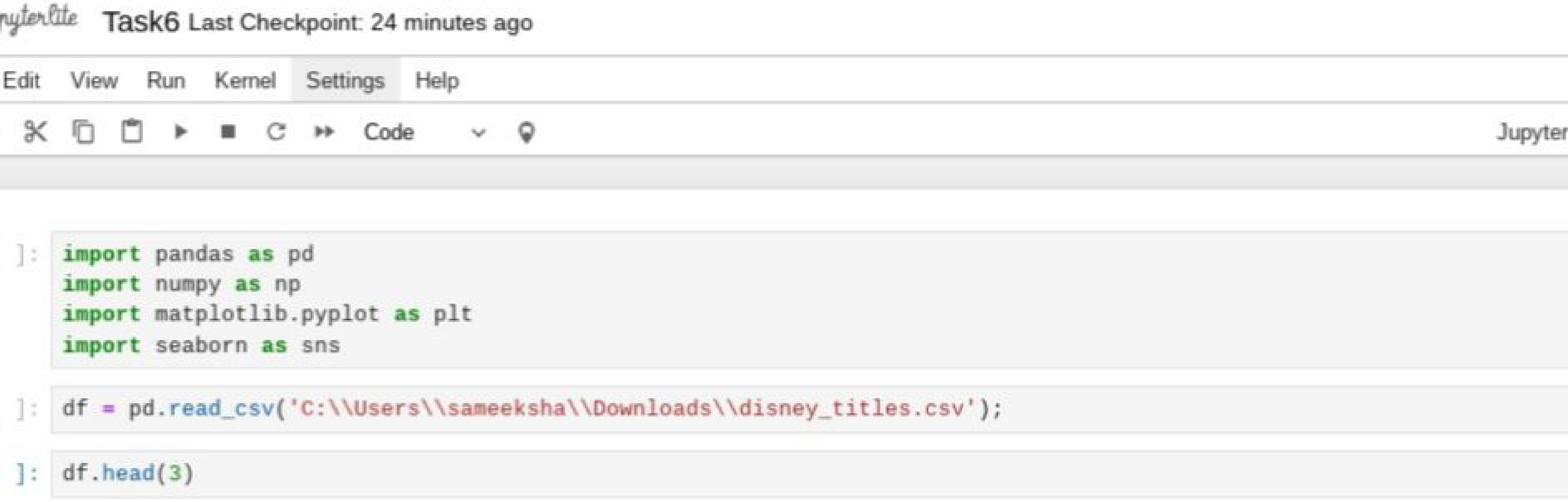
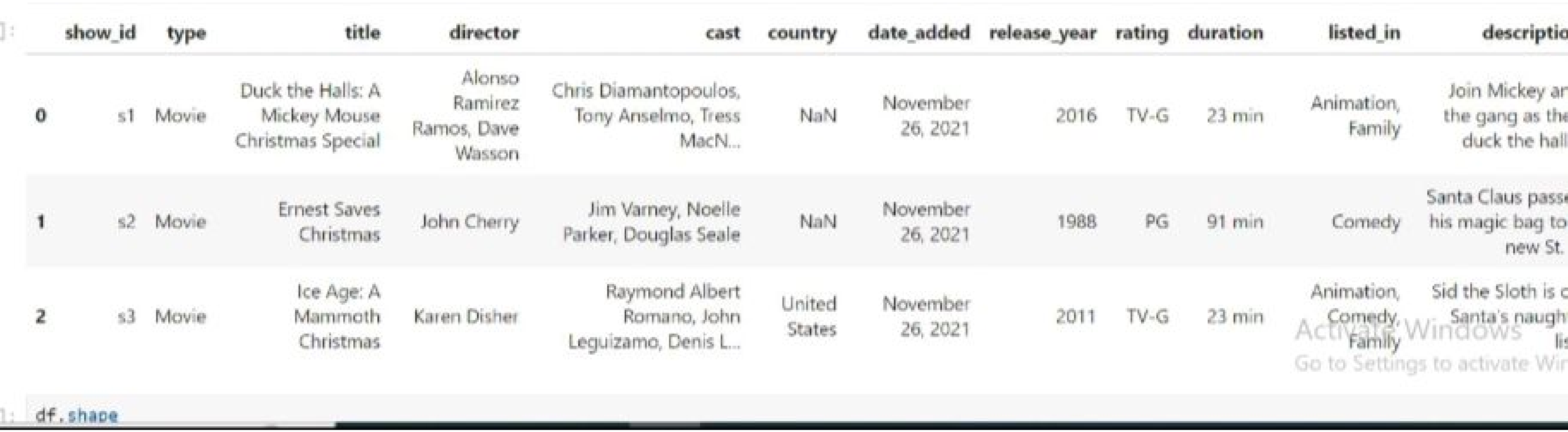


```
]: import pandas as pd
   import numpy as np
   import matplotlib.pyplot as plt
   import seaborn as sns
```

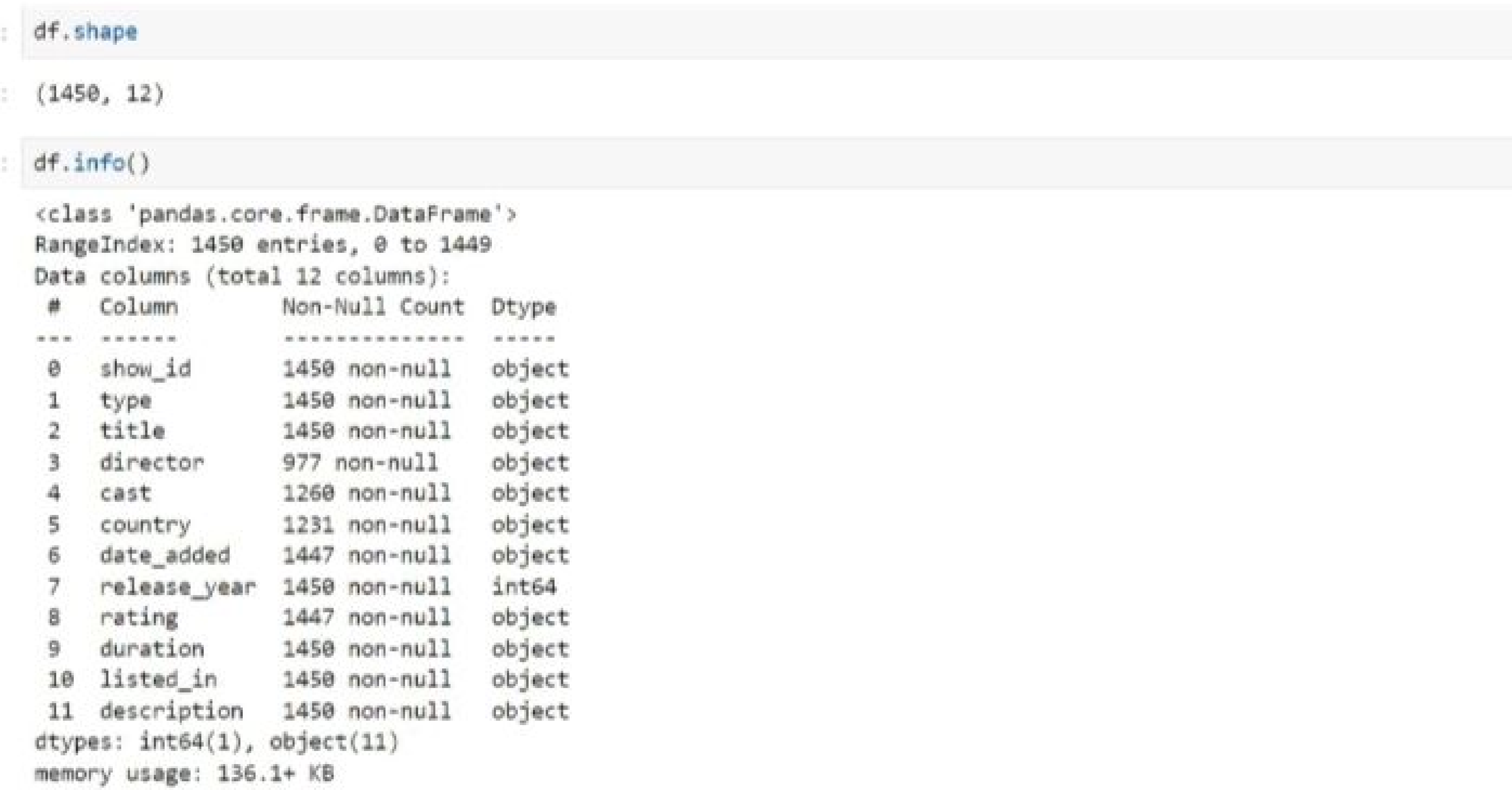
```
]: df = pd.read_csv('C:\\Users\\sameeksha\\Downloads\\disney_titles.csv');
```

```
]: df.head(3)
```



	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	descriptio
0	s1	Movie	Duck the Halls: A Mickey Mouse Christmas Special	Alonso Ramirez Ramos, Dave Wasson	Chris Diamantopoulos, Tony Anselmo, Tress MacN...	NaN	November 26, 2021	2016	TV-G	23 min	Animation, Family	Join Mickey ar the gang as the duck the hall
1	s2	Movie	Ernest Saves Christmas	John Cherry	Jim Varney, Noelle Parker, Douglas Seale	NaN	November 26, 2021	1988	PG	91 min	Comedy	Santa Claus pass his magic bag to new St.
2	s3	Movie	Ice Age: A Mammoth Christmas	Karen Disher	Raymond Albert Romano, John Leguizamo, Denis L...	United States	November 26, 2021	2011	TV-G	23 min	Animation, Comedy, Family	Sid the Sloth is c Santa's naugh lis

```
df.shape
```

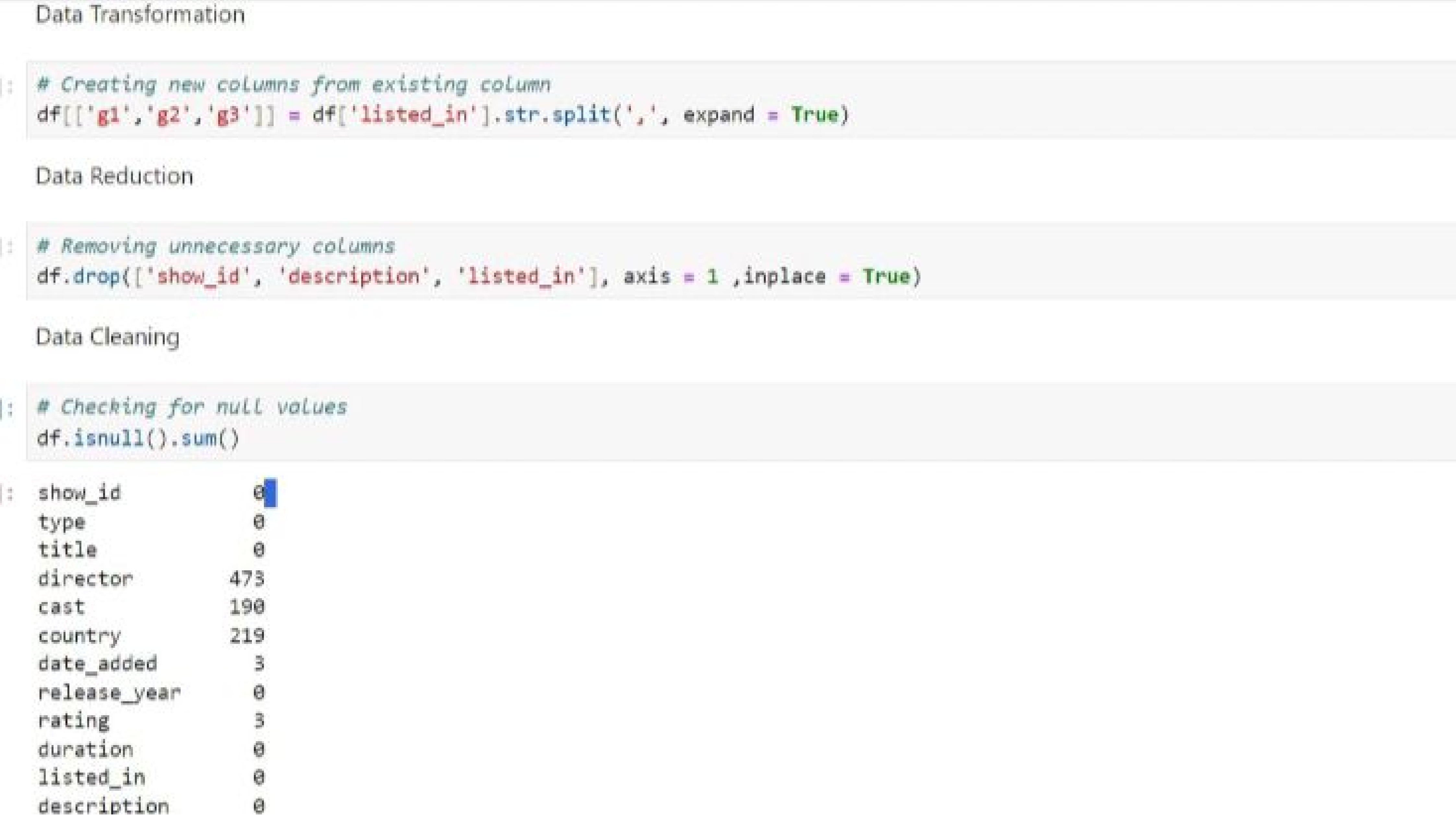


```
df.shape
```

```
(1450, 12)
```

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1450 entries, 0 to 1449
Data columns (total 12 columns):
 #   Column        Non-Null Count  Dtype 
---  ------        --------------  ----- 
 0   show_id       1450 non-null   object
 1   type          1450 non-null   object
 2   title         1450 non-null   object
 3   director      977 non-null    object
 4   cast          1260 non-null   object
 5   country       1231 non-null   object
 6   date_added    1447 non-null   object
 7   release_year  1450 non-null   int64 
 8   rating        1447 non-null   object
 9   duration      1450 non-null   object
 10  listed_in     1450 non-null   object
 11  description   1450 non-null   object
dtypes: int64(1), object(11)
memory usage: 136.1+ KB
```



Data Transformation

```python
# Creating new columns from existing column
df[['g1','g2','g3']] = df['listed_in'].str.split(',', expand = True)
```

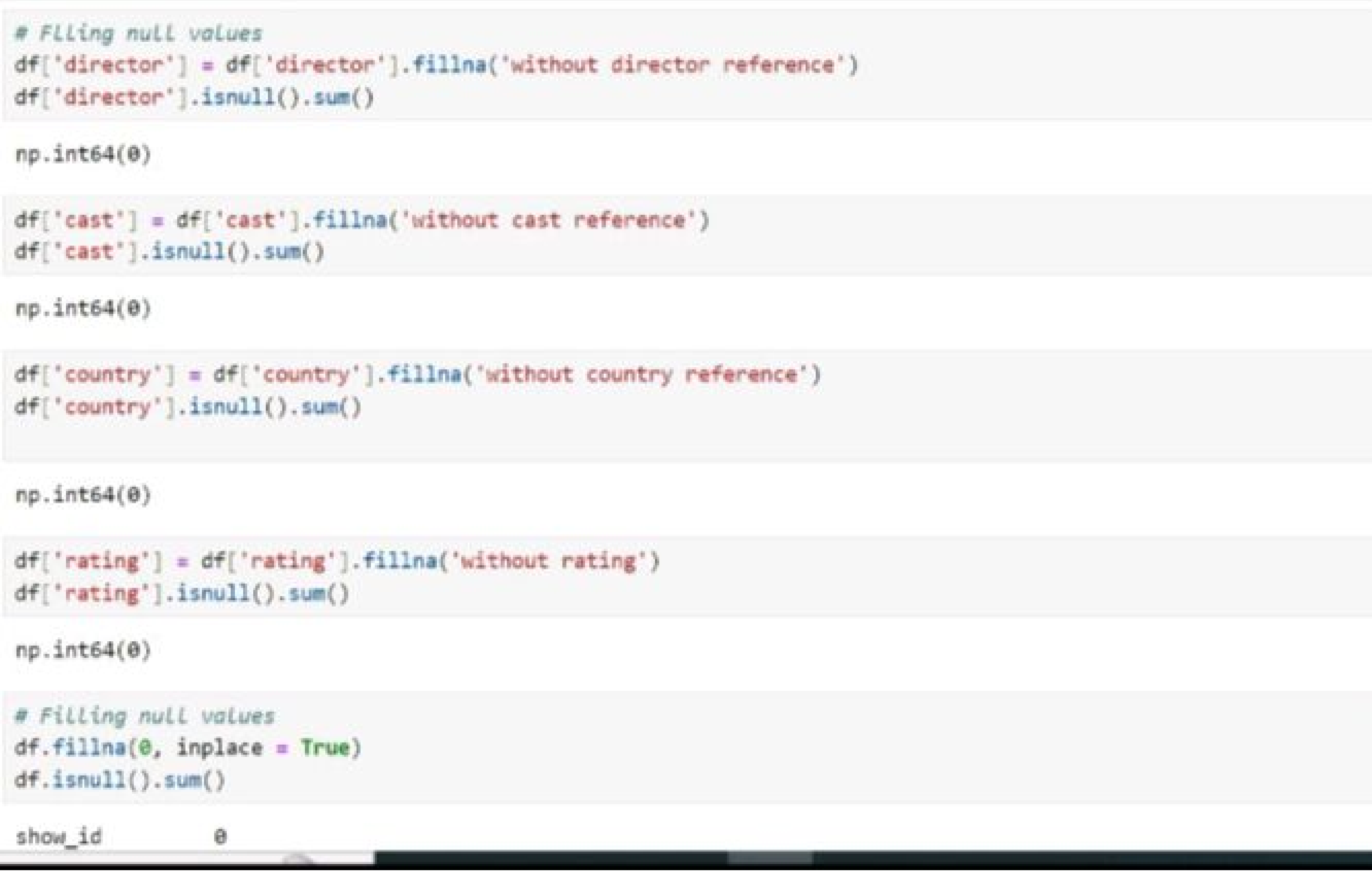
Data Reduction

```python
# Removing unnecessary columns
df.drop(['show_id', 'description', 'listed_in'], axis = 1 ,inplace = True)
```

Data Cleaning

```python
# Checking for null values
df.isnull().sum()
```

```
show_id           0
type              0
title             0
director        473
cast            190
country         219
date_added        3
release_year      0
rating            3
duration          0
listed_in         0
description       0
```



```
# Filling null values
df['director'] = df['director'].fillna('without director reference')
df['director'].isnull().sum()
```

```
np.int64(0)
```

```
df['cast'] = df['cast'].fillna('without cast reference')
df['cast'].isnull().sum()
```

```
np.int64(0)
```

```
df['country'] = df['country'].fillna('without country reference')
df['country'].isnull().sum()
```

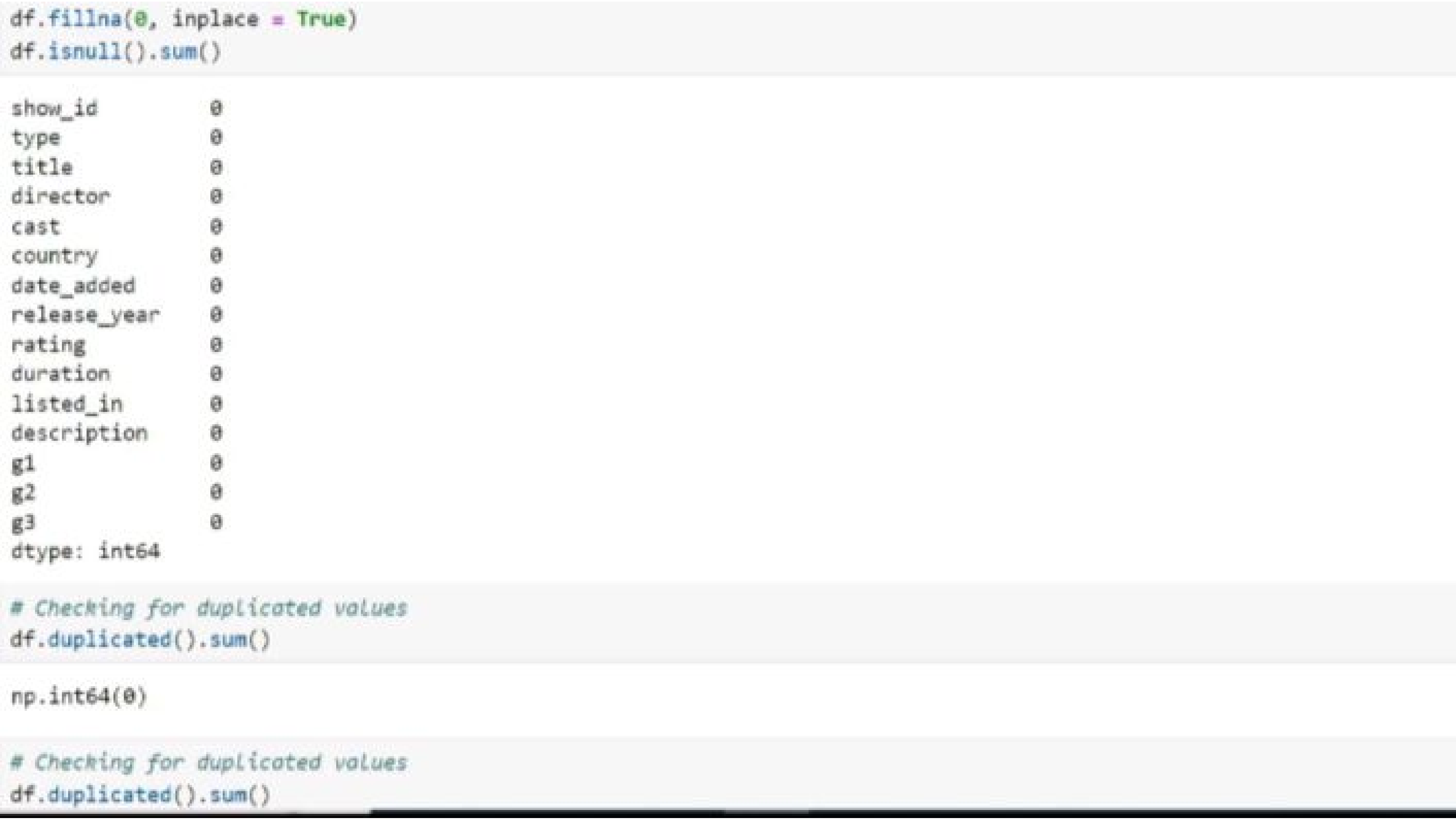
```
np.int64(0)
```

```
df['rating'] = df['rating'].fillna('without rating')
df['rating'].isnull().sum()
```

```
np.int64(0)
```

```
# Filling null values
df.fillna(0, inplace = True)
df.isnull().sum()
```

```
show_id        0
```



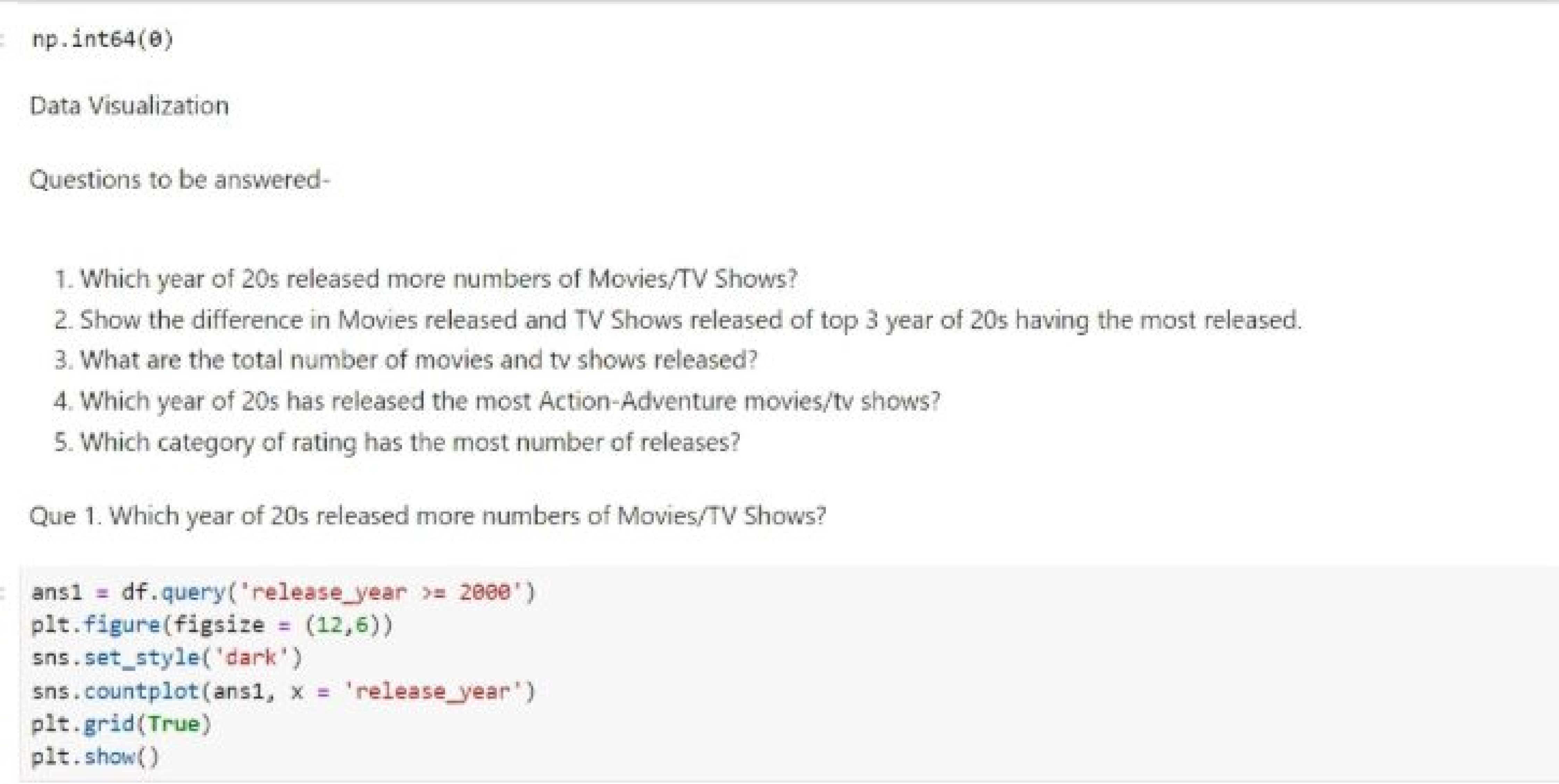
```
df.fillna(0, inplace = True)
df.isnull().sum()
```

```
show_id         0
type            0
title           0
director        0
cast            0
country         0
date_added      0
release_year    0
rating          0
duration        0
listed_in       0
description     0
g1              0
g2              0
g3              0
dtype: int64
```

```
# Checking for duplicated values
df.duplicated().sum()
```

```
np.int64(0)
```

```
# Checking for duplicated values
df.duplicated().sum()
```



```
np.int64(0)
```

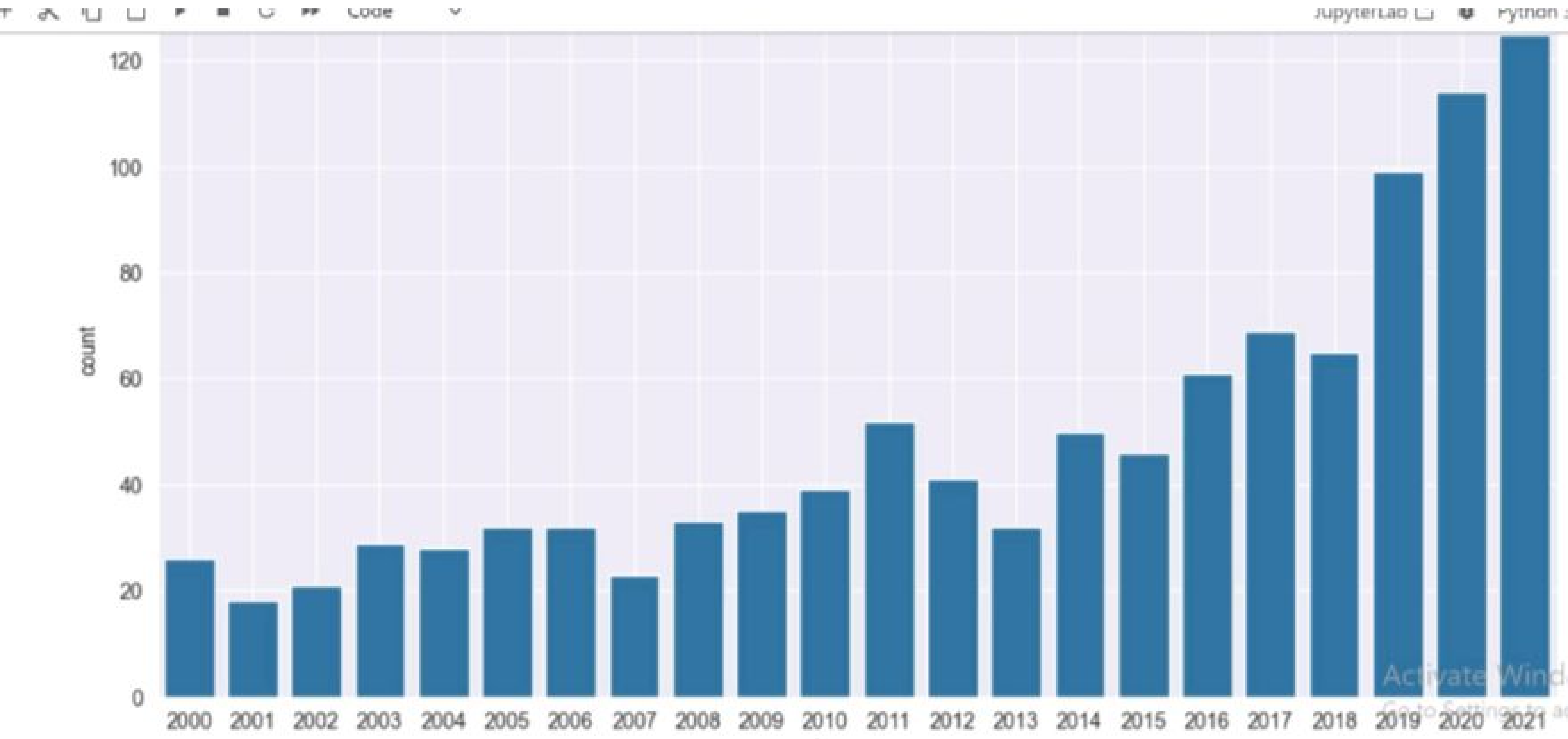
Data Visualization

Questions to be answered-

1. Which year of 20s released more numbers of Movies/TV Shows?
2. Show the difference in Movies released and TV Shows released of top 3 year of 20s having the most released.
3. What are the total number of movies and tv shows released?
4. Which year of 20s has released the most Action-Adventure movies/tv shows?
5. Which category of rating has the most number of releases?

Que 1. Which year of 20s released more numbers of Movies/TV Shows?

```
ans1 = df.query('release_year >= 2000')
plt.figure(figsize = (12,6))
sns.set_style('dark')
sns.countplot(ans1, x = 'release_year')
plt.grid(True)
plt.show()
```


Code
JupyterLab
Python 3
count
0
20
40
60
80
100
120
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
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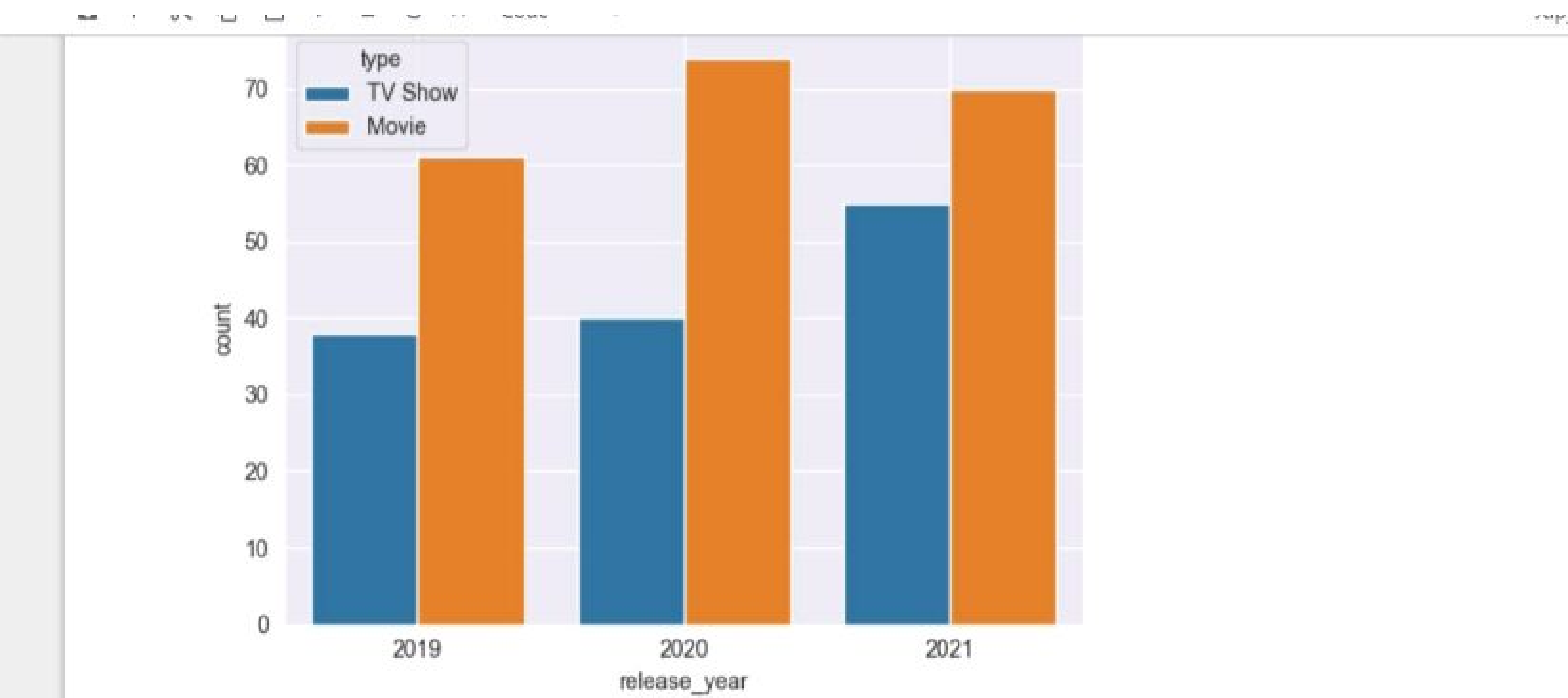
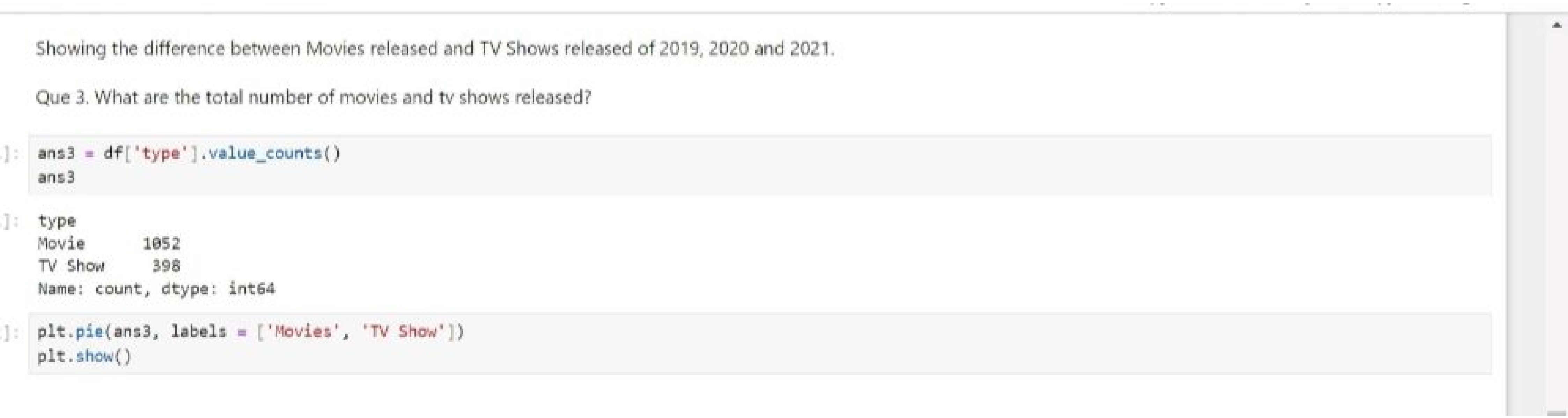
Answer

2020 from 20s released the hightest number of shows.

Que 2. Show the difference in Movies released and TV Shows released of top 3 year of 20s having the most released.

```
ans2 = df.query('release_year == [2020,2021,2019]')
sns.countplot(ans2, x = 'release_year', hue = 'type')
plt.grid(True)
plt.show()
```


type
TV Show
Movie
count
0
10
20
30
40
50
60
70
2019
2020
2021
release_year



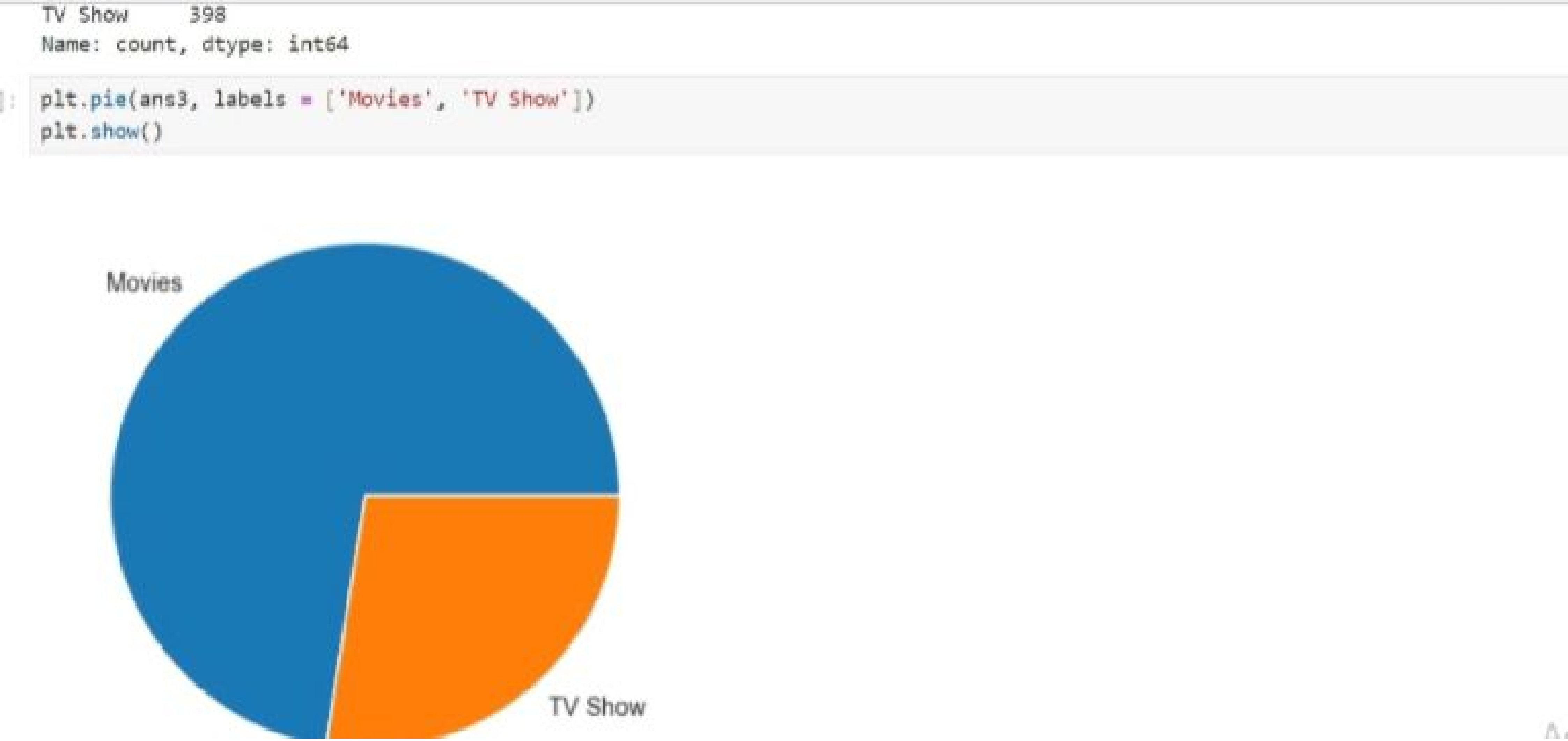
Showing the difference between Movies released and TV Shows released of 2019, 2020 and 2021.

Que 3. What are the total number of movies and tv shows released?

```
ans3 = df['type'].value_counts()
ans3
```

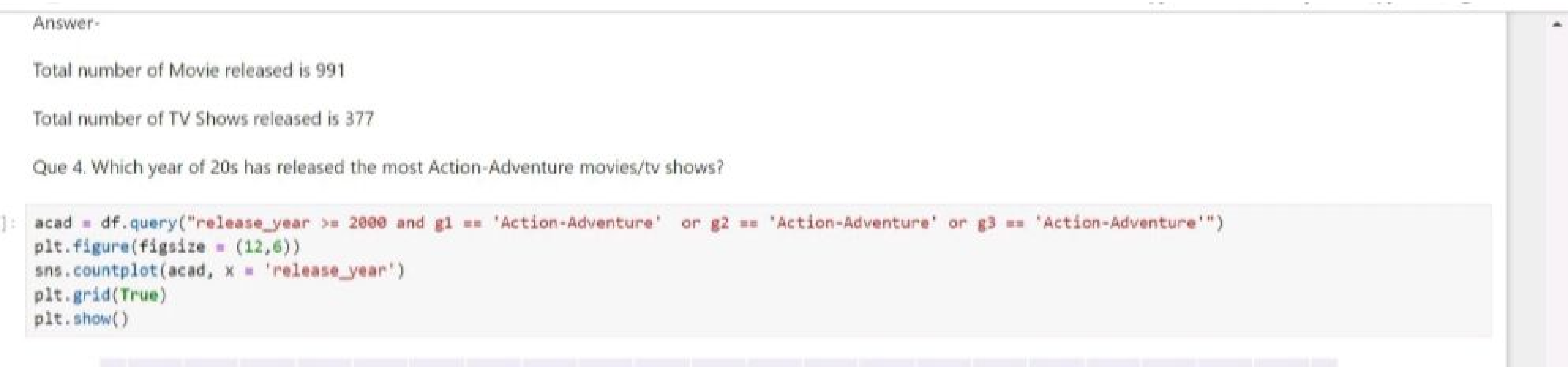
```
type
Movie      1052
TV Show     398
Name: count, dtype: int64
```

```
plt.pie(ans3, labels = ['Movies', 'TV Show'])
plt.show()
```



```
TV Show     398
Name: count, dtype: int64
```

```
plt.pie(ans3, labels = ['Movies', 'TV Show'])
plt.show()
```



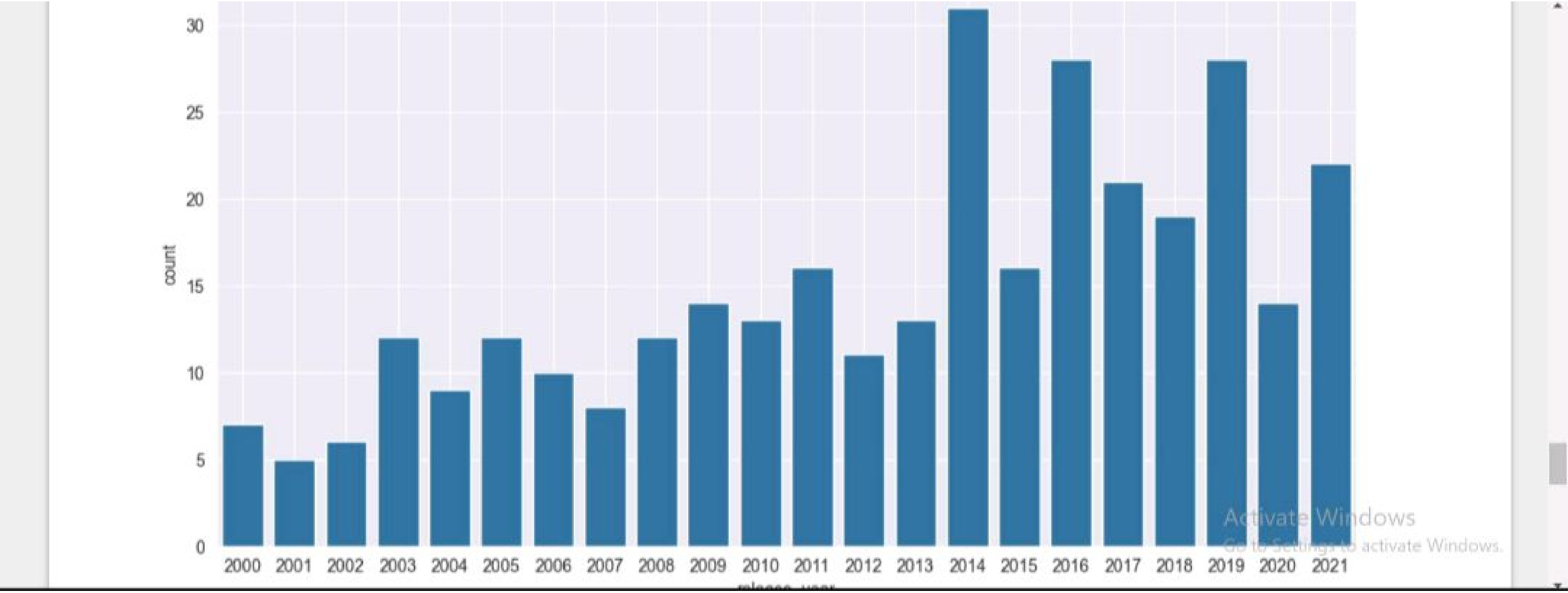
Answer-

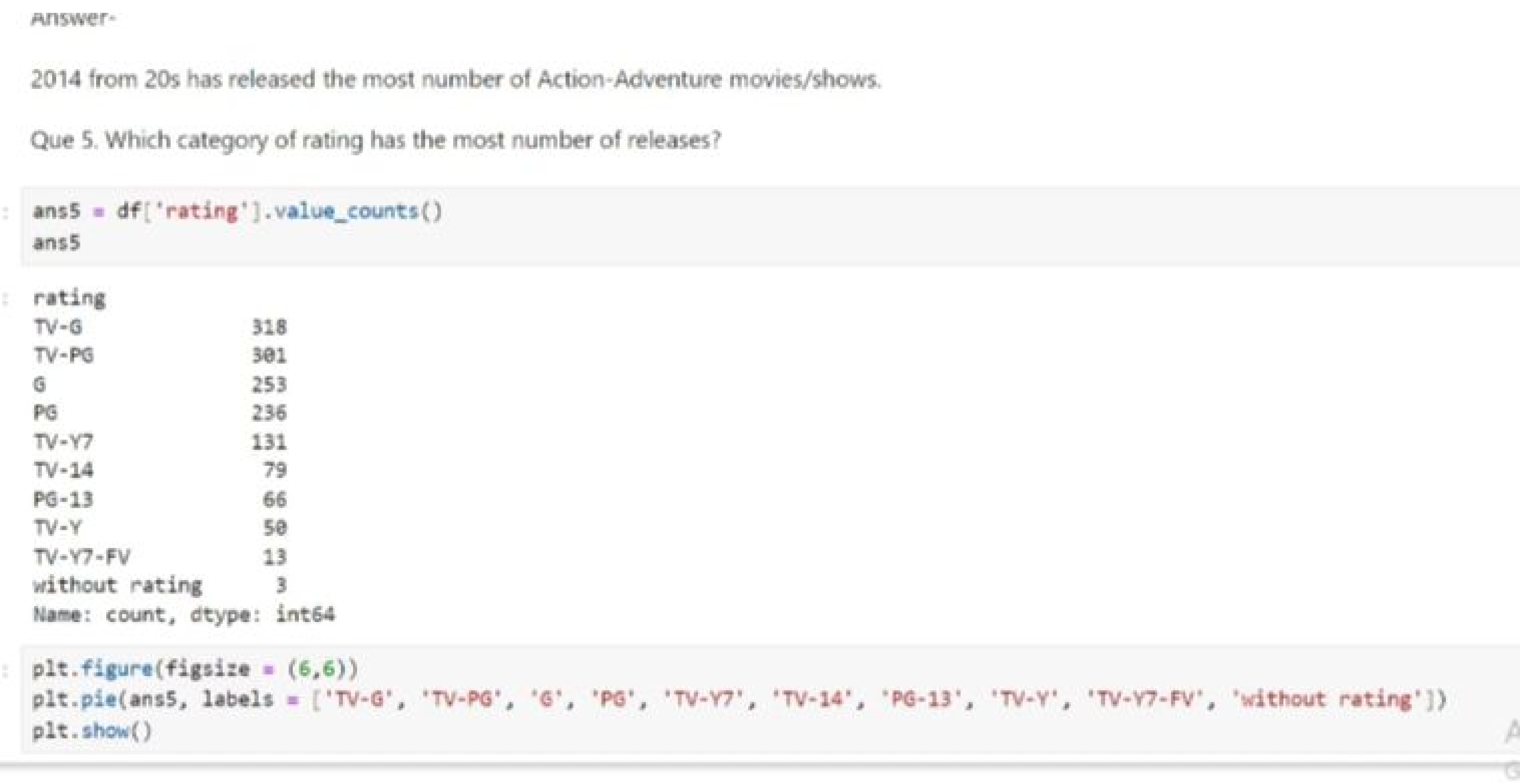
Total number of Movie released is 991

Total number of TV Shows released is 377

Que 4. Which year of 20s has released the most Action-Adventure movies/tv shows?

```
]: acad = df.query("release_year >= 2000 and g1 == 'Action-Adventure'  or g2 == 'Action-Adventure' or g3 == 'Action-Adventure'")
   plt.figure(figsize = (12,6))
   sns.countplot(acad, x = 'release_year')
   plt.grid(True)
   plt.show()
```


30
25
20
15
10
5
0
count
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
release_year
Activate Windows
Go to Settings to activate Windows.



Answer-

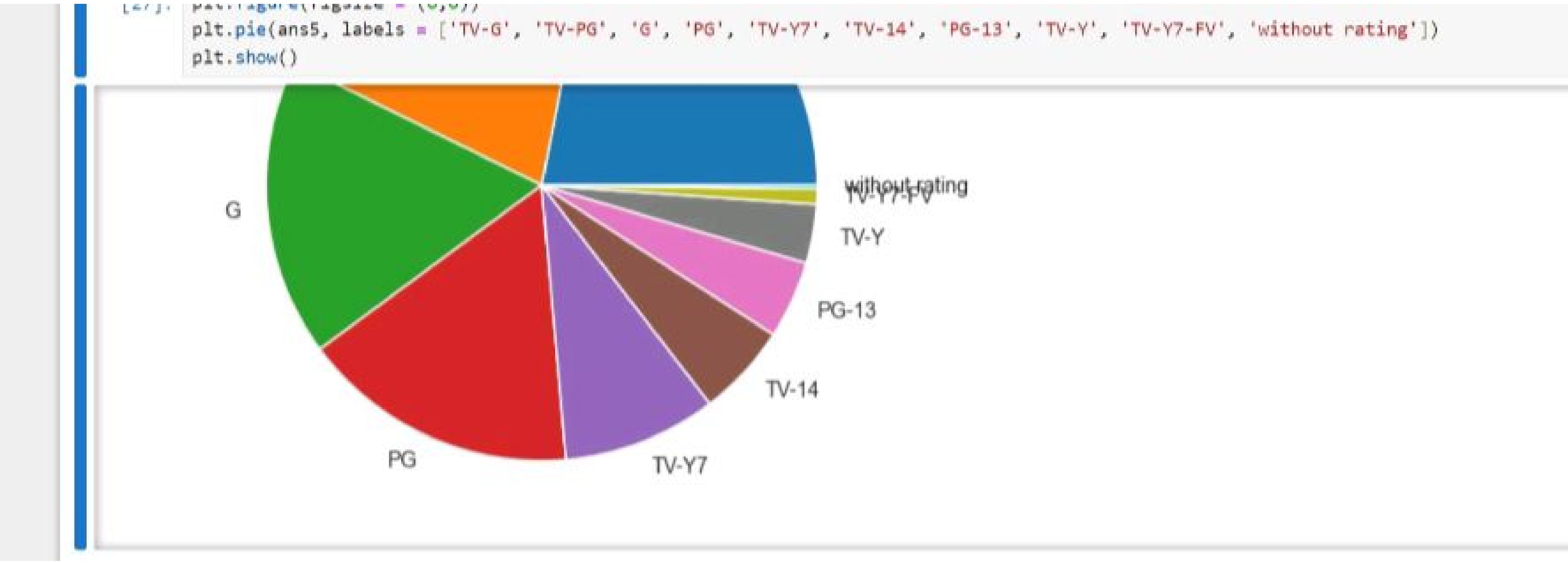
2014 from 20s has released the most number of Action-Adventure movies/shows.

Que 5. Which category of rating has the most number of releases?

```
ans5 = df['rating'].value_counts()
ans5
```

```
rating
TV-G              318
TV-PG             301
G                 253
PG                236
TV-Y7             131
TV-14              79
PG-13              66
TV-Y               50
TV-Y7-FV           13
without rating      3
Name: count, dtype: int64
```

```
plt.figure(figsize = (6,6))
plt.pie(ans5, labels = ['TV-G', 'TV-PG', 'G', 'PG', 'TV-Y7', 'TV-14', 'PG-13', 'TV-Y', 'TV-Y7-FV', 'without rating'])
plt.show()
```



```
[27]: plt.figure(figsize = (8,8))
      plt.pie(ans5, labels = ['TV-G', 'TV-PG', 'G', 'PG', 'TV-Y7', 'TV-14', 'PG-13', 'TV-Y', 'TV-Y7-FV', 'without rating'])
      plt.show()
```