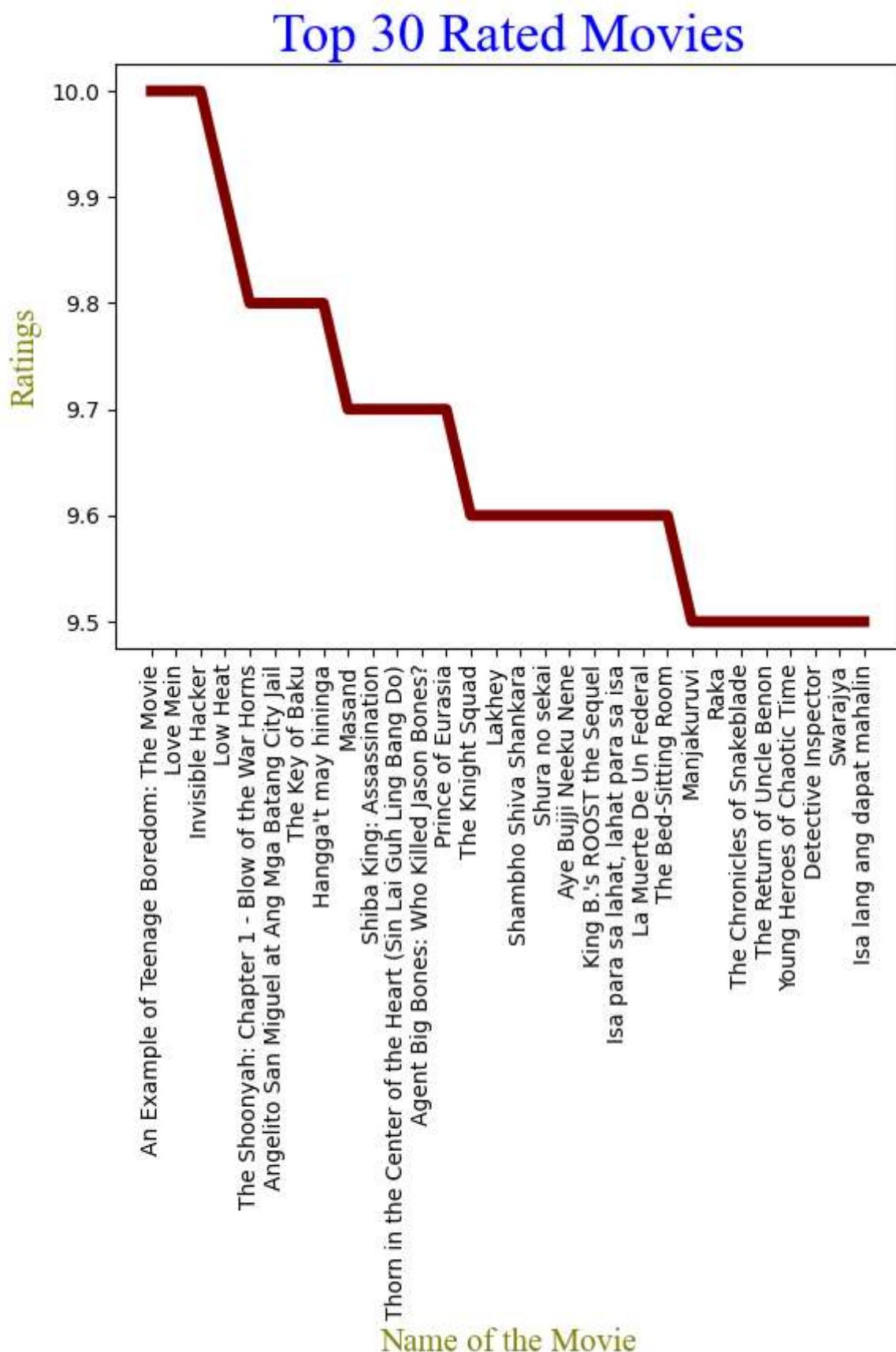
Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
15494	An Example of Teenage Boredom: The Movie	2022	Action	Comedy	Western	46 min	10.0	It's the Wes the tir late It's th the Tim Thu Laug Wall mo No Sky Man Tree

```
In [65]: x = a[ "Movie Name" ].head(30)  
y = a[ "Ratings" ].head(30)
```

```
In [66]: import matplotlib.pyplot as plt
```

In [67]: # LINEPLOT

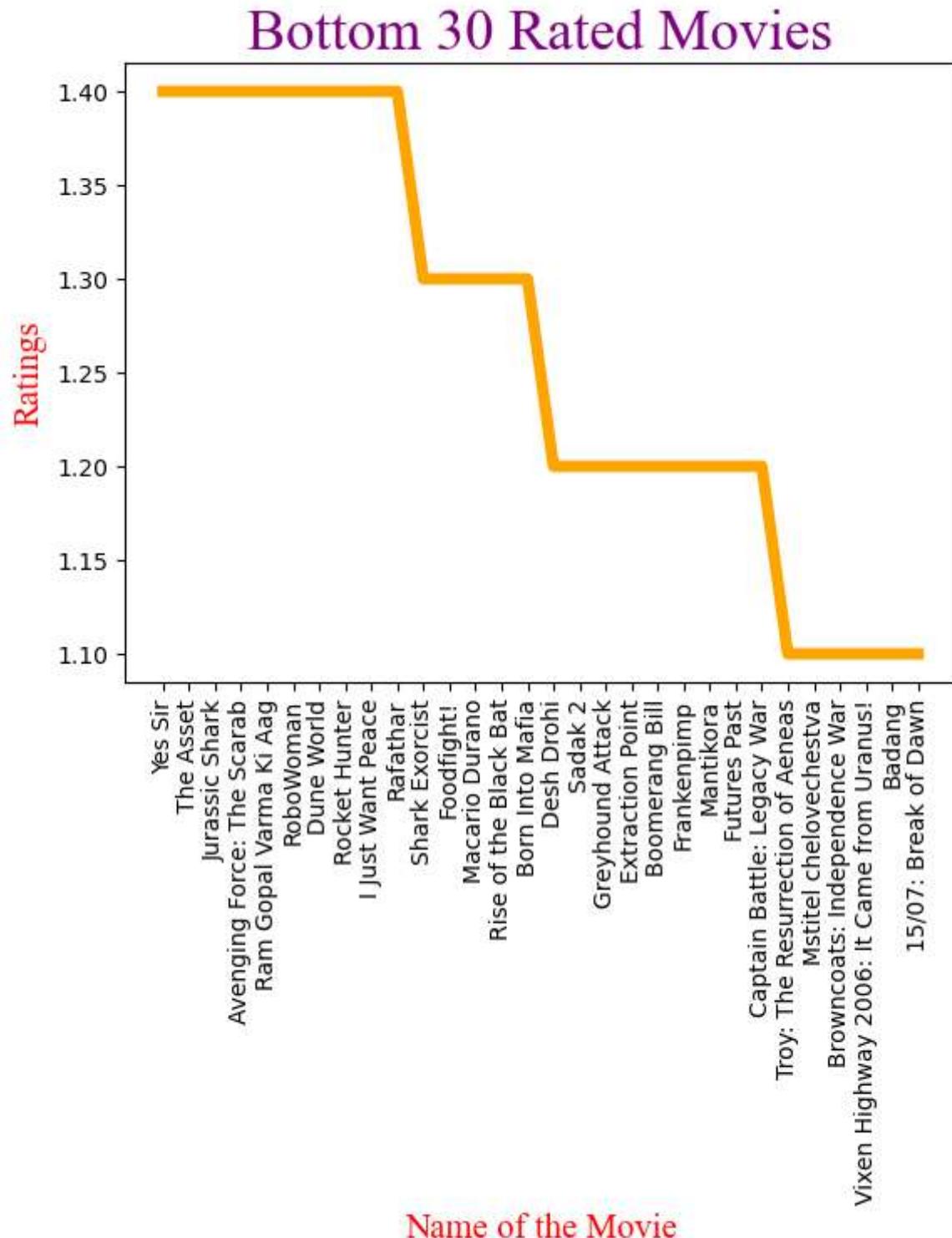
```
plt.plot(x,y,color = "Maroon", linewidth = 5)
plt.xlabel("Name of the Movie", font = "Times New Roman", size = 15, color = "black")
plt.ylabel("Ratings", font = "Times New Roman", size = 15,color = "olive")
plt.title("Top 30 Rated Movies", font = "Times New Roman", size = 25,color = "red")
plt.xticks(rotation = 90)
plt.show()
```



```
In [68]: x = a[ "Movie Name"].tail(30)
y = a[ "Ratings"].tail(30)
```

In [69]: # SCATTERPLOT

```
plt.plot(x,y,color = "orange", linewidth = 5 )
plt.xlabel("Name of the Movie", font = "Times New Roman", size = 15, color = "black")
plt.ylabel("Ratings", font = "Times New Roman", size = 15,color = "red")
plt.title("Bottom 30 Rated Movies", font = "Times New Roman", size = 25,color = "black")
plt.xticks(rotation = 90)
plt.show()
```



```
In [70]: s = df.loc[df.Year == '2022']  
s
```

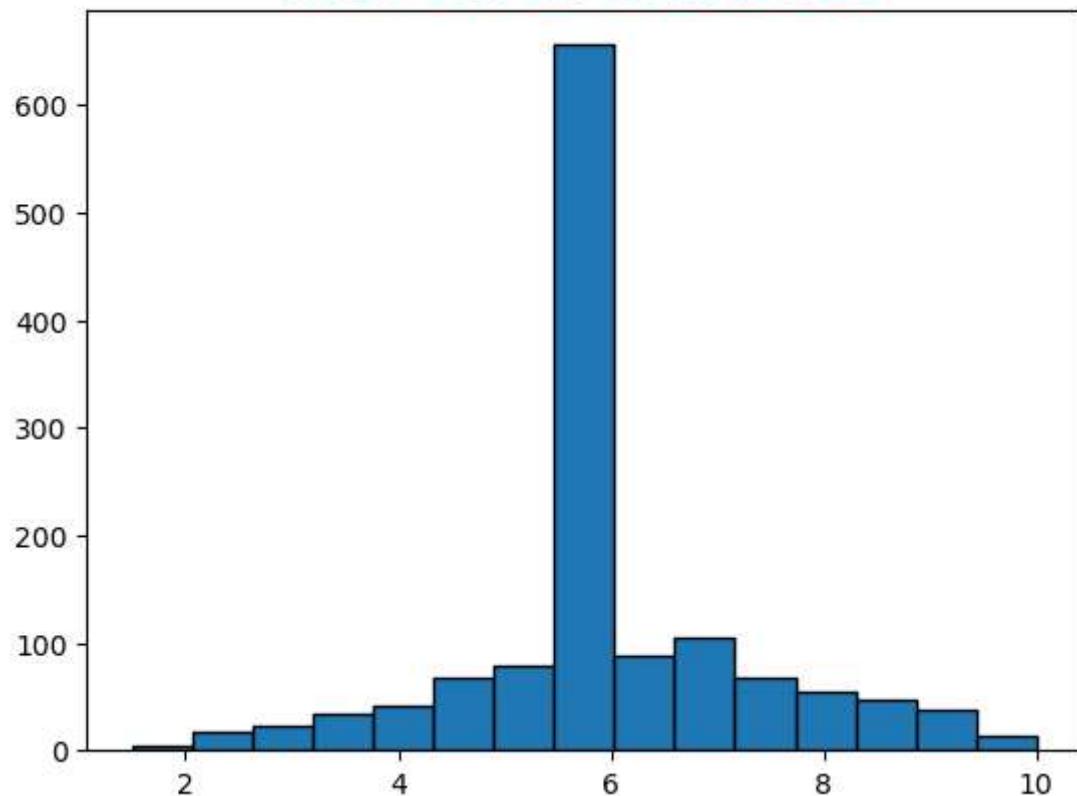
Out[70]:

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
0	tt9114286	Black Panther: Wakanda Forever	2022	Action	Adventure	Drama	161 min	6.9	The p... of Wak... fig... protect... home... interv... , pow... they m... the de...

In [71]: # HISTOGRAM

```
x = s["Movie Name"]
y = s.Ratings
plt.title("Movies in Year 2022", font = "Times New Roman", size = 25,color = "red")
plt.hist(y, bins = 15, edgecolor = "black")
plt.show()
```

Movies in Year 2022



```
In [72]: r = df.query("(Recommendations == 'Average Recommended') & (Year == '2015')")  
r
```

Out[72]:

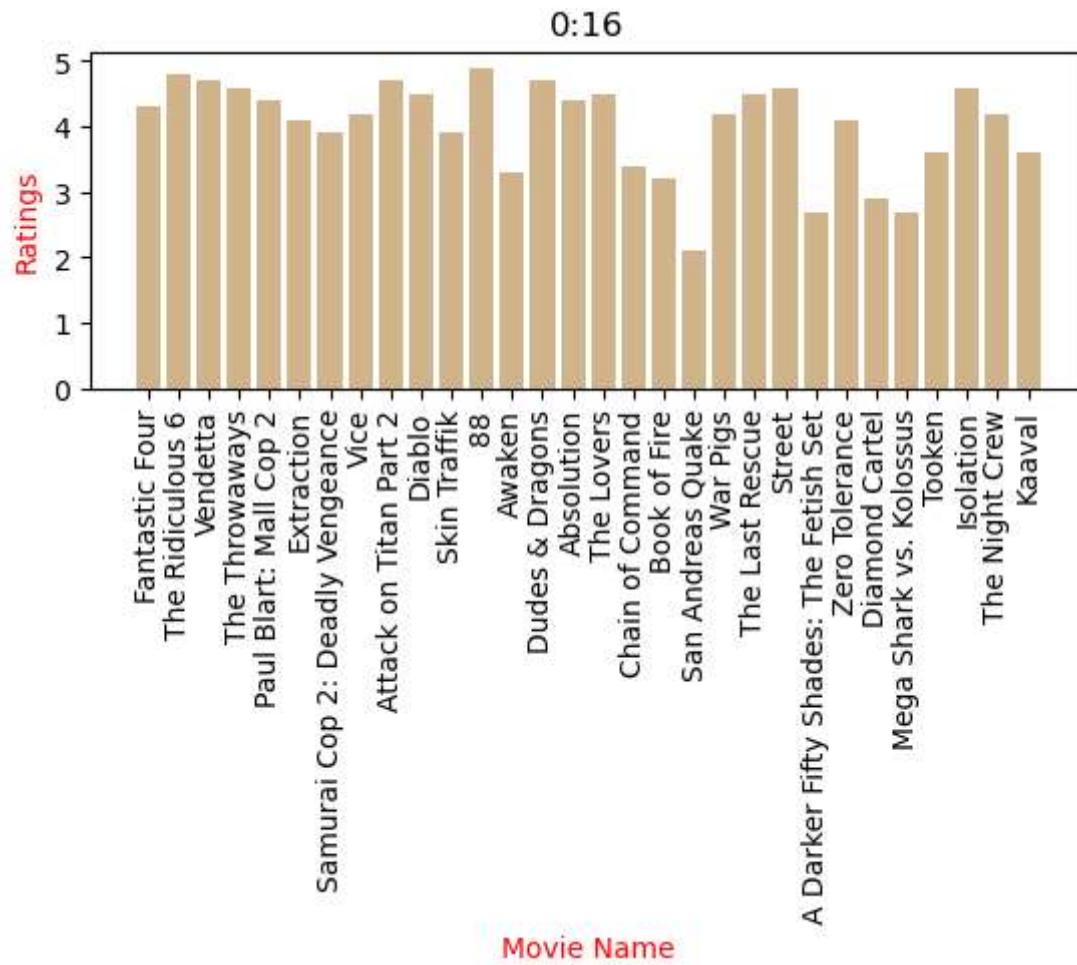
	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
									Four y outs telepi an altei
									dange uni which a
									phy fo shot ways four lea har their abilities
654	tt1502712	Fantastic Four	2015	Action	Adventure	Sci-Fi	100 min	4.3	

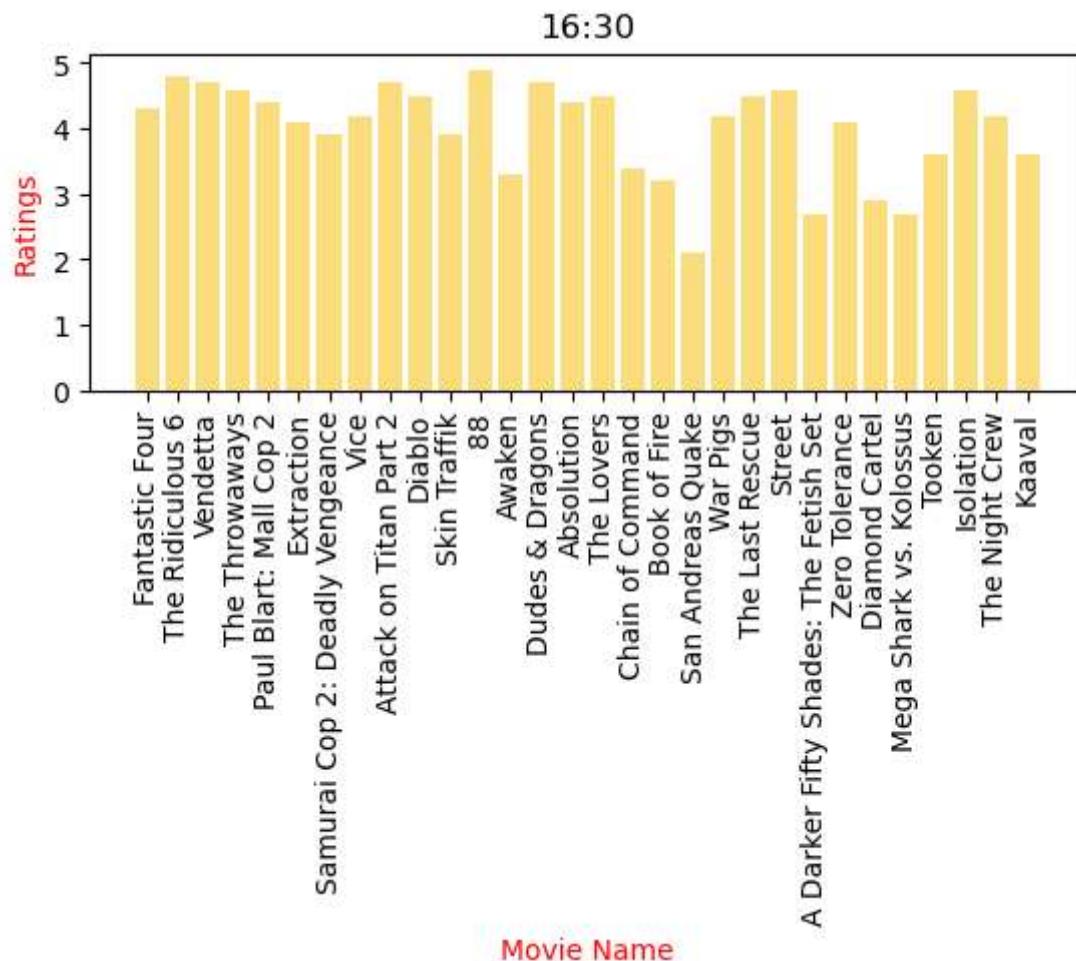
```
In [73]: a = r["Movie Name"].iloc[0:30]  
b = r["Ratings"].iloc[0:30]  
  
c = r["Movie Name"].iloc[31:60]  
d = r["Ratings"].iloc[31:60]
```

In [74]: # SUBPLOT

```
plt.subplot(2,1,1)
plt.bar(a,b, color = "#D2B48C")
plt.xlabel("Movie Name", color = "red")
plt.ylabel("Ratings",color = "red")
plt.title("0:16")
plt.xticks(rotation = 90)
plt.show()

plt.subplot(2,1,2)
plt.bar(a,b, color = "#FBDD7E")
plt.xlabel("Movie Name", color = "red")
plt.ylabel("Ratings",color = "red")
plt.title("16:30")
plt.xticks(rotation = 90)
plt.show()
```

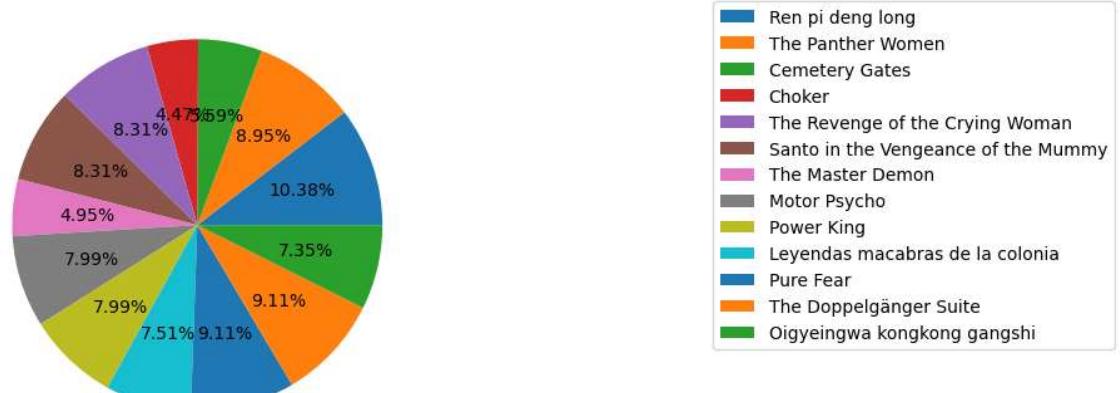




```
In [75]: h = df.loc[df["Genre1"] == "Horror"]
a = h["Movie Name"]
b = h.Ratings

plt.pie(b, autopct = '%1.2f%%')
plt.title("Movies with Ratings having Genre 1 as Horror", font = "Times New Roman")
plt.legend(labels = a, bbox_to_anchor = (2.5,1.0))
plt.show()
```

Movies with Ratings having Genre 1 as Horror



```
In [76]: df.Votes.nlargest()
```

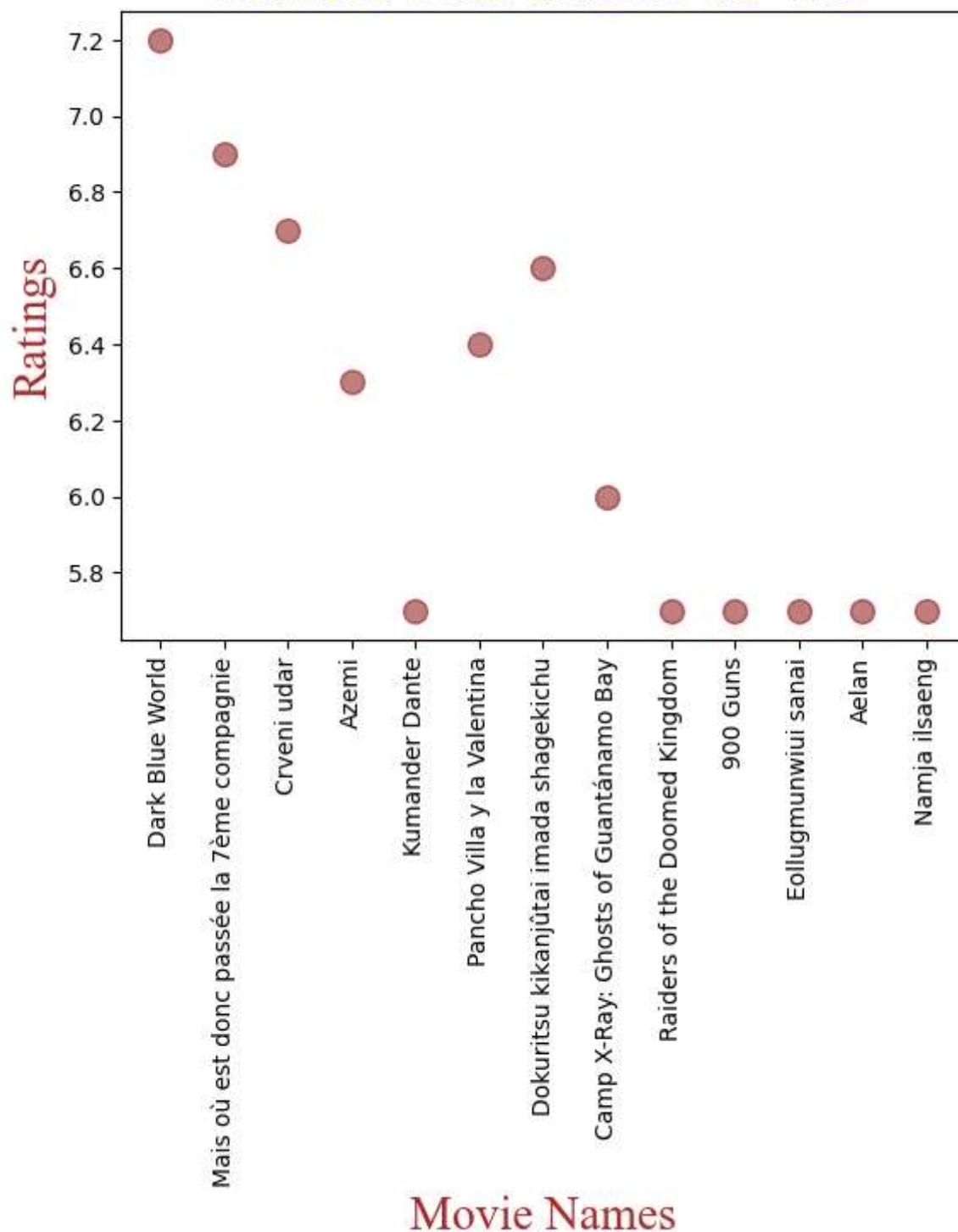
```
Out[76]: 33    2675531.0
34    2373682.0
52    1928021.0
28    1889727.0
74    1860374.0
Name: Votes, dtype: float64
```

```
In [77]: s = df.loc[df.Genre1 == 'War']
```

In [78]: # SCATTERPLOT

```
x = s["Movie Name"]
y = s.Ratings
plt.title("Movies with Genre1 as War", font = "Times New Roman", size = 25,col
plt.scatter(x,y,c = "maroon", s = 100, alpha = 0.5)
plt.xticks(rotation = 90)
plt.xlabel("Movie Names", color = "brown", font = "Times New Roman", size =20)
plt.ylabel("Ratings", color = "brown", font = "Times New Roman", size =20)
plt.show()
```

Movies with Genre1 as War

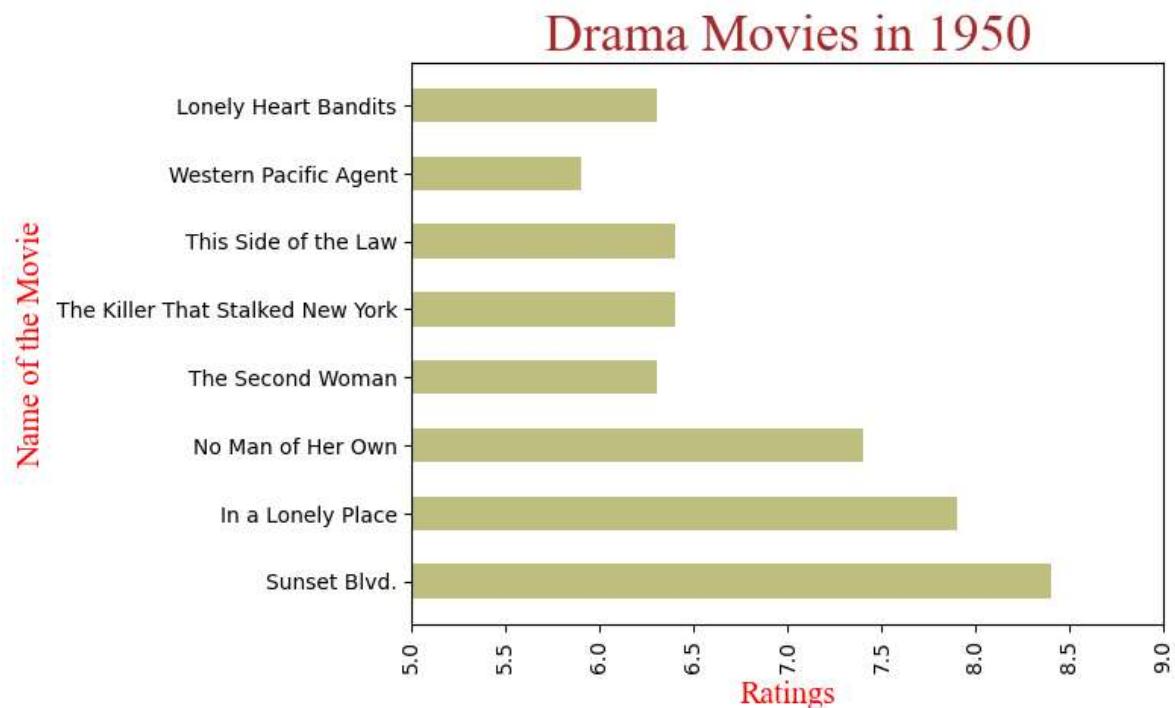


```
In [79]: a = df.query("(Genre1 == 'Drama') & (Year == 1950)")
```

```
In [80]: x = a[ "Movie Name"]
y = a.Ratings

# HORIZONTAL BARGRAPH

plt.barh(x,y,color = "olive", linewidth = 3, alpha = 0.5, height = 0.5)
plt.xlabel("Ratings", font = "Times New Roman", size = 15, color = "red")
plt.ylabel("Name of the Movie", font = "Times New Roman", size = 15,color = "red")
plt.title("Drama Movies in 1950", font = "Times New Roman", size = 25,color = "red")
plt.xticks(rotation = 90)
plt.xlim(5,9)
plt.show()
```



In [81]: df

Out[81]:

	Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Descript
0	tt9114286	Black Panther: Wakanda Forever	2022	Action	Adventure	Drama	161 min	6.9	The people of Wakanda fight to protect their home from intervening world powers they must stop the death of King T'Challa.

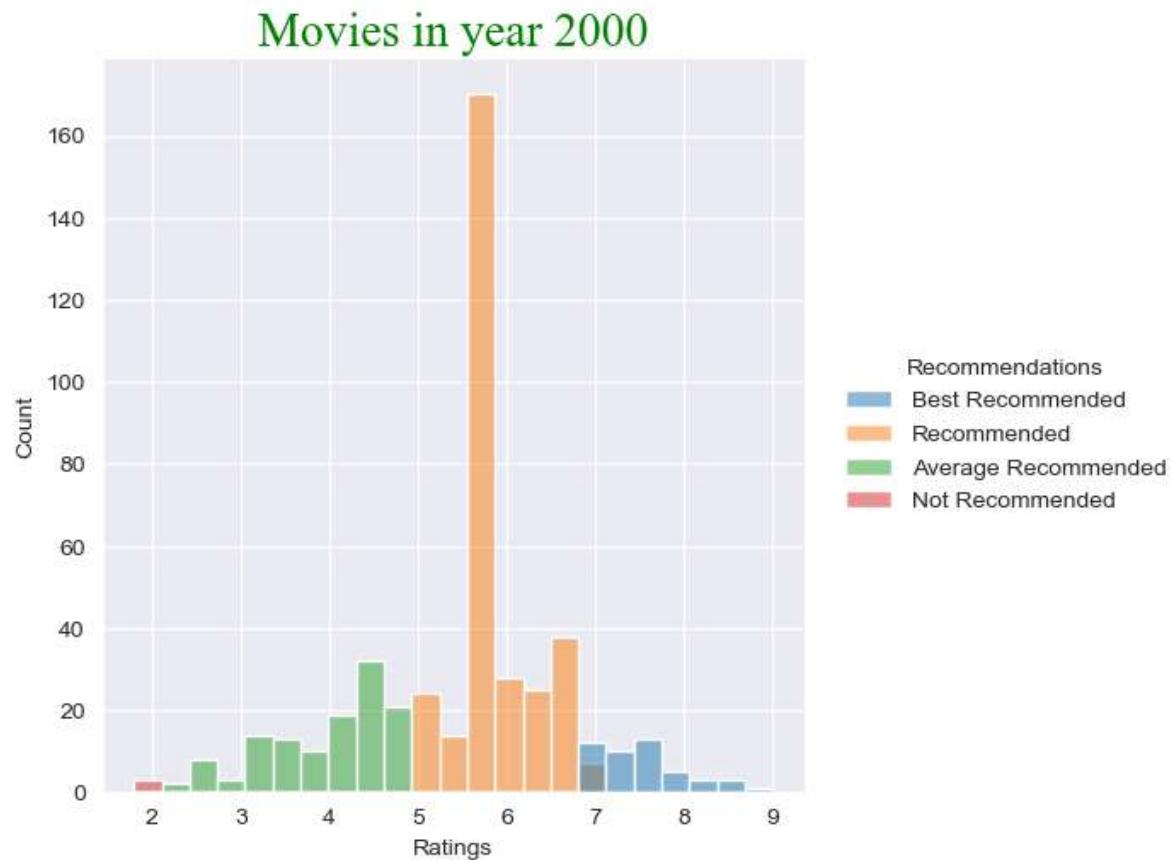
In [82]: import seaborn as sns

In [83]: sns.set_style("darkgrid")

In [84]: a = df.loc[df.Year == '2000']

In [85]: # HISTPLOT

```
sns.displot(data = a, x = "Ratings", hue = "Recommendations")
plt.title("Movies in year 2000", font = "Times New Roman", size = 20,color = "red")
plt.show()
```



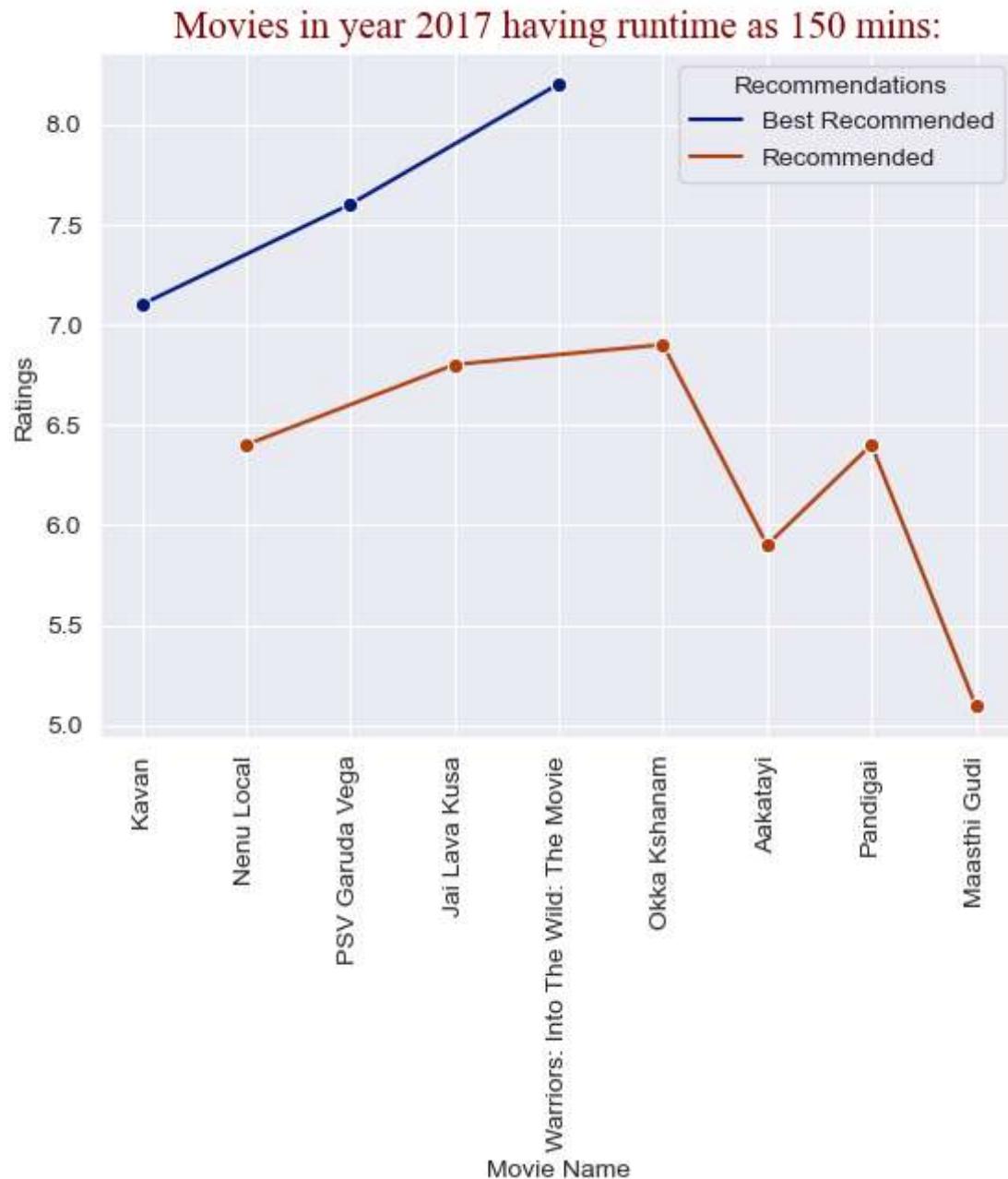
In [86]: b = df.query("(Runtime == '150 min') & (Year == '2017'))
b

Out[86]:

Movie ID	Movie Name	Year	Genre1	Genre2	Genre3	Runtime	Ratings	Description
7616	tt6712026	Kavan	2017	Action	Drama	Thriller	150 min	A journal goes against his corrupt editor in a dishonest boss who orders a hit group of young stars in their film against chemists playing
								A happy-lucky movie

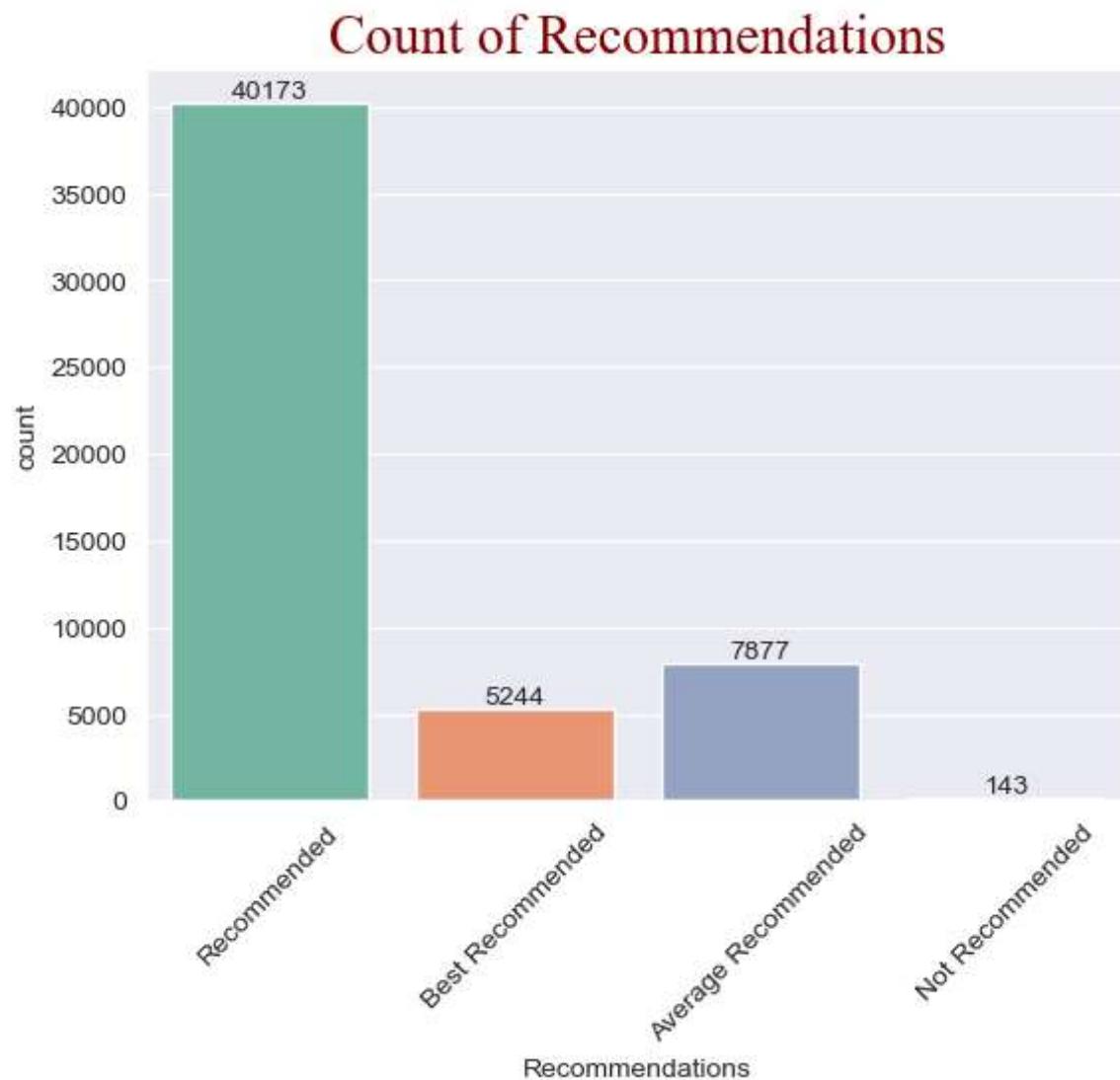
In [87]: # LINEPLOT

```
sns.lineplot(data = b, y = "Ratings", x = "Movie Name", hue = "Recommendations"  
plt.xticks(rotation = 90)  
plt.title("Movies in year 2017 having runtime as 150 mins:", font = "Times New  
plt.show()
```



In [88]: # COUNTPLOT

```
count = sns.countplot(data = df, x = "Recommendations", palette = "Set2")
plt.xticks(rotation = 45)
plt.title("Count of Recommendations", font = "Times New Roman", size = 20, color = "red")
for label in count.containers:
    count.bar_label(label)
plt.show()
```



```
In [89]: a = df.query("(Genre1 == 'Crime') ")  
  
# KDE  
  
sns.displot(data = a, x = "Ratings", hue = "Recommendations", kind = "kde", pa  
plt.title("Genre 1 as Crime", font = "Times New Roman", size = 20,color = "Bl  
plt.show()
```

