In [1]:
```
# MOVIE RATING ANALYTICS (ADVANCED VISULIZATION)
import pandas as pd
```

In [2]:
```
movies = pd.read_csv(r"D:\Samsom - All Data\Samson resume\Movie-Rating.csv")
```

In [3]:
```
movies # id(movies)
#print(type(movies))
```

Out[3]:

	Film	Genre	Rotten Tomatoes Ratings %	Audience Ratings %	Budget (million $)	Year of release
0	(500) Days of Summer	Comedy	87	81	8	2009
1	10,000 B.C.	Adventure	9	44	105	2008
2	12 Rounds	Action	30	52	20	2009
3	127 Hours	Adventure	93	84	18	2010
4	17 Again	Comedy	55	70	20	2009
...	...	...	...	...	...	...
554	Your Highness	Comedy	26	36	50	2011
555	Youth in Revolt	Comedy	68	52	18	2009
556	Zodiac	Thriller	89	73	65	2007
557	Zombieland	Action	90	87	24	2009
558	Zookeeper	Comedy	14	42	80	2011

559 rows × 6 columns

In [4]:
```
type(movies)
```

Out[4]:
```
pandas.core.frame.DataFrame
```

In [5]:
```
movies
```

Out[5]:

	Film	Genre	Rotten Tomatoes Ratings %	Audience Ratings %	Budget (million $)	Year of release
0	(500) Days of Summer	Comedy	87	81	8	2009
1	10,000 B.C.	Adventure	9	44	105	2008
2	12 Rounds	Action	30	52	20	2009
3	127 Hours	Adventure	93	84	18	2010
4	17 Again	Comedy	55	70	20	2009
...	...	...	...	...	...	...
554	Your Highness	Comedy	26	36	50	2011
555	Youth in Revolt	Comedy	68	52	18	2009
556	Zodiac	Thriller	89	73	65	2007
557	Zombieland	Action	90	87	24	2009
558	Zookeeper	Comedy	14	42	80	2011

559 rows × 6 columns

In [6]:
```
len(movies)
```

Out[6]: 559

In [7]:
```
import numpy
print(numpy.__version__)
```

```
1.26.4
```

In [8]:
```
import pandas
print(pandas.__version__)
```

```
2.2.2
```

In [9]:
```
movies.columns
```

Out[9]:
```
Index(['Film', 'Genre', 'Rotten Tomatoes Ratings %', 'Audience Ratings %',
       'Budget (million $)', 'Year of release'],
      dtype='object')
```

In [10]:
```
movies.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 559 entries, 0 to 558
Data columns (total 6 columns):
 #   Column                     Non-Null Count  Dtype 
---  ------                     --------------  ----- 
 0   Film                       559 non-null    object
 1   Genre                      559 non-null    object
 2   Rotten Tomatoes Ratings %  559 non-null    int64 
 3   Audience Ratings %         559 non-null    int64 
 4   Budget (million $)         559 non-null    int64 
 5   Year of release            559 non-null    int64 
dtypes: int64(4), object(2)
memory usage: 26.3+ KB
```

In [11]:
```
movies.shape # (no of rows & no. of columns)
```

Out[11]:
```
(559, 6)
```

In [12]:
```
movies.head() # head operation will give us top 5 rows
```

Out[12]:

	Film	Genre	Rotten Tomatoes Ratings %	Audience Ratings %	Budget (million $)	Year of release
0	(500) Days of Summer	Comedy	87	81	8	2009
1	10,000 B.C.	Adventure	9	44	105	2008
2	12 Rounds	Action	30	52	20	2009
3	127 Hours	Adventure	93	84	18	2010
4	17 Again	Comedy	55	70	20	2009

In [13]:
```
movies.tail() # display last 5 row information
```

Out[13]:

	Film	Genre	Rotten Tomatoes Ratings %	Audience Ratings %	Budget (million $)	Year of release
554	Your Highness	Comedy	26	36	50	2011
555	Youth in Revolt	Comedy	68	52	18	2009
556	Zodiac	Thriller	89	73	65	2007
557	Zombieland	Action	90	87	24	2009
558	Zookeeper	Comedy	14	42	80	2011

In [14]:
```
movies.columns
```

Out[14]:
```
Index(['Film', 'Genre', 'Rotten Tomatoes Ratings %', 'Audience Ratings %',
       'Budget (million $)', 'Year of release'],
      dtype='object')
```

In [15]:
```
movies.columns = ['Film', 'Genre', 'CriticRating', 'AudienceRating', 'BudgetMillions', 'Year']
```

In [16]:
```
movies.head(1) # Removed spaces & % removed noise characters
```

Out[16]:

	Film	Genre	CriticRating	AudienceRating	BudgetMillions	Year
0	(500) Days of Summer	Comedy	87	81	8	2009

In [17]:
```
movies.shape
```

Out[17]:
```
(559, 6)
```

In [18]:
```
movies.describe() # descriptive statistics

# if you look at the year the data type is int but when you look at the mean value it showing 2009 which is
# we have to change to category type
# also from object datatype we will convert to category datatypes
```

Out[18]:

	CriticRating	AudienceRating	BudgetMillions	Year
count	559.000000	559.000000	559.000000	559.000000
mean	47.309481	58.744186	50.236136	2009.152057
std	26.413091	16.826887	48.731817	1.362632
min	0.000000	0.000000	0.000000	2007.000000
25%	25.000000	47.000000	20.000000	2008.000000
50%	46.000000	58.000000	35.000000	2009.000000
75%	70.000000	72.000000	65.000000	2010.000000
max	97.000000	96.000000	300.000000	2011.000000

In [19]:
```
movies.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 559 entries, 0 to 558
Data columns (total 6 columns):
 #   Column          Non-Null Count  Dtype 
---  ------          --------------  ----- 
 0   Film            559 non-null    object
 1   Genre           559 non-null    object
 2   CriticRating    559 non-null    int64 
 3   AudienceRating  559 non-null    int64 
 4   BudgetMillions  559 non-null    int64 
 5   Year            559 non-null    int64 
dtypes: int64(4), object(2)
memory usage: 26.3+ KB
```

In [20]:
```
movies.Film = movies.Film.astype('category')
```

In [21]:
```
movies.Film
```

Out[21]:
```
0      (500) Days of Summer
1                10,000 B.C.
2                 12 Rounds
3                  127 Hours
4                  17 Again
               ...
554            Your Highness
555          Youth in Revolt
556                   Zodiac
557              Zombieland
558                Zookeeper
Name: Film, Length: 559, dtype: category
Categories (559, object): ['(500) Days of Summer ', '10,000 B.C.', '12 Rounds ', '127 Hours', ..., 'Youth in Revol
t', 'Zodiac', 'Zombieland ', 'Zookeeper']
```

In [22]:
```
movies.head()
```

Out[22]:

	Film	Genre	CriticRating	AudienceRating	BudgetMillions	Year
0	(500) Days of Summer	Comedy	87	81	8	2009
1	10,000 B.C.	Adventure	9	44	105	2008
2	12 Rounds	Action	30	52	20	2009
3	127 Hours	Adventure	93	84	18	2010
4	17 Again	Comedy	55	70	20	2009

In [23]:
```
movies.Genre = movies.Genre.astype('category')
movies.Year = movies.Year.astype('category')
```

In [24]:
```
movies.describe()
```

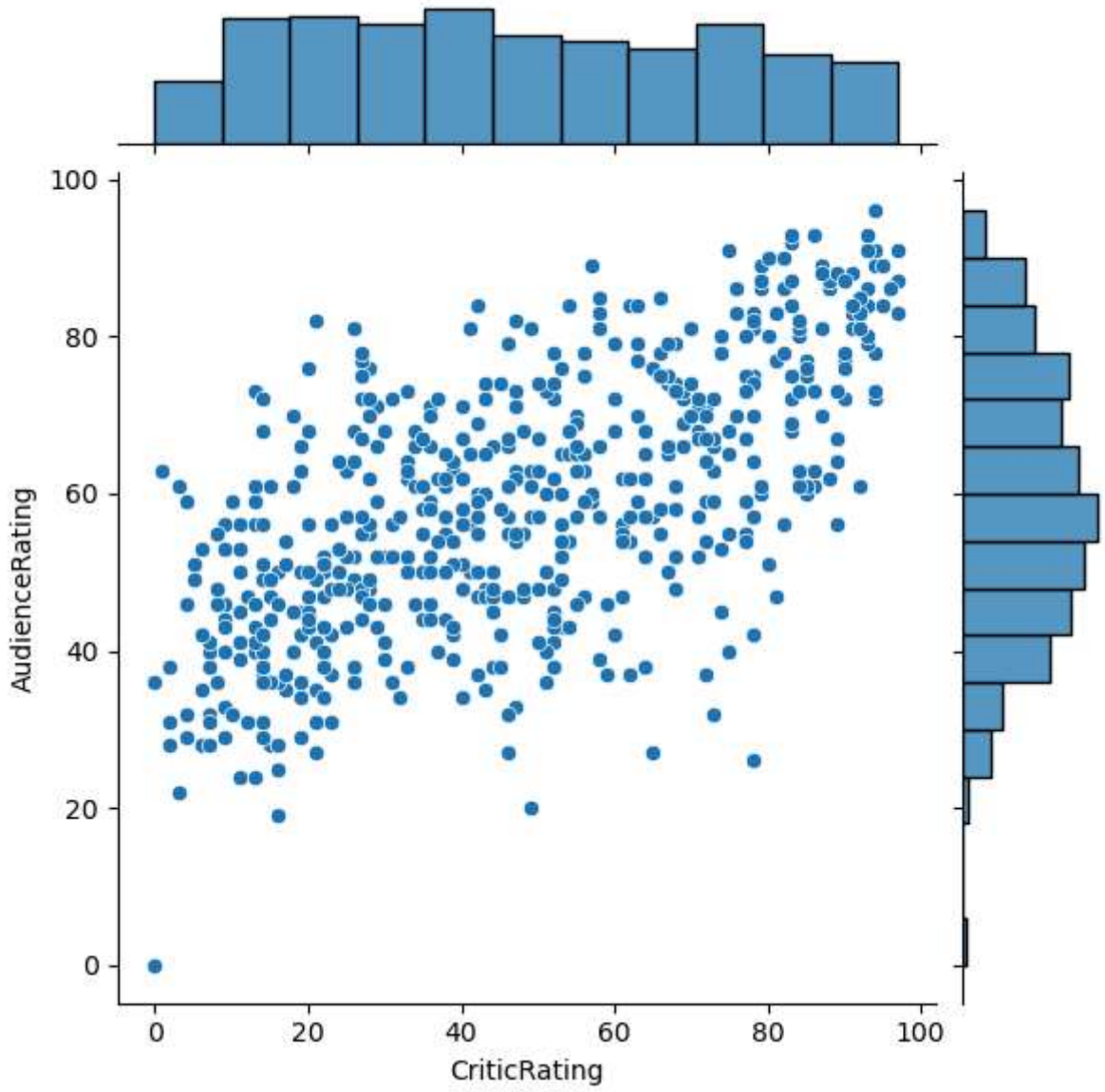
Out[24]:

	CriticRating	AudienceRating	BudgetMillions
count	559.000000	559.000000	559.000000
mean	47.309481	58.744186	50.236136
std	26.413091	16.826887	48.731817
min	0.000000	0.000000	0.000000
25%	25.000000	47.000000	20.000000
50%	46.000000	58.000000	35.000000
75%	70.000000	72.000000	65.000000
max	97.000000	96.000000	300.000000

In [25]:
```
# How to working with joint plots
from matplotlib import pyplot as plt # visualization
import seaborn as sns # advanced visualization

#%matplotlib inline #All THE PLOT SHOULD INSIDE THE LINE

import warnings
warnings.filterwarnings('ignore')
```

- basically joint plot is a scatter plot & it find the relation b/w audience & critics
- also if you look up you can find the uniform distribution (critics) and normal distribution (audience)

In [27]:
```
j = sns.jointplot(data = movies, x = 'CriticRating', y = 'AudienceRating')

# Audience rating is more dominant then critics rating
# Based on this we find out as most people are most liklihood to watch audience rating & less likely to watch
# there is positive coreleation between 2 attributes
# Let me explain the excel - if you filter audience rating & critic rating. critic rating has very low value.
```



In [ ]: