

OBJECTIVE

This project's goal is to provide an effective solution to the stated objectives following dataset analysis:

- Total global sales in each year
- Number of games released in each year
- Top 10 games sold in North America and Europe
- Number of games released in adventure and sports genre in each platform
- Sum of sales in Japan greater than 1 of each publisher.

SOURCE OF DATASET

Source of dataset: <https://www.kaggle.com/datasets/gregorut/videogamesales>

This dataset contains a list of video games with sales greater than 100,000 copies. Analysis of data of more than 16,500 games.

Following is a list of the columns that make up the dataset:

- Rank
Ranking of overall sales
- Name
The name of the games
- Platform
Platform of the games release
- Year
Year of the game's release
- Genre
Genre of the game
- Publisher
Publisher of the game
- NA_Sales
Sales in North America (in millions)
- EU_Sales
Sales in Europe (in millions)



➤ JP_Sales

Sales in Japan (in millions)

➤ Other_Sales

Sales in the rest of the world (in millions)

➤ Global_Sales

Total worldwide sales

Sample of dataset with data fields is given below:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Rank	Name	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales	Other_Sales	Global_Sales	
2	1	Wii Sports	Wii	2006	Sports	Nintendo	41.49	29.02	3.77	8.46	82.74	
3	2	Super Mario Bros.	NES	1985	Platform	Nintendo	29.08	3.58	6.81	0.77	40.24	
4	3	Mario Kart Wii	Wii	2008	Racing	Nintendo	15.85	12.88	3.79	3.31	35.82	
5	4	Wii Sports	Wii	2009	Sports	Nintendo	15.75	11.01	3.28	2.96	33	
6	5	Pokemon Red	GB	1996	Role-Playing	Nintendo	11.27	8.89	10.22	1	31.37	
7	6	Tetris	GB	1989	Puzzle	Nintendo	23.2	2.26	4.22	0.58	30.26	
8	7	New Super Mario Bros.	DS	2006	Platform	Nintendo	11.38	9.23	6.5	2.9	30.01	
9	8	Wii Play	Wii	2006	Misc	Nintendo	14.03	9.2	2.93	2.85	29.02	
10	9	New Super Mario Bros. Wii	Wii	2009	Platform	Nintendo	14.59	7.06	4.7	2.26	28.62	
11	10	Duck Hunt	NES	1984	Shooter	Nintendo	26.93	0.63	0.28	0.47	28.31	
12	11	Nintendogs	DS	2005	Simulation	Nintendo	9.07	11	1.93	2.75	24.76	
13	12	Mario Kart DS	DS	2005	Racing	Nintendo	9.81	7.57	4.13	1.92	23.42	
14	13	Pokemon Crystal	GB	1999	Role-Playing	Nintendo	9	6.18	7.2	0.71	23.1	
15	14	Wii Fit	Wii	2007	Sports	Nintendo	8.94	8.03	3.6	2.15	22.72	
16	15	Wii Fit Plus	Wii	2009	Sports	Nintendo	9.09	8.59	2.53	1.79	22	
17	16	Kinect Adventure	X360	2010	Misc	Microsoft	14.97	4.94	0.24	1.67	21.82	
18	17	Grand Theft Auto III	PS3	2013	Action	Take-Two	7.01	9.27	0.97	4.14	21.4	
19	18	Grand Theft Auto V	PS2	2004	Action	Take-Two	9.43	0.4	0.41	10.57	20.81	
20	19	Super Mario World	SNES	1990	Platform	Nintendo	12.78	3.75	3.54	0.55	20.61	
21	20	Brain Age: Train Your Brain in Minutes a Day!	DS	2005	Misc	Nintendo	4.75	9.26	4.16	2.05	20.22	
22	21	Pokemon Emerald	DS	2006	Role-Playing	Nintendo	6.42	4.52	6.04	1.37	18.36	
23	22	Super Mario Bros.	GB	1989	Platform	Nintendo	10.83	2.71	4.18	0.42	18.14	
24	23	Super Mario Bros.	NES	1988	Platform	Nintendo	9.54	3.44	3.84	0.46	17.28	

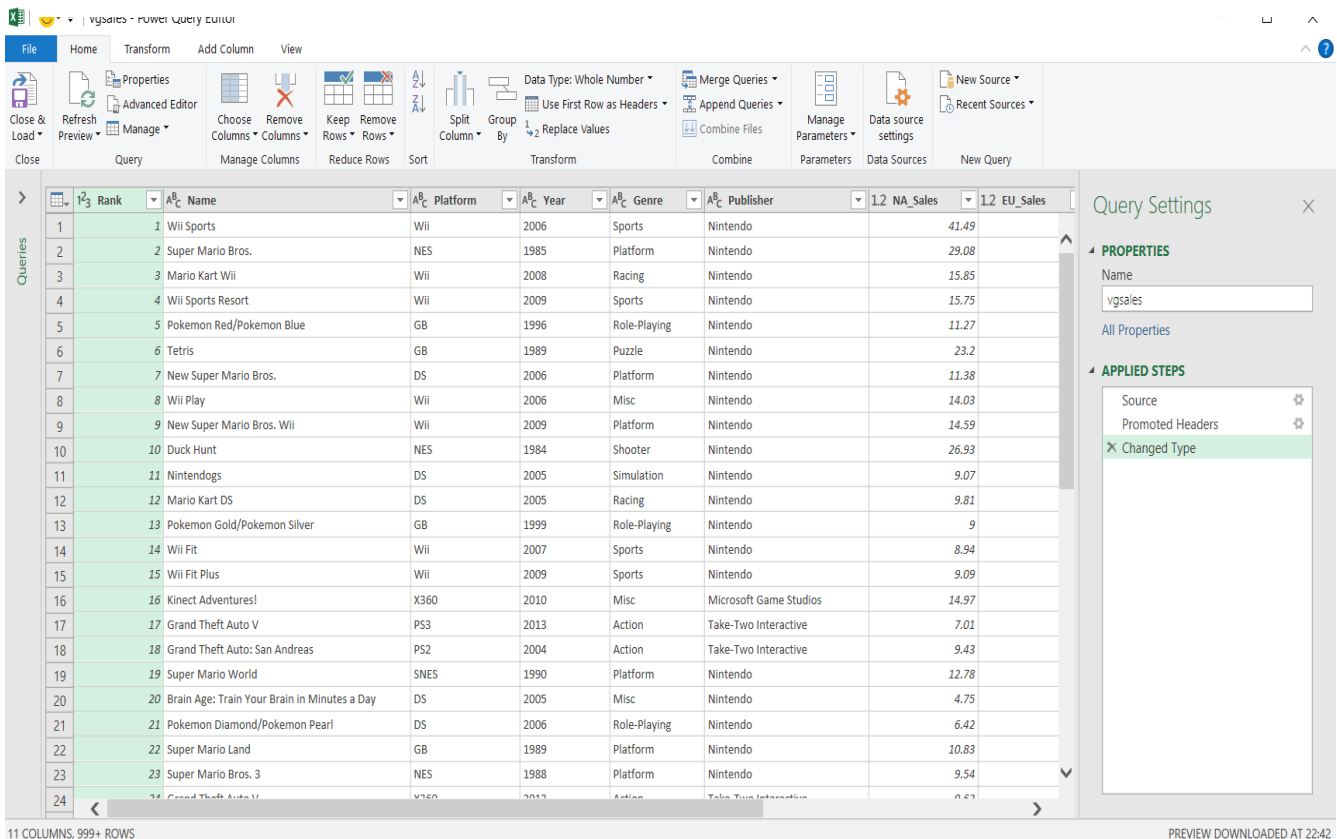
ETL PROCESS

- ETL - Extract, Transform and Load
- Data is extracted from various source systems using an ETL process, which then transforms the data (by performing calculations, computations, concatenations, etc.) and loads the data into the Data Warehouse system.
- The triple use of ETL provides necessary capabilities that are frequently combined into a single application or group of tools to assist in the following areas:
 - Enhances Business Intelligence solutions for decision making.
 - Allows verification of data transformation, aggregation and calculations rules.
 - Allows sample data comparison between source and target system.
 - Helps to improve productivity as it codifies and reuses without additional technical skills.
- Initially, the raw dataset is arranged as shown:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Rank	Name	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales	Other_Sales	Global_Sales	
2	1	Wii Sports	Wii	2006	Sports	Nintendo	41.49	29.02	3.77	8.46	82.74	
3	2	Super Mario Bros.	NES	1985	Platform	Nintendo	29.08	3.58	6.81	0.77	40.24	
4	3	Mario Kart Wii	Wii	2008	Racing	Nintendo	15.85	12.88	3.79	3.31	35.82	
5	4	Wii Sports Resort	Wii	2009	Sports	Nintendo	15.75	11.01	3.28	2.96	33	
6	5	Pokemon Red/Pokemon Blue	GB	1996	Role-Playir	Nintendo	11.27	8.89	10.22	1	31.37	
7	6	Tetris	GB	1989	Puzzle	Nintendo	23.2	2.26	4.22	0.58	30.26	
8	7	New Super Mario Bros.	DS	2006	Platform	Nintendo	11.38	9.23	6.5	2.9	30.01	
9	8	Wii Play	Wii	2006	Misc	Nintendo	14.03	9.2	2.93	2.85	29.02	
10	9	New Super Mario Bros. Wii	Wii	2009	Platform	Nintendo	14.59	7.06	4.7	2.26	28.62	
11	10	Duck Hunt	NES	1984	Shooter	Nintendo	26.93	0.63	0.28	0.47	28.31	
12	11	Nintendogs	DS	2005	Simulation	Nintendo	9.07	11	1.93	2.75	24.76	
13	12	Mario Kart DS	DS	2005	Racing	Nintendo	9.81	7.57	4.13	1.92	23.42	
14	13	Pokemon Gold/Pokemon Silver	GB	1999	Role-Playir	Nintendo	9	6.18	7.2	0.71	23.1	
15	14	Wii Fit	Wii	2007	Sports	Nintendo	8.94	8.03	3.6	2.15	22.72	
16	15	Wii Fit Plus	Wii	2009	Sports	Nintendo	9.09	8.59	2.53	1.79	22	
17	16	Kinect Adventures!	X360	2010	Misc	Microsoft	14.97	4.94	0.24	1.67	21.82	
18	17	Grand Theft Auto V	PS3	2013	Action	Take-Two	7.01	9.27	0.97	4.14	21.4	
19	18	Grand Theft Auto: San Andreas	PS2	2004	Action	Take-Two	9.43	0.4	0.41	10.57	20.81	
20	19	Super Mario World	SNES	1990	Platform	Nintendo	12.78	3.75	3.54	0.55	20.61	
21	20	Brain Age: Train Your Brain in Minutes a Day	DS	2005	Misc	Nintendo	4.75	9.26	4.16	2.05	20.22	
22	21	Pokemon Diamond/Pokemon Pearl	DS	2006	Role-Playir	Nintendo	6.42	4.52	6.04	1.37	18.36	
23	22	Super Mario Land	GB	1989	Platform	Nintendo	10.83	2.71	4.18	0.42	18.14	
24	23	Super Mario Bros. 3	NES	1988	Platform	Nintendo	9.54	3.44	3.84	0.46	17.28	
25	24	Grand Theft Auto V	X360	2013	Action	Take-Two	9.63	5.31	0.06	1.38	16.38	
26	25	Grand Theft Auto: Vice City	PS2	2002	Action	Take-Two	8.41	5.49	0.47	1.78	16.15	
27	26	Pokemon Ruby/Pokemon Sapphire	GBA	2002	Role-Playir	Nintendo	6.06	3.9	5.38	0.5	15.85	
28	27	Pokemon Black/Pokemon White	DS	2010	Role-Playir	Nintendo	5.57	3.28	5.65	0.82	15.32	
29	28	Brain Age 2: More Training in Minutes a Day	DS	2005	Puzzle	Nintendo	3.44	5.36	5.32	1.18	15.3	
30	29	Gran Turismo 3: A-Spec	PS2	2001	Racing	Sony Comp	6.85	5.09	1.87	1.16	14.98	
31	30	Call of Duty: Modern Warfare 3	X360	2011	Shooter	Activision	9.03	4.28	0.13	1.32	14.76	
32	31	Pokémon Yellow: Special Pikachu Edition	GB	1998	Role-Playir	Nintendo	5.89	5.04	3.12	0.59	14.64	

Steps taken to clean dataset through ETL process

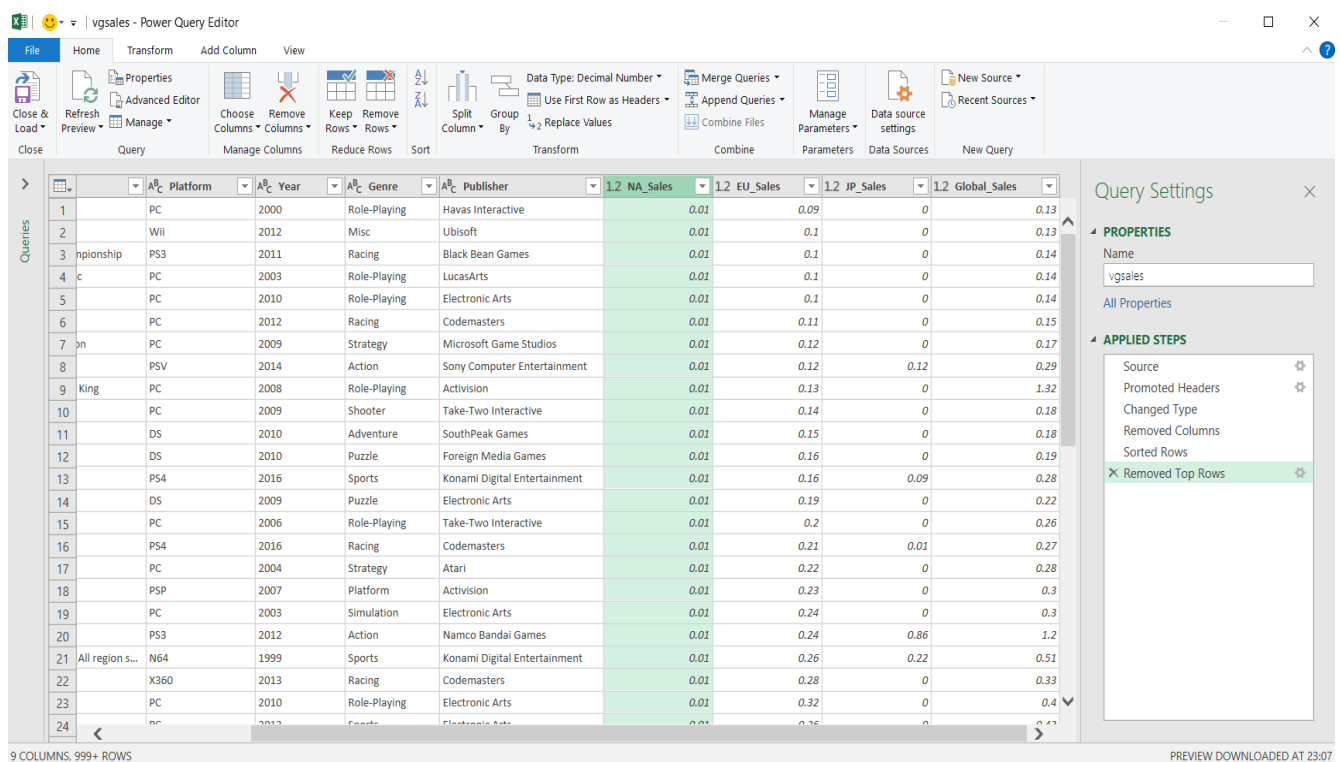
Step 1: Open a blank Excel document, pick the Data tab, click on New Query, and then choose from file - from CSV file from the drop-down menu.



The screenshot shows the Power Query Editor interface. The main area displays a table of video game data. The table has columns for Rank, Name, Platform, Year, Genre, Publisher, and Sales. The data is sorted by Rank in ascending order. The right-hand pane shows the 'Query Settings' for the 'vgsales' query, with the 'Changed Type' step applied.

Rank	Name	Platform	Year	Genre	Publisher	1.2 NA_Sales	1.2 EU_Sales
1	Wii Sports	Wii	2006	Sports	Nintendo	41.49	
2	Super Mario Bros.	NES	1985	Platform	Nintendo	29.08	
3	Mario Kart Wii	Wii	2008	Racing	Nintendo	15.85	
4	Wii Sports Resort	Wii	2009	Sports	Nintendo	15.75	
5	Pokemon Red/Pokemon Blue	GB	1996	Role-Playing	Nintendo	11.27	
6	Tetris	GB	1989	Puzzle	Nintendo	23.2	
7	New Super Mario Bros.	DS	2006	Platform	Nintendo	11.38	
8	Wii Play	Wii	2006	Misc	Nintendo	14.03	
9	New Super Mario Bros. Wii	Wii	2009	Platform	Nintendo	14.59	
10	Duck Hunt	NES	1984	Shooter	Nintendo	26.93	
11	Nintendogs	DS	2005	Simulation	Nintendo	9.07	
12	Mario Kart DS	DS	2005	Racing	Nintendo	9.81	
13	Pokemon Gold/Pokemon Silver	GB	1999	Role-Playing	Nintendo	9	
14	Wii Fit	Wii	2007	Sports	Nintendo	8.94	
15	Wii Fit Plus	Wii	2009	Sports	Nintendo	9.09	
16	Kinect Adventures!	X360	2010	Misc	Microsoft Game Studios	14.97	
17	Grand Theft Auto V	PS3	2013	Action	Take-Two Interactive	7.01	
18	Grand Theft Auto: San Andreas	PS2	2004	Action	Take-Two Interactive	9.43	
19	Super Mario World	SNES	1990	Platform	Nintendo	12.78	
20	Brain Age: Train Your Brain in Minutes a Day	DS	2005	Misc	Nintendo	4.75	
21	Pokemon Diamond/Pokemon Pearl	DS	2006	Role-Playing	Nintendo	6.42	
22	Super Mario Land	GB	1989	Platform	Nintendo	10.83	
23	Super Mario Bros. 3	NES	1988	Platform	Nintendo	9.54	
24	Grand Theft Auto V	X360	2013	Action	Take-Two Interactive	9.63	

Step 2: After entering into the query editor, data fields will promote into header.

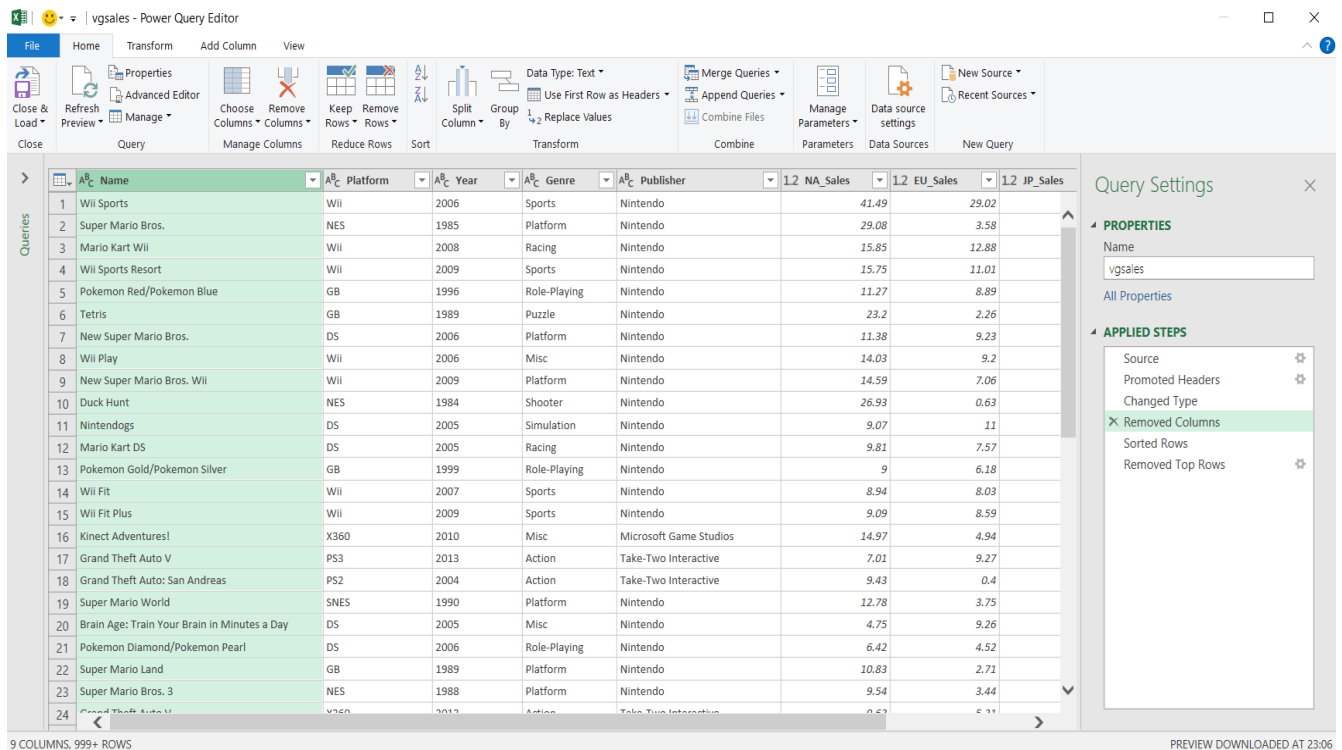


The screenshot shows the Power Query Editor interface. The main area displays a table with the following columns: Platform, Year, Genre, Publisher, 1.2 NA_Sales, 1.2 EU_Sales, 1.2 JP_Sales, and 1.2 Global_Sales. The data rows are numbered 1 through 24. The 'Removed Top Rows' step is highlighted in the 'APPLIED STEPS' pane on the right. The 'Query Settings' pane on the right shows the query name 'vgsales' and the 'APPLIED STEPS' list.

	Platform	Year	Genre	Publisher	1.2 NA_Sales	1.2 EU_Sales	1.2 JP_Sales	1.2 Global_Sales
1	PC	2000	Role-Playing	Havas Interactive	0.01	0.09	0	0.13
2	Wii	2012	Misc	Ubisoft	0.01	0.1	0	0.13
3	Playstation 3	2011	Racing	Black Bean Games	0.01	0.1	0	0.14
4	PC	2003	Role-Playing	LucasArts	0.01	0.1	0	0.14
5	PC	2010	Role-Playing	Electronic Arts	0.01	0.1	0	0.14
6	PC	2012	Racing	Codemasters	0.01	0.11	0	0.15
7	PC	2009	Strategy	Microsoft Game Studios	0.01	0.12	0	0.17
8	PSV	2014	Action	Sony Computer Entertainment	0.01	0.12	0.12	0.29
9	King of Kings	2008	Role-Playing	Activision	0.01	0.13	0	1.32
10	PC	2009	Shooter	Take-Two Interactive	0.01	0.14	0	0.18
11	DS	2010	Adventure	SouthPeak Games	0.01	0.15	0	0.18
12	DS	2010	Puzzle	Foreign Media Games	0.01	0.16	0	0.19
13	PS4	2016	Sports	Konami Digital Entertainment	0.01	0.16	0.09	0.28
14	DS	2009	Puzzle	Electronic Arts	0.01	0.19	0	0.22
15	PC	2006	Role-Playing	Take-Two Interactive	0.01	0.2	0	0.26
16	PS4	2016	Racing	Codemasters	0.01	0.21	0.01	0.27
17	PC	2004	Strategy	Atari	0.01	0.22	0	0.28
18	PSP	2007	Platform	Activision	0.01	0.23	0	0.3
19	PC	2003	Simulation	Electronic Arts	0.01	0.24	0	0.3
20	PS3	2012	Action	Namco Bandai Games	0.01	0.24	0.86	1.2
21	All region s...	N64	Sports	Konami Digital Entertainment	0.01	0.26	0.22	0.51
22	X360	2013	Racing	Codemasters	0.01	0.28	0	0.33
23	PC	2010	Role-Playing	Electronic Arts	0.01	0.32	0	0.4
24	PC	2012	Sports	Electronic Arts	0.01	0.35	0	0.43

Step 3: After entering into the query, now select Home tab and remove column which are not in required for analysis. Column which are removed from dataset are mentioned below:

- Rank
- Other_Sales



Power Query Editor - vgsales

File Home Transform Add Column View

Close & Load Refresh Properties Advanced Editor Manage Query

Choose Columns Remove Columns Keep Rows Remove Rows Split Column Group By Data Type: Text Use First Row as Headers Replace Values Merge Queries Append Queries Combine Files Manage Parameters Data source settings New Source Recent Sources

AB_C	Name	Platform	Year	Genre	Publisher	1.2 NA_Sales	1.2 EU_Sales	1.2 JP_Sales
1	Wii Sports	Wii	2006	Sports	Nintendo	41.49	29.02	
2	Super Mario Bros.	NES	1985	Platform	Nintendo	29.08	3.58	
3	Mario Kart Wii	Wii	2008	Racing	Nintendo	15.85	12.88	
4	Wii Sports Resort	Wii	2009	Sports	Nintendo	15.75	11.01	
5	Pokemon Red/Pokemon Blue	GB	1996	Role-Playing	Nintendo	11.27	8.89	
6	Tetris	GB	1989	Puzzle	Nintendo	23.2	2.26	
7	New Super Mario Bros.	DS	2006	Platform	Nintendo	11.38	9.23	
8	Wii Play	Wii	2006	Misc	Nintendo	14.03	9.2	
9	New Super Mario Bros. Wii	Wii	2009	Platform	Nintendo	14.59	7.06	
10	Duck Hunt	NES	1984	Shooter	Nintendo	26.93	0.63	
11	Nintendogs	DS	2005	Simulation	Nintendo	9.07	11	
12	Mario Kart DS	DS	2005	Racing	Nintendo	9.81	7.57	
13	Pokemon Gold/Pokemon Silver	GB	1999	Role-Playing	Nintendo	9	6.18	
14	Wii Fit	Wii	2007	Sports	Nintendo	8.94	8.03	
15	Wii Fit Plus	Wii	2009	Sports	Nintendo	9.09	8.59	
16	Kinect Adventures!	X360	2010	Misc	Microsoft Game Studios	14.97	4.94	
17	Grand Theft Auto V	PS3	2013	Action	Take-Two Interactive	7.01	9.27	
18	Grand Theft Auto: San Andreas	PS2	2004	Action	Take-Two Interactive	9.43	0.4	
19	Super Mario World	SNES	1990	Platform	Nintendo	12.78	3.75	
20	Brain Age: Train Your Brain in Minutes a Day	DS	2005	Misc	Nintendo	4.75	9.26	
21	Pokemon Diamond/Pokemon Pearl	DS	2006	Role-Playing	Nintendo	6.42	4.52	
22	Super Mario Land	GB	1989	Platform	Nintendo	10.83	2.71	
23	Super Mario Bros. 3	NES	1988	Platform	Nintendo	9.54	3.44	
24	Grand Theft Auto V	PS3	2013	Action	Take-Two Interactive	7.01	9.27	

9 COLUMNS, 999+ ROWS

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Query Settings

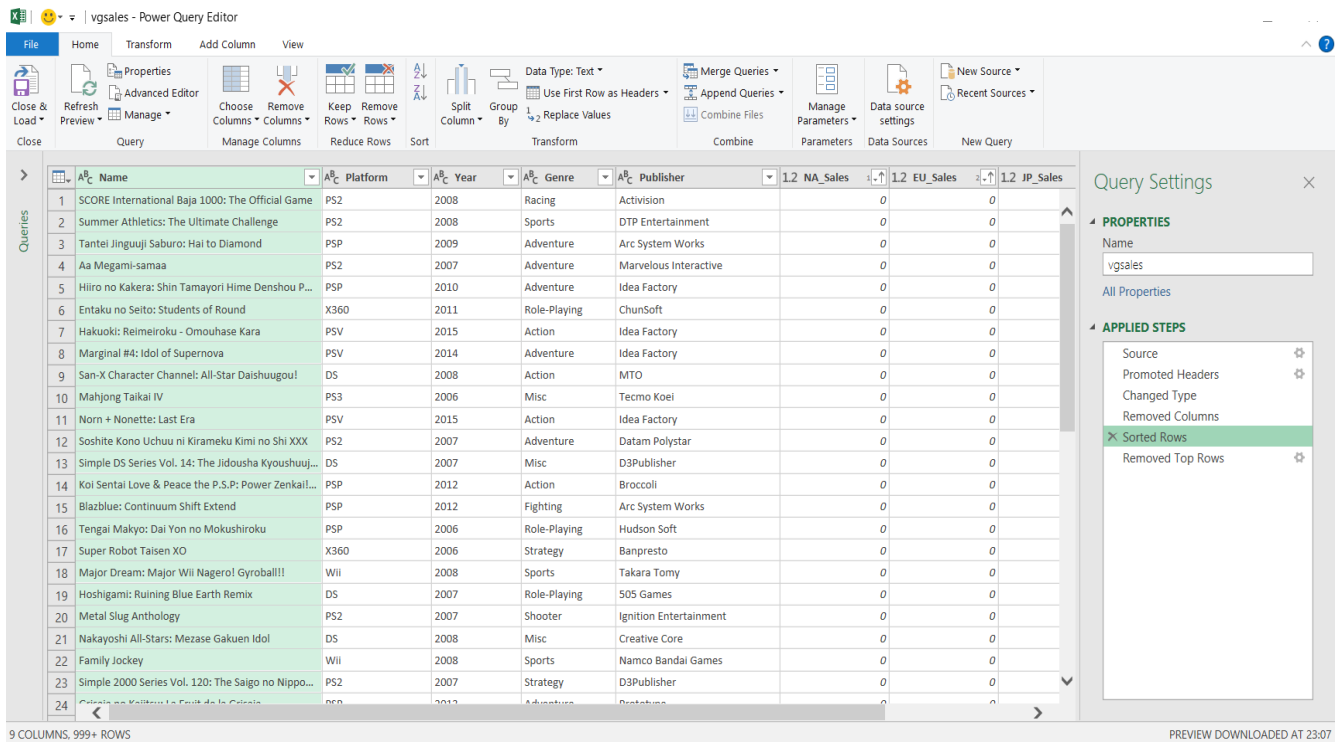
PROPERTIES

Name: vgsales

APPLIED STEPS

- Source
- Promoted Headers
- Changed Type
- Removed Columns
- Sorted Rows
- Removed Top Rows

Step 4: We can now delete null values by selecting Delete rows from the Home tab after sorting the dataset to place null values at the top.



Power Query Editor - vgsales

File Home Transform Add Column View

Close & Load Refresh Preview Advanced Editor Query

Choose Columns Remove Columns Manage Columns

Keep Rows Remove Rows Reduce Rows

Sort Split Column Group By Transform

Data Type: Text Use First Row as Headers Replace Values

Merge Queries Append Queries Combine Files Combine Parameters

Data source settings Data Sources New Query

Query Settings

PROPERTIES

Name: vgsales

APPLIED STEPS

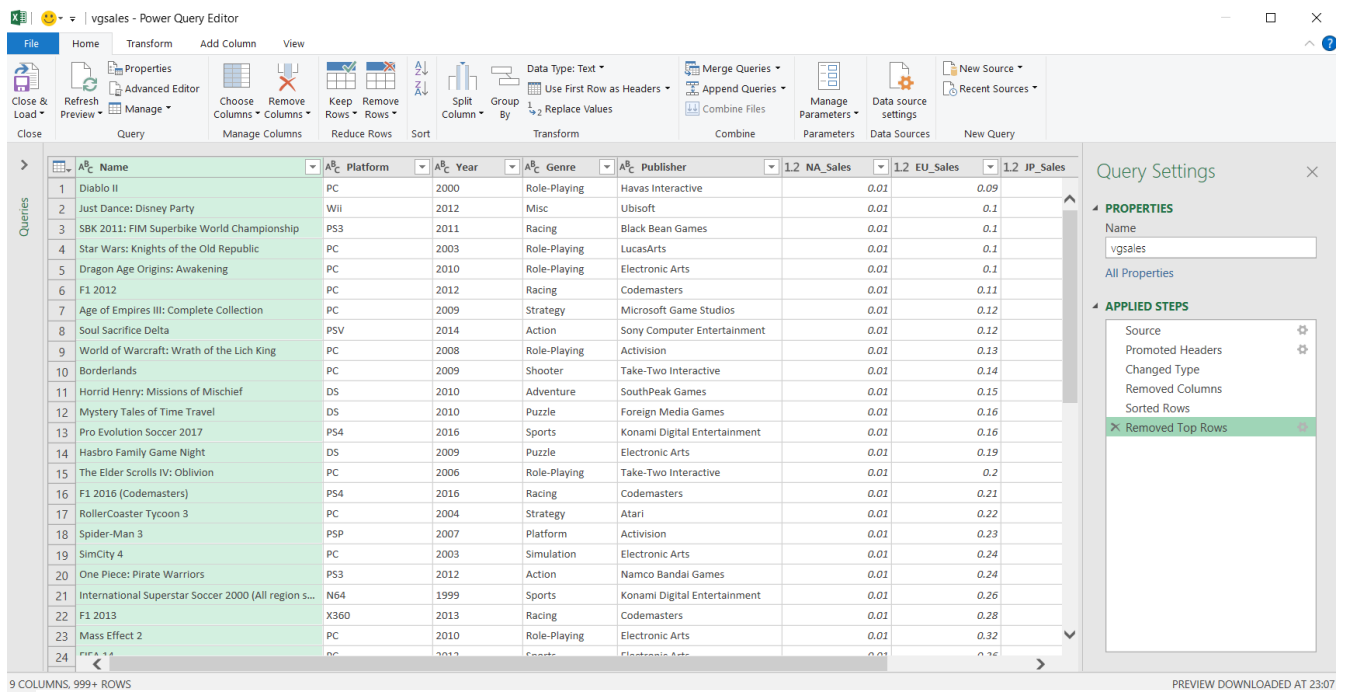
- Source
- Promoted Headers
- Changed Type
- Removed Columns
- Sorted Rows**
- Removed Top Rows

Name	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales
SCORE International Baja 1000: The Official Game	PS2	2008	Racing	Activision	0	0	0
Summer Athletics: The Ultimate Challenge	PS2	2008	Sports	DTP Entertainment	0	0	0
Tantei Jinguuji Saburo: Hai to Diamond	PSP	2009	Adventure	Arc System Works	0	0	0
Aa Megami-samaa	PS2	2007	Adventure	Marvelous Interactive	0	0	0
Hiiro no Kakera: Shin Tamayori Hime Denshou P...	PSP	2010	Adventure	Idea Factory	0	0	0
Entaku no Seito: Students of Round	X360	2011	Role-Playing	ChunSoft	0	0	0
Hakuoki: Reimeiroku - Omouhase Kara	PSV	2015	Action	Idea Factory	0	0	0
Marginal #4: Idol of Supernova	PSV	2014	Adventure	Idea Factory	0	0	0
San-X Character Channel: All-Star Daishuugou!	DS	2008	Action	MTO	0	0	0
Mahjong Taikai IV	PS3	2006	Misc	Tecmo Koei	0	0	0
Norn + Nonette: Last Era	PSV	2015	Action	Idea Factory	0	0	0
Soshite Kono Uchuu ni Kirameku Kimi no Shi XXX	PS2	2007	Adventure	Datam Polystar	0	0	0
Simple DS Series Vol. 14: The Jidousha Kyoushuuj...	DS	2007	Misc	D3Publisher	0	0	0
Koi Sentai Love & Peace the P.S.P: Power Zenkai...	PSP	2012	Action	Broccoli	0	0	0
Blazblue: Continuum Shift Extend	PSP	2012	Fighting	Arc System Works	0	0	0
Tengai Makyo: Dai Yon no Mokushiroku	PSP	2006	Role-Playing	Hudson Soft	0	0	0
Super Robot Taisen XO	X360	2006	Strategy	Banpresto	0	0	0
Major Dream: Major Wii Nagerol Gyroball!!!	Wii	2008	Sports	Takara Tomy	0	0	0
Hoshigami: Ruining Blue Earth Remix	DS	2007	Role-Playing	SOS Games	0	0	0
Metal Slug Anthology	PS2	2007	Shooter	Ignition Entertainment	0	0	0
Nakayoshi All-Stars: Mezase Gakuen Idol	DS	2008	Misc	Creative Core	0	0	0
Family Jockey	Wii	2008	Sports	Namco Bandal Games	0	0	0
Simple 2000 Series Vol. 120: The Saigo no Nippo...	PS2	2007	Strategy	D3Publisher	0	0	0
...

9 COLUMNS, 999+ ROWS

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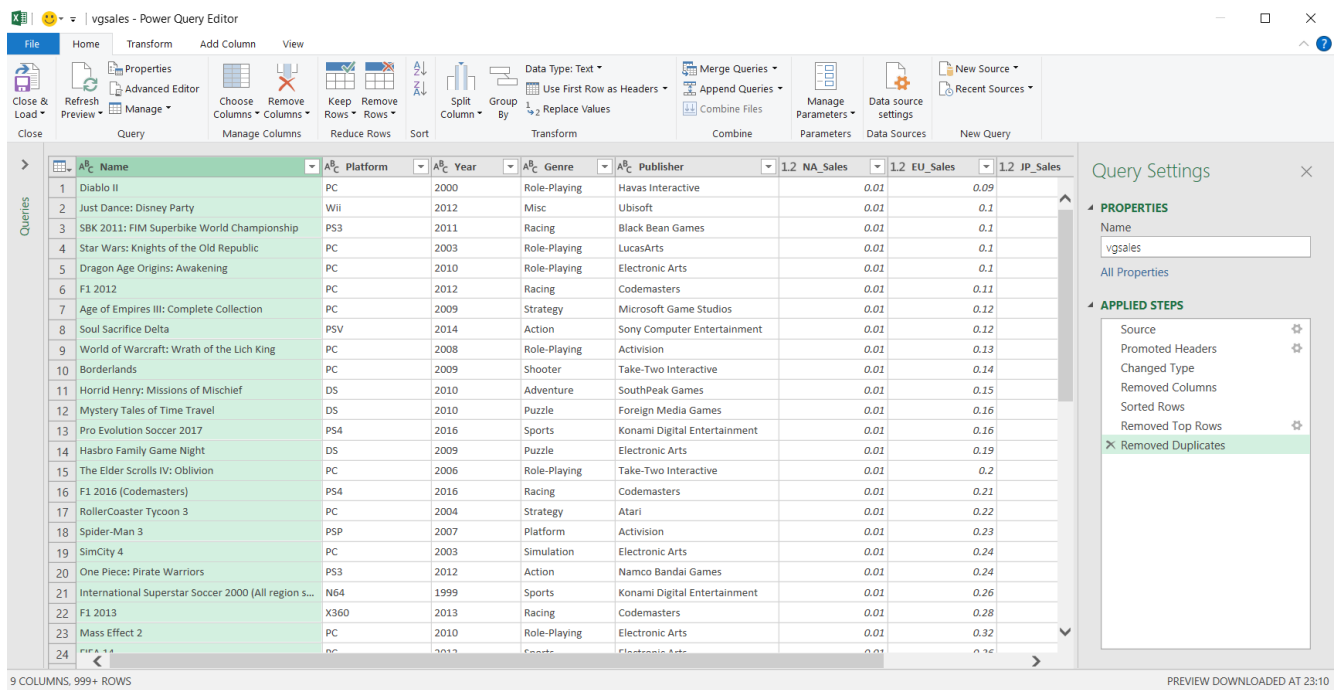
Step 5: Now remove the unnecessary top rows from the data set which contain null values in few sales data.



The screenshot shows the Power Query Editor interface. The main area displays a table with columns: Name, Platform, Year, Genre, Publisher, 1.2 NA_Sales, 1.2 EU_Sales, and 1.2 JP_Sales. The table contains 24 rows of data. On the right side, the 'Query Settings' pane is open, showing the 'APPLIED STEPS' section. The first step, 'Removed Top Rows', is highlighted, indicating that the top rows of the data have been removed. The status bar at the bottom indicates '9 COLUMNS, 999+ ROWS' and 'PREVIEW DOWNLOADED AT 23:07'.

Name	Platform	Year	Genre	Publisher	1.2 NA_Sales	1.2 EU_Sales	1.2 JP_Sales
Diablo II	PC	2000	Role-Playing	Havas Interactive	0.01	0.09	
Just Dance: Disney Party	Wii	2012	Misc	Ubisoft	0.01	0.1	
SBK 2011: FIM Superbike World Championship	PS3	2011	Racing	Black Bean Games	0.01	0.1	
Star Wars: Knights of the Old Republic	PC	2003	Role-Playing	LucasArts	0.01	0.1	
Dragon Age Origins: Awakening	PC	2010	Role-Playing	Electronic Arts	0.01	0.1	
F1 2012	PC	2012	Racing	Codemasters	0.01	0.11	
Age of Empires III: Complete Collection	PC	2009	Strategy	Microsoft Game Studios	0.01	0.12	
Soul Sacrifice Delta	PSV	2014	Action	Sony Computer Entertainment	0.01	0.12	
World of Warcraft: Wrath of the Lich King	PC	2008	Role-Playing	Activision	0.01	0.13	
Borderlands	PC	2009	Shooter	Take-Two Interactive	0.01	0.14	
Horrid Henry: Missions of Mischief	DS	2010	Adventure	SouthPeak Games	0.01	0.15	
Mystery Tales of Time Travel	DS	2010	Puzzle	Foreign Media Games	0.01	0.16	
Pro Evolution Soccer 2017	PS4	2016	Sports	Konami Digital Entertainment	0.01	0.16	
Hasbro Family Game Night	DS	2009	Puzzle	Electronic Arts	0.01	0.19	
The Elder Scrolls IV: Oblivion	PC	2006	Role-Playing	Take-Two Interactive	0.01	0.2	
F1 2016 (Codemasters)	PS4	2016	Racing	Codemasters	0.01	0.21	
RollerCoaster Tycoon 3	PC	2004	Strategy	Atari	0.01	0.22	
Spider-Man 3	PSP	2007	Platform	Activision	0.01	0.23	
SimCity 4	PC	2003	Simulation	Electronic Arts	0.01	0.24	
One Piece: Pirate Warriors	PS3	2012	Action	Namco Bandai Games	0.01	0.24	
International Superstar Soccer 2000 (All region s...	N64	1999	Sports	Konami Digital Entertainment	0.01	0.26	
F1 2013	X360	2013	Racing	Codemasters	0.01	0.28	
Mass Effect 2	PC	2010	Role-Playing	Electronic Arts	0.01	0.32	
	PC	2011	Sports	Electronic Arts	0.01	0.16	

Step 6: Now remove duplicate values from the dataset.



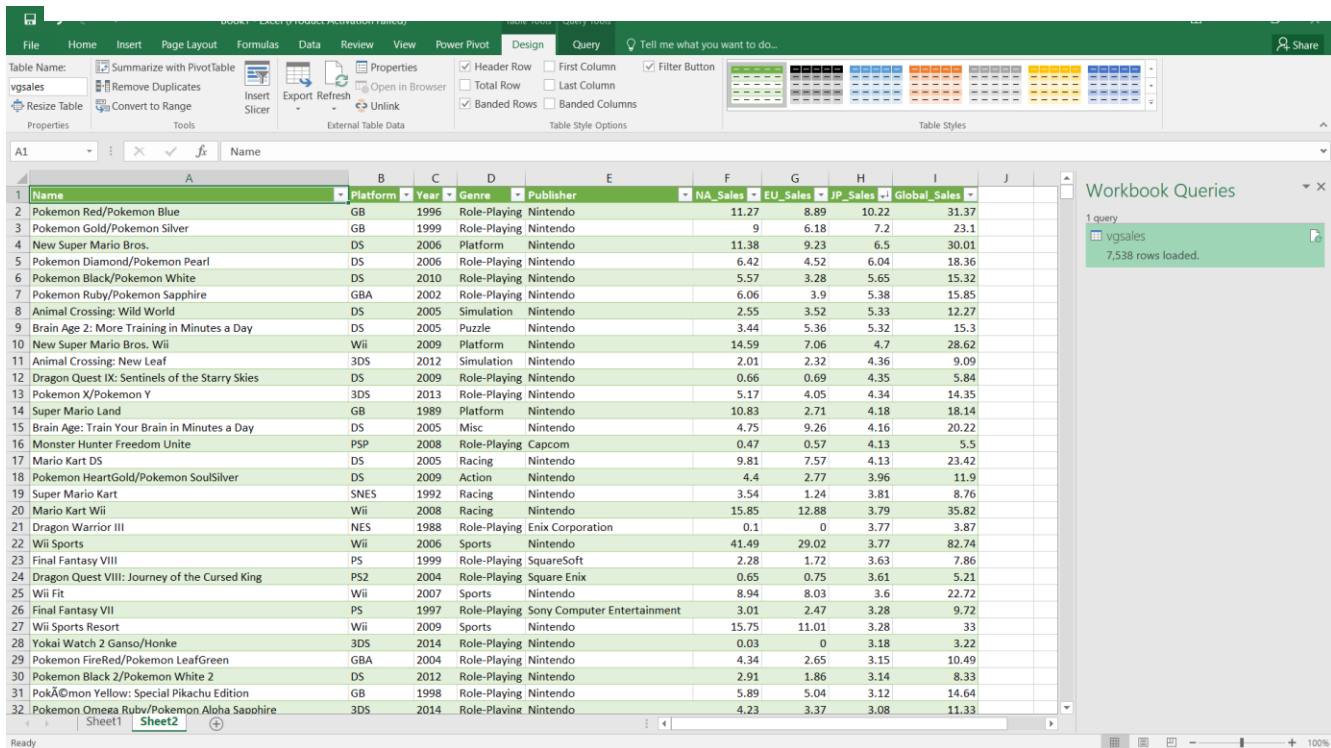
The screenshot shows the Power Query Editor interface. The main area displays a table of video game data. The 'Query Settings' pane on the right shows the 'APPLIED STEPS' list, where 'Removed Duplicates' is the current step.

Name	Platform	Year	Genre	Publisher	1.2 NA_Sales	1.2 EU_Sales	1.2 JP_Sales
1	Diablo II	PC	2000	Role-Playing	Havas Interactive	0.01	0.09
2	Just Dance: Disney Party	Wii	2012	Misc	Ubisoft	0.01	0.1
3	SBK 2011: FIM Superbike World Championship	PS3	2011	Racing	Black Bean Games	0.01	0.1
4	Star Wars: Knights of the Old Republic	PC	2003	Role-Playing	LucasArts	0.01	0.1
5	Dragon Age Origins: Awakening	PC	2010	Role-Playing	Electronic Arts	0.01	0.1
6	F1 2012	PC	2012	Racing	Codemasters	0.01	0.11
7	Age of Empires III: Complete Collection	PC	2009	Strategy	Microsoft Game Studios	0.01	0.12
8	Soul Sacrifice Delta	PSV	2014	Action	Sony Computer Entertainment	0.01	0.12
9	World of Warcraft: Wrath of the Lich King	PC	2008	Role-Playing	Activision	0.01	0.13
10	Borderlands	PC	2009	Shooter	Take-Two Interactive	0.01	0.14
11	Horrid Henry: Missions of Mischief	DS	2010	Adventure	SouthPeak Games	0.01	0.15
12	Mystery Tales of Time Travel	DS	2010	Puzzle	Foreign Media Games	0.01	0.16
13	Pro Evolution Soccer 2017	PS4	2016	Sports	Konami Digital Entertainment	0.01	0.16
14	Hasbro Family Game Night	DS	2009	Puzzle	Electronic Arts	0.01	0.19
15	The Elder Scrolls IV: Oblivion	PC	2006	Role-Playing	Take-Two Interactive	0.01	0.2
16	F1 2016 (Codemasters)	PS4	2016	Racing	Codemasters	0.01	0.21
17	RollerCoaster Tycoon 3	PC	2004	Strategy	Atari	0.01	0.22
18	Spider-Man 3	PSP	2007	Platform	Activision	0.01	0.23
19	SimCity 4	PC	2003	Simulation	Electronic Arts	0.01	0.24
20	One Piece: Pirate Warriors	PS3	2012	Action	Namco Bandai Games	0.01	0.24
21	International Superstar Soccer 2000 (All region s...	N64	1999	Sports	Konami Digital Entertainment	0.01	0.26
22	F1 2013	X360	2013	Racing	Codemasters	0.01	0.28
23	Mass Effect 2	PC	2010	Role-Playing	Electronic Arts	0.01	0.32
24	FIFA 11	PC	2012	Sports	Electronic Arts	0.01	0.35

9 COLUMNS, 999+ ROWS

PREVIEW DOWNLOADED AT 23:10

Finally, after clearing the data, the final dataset which is arranged in descending order is shown below:



The screenshot displays an Excel interface with a PivotTable named 'vgsales'. The PivotTable is sorted in descending order by 'Global_Sales'. The data includes columns for Name, Platform, Year, Genre, Publisher, NA_Sales, EU_Sales, JP_Sales, and Global_Sales. The right-hand pane shows 'Workbook Queries' with a single query named 'vgsales' containing 7,538 rows.

	Name	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales	Global_Sales
1	Pokemon Red/Pokemon Blue	GB	1996	Role-Playing	Nintendo	11.27	8.89	10.22	31.37
2	Pokemon Gold/Pokemon Silver	GB	1999	Role-Playing	Nintendo	9	6.18	7.2	23.1
3	New Super Mario Bros.	DS	2006	Platform	Nintendo	11.38	9.23	6.5	30.01
4	Pokemon Diamond/Pokemon Pearl	DS	2006	Role-Playing	Nintendo	6.42	4.52	6.04	18.36
5	Pokemon Black/Pokemon White	DS	2010	Role-Playing	Nintendo	5.57	3.28	5.65	15.32
6	Pokemon Ruby/Pokemon Sapphire	GBA	2002	Role-Playing	Nintendo	6.06	3.9	5.38	15.85
7	Animal Crossing: Wild World	DS	2005	Simulation	Nintendo	2.55	3.52	5.33	12.27
8	Brain Age 2: More Training in Minutes a Day	DS	2005	Puzzle	Nintendo	3.44	5.36	5.32	15.3
9	New Super Mario Bros. Wii	Wii	2009	Platform	Nintendo	14.59	7.06	4.7	28.62
10	Animal Crossing: New Leaf	3DS	2012	Simulation	Nintendo	2.01	2.32	4.36	9.09
11	Dragon Quest IX: Sentinels of the Starry Skies	DS	2009	Role-Playing	Nintendo	0.66	0.69	4.35	5.84
12	Pokemon X/Pokemon Y	3DS	2013	Role-Playing	Nintendo	5.17	4.05	4.34	14.35
13	Super Mario Land	GB	1989	Platform	Nintendo	10.83	2.71	4.18	18.14
14	Brain Age: Train Your Brain in Minutes a Day	DS	2005	Misc	Nintendo	4.75	9.26	4.16	20.22
15	Monster Hunter Freedom Unite	PSP	2008	Role-Playing	Capcom	0.47	0.57	4.13	5.5
16	Mario Kart DS	DS	2005	Racing	Nintendo	9.81	7.57	4.13	23.42
17	Pokemon HeartGold/Pokemon SoulSilver	DS	2009	Action	Nintendo	4.4	2.77	3.96	11.9
18	Super Mario Kart	NES	1992	Racing	Nintendo	3.54	1.24	3.81	8.76
19	Mario Kart Wii	Wii	2008	Racing	Nintendo	15.85	12.88	3.79	35.82
20	Dragon Warrior III	NES	1988	Role-Playing	Enix Corporation	0.1	0	3.77	3.87
21	Wii Sports	Wii	2006	Sports	Nintendo	41.49	29.02	3.77	82.74
22	Final Fantasy VIII	PS	1999	Role-Playing	SquareSoft	2.28	1.72	3.63	7.86
23	Dragon Quest VIII: Journey of the Cursed King	PS2	2004	Role-Playing	Square Enix	0.65	0.75	3.61	5.21
24	Wii Fit	Wii	2007	Sports	Nintendo	8.94	8.03	3.6	22.72
25	Final Fantasy VII	PS	1997	Role-Playing	Sony Computer Entertainment	3.01	2.47	3.28	9.72
26	Wii Sports Resort	Wii	2009	Sports	Nintendo	15.75	11.01	3.28	33
27	Yokai Watch 2 Ganso/Honke	3DS	2014	Role-Playing	Nintendo	0.03	0	3.18	3.22
28	Pokemon FireRed/Pokemon LeafGreen	GBA	2004	Role-Playing	Nintendo	4.34	2.65	3.15	10.49
29	Pokemon Black 2/Pokemon White 2	DS	2012	Role-Playing	Nintendo	2.91	1.86	3.14	8.33
30	Pokemon Yellow: Special Pikachu Edition	GB	1998	Role-Playing	Nintendo	5.89	5.04	3.12	14.64
31	Pokemon Omega Ruby/Pokemon Alpha Sapphire	3DS	2014	Role-Playing	Nintendo	4.23	3.37	3.08	11.33

ANALYSIS ON DATASET

1. Total Global Sales in each year

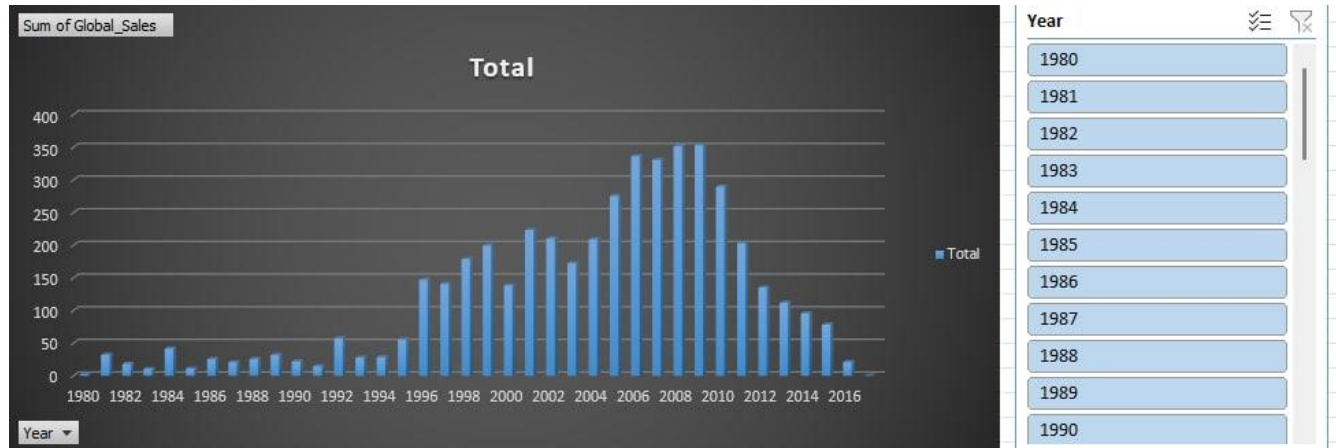
- By performing this analysis, we will be able to fetch that data of yearly global sales of the video games released.
- This analysis is based on years and sum of global sales
- Pivot table and charts are being used to analyse the data
- Sum function is used in pivot table for the sum of global sales.

Analysis Result

Row Labels	Sum of Global_Sales
1980	2.49
1981	32.02
1982	18.26
1983	10.35
1984	41.59
1985	10.65
1986	25.38
1987	20.49
1988	25.48
1989	31.88
1990	21.9
1991	14.44
1992	57.17
1993	27.95
1994	28.4
1995	55.4
1996	146.82
1997	140.54
1998	178.74
1999	199.33
2000	138.37
2001	223.13
2002	210.12
2003	172.16
2004	208.84
2005	275.32
2006	335.87
2007	330.48
2008	351.37
2009	353.08
2010	289.35
2011	202.76
2012	134.95
2013	111.52
2014	95.36
2015	78.35
2016	20.78
2020	0.29
Grand Total	4621.38



Visualization



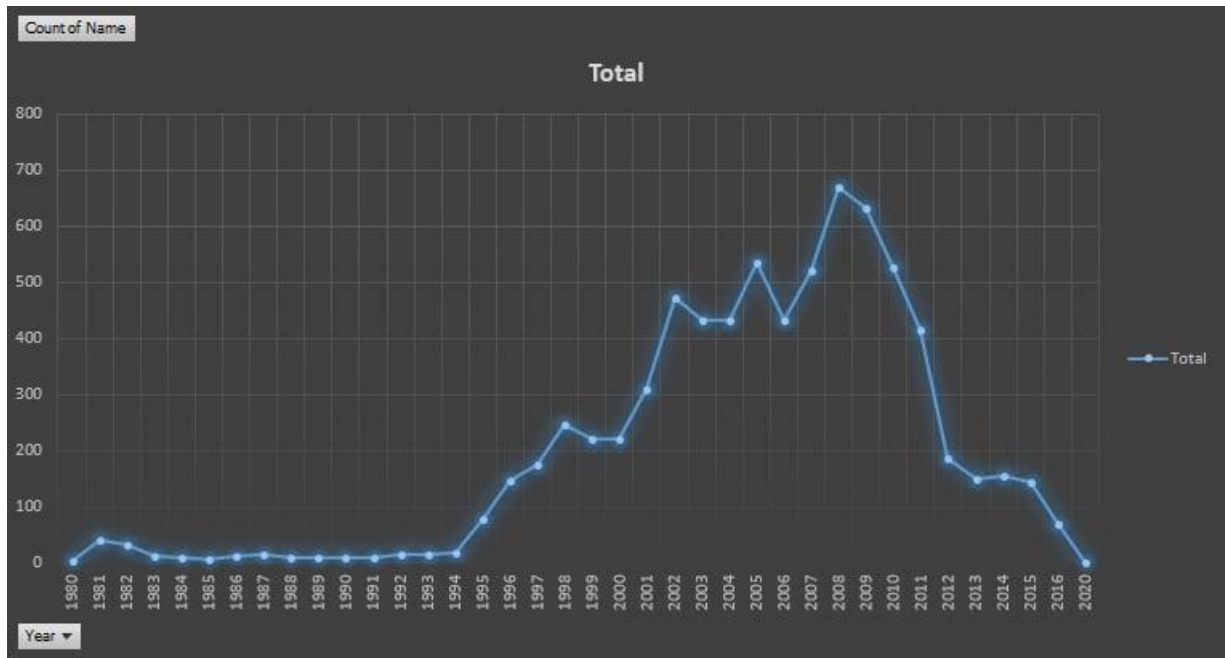
2. Number of games released in each year

- By performing this analysis, we will be able to fetch the total number of games in each year
- This analysis is based on years and count of games released in particular year
- Pivot table and charts are being used to analyse the data
- Count function is used in pivot table to count the number of games

Analysis results

Row Labels	Count of Name
1980	5
1981	43
1982	32
1983	14
1984	9
1985	7
1986	12
1987	15
1988	10
1989	10
1990	11
1991	11
1992	17
1993	15
1994	19
1995	78
1996	148
1997	175
1998	246
1999	222
2000	223
2001	309
2002	472
2003	434
2004	433
2005	536
2006	432
2007	522
2008	670
2009	632
2010	527
2011	416
2012	187
2013	151
2014	157
2015	144
2016	70
2020	1
Grand Total	7415

Visualization



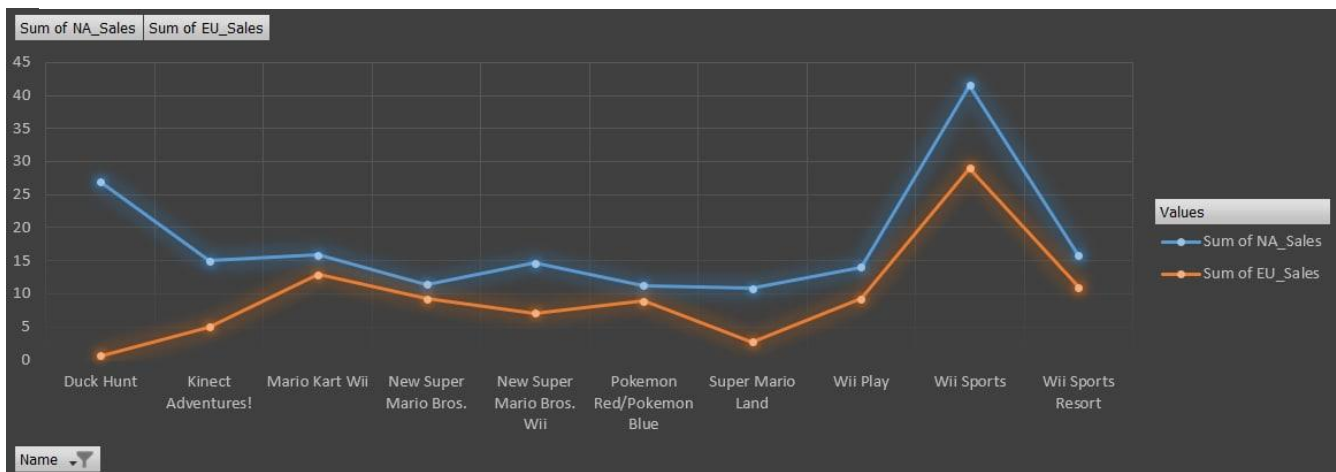
3. Top 10 games sold in North America and Europe

- By performing this analysis, we will be able to fetch the data of top 10 games sales in North America as well as top 10 sales in Europe.
- This analysis is based on Video games names and sales in North America and Europe.
- Pivot table and charts are being used to analyse the data
- Sum function is used in pivot table for the sum of North America and Europe sales.

Analysis Results

Row Labels	Sum of NA_Sales	Sum of EU_Sales
Duck Hunt	26.93	0.63
Kinect Adventures!	14.97	4.94
Mario Kart Wii	15.85	12.88
New Super Mario Bros.	11.38	9.23
New Super Mario Bros. Wii	14.59	7.06
Pokemon Red/Pokemon Blue	11.27	8.89
Super Mario Land	10.83	2.71
Wii Play	14.03	9.2
Wii Sports	41.49	29.02
Wii Sports Resort	15.75	11.01
Grand Total	177.09	95.57

Visualization



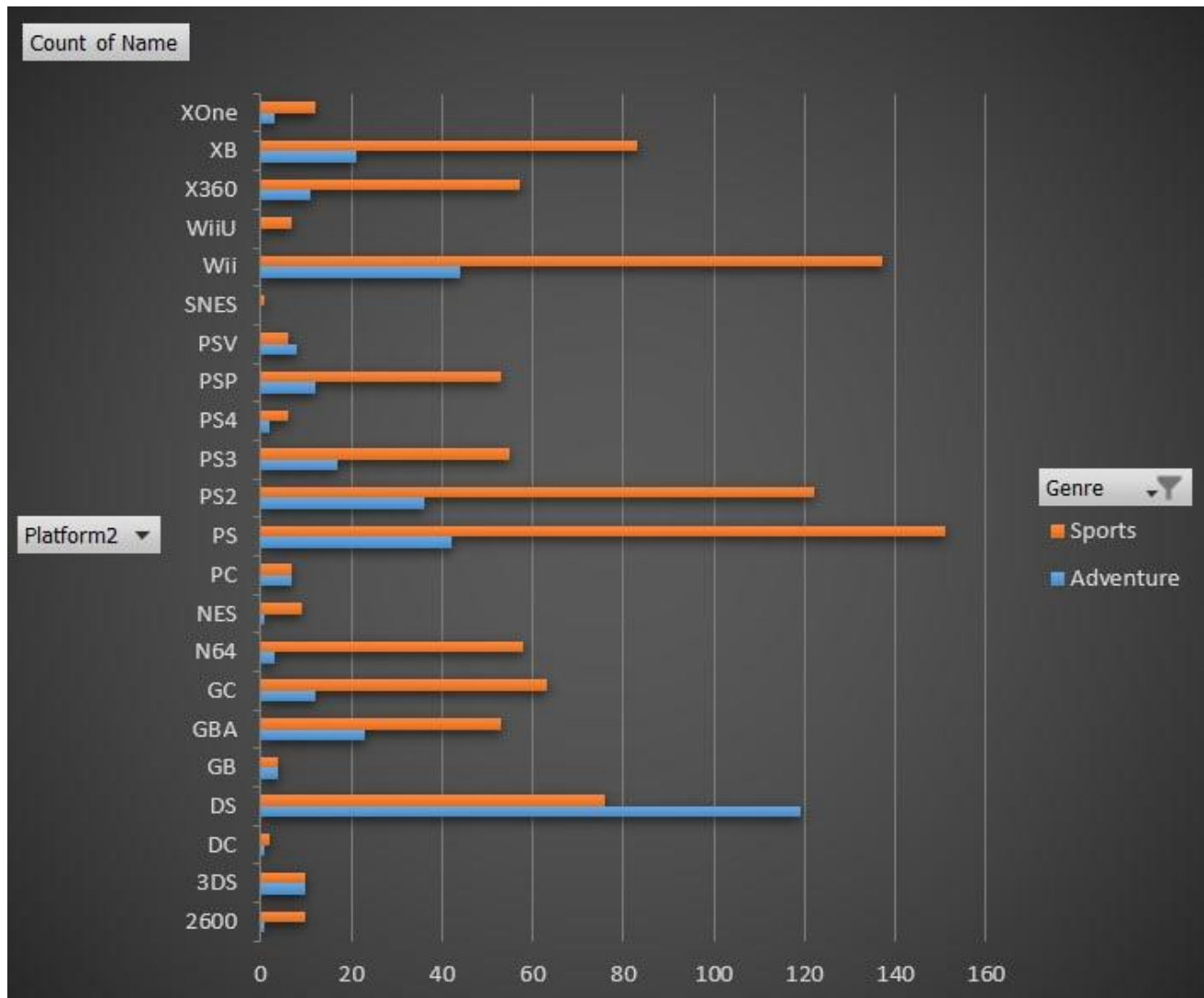
4. Number of games released in adventure and sports genre in each platform

- By performing this analysis, we will be able to fetch the data of total number of games under adventure and sports genre of each platform mentioned.
- This analysis is based on number of Video games and their platform they are released on adventure and sports genre.
- Pivot table and charts are being used to analyse the data
- Filtering of data has been done on genre column.
- Added slicer for better accuracy to view the data

Analysis Results

Count of Name		Column Labels		
Row Labels	Adventure	Sports	Grand Total	
2600	1	10	11	
3DS	10	10	20	
DC	1	2	3	
DS	119	76	195	
GB	4	4	8	
GBA	23	53	76	
GC	12	63	75	
N64	3	58	61	
NES	1	9	10	
PC	7	7	14	
PS	42	151	193	
PS2	36	122	158	
PS3	17	55	72	
PS4	2	6	8	
PSP	12	53	65	
PSV	8	6	14	
SNES		1	1	
Wii	44	137	181	
WiiU		7	7	
X360	11	57	68	
XB	21	83	104	
XOne	3	12	15	
Grand Total	377	982	1359	

Visualization





LOYOLA
PROFESSIONAL
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Genre

Action

Adventure

Fighting

Misc

Platform

Puzzle

Racing

Role-Playing

Shooter

Simulation

Sports

Strategy

Platform2

2600

3DS

DC

DS

GB

GBA

GC

N64

NES

PC

PS

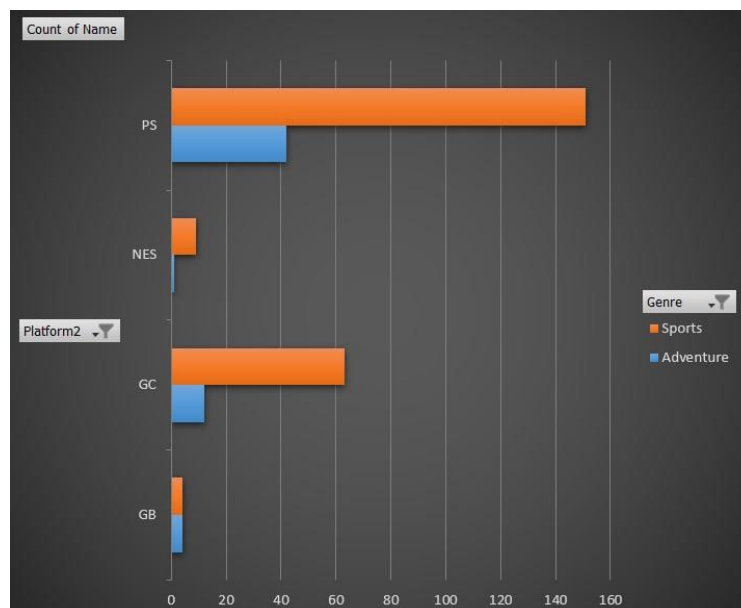
PS2

PS3

PS4

PSP

PSV



Genre

Action

Adventure

Fighting

Misc

Platform

Puzzle

Racing

Role-Playing

Shooter

Simulation

Sports

Strategy

Platform2

2600

3DS

DC

DS

GB

GBA

GC

N64

NES

PC

PS

PS2

PS3

PS4

PSP

PSV

5. Sum of sales in Japan greater than 1 of each platform

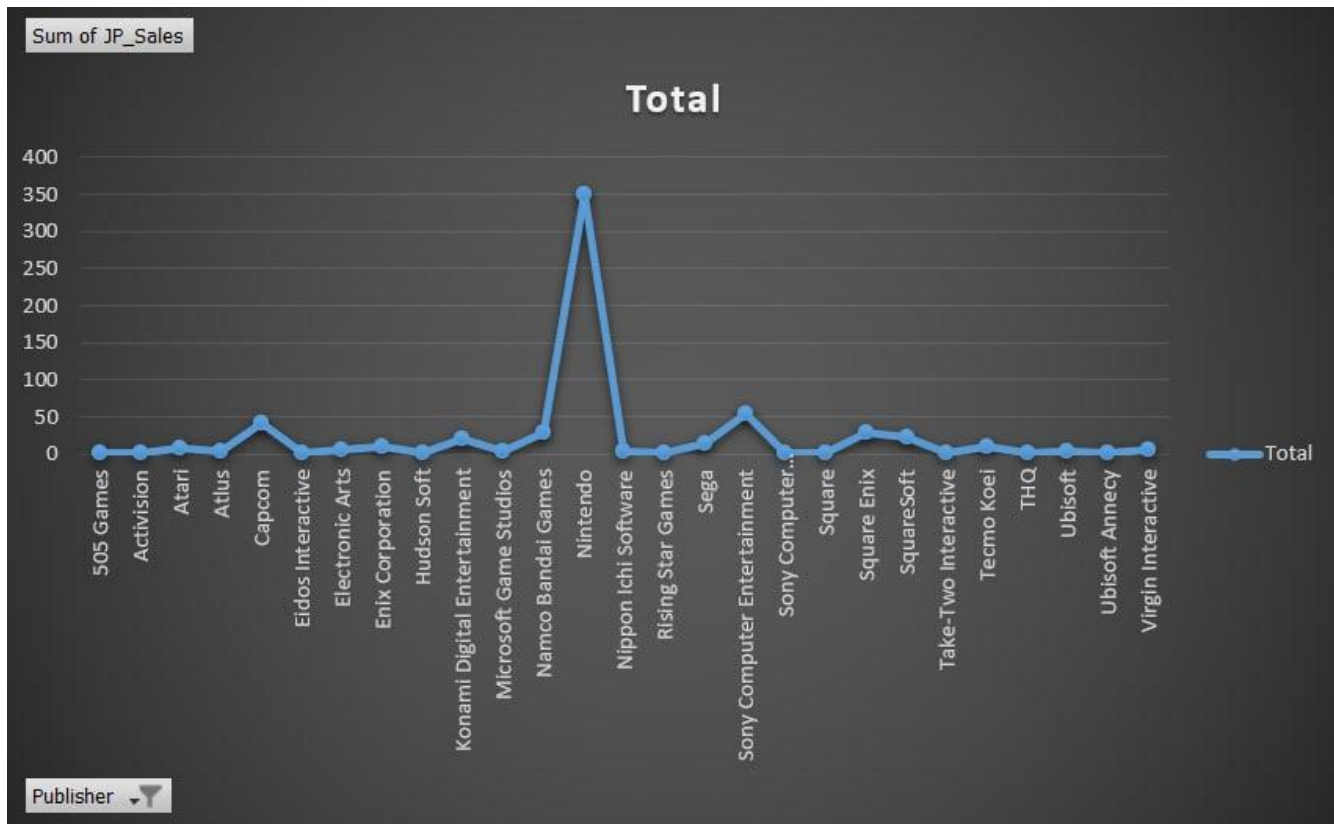
- By performing this analysis, we will be able to fetch the data of the sales in Japan that are having sum greater than 1 in each platform.
- This analysis is based on sum of sales in Japan greater than 1 of each platform mentioned.
- Pivot table and charts are being used to analyse the data
- Filtering of data has been done on the sales of Japan to view sales greater than 1.

Analysis Results

Row Labels	Sum of JP_Sales
505 Games	1.05
Activision	1.2
Atari	7.41
Atlus	2.94
Capcom	40.62
Eidos Interactive	1.26
Electronic Arts	5.35
Enix Corporation	10.85
Hudson Soft	1.4
Konami Digital Entertainment	19.96
Microsoft Game Studios	3.14
Namco Bandai Games	28.55
Nintendo	350.07
Nippon Ichi Software	3.5
Rising Star Games	2.05
Sega	14.16
Sony Computer Entertainment	54.78
Sony Computer Entertainment Europe	1.23
Square	1.33
Square Enix	29.41
SquareSoft	22.55
Take-Two Interactive	1.51
Tecmo Koei	9.21
THQ	2.52
Ubisoft	3.22
Ubisoft Annecy	1.24
Virgin Interactive	5.24
Grand Total	625.75



Visualization



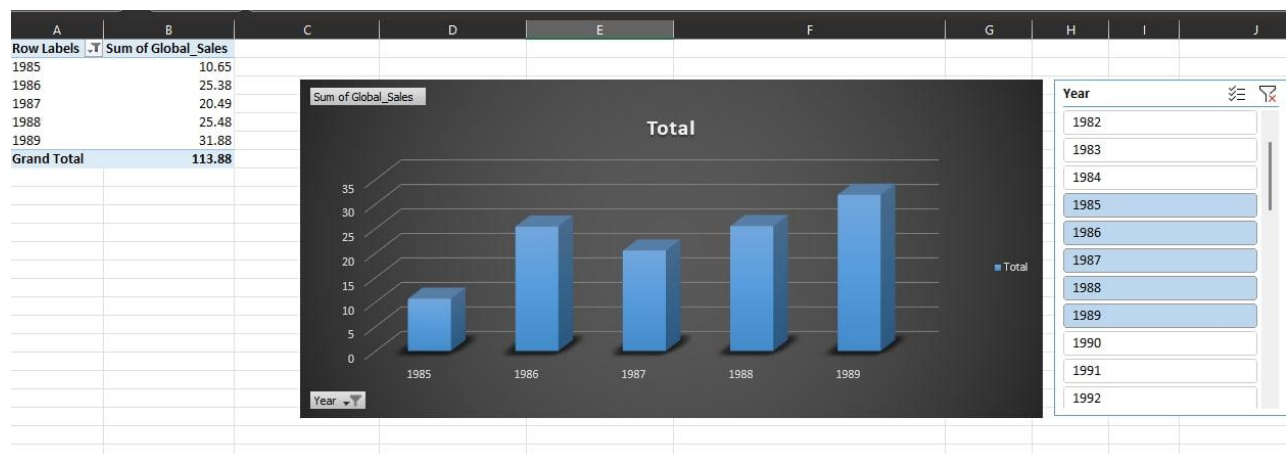
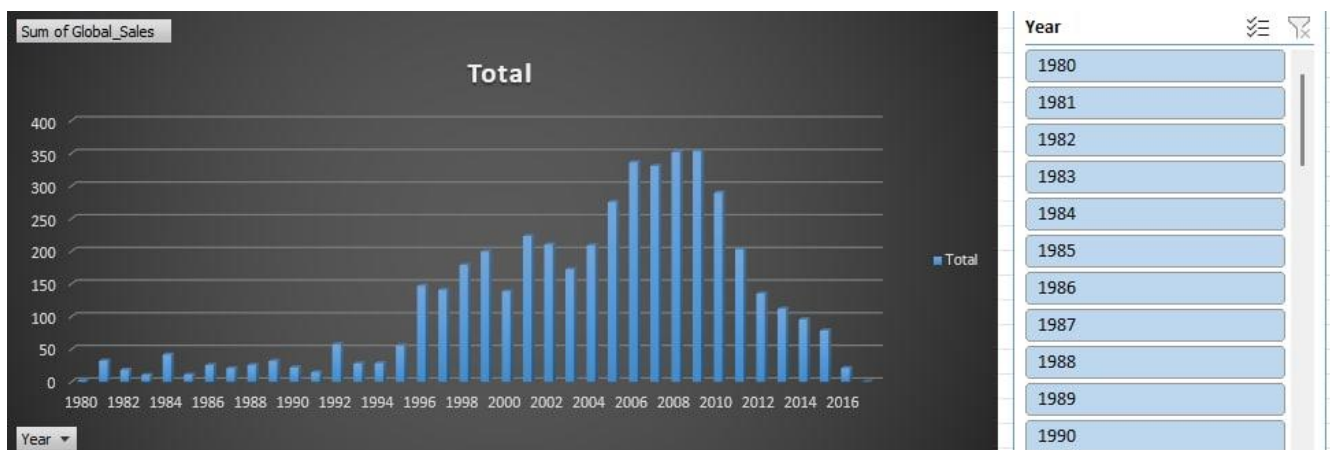


LIST OF ANALYSIS WITH RESULTS

1. Total Global sales in each year

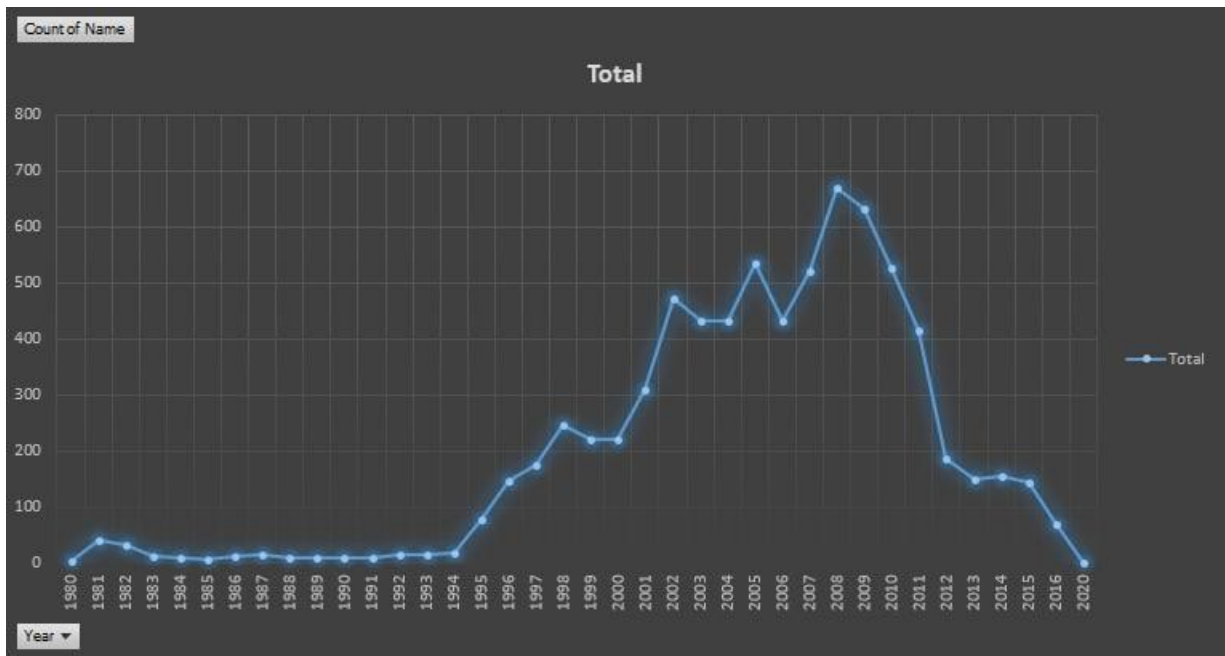
According to the column graph shown below, it represents that there was a drastic increase in the sum of global sales of the video games from 2008 to 2010 and then it gradually decreased in 2016.

Added a slicer as well for better view of the data year wise



2. Number of games released in each year

According the line graph shown below, it represents that there was a drastic increase in number of games released in 2009 and then it gradually decreased in 2016. Additionally, from 1980 to 1994, the public played a very small amount of video games.

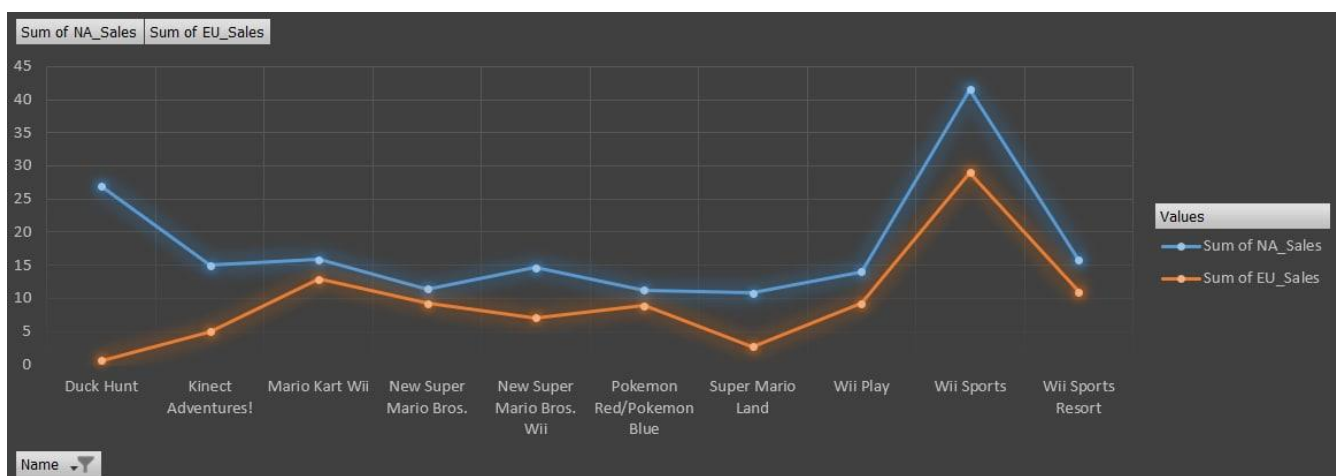




3. Top 10 games sold in North America and Europe

- 1) Duck Hunt
- 2) Kinect Adventures!
- 3) Mario Kart Wii
- 4) New Super Mario Bros.
- 5) New Super Mario Bros. Wii
- 6) Pokémon Red/Pokémon Blue
- 7) Super Mario Land
- 8) Wii Play
- 9) Wii Sports
- 10) Wii Sports Resort

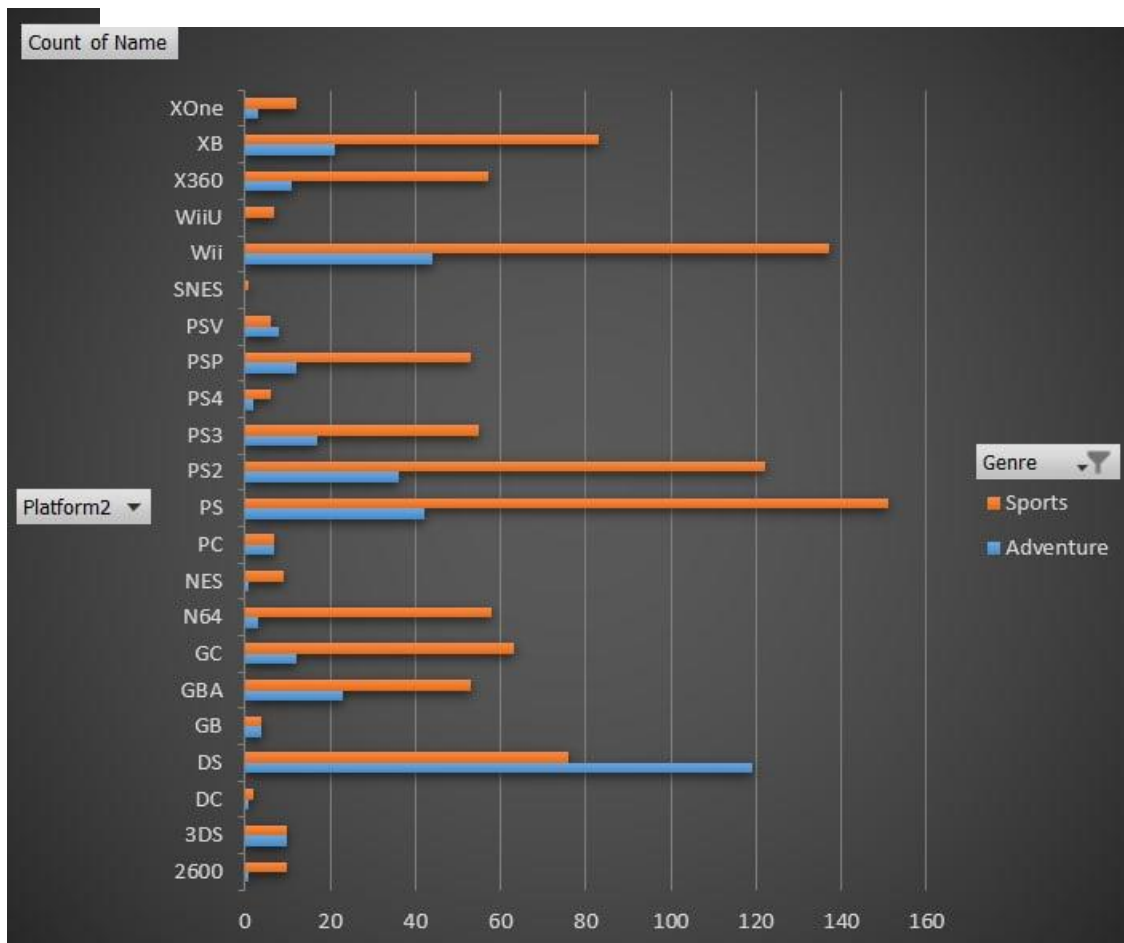
According to the line graph below, sales of the Duck Hunt video game peaked in North America at that period, while they were quite low in Europe. Looking farther into the future, we can observe that North America has the highest amount of Wii Sports sales, while Europe has considerably lower numbers.





4. Number of games released in adventure and sports genre in each platform

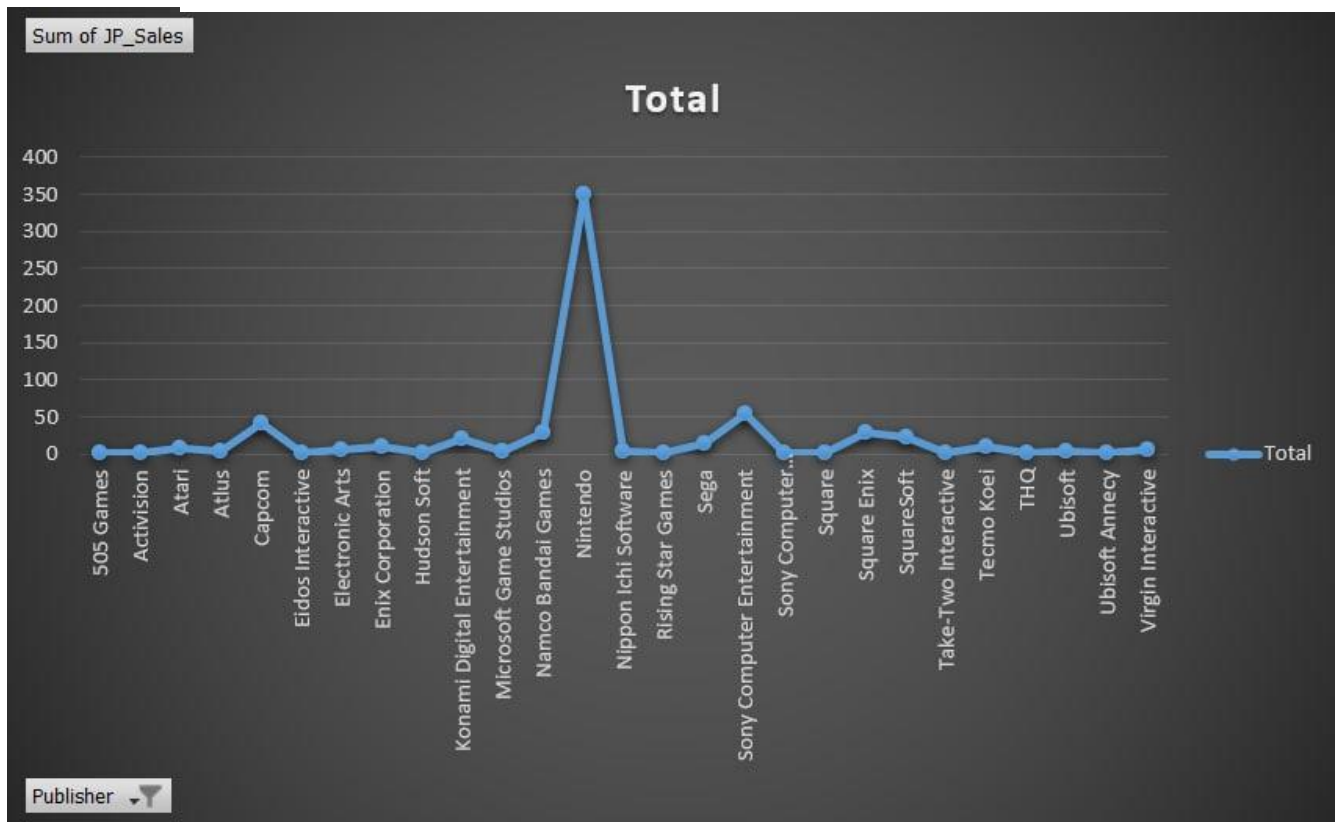
The number of games released of genre sports and adventure on platforms PS and DS are highest whereas the games released on SNES of both genres are the lowest.





5. Sum of sales in Japan greater than 1 of each publisher

The video games in Japan published by the publisher Nintendo are the most popular ones. The sales of the others are relatively negligible except the publisher Capcom and Sony Computer Entertainment.





BIBLIOGRAPHY

- Dataset Source

<https://www.kaggle.com/datasets/gregorut/videogamesales>

- Information about Data Management

<https://www.blue-pencil.ca/what-is-data-management-and-why-it-is-important/>