

VideoGame Analysis

Import Library

In [1]:

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from matplotlib import style
import warnings
warnings.filterwarnings('ignore')
%matplotlib inline
```

Read File

In [2]:

```
v=pd.read_excel('C:/LINGESH/Data/vgsales.xls')
```

View the Data

In [3]:



```
v
```

Out[3]:

	Rank	Name	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sa
0	1	Wii Sports	Wii	2006.0	Sports	Nintendo	41.49	29.02	3
1	2	Super Mario Bros.	NES	1985.0	Platform	Nintendo	29.08	3.58	6
2	3	Mario Kart Wii	Wii	2008.0	Racing	Nintendo	15.85	12.88	3
3	4	Wii Sports Resort	Wii	2009.0	Sports	Nintendo	15.75	11.01	3
4	5	Pokemon Red/Pokemon Blue	GB	1996.0	Role-Playing	Nintendo	11.27	8.89	10
...
16593	16596	Woody Woodpecker in Crazy Castle 5	GBA	2002.0	Platform	Kemco	0.01	0.00	0
16594	16597	Men in Black II: Alien Escape	GC	2003.0	Shooter	Infogrames	0.01	0.00	0
16595	16598	SCORE International Baja 1000: The Official Game	PS2	2008.0	Racing	Activision	0.00	0.00	0
16596	16599	Know How 2	DS	2010.0	Puzzle	7G//AMES	0.00	0.01	0
16597	16600	Spirits & Spells	GBA	2003.0	Platform	Wanadoo	0.01	0.00	0

16598 rows × 11 columns

In [4]:



```
v.columns
```

Out[4]:

```
Index(['Rank', 'Name', 'Platform', 'Year', 'Genre', 'Publisher', 'NA_Sales',  
       'EU_Sales', 'JP_Sales', 'Other_Sales', 'Global_Sales'],  
      dtype='object')
```

Rename the columns

In [5]:

```
v.rename(columns={'Name': 'GamesName'}, inplace=True)
```

In [6]:

```
v
```

Out[6]:

	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sa
0	1	Wii Sports	Wii	2006.0	Sports	Nintendo	41.49	29.02	3
1	2	Super Mario Bros.	NES	1985.0	Platform	Nintendo	29.08	3.58	6
2	3	Mario Kart Wii	Wii	2008.0	Racing	Nintendo	15.85	12.88	3
3	4	Wii Sports Resort	Wii	2009.0	Sports	Nintendo	15.75	11.01	3
4	5	Pokemon Red/Pokemon Blue	GB	1996.0	Role-Playing	Nintendo	11.27	8.89	10
...
16593	16596	Woody Woodpecker in Crazy Castle 5	GBA	2002.0	Platform	Kemco	0.01	0.00	0
16594	16597	Men in Black II: Alien Escape	GC	2003.0	Shooter	Infogrames	0.01	0.00	0
16595	16598	SCORE International Baja 1000: The Official Game	PS2	2008.0	Racing	Activision	0.00	0.00	0
16596	16599	Know How 2	DS	2010.0	Puzzle	7G//AMES	0.00	0.01	0
16597	16600	Spirits & Spells	GBA	2003.0	Platform	Wanadoo	0.01	0.00	0

16598 rows × 11 columns

To print top 5 rows

In [23]:



```
v.head(5)
```

Out[23]:

Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales	C
0	1	Wii Sports	Wii	2006.0	Sports	Nintendo	41.49	29.02	3.77
1	2	Super Mario Bros.	NES	1985.0	Platform	Nintendo	29.08	3.58	6.81
2	3	Mario Kart Wii	Wii	2008.0	Racing	Nintendo	15.85	12.88	3.79
3	4	Wii Sports Resort	Wii	2009.0	Sports	Nintendo	15.75	11.01	3.28
4	5	Pokemon Red/Pokemon Blue	GB	1996.0	Role-Playing	Nintendo	11.27	8.89	10.22

To print bottom 5 rows

In [7]:



```
v.tail(5)
```

Out[7]:

Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sal
16593	16596	Woody Woodpecker in Crazy Castle 5	GBA	2002.0	Platform	Kemco	0.01	0.00
16594	16597	Men in Black II: Alien Escape	GC	2003.0	Shooter	Infogrames	0.01	0.00
16595	16598	SCORE International Baja 1000: The Official Game	PS2	2008.0	Racing	Activision	0.00	0.00
16596	16599	Know How 2	DS	2010.0	Puzzle	7G//AMES	0.00	0.01
16597	16600	Spirits & Spells	GBA	2003.0	Platform	Wanadoo	0.01	0.00

To check how many columns and rows

In [8]:



```
v.shape
```

Out[8]:

```
(16598, 11)
```

to check the data types of attributes

In [9]:



```
v.dtypes
```

Out[9]:

```
Rank           int64
GamesName     object
Platform       object
Year           float64
Genre           object
Publisher      object
NA_Sales       float64
EU_Sales       float64
JP_Sales       float64
Other_Sales    float64
Global_Sales   float64
dtype: object
```

To print the number of dimensions

In [10]:



```
v.ndim
```

Out[10]:

```
2
```

To print the index

In [11]:



```
v.index
```

Out[11]:

```
RangeIndex(start=0, stop=16598, step=1)
```

To check the size of the data

In [12]:

```
v.size
```

Out[12]:

182578

To check the whether data type is empty or not

In [13]:

```
v.empty
```

Out[13]:

False

Print the column names

In [14]:

```
v.columns
```

Out[14]:

```
Index(['Rank', 'GamesName', 'Platform', 'Year', 'Genre', 'Publisher',
       'NA_Sales', 'EU_Sales', 'JP_Sales', 'Other_Sales', 'Global_Sales'],
      dtype='object')
```

print the information of dataset

In [15]:



```
v.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 16598 entries, 0 to 16597
Data columns (total 11 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   Rank              16598 non-null   int64  
 1   GamesName         16598 non-null   object  
 2   Platform          16598 non-null   object  
 3   Year              16327 non-null   float64 
 4   Genre             16598 non-null   object  
 5   Publisher         16540 non-null   object  
 6   NA_Sales          16598 non-null   float64 
 7   EU_Sales          16598 non-null   float64 
 8   JP_Sales          16598 non-null   float64 
 9   Other_Sales       16598 non-null   float64 
 10  Global_Sales     16598 non-null   float64 
dtypes: float64(6), int64(1), object(4)
memory usage: 1.4+ MB
```

Print statistical information

In [16]:



```
v.describe()
```

Out[16]:

	Rank	Year	NA_Sales	EU_Sales	JP_Sales	Other_Sales	GI
count	16598.000000	16327.000000	16598.000000	16598.000000	16598.000000	16598.000000	16
mean	8300.605254	2006.406443	0.264667	0.146652	0.077782	0.048063	
std	4791.853933	5.828981	0.816683	0.505351	0.309291	0.188588	
min	1.000000	1980.000000	0.000000	0.000000	0.000000	0.000000	
25%	4151.250000	2003.000000	0.000000	0.000000	0.000000	0.000000	
50%	8300.500000	2007.000000	0.080000	0.020000	0.000000	0.010000	
75%	12449.750000	2010.000000	0.240000	0.110000	0.040000	0.040000	
max	16600.000000	2020.000000	41.490000	29.020000	10.220000	10.570000	

Print all statistical information

In [17]:



```
v.describe(include='all')
```

Out[17]:

	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	
count	16598.000000	16598	16598	16327.000000	16598	16540	16598.000000	16
unique	NaN	11493	31	NaN	12	578	NaN	
top	NaN	Need for Speed: Most Wanted	DS	NaN	Action	Electronic Arts	NaN	
freq	NaN	12	2163	NaN	3316	1351	NaN	
mean	8300.605254	NaN	NaN	2006.406443	NaN	NaN	0.264667	
std	4791.853933	NaN	NaN	5.828981	NaN	NaN	0.816683	
min	1.000000	NaN	NaN	1980.000000	NaN	NaN	0.000000	
25%	4151.250000	NaN	NaN	2003.000000	NaN	NaN	0.000000	
50%	8300.500000	NaN	NaN	2007.000000	NaN	NaN	0.080000	
75%	12449.750000	NaN	NaN	2010.000000	NaN	NaN	0.240000	
max	16600.000000	NaN	NaN	2020.000000	NaN	NaN	41.490000	

In [18]:



v

Out[18]:

	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sa
0	1	Wii Sports	Wii	2006.0	Sports	Nintendo	41.49	29.02	3
1	2	Super Mario Bros.	NES	1985.0	Platform	Nintendo	29.08	3.58	6
2	3	Mario Kart Wii	Wii	2008.0	Racing	Nintendo	15.85	12.88	3
3	4	Wii Sports Resort	Wii	2009.0	Sports	Nintendo	15.75	11.01	3
4	5	Pokemon Red/Pokemon Blue	GB	1996.0	Role-Playing	Nintendo	11.27	8.89	10
...
16593	16596	Woody Woodpecker in Crazy Castle 5	GBA	2002.0	Platform	Kemco	0.01	0.00	0
16594	16597	Men in Black II: Alien Escape	GC	2003.0	Shooter	Infogrames	0.01	0.00	0
16595	16598	SCORE International Baja 1000: The Official Game	PS2	2008.0	Racing	Activision	0.00	0.00	0
16596	16599	Know How 2	DS	2010.0	Puzzle	7G//AMES	0.00	0.01	0
16597	16600	Spirits & Spells	GBA	2003.0	Platform	Wanadoo	0.01	0.00	0

16598 rows × 11 columns

To check is there any missing value

In [19]:



```
v.isna()
```

Out[19]:

	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales
0	False	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False
...
16593	False	False	False	False	False	False	False	False	False
16594	False	False	False	False	False	False	False	False	False
16595	False	False	False	False	False	False	False	False	False
16596	False	False	False	False	False	False	False	False	False
16597	False	False	False	False	False	False	False	False	False

16598 rows × 11 columns

sum of missing value

In [20]:



```
v.isna().sum()
```

Out[20]:

```
Rank          0
GamesName     0
Platform       0
Year         271
Genre          0
Publisher      58
NA_Sales      0
EU_Sales      0
JP_Sales       0
Other_Sales    0
Global_Sales   0
dtype: int64
```

In [21]:

▶

```
v.isnull().sum()
```

Out[21]:

```
Rank          0
GamesName     0
Platform      0
Year         271
Genre          0
Publisher     58
NA_Sales      0
EU_Sales      0
JP_Sales      0
Other_Sales   0
Global_Sales  0
dtype: int64
```

Drop the column

In [22]:



```
v
```

Out[22]:

	Rank	GameName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales
0	1	Wii Sports	Wii	2006.0	Sports	Nintendo	41.49	29.02	3
1	2	Super Mario Bros.	NES	1985.0	Platform	Nintendo	29.08	3.58	6
2	3	Mario Kart Wii	Wii	2008.0	Racing	Nintendo	15.85	12.88	3
3	4	Wii Sports Resort	Wii	2009.0	Sports	Nintendo	15.75	11.01	3
4	5	Pokemon Red/Pokemon Blue	GB	1996.0	Role-Playing	Nintendo	11.27	8.89	10
...
16593	16596	Woody Woodpecker in Crazy Castle 5	GBA	2002.0	Platform	Kemco	0.01	0.00	0
16594	16597	Men in Black II: Alien Escape	GC	2003.0	Shooter	Infogrames	0.01	0.00	0
16595	16598	SCORE International Baja 1000: The Official Game	PS2	2008.0	Racing	Activision	0.00	0.00	0
16596	16599	Know How 2	DS	2010.0	Puzzle	7G//AMES	0.00	0.01	0
16597	16600	Spirits & Spells	GBA	2003.0	Platform	Wanadoo	0.01	0.00	0

16598 rows × 11 columns

In [23]:



```
v.drop('Global_Sales',axis=1,inplace=True)
```

In [24]:

▶

v

Out[24]:

	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sa
0	1	Wii Sports	Wii	2006.0	Sports	Nintendo	41.49	29.02	3
1	2	Super Mario Bros.	NES	1985.0	Platform	Nintendo	29.08	3.58	6
2	3	Mario Kart Wii	Wii	2008.0	Racing	Nintendo	15.85	12.88	3
3	4	Wii Sports Resort	Wii	2009.0	Sports	Nintendo	15.75	11.01	3
4	5	Pokemon Red/Pokemon Blue	GB	1996.0	Role-Playing	Nintendo	11.27	8.89	10
...
16593	16596	Woody Woodpecker in Crazy Castle 5	GBA	2002.0	Platform	Kemco	0.01	0.00	0
16594	16597	Men in Black II: Alien Escape	GC	2003.0	Shooter	Infogrames	0.01	0.00	0
16595	16598	SCORE International Baja 1000: The Official Game	PS2	2008.0	Racing	Activision	0.00	0.00	0
16596	16599	Know How 2	DS	2010.0	Puzzle	7G//AMES	0.00	0.01	0
16597	16600	Spirits & Spells	GBA	2003.0	Platform	Wanadoo	0.01	0.00	0

16598 rows × 10 columns

Check the duplicated values

In [25]:



```
v.duplicated()
```

Out[25]:

```
0      False
1      False
2      False
3      False
4      False
...
16593  False
16594  False
16595  False
16596  False
16597  False
Length: 16598, dtype: bool
```

Sum of duplicated value

In [26]:



```
v.duplicated().sum()
```

Out[26]:

```
0
```

number of unique values in dataset

In [27]:



```
v.nunique()
```

Out[27]:

```
Rank          16598
GamesName    11493
Platform      31
Year          39
Genre          12
Publisher     578
NA_Sales      409
EU_Sales      305
JP_Sales      244
Other_Sales   157
dtype: int64
```

Print unique genre in data set

In [28]:



```
v.Genre.unique()
```

Out[28]:

```
array(['Sports', 'Platform', 'Racing', 'Role-Playing', 'Puzzle', 'Misc',
       'Shooter', 'Simulation', 'Action', 'Fighting', 'Adventure',
       'Strategy'], dtype=object)
```

In [30]:



```
v['Genre'].unique()
```

Out[30]:

```
array(['Sports', 'Platform', 'Racing', 'Role-Playing', 'Puzzle', 'Misc',
       'Shooter', 'Simulation', 'Action', 'Fighting', 'Adventure',
       'Strategy'], dtype=object)
```

count the Games name

In [29]:



```
v.GamesName.value_counts()
```

Out[29]:

Need for Speed: Most Wanted	12
LEGO Marvel Super Heroes	9
FIFA 14	9
Madden NFL 07	9
Ratatouille	9
	..
Starry ? Sky: After Spring	1
Imabikisou	1
Resident Evil: Outbreak	1
Shining Wind	1
Namco Museum 50th Anniversary (JP sales)	1
Name: GamesName, Length: 11493, dtype: int64	

Count the publisher

In [30]:



```
v.Publisher.value_counts()
```

Out[30]:

```
Electronic Arts          1351
Activision               975
Namco Bandai Games     932
Ubisoft                  921
Konami Digital Entertainment 832
...
TalonSoft                 1
Commseed                  1
Gameloft                  1
Interchannel-Holon        1
PM Studios                 1
Name: Publisher, Length: 578, dtype: int64
```

to show the maximum number of Na_Sales

In [31]:



```
v.sort_values('NA_Sales', ascending=False).head(5)
```

Out[31]:

Rank	Game Name	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales	Other
0	1	Wii Sports	Wii	2006.0	Sports	Nintendo	41.49	29.02	3.77
1	2	Super Mario Bros.	NES	1985.0	Platform	Nintendo	29.08	3.58	6.81
9	10	Duck Hunt	NES	1984.0	Shooter	Nintendo	26.93	0.63	0.28
5	6	Tetris	GB	1989.0	Puzzle	Nintendo	23.20	2.26	4.22
2	3	Mario Kart Wii	Wii	2008.0	Racing	Nintendo	15.85	12.88	3.79

To show the maximum number EU_Sales

In [32]:

```
v.sort_values('EU_Sales', ascending=False).head(5)
```

Out[32]:

	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales
0	1	Wii Sports	Wii	2006.0	Sports	Nintendo	41.49	29.02	3.77
2	3	Mario Kart Wii	Wii	2008.0	Racing	Nintendo	15.85	12.88	3.79
3	4	Wii Sports Resort	Wii	2009.0	Sports	Nintendo	15.75	11.01	3.28
10	11	Nintendogs	DS	2005.0	Simulation	Nintendo	9.07	11.00	1.93
16	17	Grand Theft Auto V	PS3	2013.0	Action	Take-Two Interactive	7.01	9.27	0.97

To show the minimum number EU_Sales

In [33]:

```
v.sort_values('EU_Sales').head(5)
```

Out[33]:

	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP
16597	16600	Spirits & Spells	GBA	2003.0	Platform	Wanadoo	0.01	0.0	
5645	5647	Street Fighter Alpha 2	SAT	1995.0	Fighting	Virgin Interactive	0.00	0.0	
5644	5646	Seaman: Kindan no Pet - Gaze Hakushi no Jikken...	PS2	2001.0	Simulation	ASCII Entertainment	0.00	0.0	
11968	11970	Rec Room Games	DS	2011.0	Sports	Destineer	0.07	0.0	
11971	11973	Pro Yaky? Spirits 2011	3DS	2011.0	Sports	Konami Digital Entertainment	0.00	0.0	

To view the record of Sports

In [36]:



```
rec=v[v['Genre']=='Sports']  
rec
```

Out[36]:

	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales
0	1	Wii Sports	Wii	2006.0	Sports	Nintendo	41.49	29.02	3.77
3	4	Wii Sports Resort	Wii	2009.0	Sports	Nintendo	15.75	11.01	3.28
13	14	Wii Fit	Wii	2007.0	Sports	Nintendo	8.94	8.03	3.60
14	15	Wii Fit Plus	Wii	2009.0	Sports	Nintendo	9.09	8.59	2.53
77	78	FIFA 16	PS4	2015.0	Sports	Electronic Arts	1.11	6.06	0.06
...
16576	16579	Rugby Challenge 3	XOne	2016.0	Sports	Alternative Software	0.00	0.01	0.00
16578	16581	Outdoors Unleashed: Africa 3D	3DS	2011.0	Sports	Mastiff	0.01	0.00	0.00
16579	16582	PGA European Tour	N64	2000.0	Sports	Infogrames	0.01	0.00	0.00
16581	16584	Fit & Fun	Wii	2011.0	Sports	Unknown	0.00	0.01	0.00
16587	16590	Mezase!! Tsuri Master DS	DS	2009.0	Sports	Hudson Soft	0.00	0.00	0.01

2346 rows × 10 columns

Maximum publisher of sports games

In [37]:



```
rec.sort_values('Publisher', ascending=False).head(5)
```

Out[37]:

	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_S
13684	13686	Yourself Fitness	PS2	2005.0	Sports	responDESIGN	0.02	0.02	
10945	10947	Yourself Fitness	XB	2004.0	Sports	responDESIGN	0.07	0.02	
5917	5919	Reel Fishing: Angler's Dream	Wii	2009.0	Sports	Zushi Games	0.26	0.01	
5209	5211	North American Hunting Extravaganza	Wii	2008.0	Sports	Zushi Games	0.33	0.00	
7445	7447	StokEd	X360	2009.0	Sports	Zushi Games	0.18	0.01	

Grouping different types Na_sales,eu_sales,jp_sales

In [39]:



```
gw=v.groupby(['Genre']).agg({'NA_Sales':'sum','EU_Sales':'sum','JP_Sales':'sum'})  
gw
```

Out[39]:

Genre	NA_Sales	EU_Sales	JP_Sales
Action	877.83	525.00	159.95
Adventure	105.80	64.13	52.07
Fighting	223.59	101.32	87.35
Misc	410.24	215.98	107.76
Platform	447.05	201.63	130.77
Puzzle	123.78	50.78	57.31
Racing	359.42	238.39	56.69
Role-Playing	327.28	188.06	352.31
Shooter	582.60	313.27	38.28
Simulation	183.31	113.38	63.70
Sports	683.35	376.85	135.37
Strategy	68.70	45.34	49.46

Total number EU_SALES

In [40]:

```
gw['EU_Sales'].iloc[-1]
```

Out[40]:

45.34000000000005

Total number JP_SALES

In [41]:

```
gw['JP_Sales'].iloc[-1]
```

Out[41]:

49.46000000000003

Total number of SALES

In [42]:

```
gw['EU_Sales'].iloc[-1]+gw['NA_Sales'].iloc[-1]+gw['JP_Sales'].iloc[-1]
```

Out[42]:

163.50000000000028

Check the co relationship between data

In [43]:

```
v.corr()
```

Out[43]:

	Rank	Year	NA_Sales	EU_Sales	JP_Sales	Other_Sales
Rank	1.000000	0.178814	-0.401362	-0.379123	-0.267785	-0.332986
Year	0.178814	1.000000	-0.091402	0.006014	-0.169316	0.041058
NA_Sales	-0.401362	-0.091402	1.000000	0.767727	0.449787	0.634737
EU_Sales	-0.379123	0.006014	0.767727	1.000000	0.435584	0.726385
JP_Sales	-0.267785	-0.169316	0.449787	0.435584	1.000000	0.290186
Other_Sales	-0.332986	0.041058	0.634737	0.726385	0.290186	1.000000

To print random data

In [44]:

▶

```
v.sample(5)
```

Out[44]:

	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_S
14864	14867	Monster Hunter Frontier Online: Forward 2	X360	2011.0	Role-Playing	Capcom	0.00	0.00	
8010	8012	Indiana Jones and the Emperor's Tomb	XB	2003.0	Action	LucasArts	0.14	0.04	
5413	5415	Tiny Tank	PS	1998.0	Action	Sony Computer Entertainment	0.19	0.13	
7286	7288	Jackie Chan: Stuntmaster	PS	1999.0	Action	Sony Computer Entertainment	0.12	0.08	
8604	8606	TimeShift	PS3	2007.0	Shooter	Vivendi Games	0.14	0.01	

print the record which are equal sale

In [45]:



```
v[v.EU_Sales==v.NA_Sales]
```

Out[45]:

	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales
214	215	Monster Hunter Freedom 3	PSP	2010.0	Role-Playing	Capcom	0.00	0.00	
253	254	Resistance: Fall of Man	PS3	2006.0	Shooter	Sony Computer Entertainment	1.73	1.73	
326	327	Ratchet & Clank: Size Matters	PSP	2007.0	Platform	Sony Computer Entertainment	1.40	1.40	
338	339	Friend Collection	DS	2009.0	Misc	Nintendo	0.00	0.00	
383	384	Monster Hunter 4	3DS	2013.0	Role-Playing	Capcom	0.00	0.00	
...
16580	16583	Real Rode	PS2	2008.0	Adventure	Kadokawa Shoten	0.00	0.00	
16587	16590	Mezase!! Tsuri Master DS	DS	2009.0	Sports	Hudson Soft	0.00	0.00	
16589	16592	Chou Ezaru wa Akai Hana: Koi wa Tsuki ni Shiru...	PSV	2016.0	Action	dramatic create	0.00	0.00	
16590	16593	Eiyuu Densetsu: Sora no Kiseki Material Collec...	PSP	2007.0	Role-Playing	Falcom Corporation	0.00	0.00	
16595	16598	SCORE International Baja 1000: The Official Game	PS2	2008.0	Racing	Activision	0.00	0.00	

3702 rows × 10 columns

To check particular platform

In [46]:



```
v_PSP=v[v['Platform']=='PSP']
top=v_PSP.tail(5)
top
```

Out[46]:

	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP.
16546	16549	Hyakki Yagyou Kaidan Romance	PSP	2012.0	Action	Quinrose	0.0	0.0	
16568	16571	XI Coliseum	PSP	2006.0	Puzzle	Sony Computer Entertainment	0.0	0.0	
16571	16574	Grisaia no Kajitsu: La Fruit de la Grisaia	PSP	2013.0	Adventure	Prototype	0.0	0.0	
16575	16578	Neo Angelique Special	PSP	2008.0	Adventure	Tecmo Koei	0.0	0.0	
16590	16593	Eiyuu Densetsu: Sora no Kiseki Material Collec...	PSP	2007.0	Role- Playing	Falcom Corporation	0.0	0.0	

In [47]:



```
v_PSP=v[v['Platform']=='PSP']
top=v_PSP.head(5)
top
```

Out[47]:

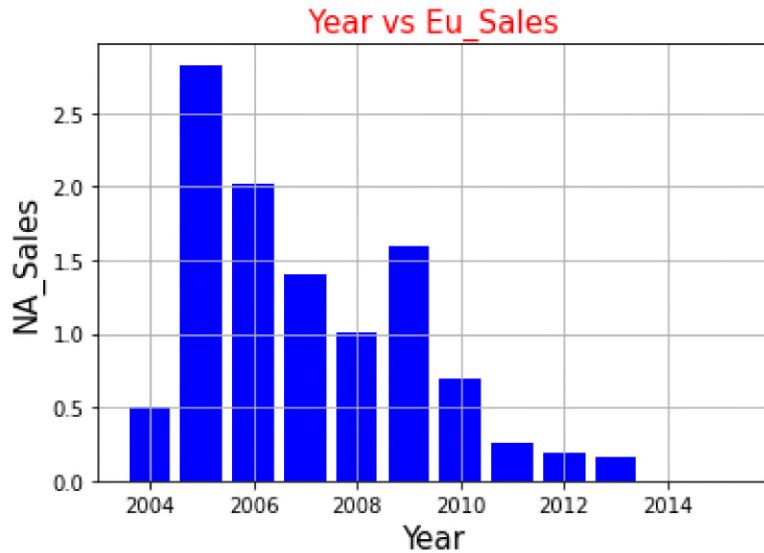
	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sale
90	91	Grand Theft Auto: Liberty City Stories	PSP	2005.0	Action	Take-Two Interactive	2.90	2.83	0.2
161	162	Monster Hunter Freedom Unite	PSP	2008.0	Role-Playing	Capcom	0.47	0.57	4.1
198	199	Grand Theft Auto: Vice City Stories	PSP	2006.0	Action	Take-Two Interactive	1.70	2.02	0.1
214	215	Monster Hunter Freedom 3	PSP	2010.0	Role-Playing	Capcom	0.00	0.00	4.8
266	267	Daxter	PSP	2006.0	Platform	Sony Computer Entertainment	2.45	1.02	0.0

Data visualization

Bar graph

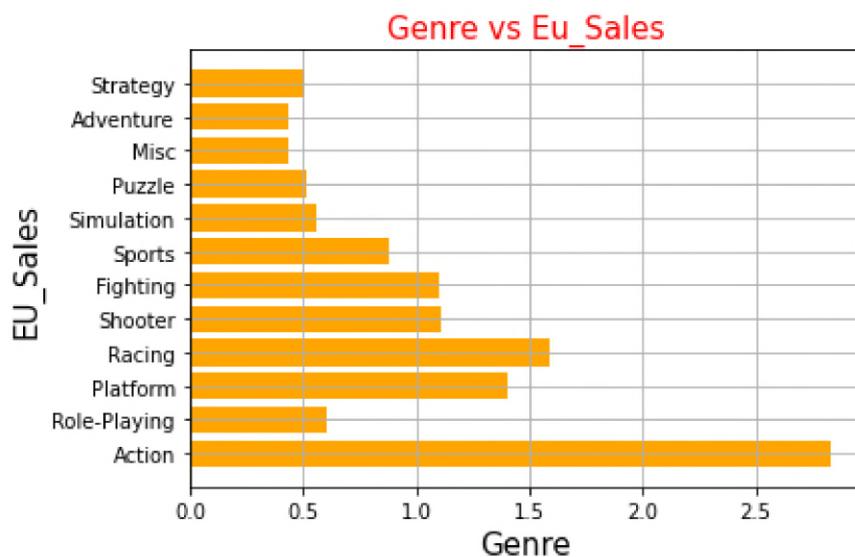
In [48]:

```
plt.bar(v_PSP['Year'],v_PSP['EU_Sales'],color='blue')
plt.title('Year vs Eu_Sales',fontsize=15,color='red')
plt.xlabel('Year',fontsize=15)
plt.ylabel('NA_Sales',fontsize=15)
plt.grid(True)
plt.show()
```



In [50]:

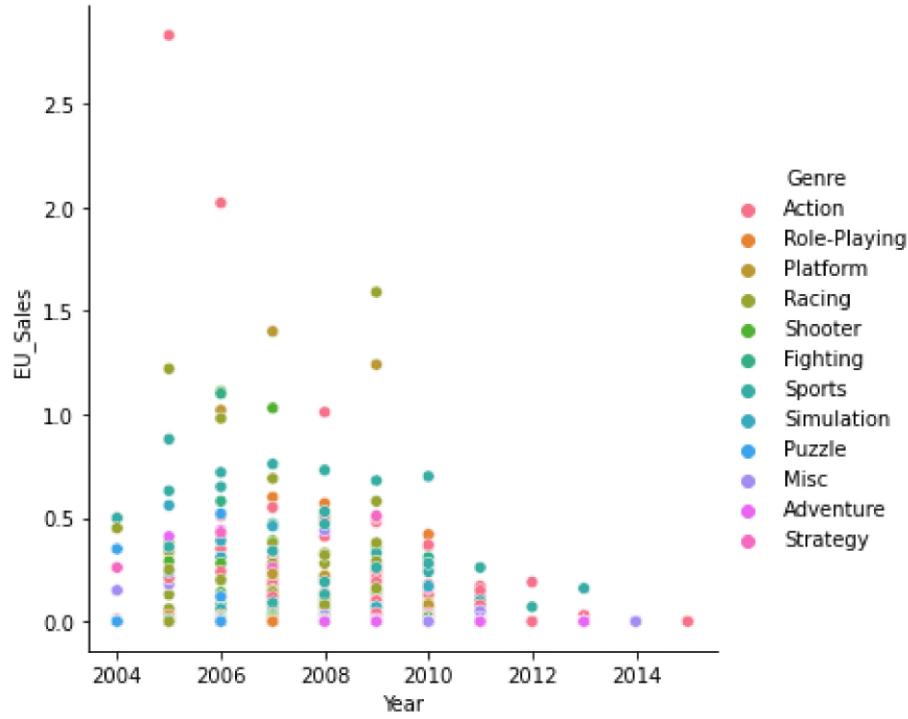
```
plt.barh(v_PSP['Genre'],v_PSP['EU_Sales'],color='orange')
plt.title('Genre vs Eu_Sales',fontsize=15,color='red')
plt.xlabel('Genre',fontsize=15)
plt.ylabel('EU_Sales',fontsize=15)
plt.grid(True)
plt.show()
```



In [51]:

```
plt.figure(figsize=(16,180))
sns.relplot(x='Year',y='EU_Sales',hue='Genre',data=v_PSP)
plt.show()
```

<Figure size 1152x12960 with 0 Axes>



In [52]:

```
v_PS2=v[v['Platform']=='PS2']
```

In [53]:



v_PS2

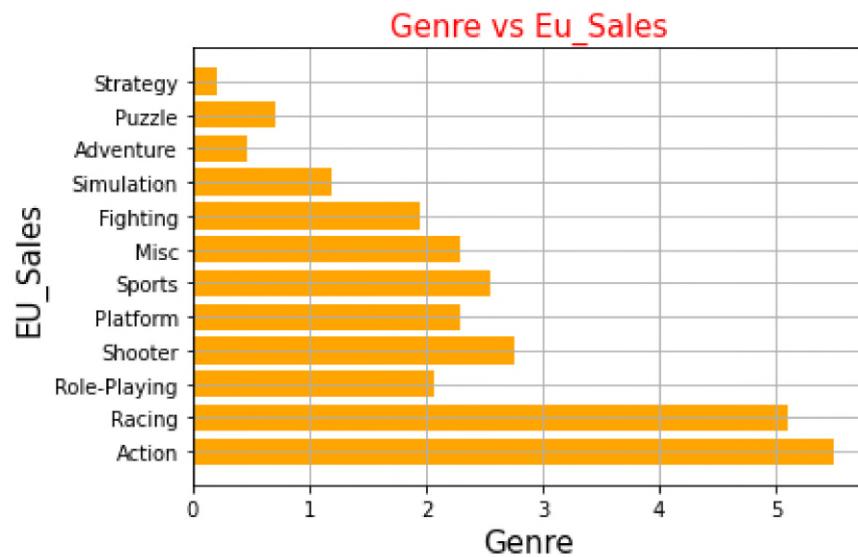
Out[53]:

	Rank	GamesName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_
17	18	Grand Theft Auto: San Andreas	PS2	2004.0	Action	Take-Two Interactive	9.43	0.40	
24	25	Grand Theft Auto: Vice City	PS2	2002.0	Action	Take-Two Interactive	8.41	5.49	
28	29	Gran Turismo 3: A-Spec	PS2	2001.0	Racing	Sony Computer Entertainment	6.85	5.09	
38	39	Grand Theft Auto III	PS2	2001.0	Action	Take-Two Interactive	6.99	4.51	
47	48	Gran Turismo 4	PS2	2004.0	Racing	Sony Computer Entertainment	3.01	0.01	
...
16559	16562	Sugar + Spice! Anoko no Suteki na Nanimokamo	PS2	2008.0	Adventure	Alchemist	0.00	0.00	
16561	16564	Kanokon: Esuui	PS2	2008.0	Adventure	5pb	0.00	0.00	
16572	16575	Scarlett: Nichijou no Kyoukaisen	PS2	2008.0	Adventure	Kadokawa Shoten	0.00	0.00	
16580	16583	Real Rode	PS2	2008.0	Adventure	Kadokawa Shoten	0.00	0.00	
16595	16598	SCORE International Baja 1000: The Official Game	PS2	2008.0	Racing	Activision	0.00	0.00	

2161 rows × 10 columns

In [54]:

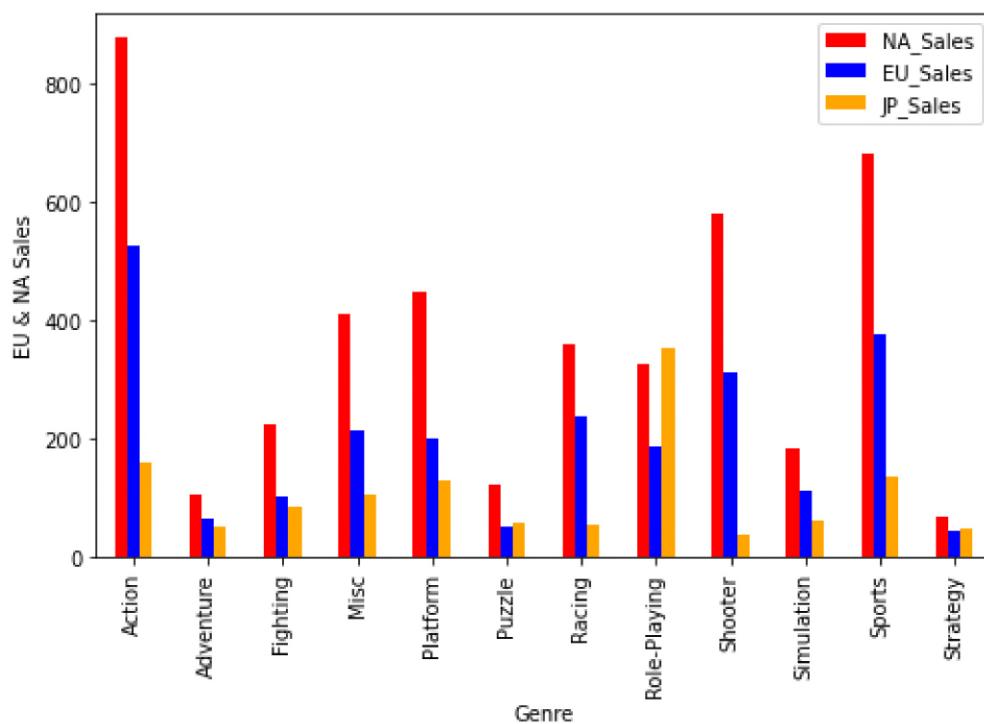
```
plt.barh(v_PS2['Genre'],v_PS2['EU_Sales'],color='orange')
plt.title('Genre vs Eu_Sales',fontsize=15,color='red')
plt.xlabel('Genre',fontsize=15)
plt.ylabel('EU_Sales',fontsize=15)
plt.grid(True)
plt.show()
```



Bar Graph of NA,EU & JP Sales

In [55]:

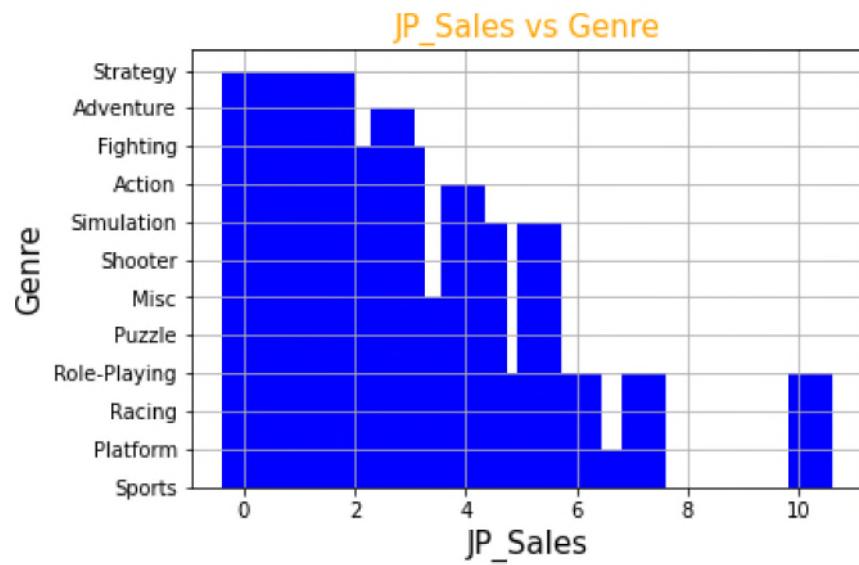
```
v.groupby('Genre')[['NA_Sales', 'EU_Sales', 'JP_Sales']].sum().plot.bar(color=['red', 'blue', 'orange'])  
plt.ylabel('EU & NA Sales')  
plt.show()
```



JP_Sales vs Genre

In [56]:

```
plt.bar(v['JP_Sales'],v['Genre'],color='blue')
plt.title('JP_Sales vs Genre',fontsize=15,color='orange')
plt.xlabel('JP_Sales',fontsize=15)
plt.ylabel('Genre',fontsize=15)
plt.grid(True)
plt.show()
```



In [57]:

▶

v

Out[57]:

	Rank	GameName	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales
0	1	Wii Sports	Wii	2006.0	Sports	Nintendo	41.49	29.02	3
1	2	Super Mario Bros.	NES	1985.0	Platform	Nintendo	29.08	3.58	6
2	3	Mario Kart Wii	Wii	2008.0	Racing	Nintendo	15.85	12.88	3
3	4	Wii Sports Resort	Wii	2009.0	Sports	Nintendo	15.75	11.01	3
4	5	Pokemon Red/Pokemon Blue	GB	1996.0	Role-Playing	Nintendo	11.27	8.89	10
...
16593	16596	Woody Woodpecker in Crazy Castle 5	GBA	2002.0	Platform	Kemco	0.01	0.00	0
16594	16597	Men in Black II: Alien Escape	GC	2003.0	Shooter	Infogrames	0.01	0.00	0
16595	16598	SCORE International Baja 1000: The Official Game	PS2	2008.0	Racing	Activision	0.00	0.00	0
16596	16599	Know How 2	DS	2010.0	Puzzle	7G//AMES	0.00	0.01	0
16597	16600	Spirits & Spells	GBA	2003.0	Platform	Wanadoo	0.01	0.00	0

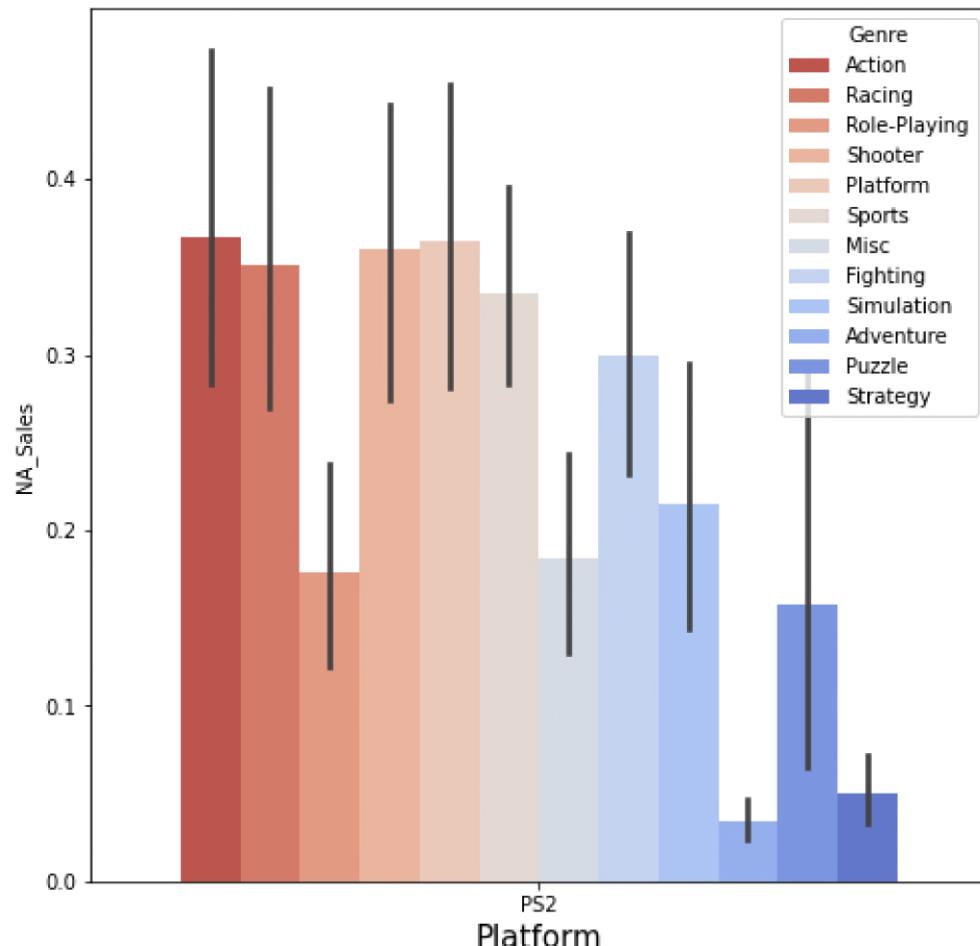
16598 rows × 10 columns

Platform vs NA_Sales for PS2 platform

In [58]:

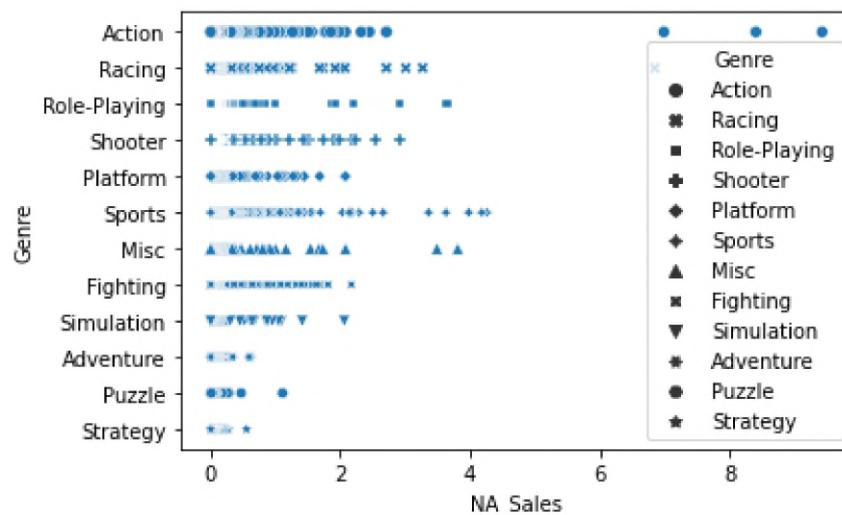
▶

```
plt.figure(figsize=(8,8))
plt.title('')
sns.barplot(x='Platform',y='NA_Sales',data=v_PS2,hue='Genre',order=v_PS2['Platform'].value_
plt.xlabel('Platform',fontsize=15)
plt.show()
```



In [59]:

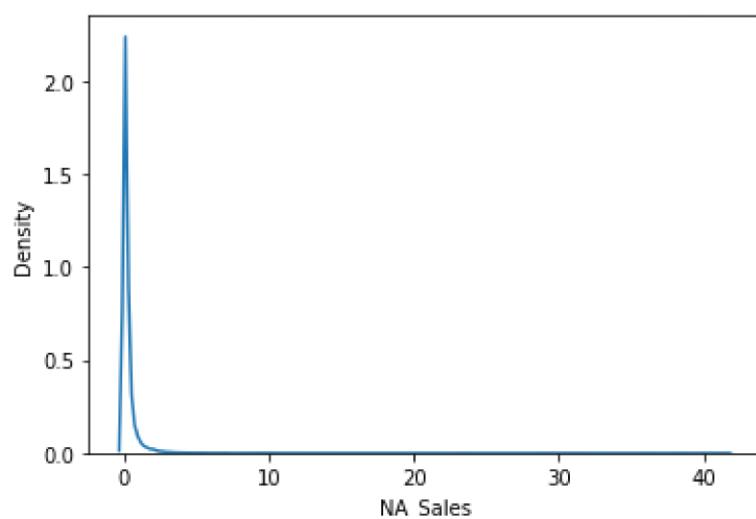
```
sns.scatterplot(x='NA_Sales',y='Genre',style='Genre',data=v_PS2)
plt.figure(figsize=(16,80))
plt.show()
```



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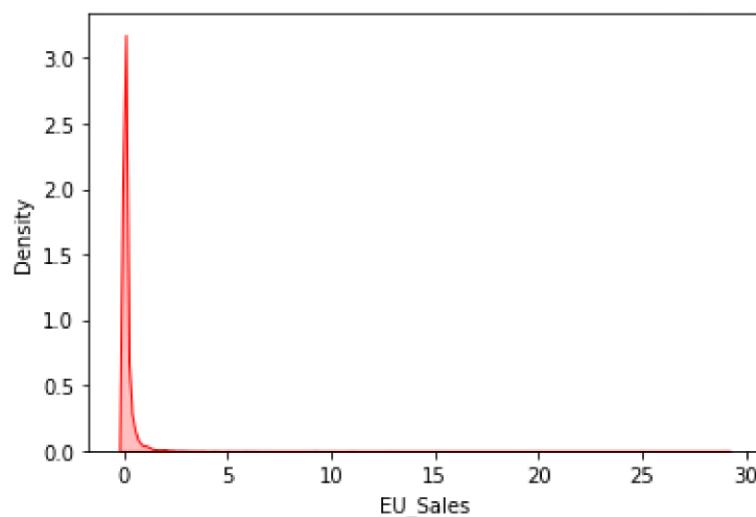
In [60]:

```
sns.kdeplot(v['NA_Sales'])
plt.show()
```



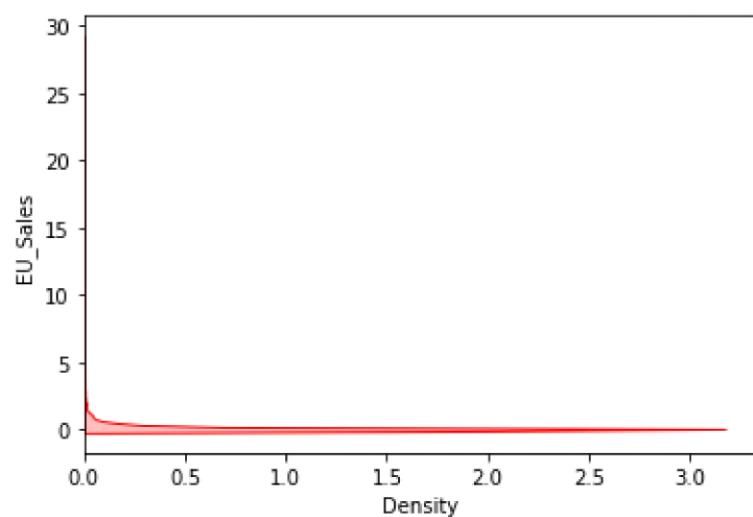
In [61]:

```
sns.kdeplot(v['EU_Sales'],color='red',shade=True)  
plt.show()
```



In [62]:

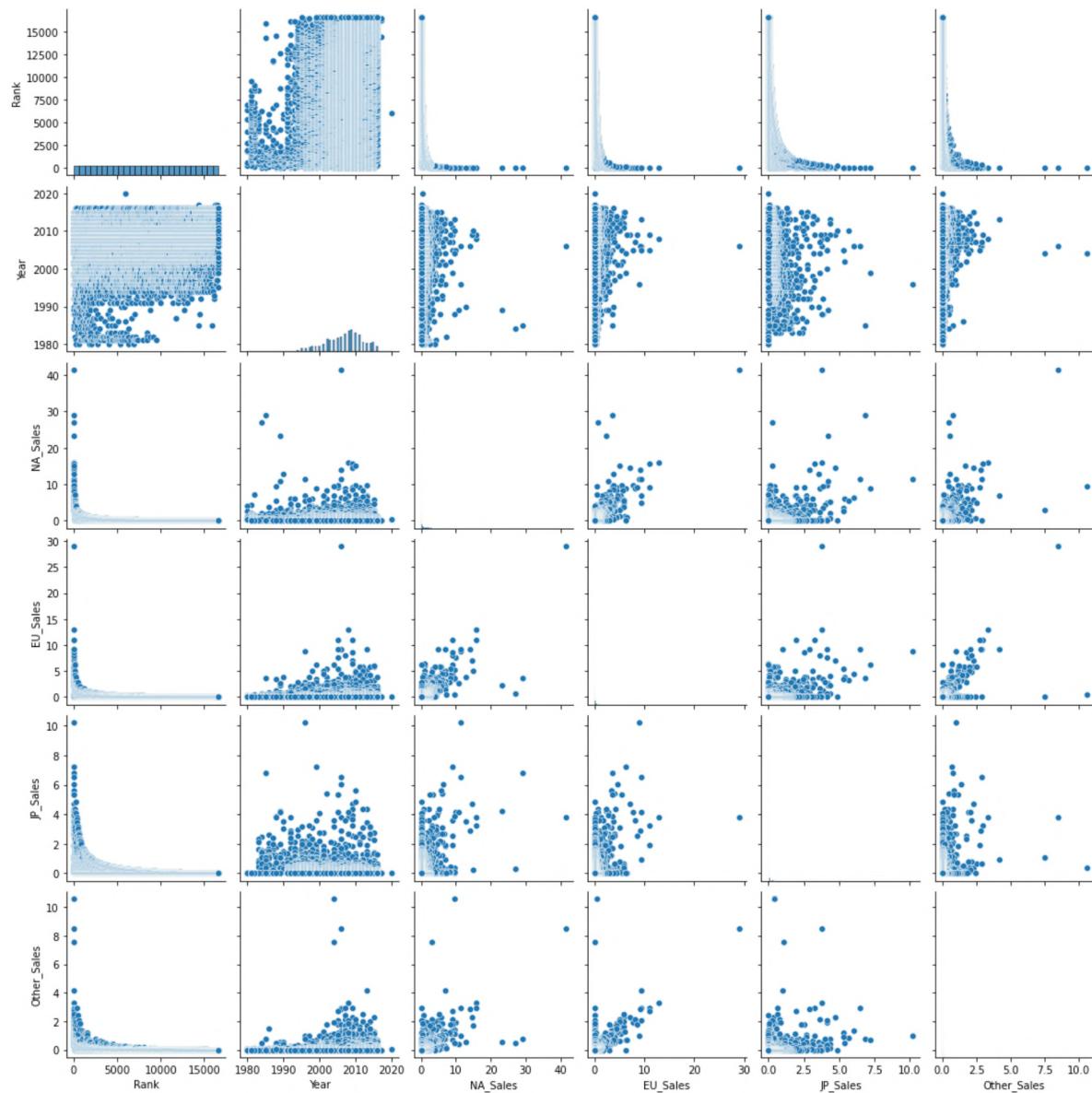
```
sns.kdeplot(v['EU_Sales'],color='red',vertical=True,shade=True)  
plt.show()
```



In [64]:

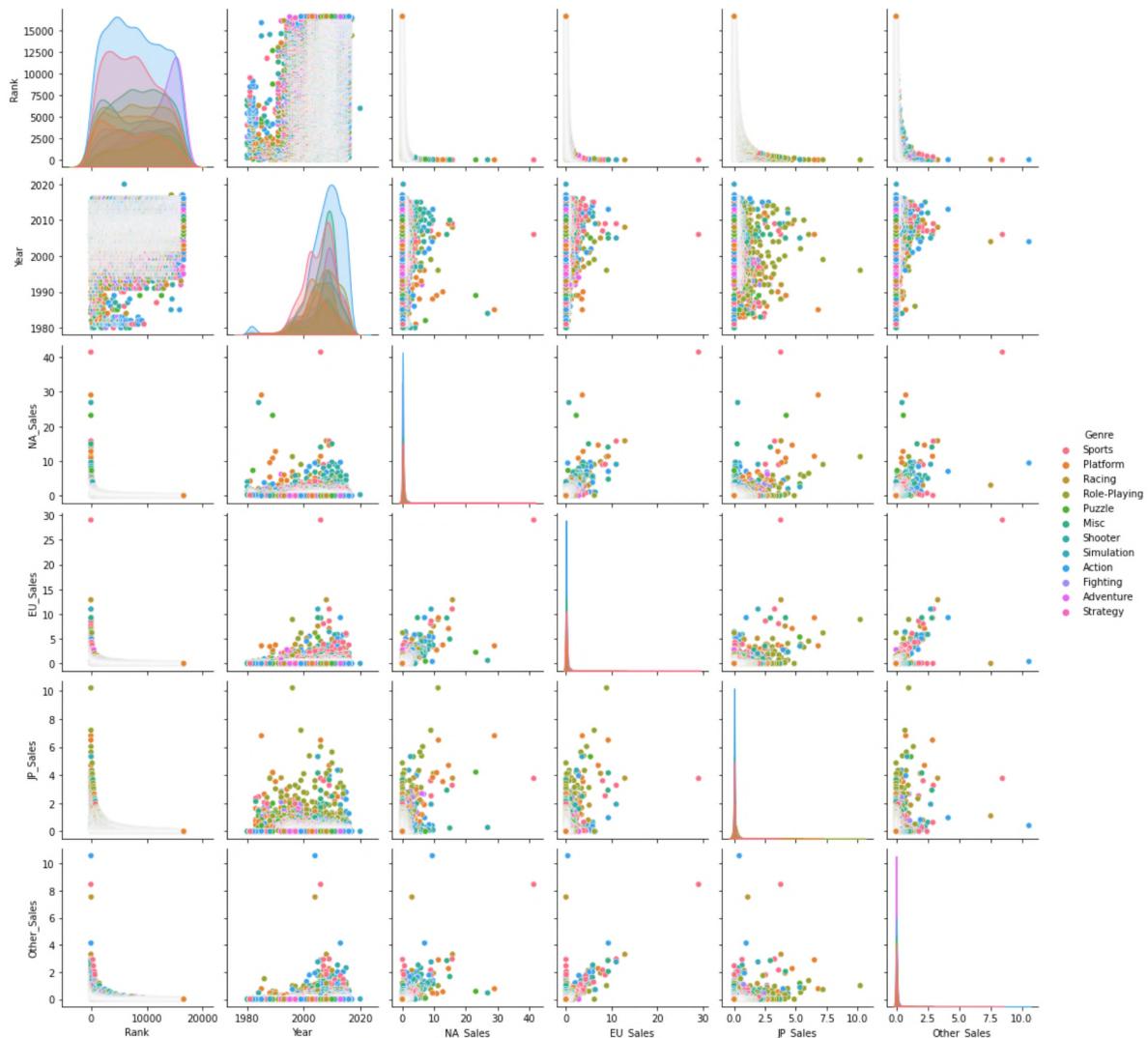


```
sns.pairplot(v)  
plt.show()
```



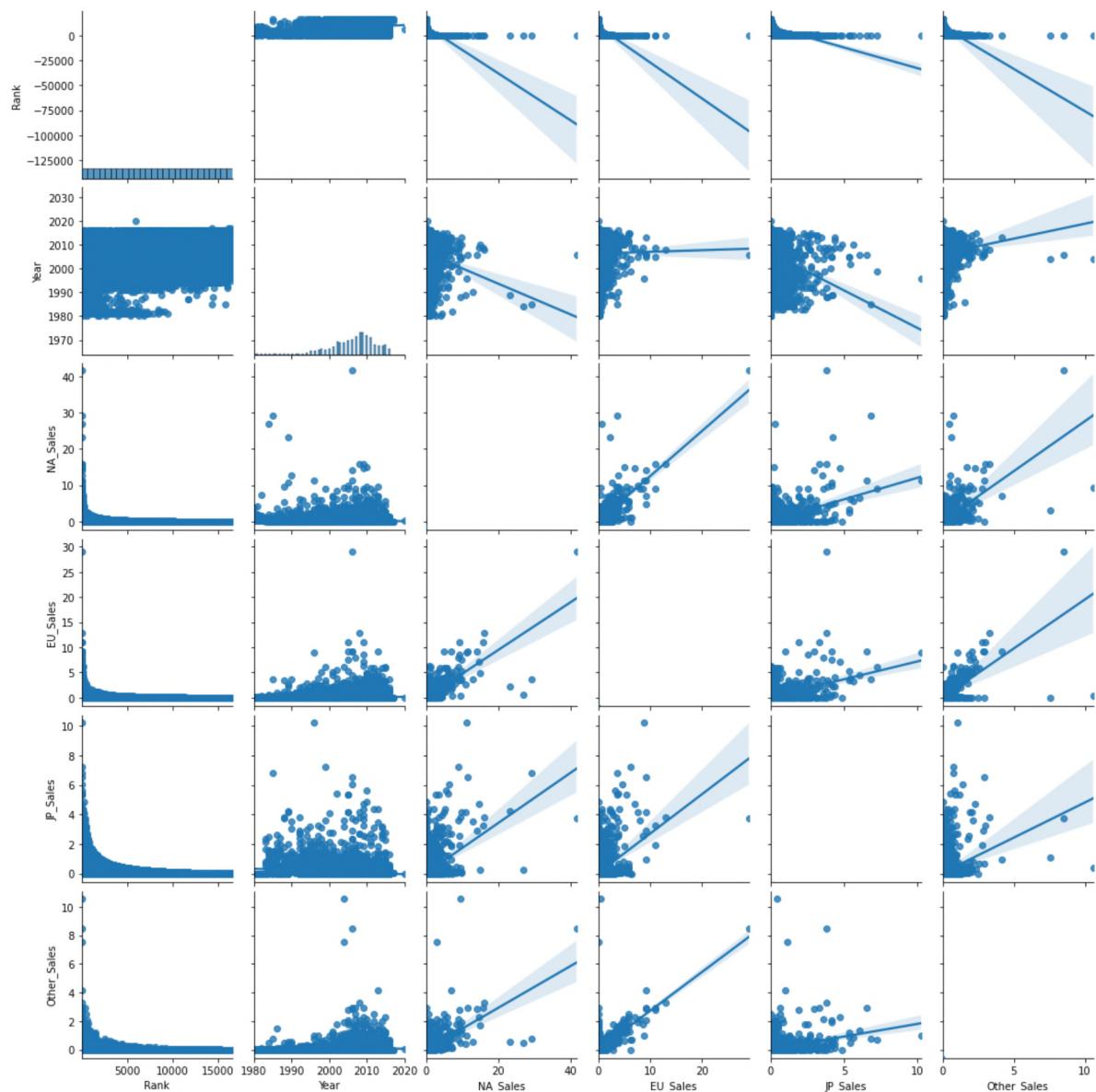
In [66]:

```
sns.pairplot(v,diag_kind='kde',hue='Genre')
plt.show()
```



In [67]:

```
sns.pairplot(v,diag_kind='hist',kind='reg')
plt.show()
```



In []:

