INTERNSHIP PROJECT REPORT

ON

“VIDEO GAMES ANALYSIS”

SUBMITTED BY:

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EXECUTIVE SUMMARY

The "Video Game Sales Analysis" project report examines the variables influencing video games' financial performance. To find patterns, trends, and statistically significant relationships between different game qualities and their commercial performance, the analysis employs a quantitative research methodology to look at a sizable dataset of video game sales. The paper explores the market dynamics for video games and offers insights that industry stakeholders may find useful.

The study makes use of Kaggle data, which includes a range of video games from various platforms and time periods. Total sales, platform, genre, publisher, developer, year of release, and reviewer ratings are among the important characteristics that are examined. Descriptive statistics, grouping and aggregation, exploratory data analysis (EDA), statistical inference (including t-tests, ANOVA, and chi-squared tests), and correlation analysis are all part of the analytical approach. Python is used for the data analysis, along with libraries like scipy.stats, matplotlib, seaborn, and pandas.

Several significant insights are revealed by the analysis's findings:

- 64,016 video game titles with 14 features—including qualitative and numerical data—make up the dataset.
- The distribution of total sales is skewed, and a small number of best-selling titles dominate the market.
- Japan and other regions have smaller market shares than North America and the PAL region, which contribute the most to overall sales.
- Platforms (such as the PS2 and X360) and major publishers (like Activision and Electronic Arts) have shown impressive overall sales performance.
- Among the most popular game genres are action and adventure games.
- There is a weak positive association between critic scores and overall sales, and critic reviews are often positive.

Missing data, possible data discrepancies, the inability to prove causation, a limited collection of features, the scope of the study, and the potential for bias in statistical tests are just a few of the limitations noted in the report.

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OBJECTIVES

"Video Game Sales Analysis" is defined for the purposes of this project report as the methodical process of looking at and analysing quantitative data pertaining to the commercial performance of video games. This procedure entails:

- Data Acquisition and Preparation: Compiling unprocessed data on video game sales numbers, possibly including variables like genre, publisher, developer, release date, critic ratings, platform (console, PC, mobile), revenue generated (both globally and in particular regions like North America, Japan, and Europe), and units sold. Data organization and cleansing for analysis are also part of this step.
- Descriptive statistics and exploratory data analysis (EDA): determining summary metrics for sales data and other pertinent numerical variables, such as mean, median, and standard deviation. Using data visualizations (such as bar charts, histograms, and scatter plots) to comprehend the distribution of important variables and spot patterns, trends, and possible links.
- Comparative analysis is the study of sales success in many categories. For example, it compares the overall sales of various game consoles, genres, publishers, or time periods (e.g., year of release). This could entail figuring out and displaying variations in average or total sales.
- Examining possible relationships or correlations between various factors and video game sales is known as relationship analysis. For instance, employing statistical tests such as the chi-squared test to investigate the relationship between console and genre or correlation coefficients and scatter plots to investigate the relationship between critic scores and overall sales
- Statistical Inference: By using statistical tests (such as ANOVA and t-tests) to determine the significance of observed associations or differences in the data, conclusions can be made about the larger population of video games outside of the particular dataset.

The ultimate goal of this "Video Game Sales Analysis," as defined within this report, is to extract meaningful insights from the sales data to understand the factors influencing commercial success in the video game industry, identify trends, and potentially inform future strategies or predictions. The specific techniques and variables analysed will be detailed within the methodology section of this report.

DATA ANALYSIS

```
#Importing libraries
import numpy as np # linear algebra
import pandas as pd # data processing
import warnings
warnings.filterwarnings("ignore")
```

```
#Importing data
df = pd.read_csv('vgchartz-2024.csv')
```

```
#Looking into the data
df.head(5)
```

	img	title	console	genre	publisher	developer	critic_score	total_sales	na_sales	jp_sales	pal_sales	other_sales	release_
0	/games/boxart/full_6510540AmericaFrontccc.jpg	Grand Theft Auto V	PS3	Action	Rockstar Games	Rockstar North	9.4	20.32	6.37	0.99	9.85	3.12	2013-0
1	/games/boxart/full_5563178AmericaFrontccc.jpg	Grand Theft Auto V	PS4	Action	Rockstar Games	Rockstar North	9.7	19.39	6.06	0.60	9.71	3.02	2014-1
2	/games/boxart/827563ccc.jpg	Grand Theft Auto: Vice City	PS2	Action	Rockstar Games	Rockstar North	9.6	16.15	8.41	0.47	5.49	1.78	2002-1
3	/games/boxart/full_9218923AmericaFrontccc.jpg	Grand Theft Auto V	X360	Action	Rockstar Games	Rockstar North	NaN	15.86	9.06	0.06	5.33	1.42	2013-0
4	/games/boxart/full_4990510AmericaFrontccc.jpg	Call of Duty: Black Ops 3	PS4	Shooter	Activision	Treyarch	8.1	15.09	6.18	0.41	6.05	2.44	2015-1

```
df.tail()
```

	img	title	console	genre	publisher	developer	critic_score	total_sales	na_sales	jp_sales	pal_sales	other_sales
64011	/games/boxart/full_2779838AmericaFrontccc.jpg	XBlaze Lost: Memories	PC	Visual Novel	Aksys Games	Arc System Works	NaN	NaN	NaN	NaN	NaN	NaN
64012	/games/boxart/full_8031506AmericaFrontccc.jpg	Yoru, Tomosu	PS4	Visual Novel	Nippon Ichi Software	Nippon Ichi Software	NaN	NaN	NaN	NaN	NaN	NaN
64013	/games/boxart/full_6553045AmericaFrontccc.jpg	Yoru, Tomosu	NS	Visual Novel	Nippon Ichi Software	Nippon Ichi Software	NaN	NaN	NaN	NaN	NaN	NaN
64014	/games/boxart/full_6012940JapanFrontccc.png	Yunohana SpRING! ~Mellow Times~	NS	Visual Novel	Idea Factory	Otomate	NaN	NaN	NaN	NaN	NaN	NaN
64015	/games/boxart/default.jpg	Yurukill: The Calumniation Games	PS4	Visual Novel	Unknown	G.rev Ltd.	NaN	NaN	NaN	NaN	NaN	NaN

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 64016 entries, 0 to 64015
Data columns (total 14 columns):
 #   Column        Non-Null Count  Dtype  
---  ------        --------------  -----  
 0   img           64016 non-null  object 
 1   title         64016 non-null  object 
 2   console       64016 non-null  object 
 3   genre         64016 non-null  object 
 4   publisher     64016 non-null  object 
 5   developer     63999 non-null  object 
 6   critic_score  6678 non-null   float64
 7   total_sales   18922 non-null  float64
 8   na_sales      12637 non-null  float64
 9   jp_sales      6726 non-null   float64
 10  pal_sales     12824 non-null  float64
 11  other_sales   15128 non-null  float64
 12  release_date  56965 non-null  object 
 13  last_update   17879 non-null  object 
dtypes: float64(6), object(8)
memory usage: 6.8+ MB
```

```
df.columns
```

```
Index(['img', 'title', 'console', 'genre', 'publisher', 'developer',
       'critic_score', 'total_sales', 'na_sales', 'jp_sales', 'pal_sales',
       'other_sales', 'release_date', 'last_update'],
      dtype='object')
```

```
df.dtypes
```

```
img              object
title            object
console          object
genre            object
publisher        object
developer        object
critic_score    float64
total_sales     float64
na_sales        float64
jp_sales        float64
pal_sales       float64
other_sales     float64
release_date     object
last_update      object
dtype: object
```

```
df.shape
```

```
(64016, 14)
```

```
df.describe()
```

	critic_score	total_sales	na_sales	jp_sales	pal_sales	other_sales
count	6678.000000	18922.000000	12637.000000	6726.000000	12824.000000	15128.000000
mean	7.220440	0.349113	0.264740	0.102281	0.149472	0.043041
std	1.457066	0.807462	0.494787	0.168811	0.392653	0.126643
min	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25%	6.400000	0.030000	0.050000	0.020000	0.010000	0.000000
50%	7.500000	0.120000	0.120000	0.040000	0.040000	0.010000
75%	8.300000	0.340000	0.280000	0.120000	0.140000	0.030000
max	10.000000	20.320000	9.760000	2.130000	9.850000	3.120000

```
df.nunique()
```

```
img             56177
title           39798
console            81
genre              20
publisher        3383
developer        8862
critic_score       89
total_sales       482
na_sales          320
jp_sales          121
pal_sales         256
other_sales       133
release_date     7922
last_update      1545
dtype: int64
```

```
df.isnull().any()
```

```
img             False
title           False
console         False
genre           False
publisher       False
developer        True
critic_score     True
total_sales      True
na_sales         True
jp_sales         True
pal_sales        True
other_sales      True
release_date     True
last_update      True
dtype: bool
```

```
#Cleaning the dataset
df_cleaned = df.dropna(subset=['release_date', 'developer'])
sales_columns = ['total_sales', 'na_sales', 'jp_sales', 'pal_sales', 'other_sales']
df_cleaned[sales_columns] = df_cleaned[sales_columns].fillna(0)
df_cleaned
```

	img	title	console	genre	publisher	developer	critic_score	total_sales	na_sales	jp_sales	pal_sales	other_sales
0	/games/boxart/full_6510540AmericaFrontccc.jpg	Grand Theft Auto V	PS3	Action	Rockstar Games	Rockstar North	9.4	20.32	6.37	0.99	9.85	3.12
1	/games/boxart/full_5563178AmericaFrontccc.jpg	Grand Theft Auto V	PS4	Action	Rockstar Games	Rockstar North	9.7	19.39	6.06	0.60	9.71	3.02
2	/games/boxart/827563ccc.jpg	Grand Theft Auto: Vice City	PS2	Action	Rockstar Games	Rockstar North	9.6	16.15	8.41	0.47	5.49	1.78
3	/games/boxart/full_9218923AmericaFrontccc.jpg	Grand Theft Auto V	X360	Action	Rockstar Games	Rockstar North	NaN	15.86	9.06	0.06	5.33	1.42
4	/games/boxart/full_4990510AmericaFrontccc.jpg	Call of Duty: Black Ops 3	PS4	Shooter	Activision	Treyarch	8.1	15.09	6.18	0.41	6.05	2.44
...	...	...	...	...	...	...	...	...	...	...	...	...
64010	/games/boxart/full_2294305JapanFrontccc.jpg	World End Syndrome	PS4	Visual Novel	Arc System Works	Arc System Works	NaN	0.00	0.00	0.00	0.00	0.00

```
df_cleaned['last_update'] = df_cleaned['last_update'].fillna(df_cleaned['release_date'])
df = df_cleaned
df
```

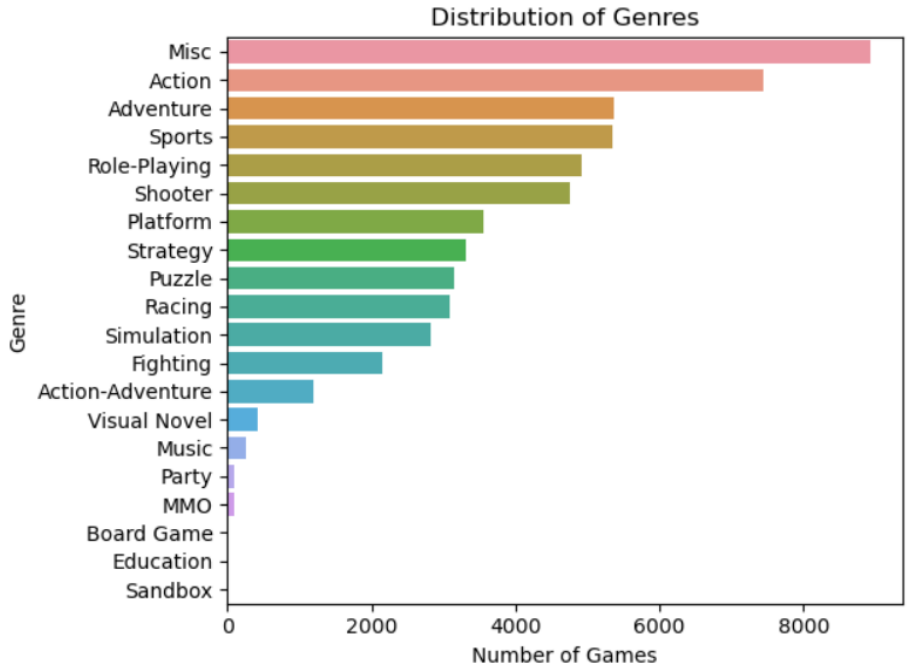
	img	title	console	genre	publisher	developer	critic_score	total_sales	na_sales	jp_sales	pal_sales	other_sales
0	/games/boxart/full_6510540AmericaFrontccc.jpg	Grand Theft Auto V	PS3	Action	Rockstar Games	Rockstar North	9.4	20.32	6.37	0.99	9.85	3.12
1	/games/boxart/full_5563178AmericaFrontccc.jpg	Grand Theft Auto V	PS4	Action	Rockstar Games	Rockstar North	9.7	19.39	6.06	0.60	9.71	3.02
2	/games/boxart/827563ccc.jpg	Grand Theft Auto: Vice City	PS2	Action	Rockstar Games	Rockstar North	9.6	16.15	8.41	0.47	5.49	1.78
3	/games/boxart/full_9218923AmericaFrontccc.jpg	Grand Theft Auto V	X360	Action	Rockstar Games	Rockstar North	NaN	15.86	9.06	0.06	5.33	1.42
4	/games/boxart/full_4990510AmericaFrontccc.jpg	Call of Duty: Black Ops 3	PS4	Shooter	Activision	Treyarch	8.1	15.09	6.18	0.41	6.05	2.44
...	...	...	...	...	...	...	...	...	...	...	...	...
64010	/games/boxart/full_2294305JapanFrontccc.jpg	World End Syndrome	PS4	Visual Novel	Arc System Works	Arc System Works	NaN	0.00	0.00	0.00	0.00	0.00

```
#Libraries for plotting diagrams and graphs
import matplotlib.pyplot as plt
import seaborn as sns
```

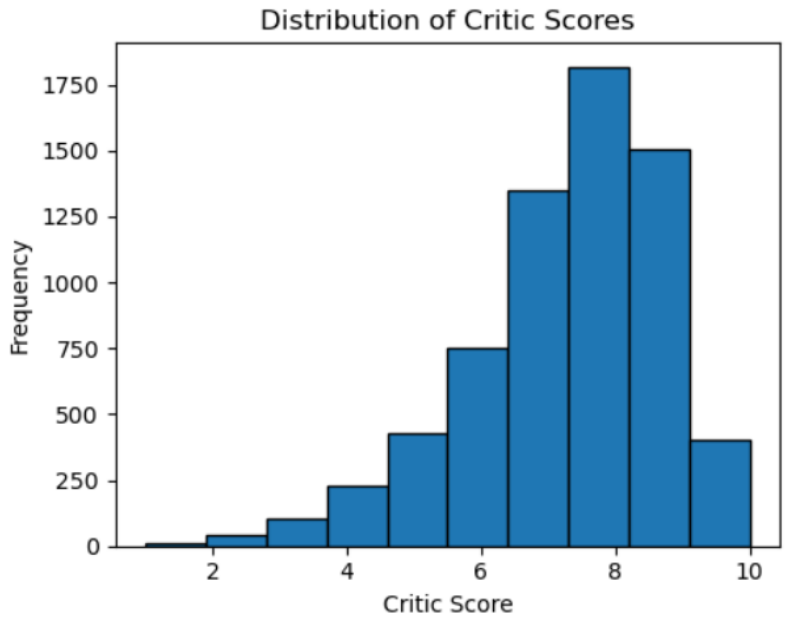
```
#Top 10 games by sales
top_games = df[['title', 'total_sales', 'console', 'publisher']].sort_values(by='total_sales', ascending=False).head(10)
print(top_games)
```

```
                         title  total_sales console       publisher
0              Grand Theft Auto V        20.32     PS3  Rockstar Games
1              Grand Theft Auto V        19.39     PS4  Rockstar Games
2     Grand Theft Auto: Vice City        16.15     PS2  Rockstar Games
3              Grand Theft Auto V        15.86    X360  Rockstar Games
4       Call of Duty: Black Ops 3        15.09     PS4      Activision
5  Call of Duty: Modern Warfare 3        14.82    X360      Activision
6         Call of Duty: Black Ops        14.74    X360      Activision
7            Red Dead Redemption 2        13.94     PS4  Rockstar Games
8      Call of Duty: Black Ops II        13.86    X360      Activision
9      Call of Duty: Black Ops II        13.80     PS3      Activision
```

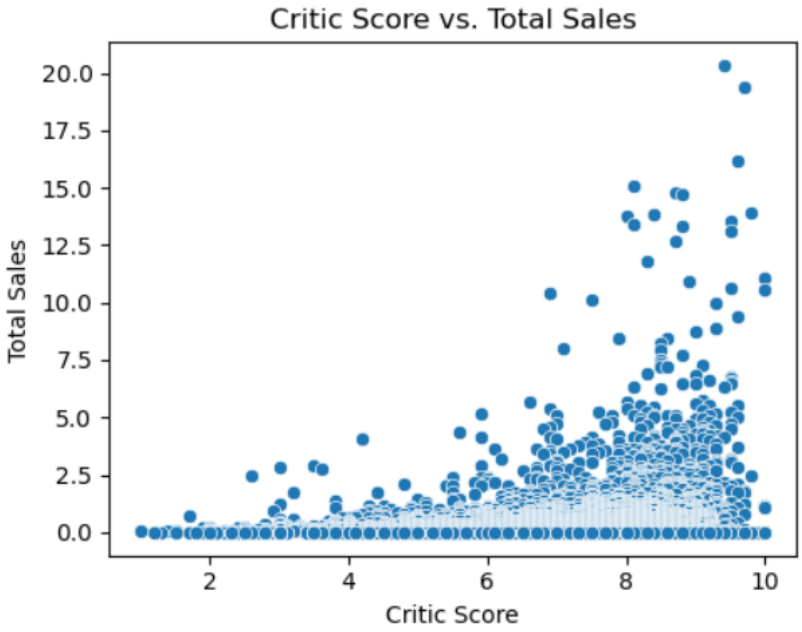
```
#Distribution of Genres
sns.countplot(data=df, y='genre', order=df['genre'].value_counts().index)
plt.title('Distribution of Genres')
plt.xlabel('Number of Games')
plt.ylabel('Genre')
plt.tight_layout()
plt.show()
```



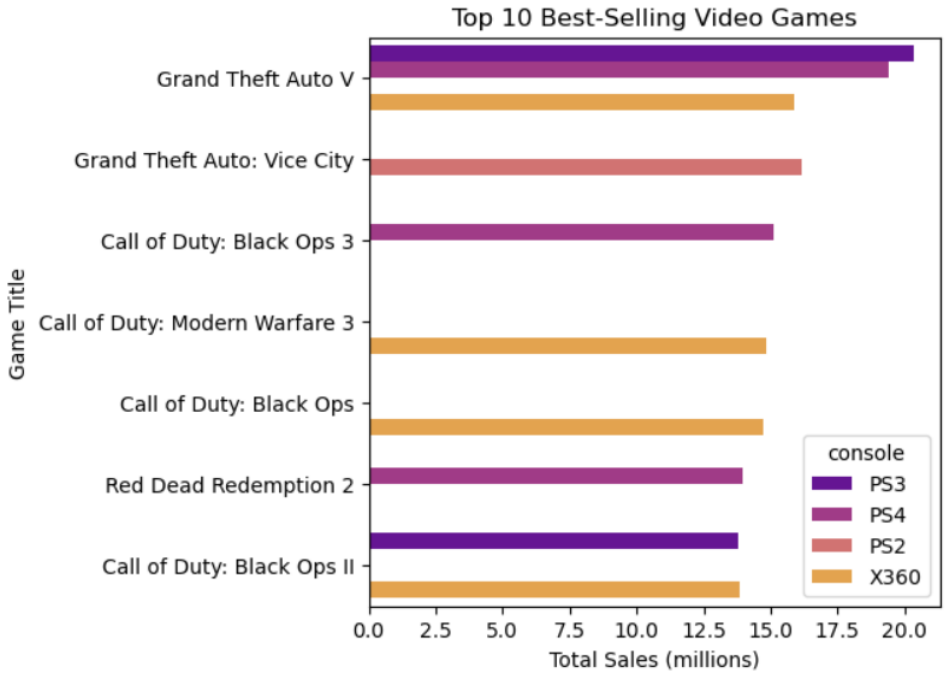

```
# Histogram of critic scores
df['critic_score'].plot(kind='hist', bins=10, edgecolor='black', figsize=(5, 4))
plt.title('Distribution of Critic Scores')
plt.xlabel('Critic Score')
plt.ylabel('Frequency')
plt.tight_layout()
plt.show()
```



```
# Scatter plot of critic score vs. total sales
plt.figure(figsize=(5, 4))
sns.scatterplot(data=df, x='critic_score', y='total_sales')
plt.title('Critic Score vs. Total Sales')
plt.xlabel('Critic Score')
plt.ylabel('Total Sales')
plt.tight_layout()
plt.show()
```



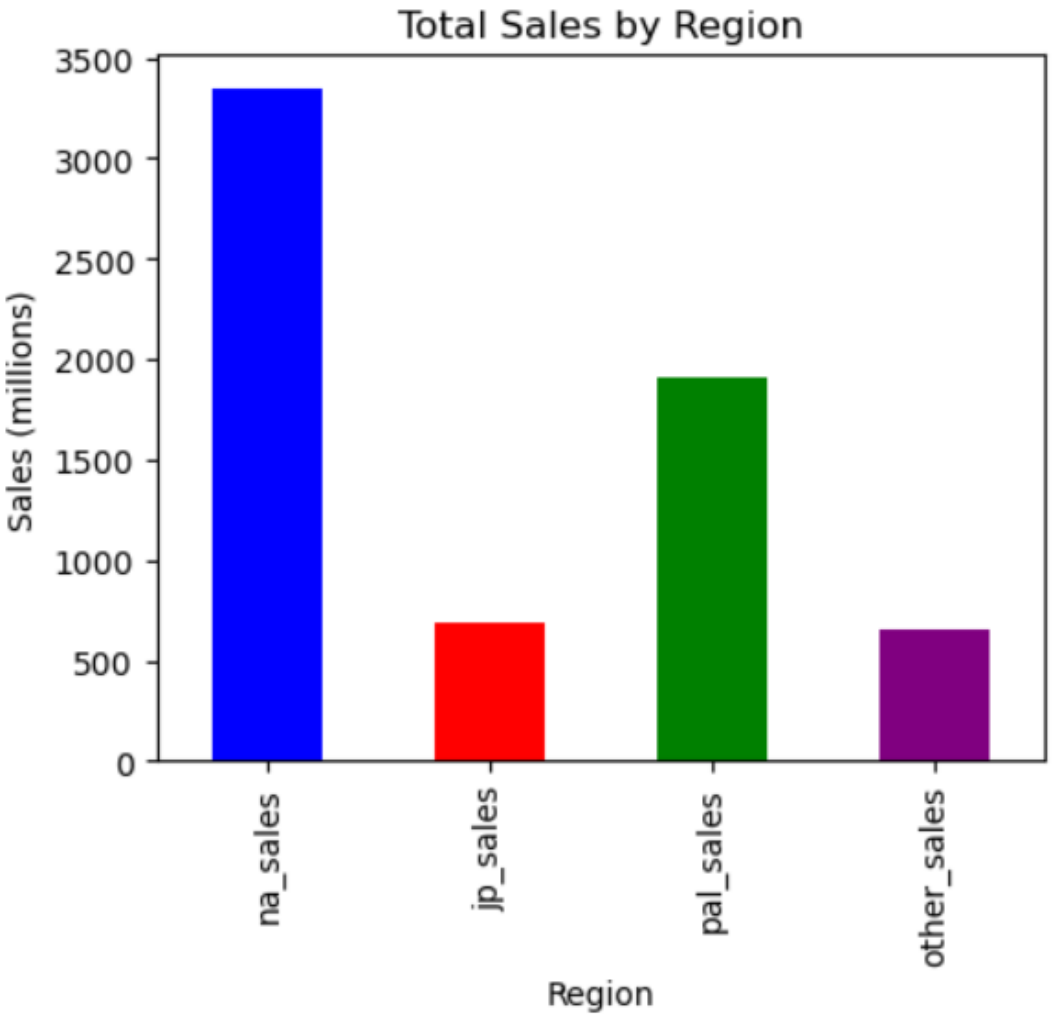

```
#Top 10 best selling games
plt.figure(figsize=(5, 5))
sns.barplot(data=top_games, x='total_sales', y='title', hue='console', palette='plasma')
plt.title("Top 10 Best-Selling Video Games")
plt.xlabel("Total Sales (millions)")
plt.ylabel("Game Title")
plt.show()
```



```
region_sales = df[['na_sales', 'jp_sales', 'pal_sales', 'other_sales']].sum()
print(region_sales)
```

```
na_sales       3344.54
jp_sales        684.99
pal_sales      1914.64
other_sales     650.49
dtype: float64
```

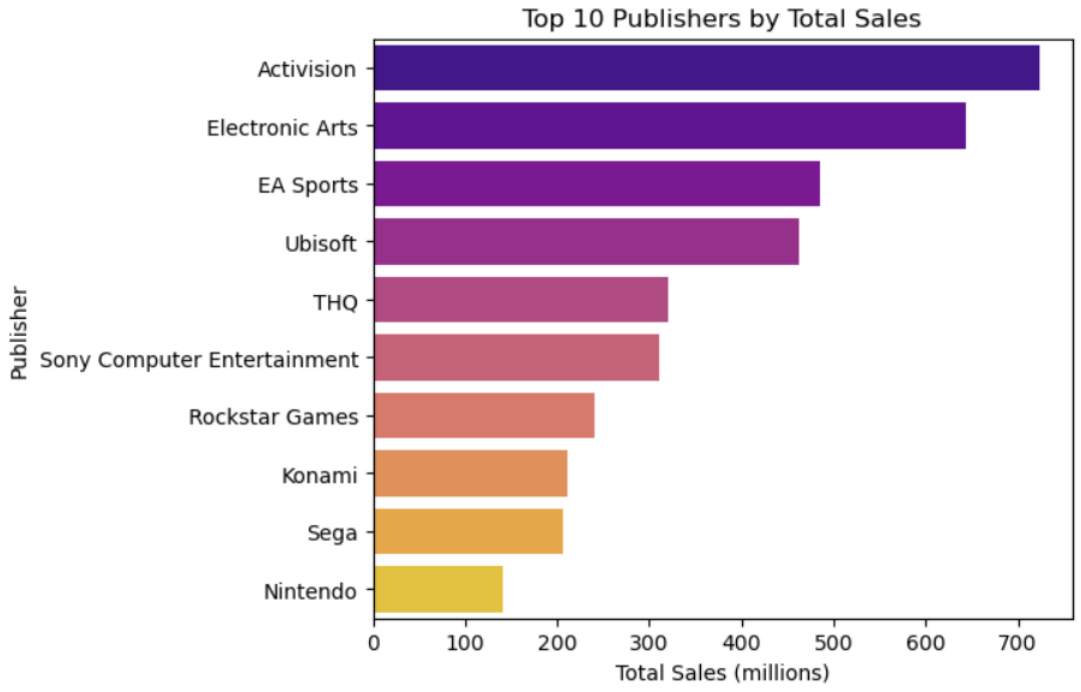
```
#Total sales by Region
plt.figure(figsize=(5, 4))
region_sales.plot(kind='bar', color=['blue', 'red', 'green', 'purple'])
plt.title("Total Sales by Region")
plt.ylabel("Sales (millions)")
plt.xlabel("Region")
plt.show()
```



```
top_publishers = df.groupby('publisher')['total_sales'].sum().sort_values(ascending=False).head(10)
print(top_publishers)
```

```
publisher
Activision                      722.77
Electronic Arts                 644.13
EA Sports                       485.66
Ubisoft                         462.43
THQ                             320.89
Sony Computer Entertainment     311.08
Rockstar Games                  239.67
Konami                          210.70
Sega                            206.38
Nintendo                        140.80
Name: total_sales, dtype: float64
```

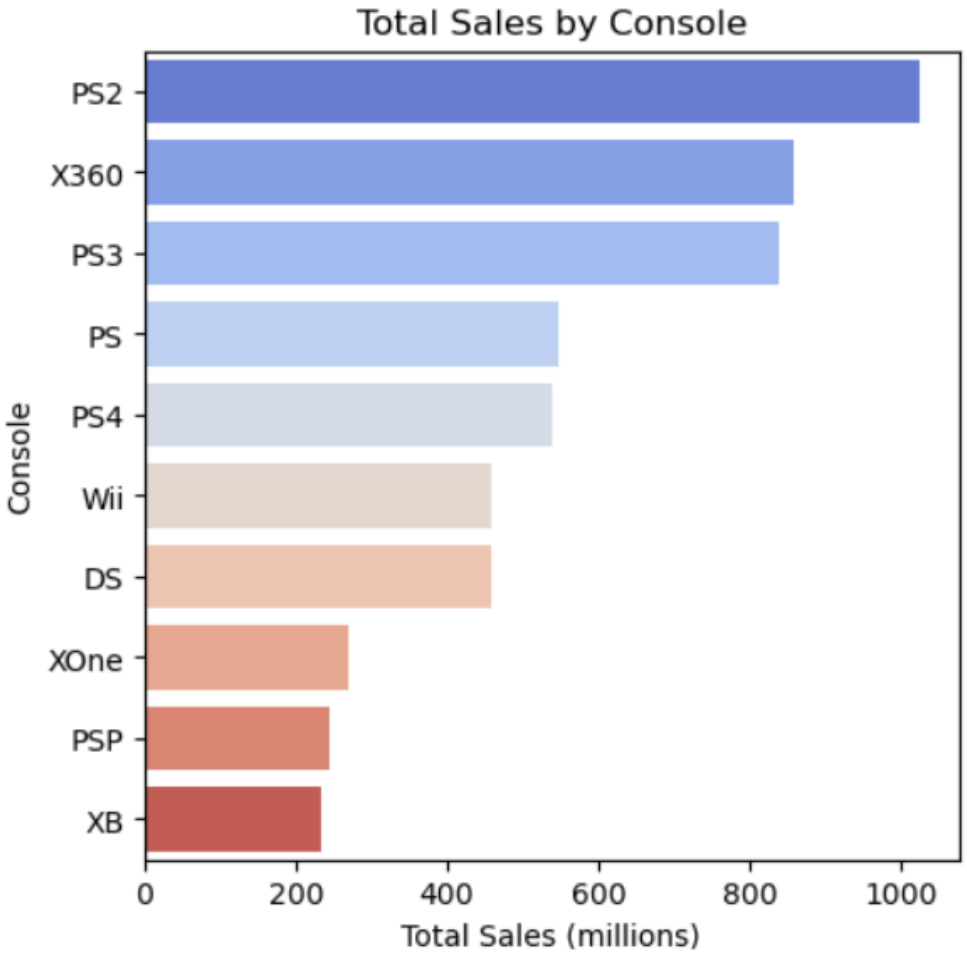
```
#Top 10 publisher by total sales
plt.figure(figsize=(6, 5))
sns.barplot(x=top_publishers.values, y=top_publishers.index, palette="plasma")
plt.title("Top 10 Publishers by Total Sales")
plt.xlabel("Total Sales (millions)")
plt.ylabel("Publisher")
plt.show()
```




```
console_sales = df.groupby('console')['total_sales'].sum().sort_values(ascending=False).head(10)
print(console_sales)
```

```
console
PS2     1025.38
X360     859.41
PS3      839.01
PS       546.21
PS4      539.92
Wii      458.92
DS       457.54
XOne     268.96
PSP      244.74
XB       232.05
Name: total_sales, dtype: float64
```

```
#Total sales by console
plt.figure(figsize=(5, 5))
sns.barplot(x=console_sales.values, y=console_sales.index, palette="coolwarm")
plt.title("Total Sales by Console")
plt.xlabel("Total Sales (millions)")
plt.ylabel("Console")
plt.show()
```

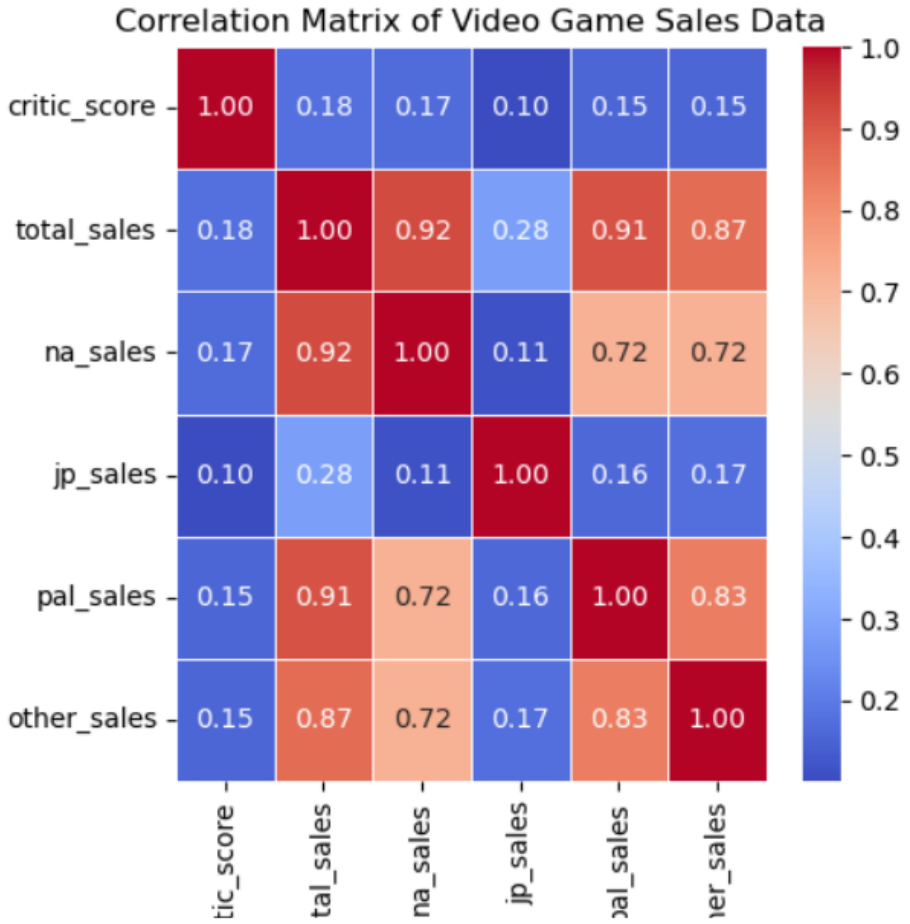



```
columns_to_drop = ['img', 'title', 'release_date', 'last_update','console','genre','publisher','developer']
df_dropped = df.drop(columns=columns_to_drop)
print("\nDataFrame after dropping specified columns:")
df_dropped.head()
```

```
DataFrame after dropping specified columns:
```

	critic_score	total_sales	na_sales	jp_sales	pal_sales	other_sales
0	9.4	20.32	6.37	0.99	9.85	3.12
1	9.7	19.39	6.06	0.60	9.71	3.02
2	9.6	16.15	8.41	0.47	5.49	1.78
3	NaN	15.86	9.06	0.06	5.33	1.42
4	8.1	15.09	6.18	0.41	6.05	2.44

```
#Correlation Matrix of Video Game Sales Data
correlation_matrix = df_dropped.corr()
plt.figure(figsize=(5, 5))
sns.heatmap(correlation_matrix, annot=True, cmap='coolwarm', fmt=".2f", linewidths=.5)
plt.title('Correlation Matrix of Video Game Sales Data')
plt.show()
```




```
#Importing libraries for wordcloud
from wordcloud import WordCloud
# Function to generate word cloud
def generate_wordcloud(text_series, title):
    text = ' '.join(text_series.dropna().astype(str))
    wordcloud = WordCloud(width=800, height=400, background_color='white').generate(text)
    plt.figure(figsize=(8, 5))
    plt.imshow(wordcloud, interpolation='bilinear')
    plt.axis('off')
    plt.title(title)
    plt.tight_layout()
    plt.show()

# Word cloud for genres
generate_wordcloud(df['genre'], 'Common Game Genres')

# Word cloud for publishers
generate_wordcloud(df['publisher'], 'Common Game Publishers')

# Word cloud for developers
generate_wordcloud(df['developer'], 'Common Game Developers')
```


Common Game Genres
Strategy Strategy
Platform Platform
Action Action
Role Playing
Action Adventure
Sports Sports
Puzzle Puzzle
Racing Racing
Fighting Fighting
Misc Misc
Simulation Simulation
Adventure Adventure
Adventure Action
Playing Role
Shooter Shooter
Common Game Publishers
Nintendo Nintendo
Sega
Atari
Sega Sega
Idea Factory
Capcom Capcom
Eidos Interactive
Entertainment Sony
Interactive Studio
Computer Entertainment
Activision
EA Sports
Microsoft
Ubisoft Ubisoft
Square Enix
Bandai Game
Konami Konami
Activision Activision
Ubisoft
Namco Bandai
Capcom
Arts Electronic
Disney Interactive
Midway Games
Sony Computer
Konami
Acclaim Entertainment
Atlus
Bros Interactive
Nintendo
Unknown Unknown
Electronic Arts
Warner Bros
Unknown
Interactive Entertainment
D3 Publisher
Hudson Soft
Common Game Developers
Games Unknown
Idea Factory
Konami
Sonic Team
EA Canada
Sony Computer
EA Tiburon
Ichi Software
Digital Eclipse
Traveller Tales
Ltd
Namco Game
Game
Square Enix
Taito Corporation
Namco Bandai
Nippon Ichi
Bandai
Namco
Activision
Telltale Games
Koei Koei
Computer Entertainment
Ubisoft Montreal
Konami
Konami System Works
Hudson Soft
Vicarious Visions
Electronic Arts
Unknown Unknown
Arc System
Nihon Falcom
Konami Computer
Rare Ltd
Nintendo EAD
Capcom
Corporation SNK
Capcom
Capcom
Nintendo
Enix Square
Sega
Sega Sega
Atari
Studio
Inc
Visual Concepts
Namco Namco
Data East
Bandai Games
SNK Corporation
San Diego
Co Ltd
Falcom Corporation

```
best_seller = df.groupby('title')['total_sales'].sum().sort_values(ascending=False).head(10)
print(best_seller)
```

```
title
Grand Theft Auto V                64.29
Call of Duty: Black Ops           30.99
Call of Duty: Modern Warfare 3    30.71
Call of Duty: Black Ops II        29.59
Call of Duty: Ghosts              28.80
Call of Duty: Black Ops 3         26.72
Call of Duty: Modern Warfare 2    25.02
Minecraft                         24.01
Grand Theft Auto IV               22.53
Call of Duty: Advanced Warfare    21.78
Name: total_sales, dtype: float64
```

```
best_seller2 = df.groupby('title')['total_sales'].sum().sort_values(ascending=False)[11:21]
print(best_seller2)
```

```
title
Call of Duty: WWII                  19.82
Red Dead Redemption 2               19.71
Call of Duty 4: Modern Warfare      18.33
FIFA 15                             18.03
Battlefield 3                       17.32
FIFA 14                             17.31
FIFA 17                             17.02
FIFA 18                             16.92
Guitar Hero III: Legends of Rock    16.38
Grand Theft Auto: Vice City         16.19
Name: total_sales, dtype: float64
```

```
from scipy import stats
```

```
#ANOVA Test
f_statistic, p_value = stats.f_oneway(best_seller,best_seller2)
print(f"F-statistic: {f_statistic}")
print(f"P-value: {p_value}")
```

```
F-statistic: 10.53986771760108
P-value: 0.004479657072584212
```

```
#T Test
ps4_sales = df[df['console'] == 'PS4']['total_sales']
ps3_sales = df[df['console'] == 'PS3']['total_sales']
tvalue, pvalue = stats.ttest_ind(ps3_sales, ps4_sales)
print(f"T-value: {tvalue}, P-value: {pvalue}")
```

```
T-value: 6.154334474099901, P-value: 8.312841588399693e-10
```

```
#ANOVA Test
f_statistic, p_value = stats.f_oneway(ps3_sales,ps4_sales)
print(f"F-statistic: {f_statistic}")
print(f"P-value: {p_value}")
```

```
F-statistic: 37.875832819094505
P-value: 8.312841588393562e-10
```

```python
#Chi-square Test
contingency_table = pd.crosstab(df['console'], df['genre'])
chi2_statistic, p_value, dof, expected_frequencies = stats.chi2_contingency(contingency_table)

print(f"Chi2 Statistic: {chi2_statistic:.2f}")
print(f"P-value: {p_value:.3f}")
print("Degrees of Freedom:", dof)
print("Expected Frequencies:\n", expected_frequencies)

alpha = 0.05
if p_value < alpha:
    print("Reject the null hypothesis: There is a significant association between console and genre.")
else:
    print("Fail to reject the null hypothesis: There is no significant association between console and genre.")
```

```
Chi2 Statistic: 32517.51
P-value: 0.000
Degrees of Freedom: 1482
Expected Frequencies:
 [[6.33478772e+01 1.01336166e+01 4.57119781e+01 ... 4.54820557e+01
  2.81271728e+01 3.61063314e+00]
 [3.95760965e+01 6.33089862e+00 2.85582049e+01 ... 2.84145626e+01
  1.75722337e+01 2.25571514e+00]
 [1.46026653e+02 2.33595533e+01 1.05373178e+02 ... 1.04843172e+02
  6.48374829e+01 8.32306774e+00]
 ...
 [1.55430874e+01 2.48639253e+00 1.12159286e+01 ... 1.11595147e+01
  6.90130632e+00 8.85907926e-01]
 [2.48166942e+00 3.96987042e-01 1.79077852e+00 ... 1.78177125e+00
  1.10188924e+00 1.41447484e-01]
 [9.40422095e+00 1.50437195e+00 6.78610809e+00 ... 6.75197528e+00
  4.17558029e+00 5.36011518e-01]]
Reject the null hypothesis: There is a significant association between console and genre.
```

CONCLUSION

Several important insights into the elements affecting the industry's commercial performance have been uncovered by this examination of the video game sales dataset.

- Data Characteristics: The dataset includes 64,016 video game titles with 14 features. It includes both numerical (such as sales numbers and critic ratings) and categorical (such as genre, publisher, and console) data. Careful data cleaning and preparation are required because a sizable amount of the data, especially sales numbers and critic scores, have missing values.
- Sales Distribution: A few number of best-selling titles dominate the market, and the distribution of overall sales is severely skewed. One game that performs exceptionally well on a variety of platforms is Grand Theft Auto V.
- Regional Sales: While Japan and other regions have lesser market shares, North America and the PAL region make significant contributions to overall sales.
- Performance of publishers and systems: A number of publishers, including Activision and Electronic Arts, as well as systems such as the PS2 and X360, have shown impressive overall sales results.
- Analysis of Genre: Among the most popular gaming genres are action and adventure games.
- Critic ratings: The dataset generally shows a trend toward good evaluations, with critic ratings concentrated in the higher range. Total sales and critic scores have a weakly positive association.

Statistical Relationships:

- The genre of the game and the gaming system are statistically significantly correlated.
- The average reviewer evaluations for action and sports games differ statistically significantly.
- The difference between PS3 and PS4 system sales is statistically significant.