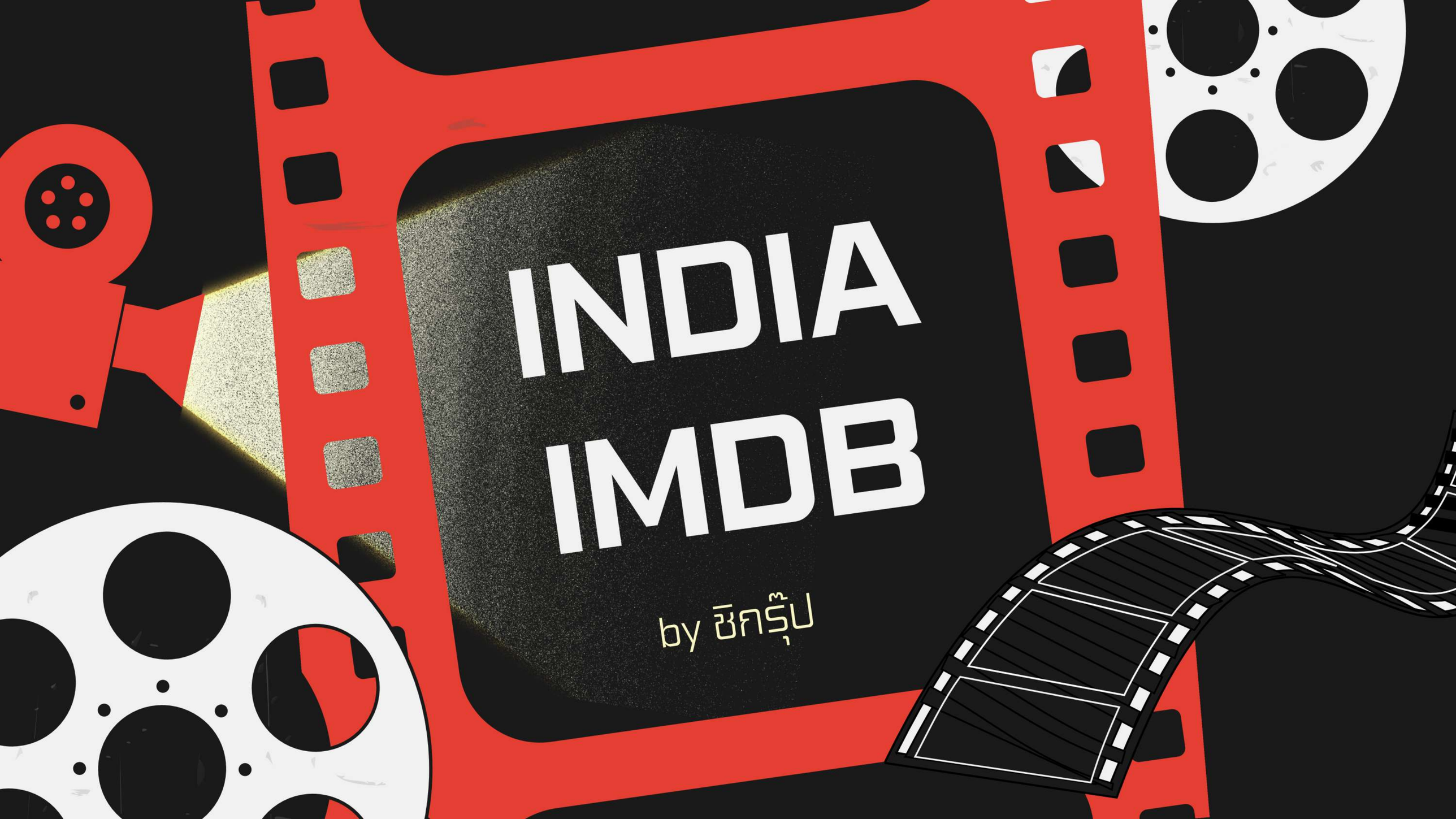
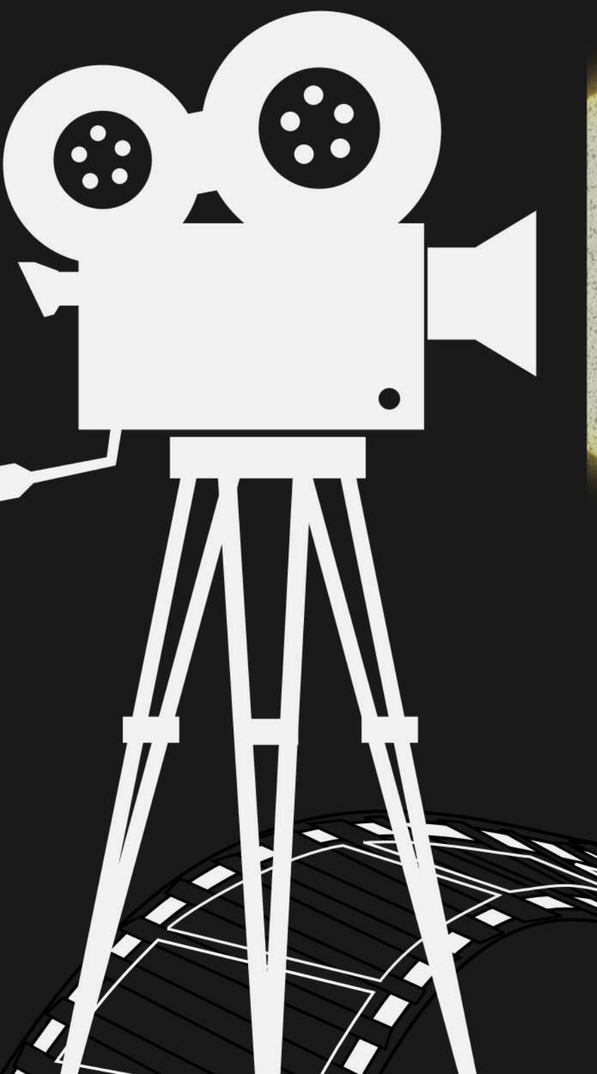

INDIA
IMDB
by ชิกรุ๊ป

สมาชิก

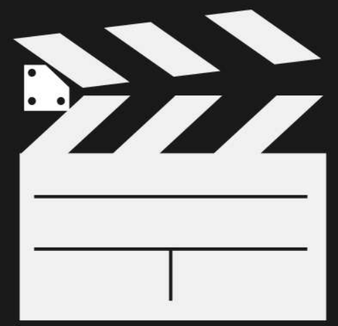
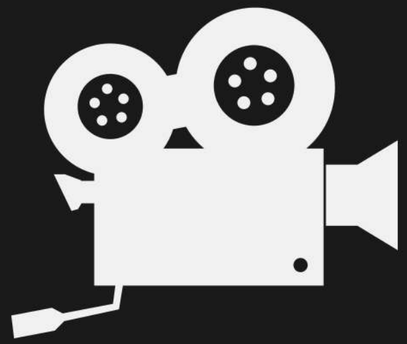
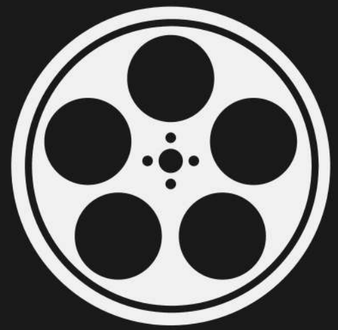
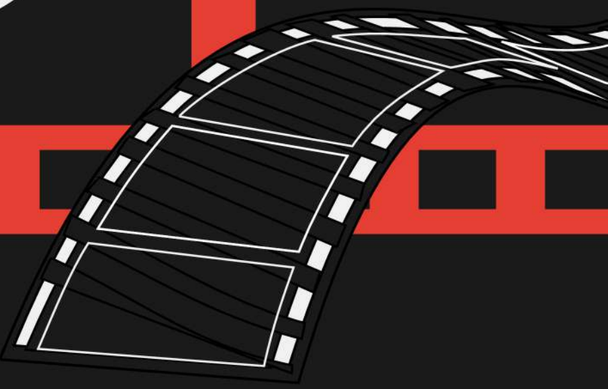


5 ณัชชา ประทุมชาติ

12 พรรณรมณ ราชคมน์

15 รัชชานนท์ พันกาฬสินธุ์

27 อริสรา ยังอยู่

Hw 8

วาด STACKED หรือ GROUPED BAR CHART ของข้อมูลหนัง INDIA

G1 กราฟแสดงจำนวนหนังในแต่ละยุคตามประเภทของหนัง 5 ประเภท (STACKED BAR CHART)

G2 กราฟแสดงความยาวของหนังประเภท Drama ในแต่ละยุค กับ Rating (Group Bar Chart)

การจัดการข้อมูล

```
movie_df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 15509 entries, 0 to 15508
Data columns (total 10 columns):
 #   Column    Non-Null Count  Dtype
---  ------    --------------  -----
 0   Name      15509 non-null  object
 1   Year      14981 non-null  object
 2   Duration  7240 non-null   object
 3   Genre     13632 non-null  object
 4   Rating    7919 non-null   float64
 5   Votes     7920 non-null   object
 6   Director  14984 non-null  object
 7   Actor 1   13892 non-null  object
 8   Actor 2   13125 non-null  object
 9   Actor 3   12365 non-null  object
dtypes: float64(1), object(9)
memory usage: 1.2+ MB
```

```
#ตรวจสอบค่า null
movie_df.isnull().sum()
```

	0
Name	0
Year	528
Duration	8269
Genre	1877
Rating	7590
Votes	7589
Director	525
Actor 1	1617
Actor 2	2384
Actor 3	3144

dtype: int64

การจัดการข้อมูล

```
# หา mode ของคอลัมน์ Year
year_mode = movie_df['Year'].mode()[0]
year_mode
```

```
'(2019)'
```

```
# เติมค่า mode ลงในช่องว่างของคอลัมน์ Year
movie_df['Year'] = movie_df['Year'].fillna(year_mode)
```

```
#ตรวจสอบค่า null
movie_df.isnull().sum()
```

	0
Name	0
Year	0
Duration	8269
Genre	1877
Rating	7590
Votes	7589
Director	525
Actor 1	1617
Actor 2	2384
Actor 3	3144

dtype: int64

การจัดการข้อมูล

```
movie_df = movie_df.dropna(subset=['Rating','Duration','Genre'])
movie_df = movie_df[['Name' ,'Year','Genre','Rating','Duration']]
movie_df
```

	Name	Year	Genre	Rating	Duration
1	#Gadhvi (He thought he was Gandhi)	(2019)	Drama	7.0	109 min
3	#Yaaram	(2019)	Comedy, Romance	4.4	110 min
5	...Aur Pyaar Ho Gaya	(1997)	Comedy, Drama, Musical	4.7	147 min
6	...Yahaan	(2005)	Drama, Romance, War	7.4	142 min
8	?: A Question Mark	(2012)	Horror, Mystery, Thriller	5.6	82 min
...	...	...	...	...	...
15493	Zubaan	(2015)	Drama	6.1	115 min
15494	Zubeidaa	(2001)	Biography, Drama, History	6.2	153 min
15503	Zulm Ki Zanjeer	(1989)	Action, Crime, Drama	5.8	125 min
15505	Zulmi	(1999)	Action, Drama	4.5	129 min
15508	Zulm-O-Sitam	(1998)	Action, Drama	6.2	130 min

5820 rows × 5 columns

```
#ตรวจสอบค่า null
movie_df.isnull().sum()
```

	0
Name	0
Year	0
Genre	0
Rating	0
Duration	0

```
#หลังdropnaแล้วข้อมูลเหลือกี่%จากเดิม

print(f"ข้อมูลเหลือ {(len(movie_df) / len(pd.read_csv('/content/drive/MyDrive/data_viz_2024_DATA/IMDb Movies India.csv', encoding='latin-1'))) * 100:.2f}% จากเดิม")
```

```
ข้อมูลเหลือ 37.53% จากเดิม
```

การจัดการข้อมูล

```
movie_df['Year'] = movie_df['Year'].str.replace('(', '').str.replace(')', '').astype(int)
movie_df['Duration'] = movie_df['Duration'].str.replace(' min', '').astype(int)
movie_df
```

	Name	Year	Genre	Rating	Duration
1	#Gadhvi (He thought he was Gandhi)	2019	Drama	7.0	109
3	#Yaaram	2019	Comedy, Romance	4.4	110
5	...Aur Pyaar Ho Gaya	1997	Comedy, Drama, Musical	4.7	147
6	...Yahaan	2005	Drama, Romance, War	7.4	142
8	?: A Question Mark	2012	Horror, Mystery, Thriller	5.6	82
...	...	...	...	...	...
15493	Zubaan	2015	Drama	6.1	115
15494	Zubeidaa	2001	Biography, Drama, History	6.2	153
15503	Zulm Ki Zanjeer	1989	Action, Crime, Drama	5.8	125
15505	Zulmi	1999	Action, Drama	4.5	129
15508	Zulm-O-Sitam	1998	Action, Drama	6.2	130

5820 rows × 5 columns

การจัดการข้อมูล

```
# prompt: แบ่ง Year ออกเป็น 1931-1940 เป็น 'Sound Era'  1941-1969 เป็น 'Golden Era'  1970-1990 เป็น 'Masala Era'  1991-2000 เป็น 'New Wave Era'  2001-2021 เป็น 'Contemporary Era'

def categorize_year(year):
  if 1931 <= year <= 1940:
    return 'Sound Era'
  elif 1941 <= year <= 1969:
    return 'Golden Era'
  elif 1970 <= year <= 1990:
    return 'Masala Era'
  elif 1991 <= year <= 2000:
    return 'New Wave Era'
  else:
    return 'Contemporary Era'

# Apply the function to create a new column 'Era'
movie_df['Era'] = movie_df['Year'].apply(categorize_year)
movie_df
```

	Name	Year	Genre	Rating	Duration	Era
1	#Gadhvi (He thought he was Gandhi)	2019	Drama	7.0	109	Contemporary Era
3	#Yaaram	2019	Comedy, Romance	4.4	110	Contemporary Era
5	...Aur Pyaar Ho Gaya	1997	Comedy, Drama, Musical	4.7	147	New Wave Era
6	...Yahaan	2005	Drama, Romance, War	7.4	142	Contemporary Era
8	?: A Question Mark	2012	Horror, Mystery, Thriller	5.6	82	Contemporary Era
...	...	...	...	...	...	...
15493	Zubaan	2015	Drama	6.1	115	Contemporary Era
15494	Zubeidaa	2001	Biography, Drama, History	6.2	153	Contemporary Era
15503	Zulm Ki Zanjeer	1989	Action, Crime, Drama	5.8	125	Masala Era
15505	Zulmi	1999	Action, Drama	4.5	129	New Wave Era
15508	Zulm-O-Sitam	1998	Action, Drama	6.2	130	New Wave Era

การจัดการข้อมูล

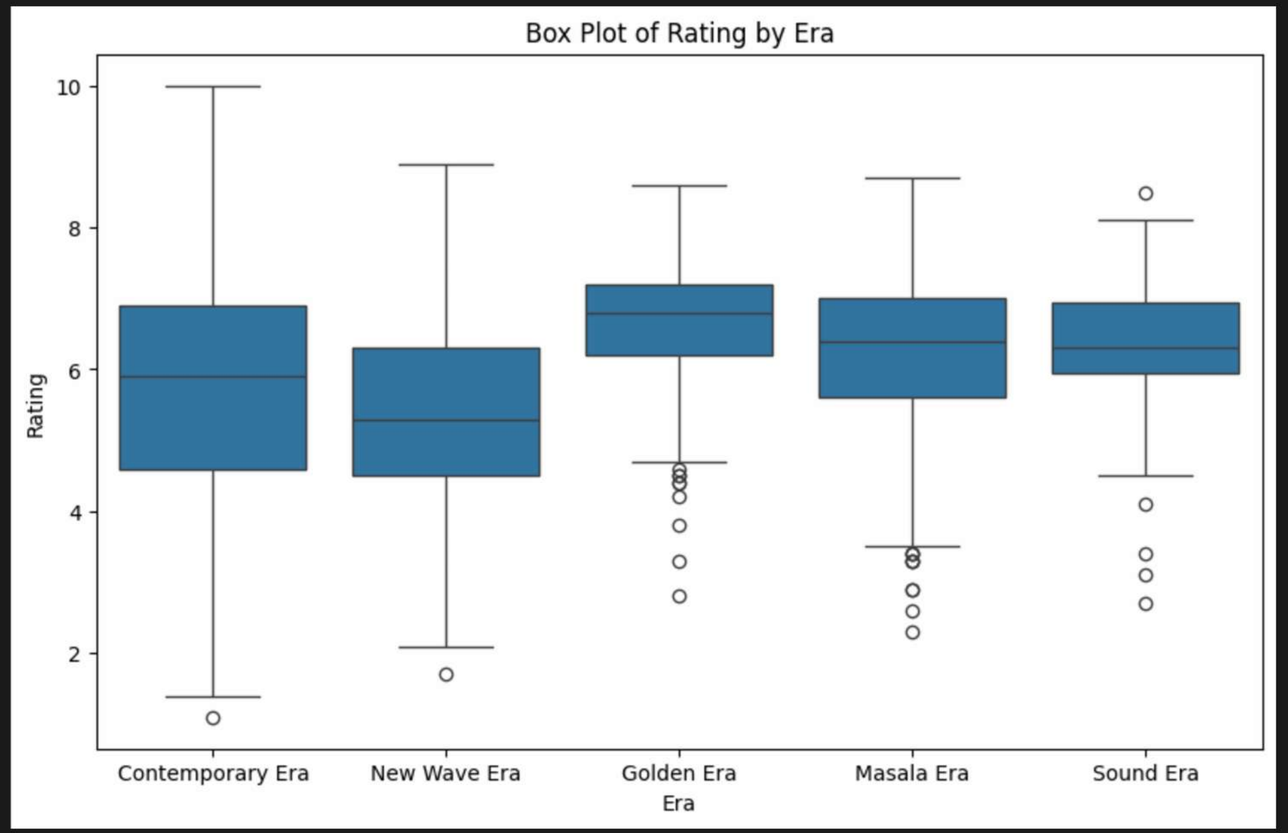
```python
# Define a function to categorize duration
def categorize_duration(duration):
  if duration < 60:
    return 'short'
  elif 60 <= duration <= 90:
    return 'medium'
  else:
    return 'long'

# Apply the function to create a new column 'Duration Category'
movie_df['Duration Category'] =movie_df['Duration'].apply(categorize_duration)
movie_df
```

	Name	Year	Genre	Rating	Duration	Era	Duration Category
1	#Gadhvi (He thought he was Gandhi)	2019	Drama	7.0	109	Contemporary Era	long
3	#Yaaram	2019	Comedy, Romance	4.4	110	Contemporary Era	long
5	...Aur Pyaar Ho Gaya	1997	Comedy, Drama, Musical	4.7	147	New Wave Era	long
6	...Yahaan	2005	Drama, Romance, War	7.4	142	Contemporary Era	long
8	?: A Question Mark	2012	Horror, Mystery, Thriller	5.6	82	Contemporary Era	medium
...	...	...	...	...	...	...	...
15493	Zubaan	2015	Drama	6.1	115	Contemporary Era	long
15494	Zubeidaa	2001	Biography, Drama, History	6.2	153	Contemporary Era	long
15503	Zulm Ki Zanjeer	1989	Action, Crime, Drama	5.8	125	Masala Era	long
15505	Zulmi	1999	Action, Drama	4.5	129	New Wave Era	long
15508	Zulm-O-Sitam	1998	Action, Drama	6.2	130	New Wave Era	long

การจัดการข้อมูล

มี outlier ในบางยุค จึงเลือกใช้ median

```python
# prompt: ทำ box plot ของ Rating แยกแต่ละ Era

import matplotlib.pyplot as plt
import seaborn as sns

plt.figure(figsize=(10, 6))
sns.boxplot(x='Era', y='Rating', data=movie_df)
plt.title('Box Plot of Rating by Era')
plt.xlabel('Era')
plt.ylabel('Rating')
plt.show()
```



Stacked Bar Chart

5 ประเภทหนังที่มีจำนวนเยอะที่สุด

```
# Create a new DataFrame with single genres
single_genre_df = movie_df[~movie_df['Genre'].str.contains(',')]
single_genre_df
```

	Name	Year	Genre	Rating	Duration	Era	Duration Category
1	#Gadhvi (He thought he was Gandhi)	2019	Drama	7.0	109	Contemporary Era	long
10	1:1.6 An Ode to Lost Love	2004	Drama	6.2	96	Contemporary Era	long
11	1:13:7 Ek Tera Saath	2016	Horror	5.9	120	Contemporary Era	long
30	15 Park Avenue	2005	Drama	7.1	116	Contemporary Era	long
32	15th August	1993	Drama	5.6	168	New Wave Era	long
...	...	...	...	...	...	...	...
15478	Zindagi Tere Naam	2012	Romance	4.4	120	Contemporary Era	long
15479	Zindagi Tumse	2019	Family	6.0	120	Contemporary Era	long
15482	Zindagi Zindabad	2000	Drama	5.7	140	New Wave Era	long
15488	Zoo	2018	Drama	5.7	100	Contemporary Era	long
15493	Zubaan	2015	Drama	6.1	115	Contemporary Era	long

1766 rows × 7 columns

Stacked Bar Chart

5 ประเภทหนังที่มีจำนวนเยอะที่สุด

```
# prompt: groupby 'Genre' in single_genre_df
single_genre_df.groupby('Genre').size().sort_values(ascending=False).rename('Movies Count').head(5)
```

Genre	Movies Count
Drama	870
Comedy	191
Action	175
Romance	127
Thriller	87

Stacked Bar Chart

5 ประเภทหนังที่มีจำนวนเยอะที่สุด

```
selected_genres = ['Drama', 'Comedy', 'Action', 'Romance', 'Thriller']
selected_df = single_genre_df[single_genre_df['Genre'].isin(selected_genres)]
selected_df
```

	Name	Year	Genre	Rating	Duration	Era	Duration Category
1	#Gadhvi (He thought he was Gandhi)	2019	Drama	7.0	109	Contemporary Era	long
10	1:1.6 An Ode to Lost Love	2004	Drama	6.2	96	Contemporary Era	long
30	15 Park Avenue	2005	Drama	7.1	116	Contemporary Era	long
32	15th August	1993	Drama	5.6	168	New Wave Era	long
34	18.11	2014	Action	3.5	126	Contemporary Era	long
...	...	...	...	...	...	...	...
15471	Zindagi Jalebi	2013	Comedy	3.7	117	Contemporary Era	long
15478	Zindagi Tere Naam	2012	Romance	4.4	120	Contemporary Era	long
15482	Zindagi Zindabad	2000	Drama	5.7	140	New Wave Era	long
15488	Zoo	2018	Drama	5.7	100	Contemporary Era	long
15493	Zubaan	2015	Drama	6.1	115	Contemporary Era	long

1450 rows × 7 columns

Stacked Bar Chart

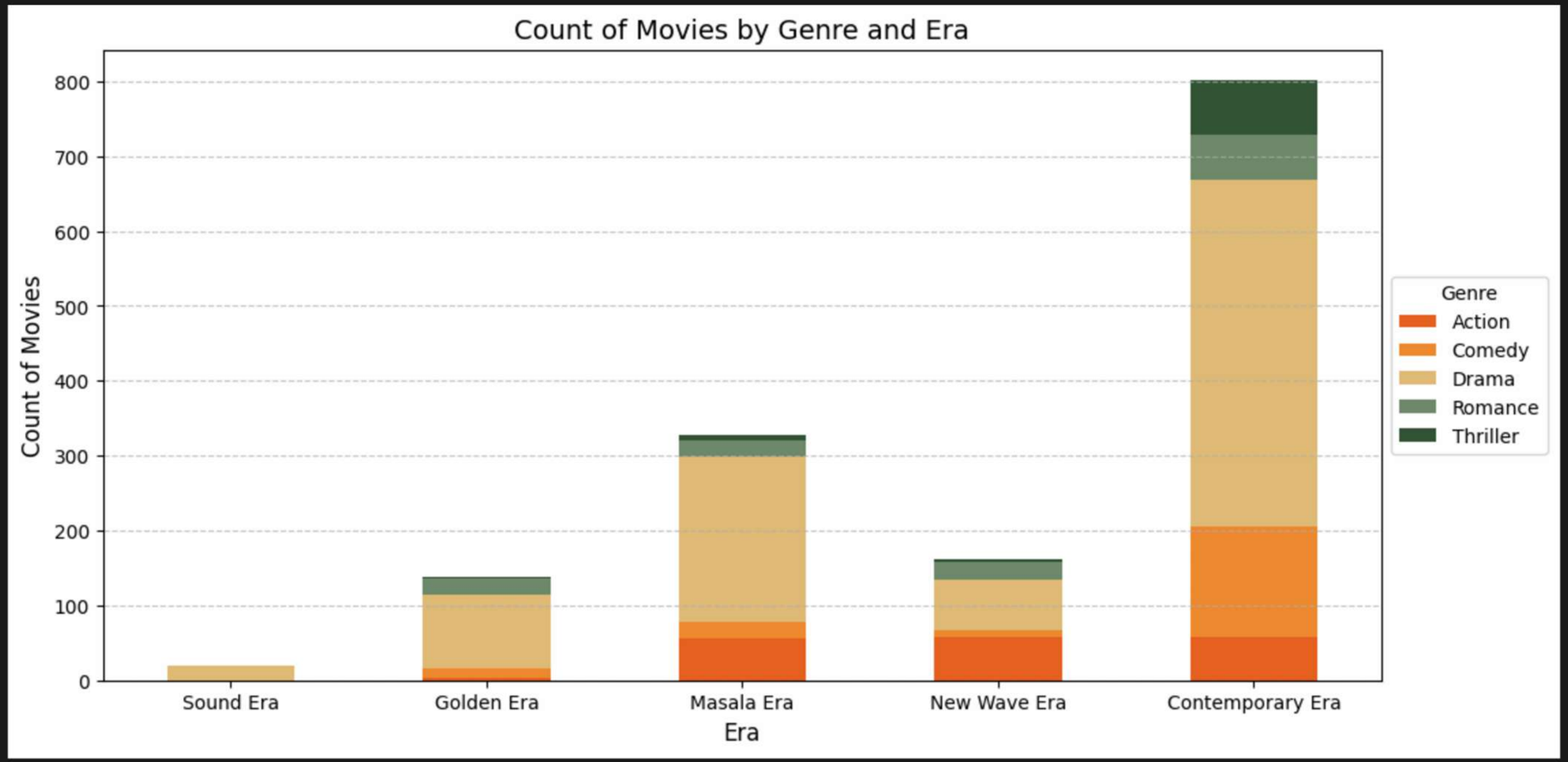
5 ประเภทหนังที่มีจำนวนเยอะที่สุด

```python
import matplotlib.pyplot as plt

# Define distinct custom colors for each genre
custom_colors = ['#E76020', '#EE892F', '#E0BB76', '#6E896A', '#325434']
# Calculate the count of movies for each genre in each era
genre_count = selected_df.groupby(['Era', 'Genre'])['Name'].count().unstack()

# Create a dictionary to map the desired order of eras
era_order = {
    "Sound Era": 0,"Golden Era": 1,"Masala Era": 2,"New Wave Era": 3,"Contemporary Era": 4 }

# Reorder the index of the dataframe based on the era_order
genre_count = genre_count.reindex(era_order)

# Set the figure size to make the plot wider
plt.figure(figsize=(15, 6))

# Create a stacked bar chart with distinct colors
ax = genre_count.plot(kind='bar', stacked=True, ax=plt.gca(), color=custom_colors)
```

```python
# Add x and y axis labels
plt.xlabel('Era', fontsize=12)  # Label for the x-axis
plt.ylabel('Count of Movies', fontsize=12)  # Label for the y-axis

# Add a title to the chart
plt.title('Count of Movies by Genre and Era', fontsize=14)

# Move the legend outside the plot to avoid overlap
plt.legend(loc='center left', bbox_to_anchor=(1, 0.5), title='Genre')

# Adjust the space on the right to fit the legend
plt.gcf().subplots_adjust(right=0.75)

# Rotate the x-axis labels for better readability
plt.xticks(rotation=90)

# Add grid lines for better visualization
plt.grid(axis='y', linestyle='--', alpha=0.7)

# Display the plot
plt.show()
```

Stacked Bar Chart

กราฟแสดงจำนวนหนังในแต่ละยุคตามประเภทของหนัง 5 ประเภท



Stacked Bar Chart

จำนวนหนังในแต่ละยุคตามประเภทของหนัง 5 ประเภท

```
# prompt: perform crosstab on selected-data
pd.crosstab(selected_df['Genre'], selected_df['Era'])
```

Era Genre	Contemporary Era	Golden Era	Masala Era	New Wave Era	Sound Era
Action	58	4	56	57	0
Comedy	148	12	21	10	0
Drama	462	99	222	67	20
Romance	60	22	21	24	0
Thriller	74	1	8	4	0

Group Bar Chart

หนัง Drama ของอินเดียโดยแบ่งกลุ่มตามยุค
และเปรียบเทียบ Rating ตามความยาวหนัง

```
drama_df = movie_df[movie_df['Genre'] == 'Drama']
drama_df
```

	Name	Year	Genre	Rating	Duration	Era	Duration Category
1	#Gadhvi (He thought he was Gandhi)	2019	Drama	7.0	109	Contemporary Era	long
10	1:1.6 An Ode to Lost Love	2004	Drama	6.2	96	Contemporary Era	long
30	15 Park Avenue	2005	Drama	7.1	116	Contemporary Era	long
32	15th August	1993	Drama	5.6	168	New Wave Era	long
36	19 Revolutions	2004	Drama	4.5	94	Contemporary Era	long
...	...	...	...	...	...	...	...
15457	Zindagi	1940	Drama	7.0	120	Sound Era	long
15466	Zindagi Aur Maut	1965	Drama	6.0	134	Golden Era	long
15482	Zindagi Zindabad	2000	Drama	5.7	140	New Wave Era	long
15488	Zoo	2018	Drama	5.7	100	Contemporary Era	long
15493	Zubaan	2015	Drama	6.1	115	Contemporary Era	long

870 rows × 7 columns

Group Bar Chart

หนัง Drama ของอินเดียโดยแบ่งกลุ่มตามยุค
และเปรียบเทียบ Rating ตามความยาวหนัง

```python
drama_bar = drama_df.groupby(['Era','Duration Category',])['Rating'].median().unstack()
# Create a dictionary to map the desired order of eras
era_order = {
    "Sound Era": 0,
    "Golden Era": 1,
    "Masala Era": 2,
    "New Wave Era": 3,
    "Contemporary Era": 4
}

# Reset the index to make 'Era' a column
drama_bar = drama_bar.reset_index()

# Create a new column with the order values
drama_bar['era_order'] = drama_bar['Era'].map(era_order)

# Sort the dataframe based on the new column
drama_bar = drama_bar.sort_values('era_order')

# Drop the temporary column
drama_bar = drama_bar.drop('era_order', axis=1)

# Set 'Era' as index again
drama_bar = drama_bar.set_index('Era')

# Display the sorted dataframe
drama_bar
```

Duration Category Era	long	medium	short
Sound Era	6.50	6.30	NaN
Golden Era	6.75	6.70	NaN
Masala Era	6.60	7.00	NaN
New Wave Era	6.10	6.25	NaN
Contemporary Era	6.50	6.75	6.3

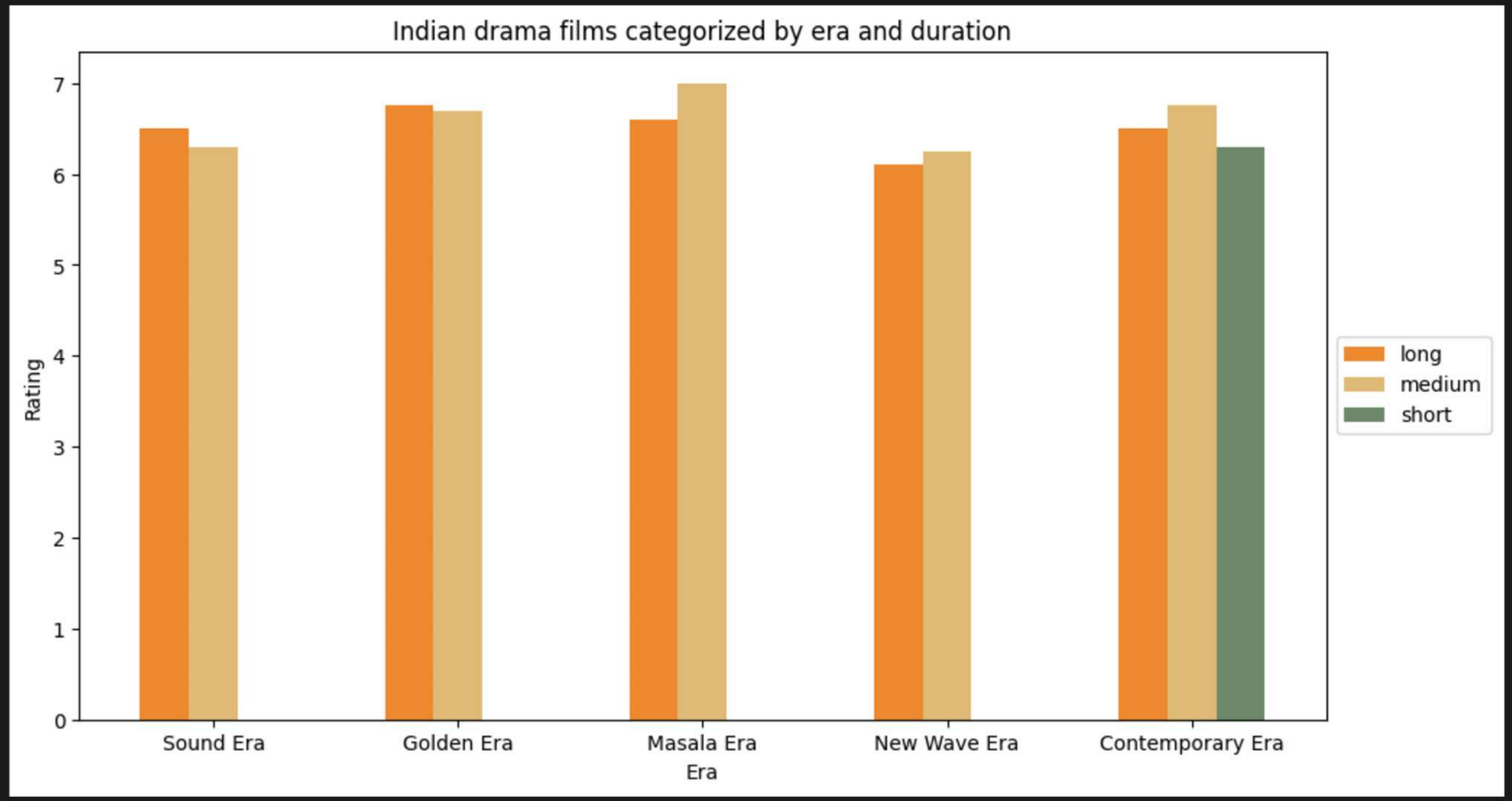
Group Bar Chart

หนัง Drama ของอินเดียโดยแบ่งกลุ่มตามยุค
และเปรียบเทียบ Rating ตามความยาวหนัง

```
# Define distinct custom colors for each genre
custom_colors = ['#EE892F', '#E0BB76', '#6E896A']  # Add enough distinct colors

ax = drama_bar.plot(kind='bar', figsize=(15, 6), width=0.6, color=custom_colors)

# Add labels and title
plt.xlabel('Era')
plt.ylabel('Rating')
plt.title('Indian drama films categorized by era and duration')

# Move the legend outside the plot
plt.legend(loc='center left', bbox_to_anchor=(1, 0.5))

# Adjust the plot size
plt.gcf().subplots_adjust(right=0.7)

# Show the plot
plt.show()
```

Group Bar Chart

หนัง Drama ของอินเดียโดยแบ่งกลุ่มตามยุค
และเปรียบเทียบ Rating ตามความยาวหนัง




THANK
YOU