

A decorative graphic on the left side of the slide consisting of two overlapping parallelograms. The front one is blue and the back one is a light green. They are positioned diagonally, with the blue one partially covering the green one.

# Game Sales and Data Visualization


7/13/2021  
Andrew Wilson  
Austen Hsiao

# Introduction



# Finding Data

- Publisher
- Genre
- Scores
- Sales



Dataset

**Video Game Sales 2020**

by Bayne Brannen

a year ago • 4 MB • ^ 27

[Video Game Sales 2020](#)

	img	title	console	genre	publisher	developer	vg_score	critic_score	user_score	total_ship	total_sale	na_sales	jp_sales	pal_sales	other_sales	release_date	last_update
3	/games/bc	Warriors Series	Action	Unknown	Omega Force					42.06							3/24/2020
4	/games/bc	God of War Series	Action	Sony Com	SIE Santa Monica Studio	Ready at Dawn				35.05						3/22/2005	3/4/2020
5	/games/bc	Devil May Series	Action	Capcom	Capcom	Ninja Theory				22						10/16/2001	2/3/2020
6	/games/bc	Grand The PS3	Action	Rockstar G	Rockstar North		9.4				20.32	6.37	0.99	9.85	3.12	9/17/2013	
7	/games/bc	Frogger Series	Action	Konami	Konami	Parker Brothers	SCE Cambridge			20						10/23/1981	2/26/2020
8	/games/bc	Grand The PS4	Action	Rockstar G	Rockstar North		9.7				19.39	6.06	0.6	9.71	3.02	11/18/2014	1/3/2018
9	/games/bc	Grand The PS2	Action	Rockstar G	Rockstar North		9.5			17.3						10/26/2004	
10	/games/bc	Uncharted PS4	Action	Sony Inter	Naughty Dog		9.2			16.25						5/10/2016	9/23/2018
11	/games/bc	Grand The PS2	Action	Rockstar G	Rockstar North		9.6				16.15	8.41	0.47	5.49	1.78	10/28/2002	
12	/games/bc	Grand The X360	Action	Rockstar G	Rockstar North						15.86	9.06	0.06	5.33	1.42	9/17/2013	

## Verifying Data



# Data Cleaning

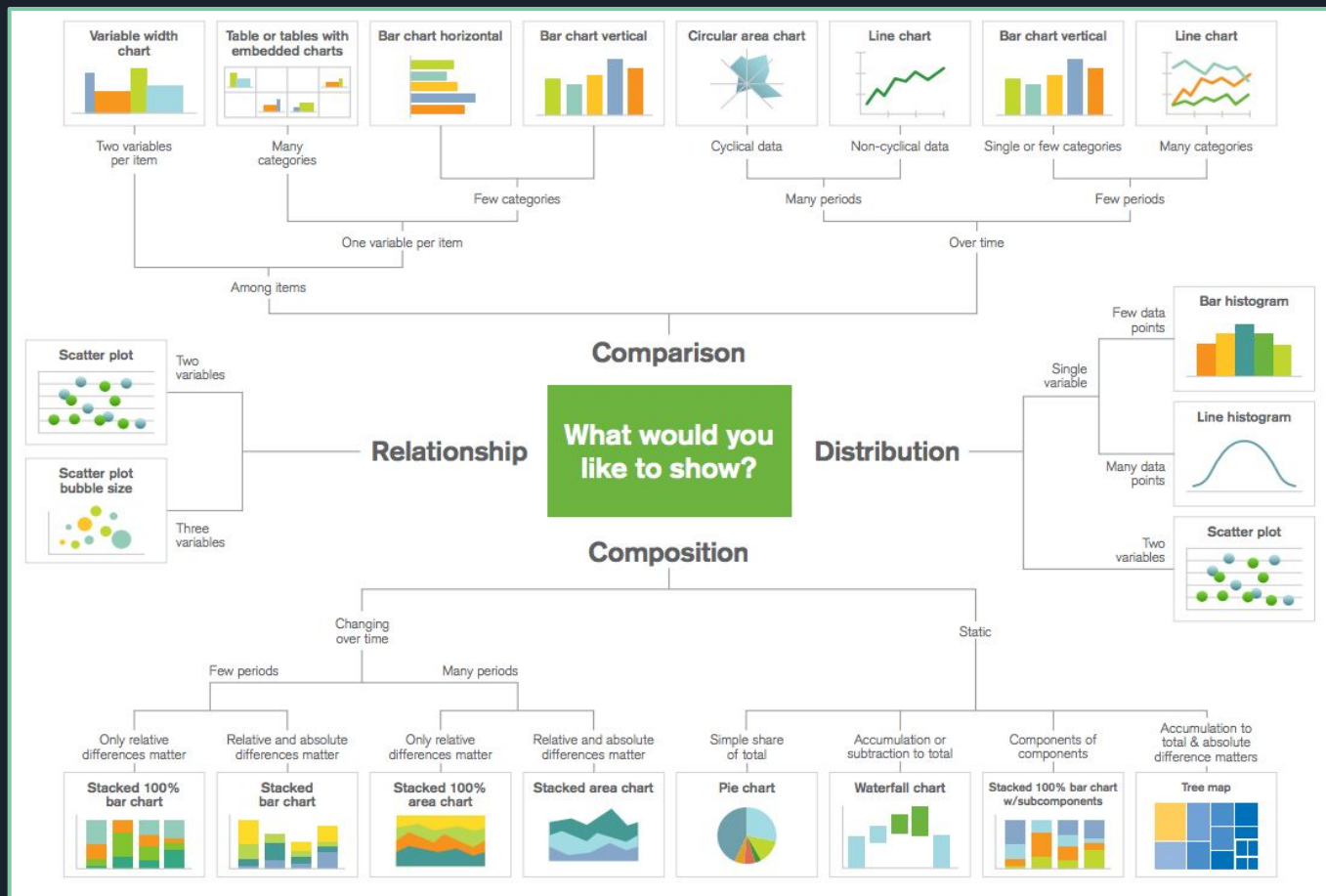


	img	title	console	genre	publisher	developer	vg_score	score	total_ship	total_sale	na_sales	jp_sales	pal_sales	other_sales	release_date	last_update
3	/games/bc	Warriors Series	Action	Unknown	Omega Force				42.06							3/24/2020
4	/games/bc	God of War Series	Action	Sony Com	SIE Santa Monica Studio	Ready at Dawn			35.05						3/22/2005	3/4/2020
5	/games/bc	Devil May Series	Action	Capcom	Capcom	Ninja Theory			22						10/16/2001	2/3/2020
6	/games/bc	Grand Theft Auto III	PS3	Action	Rockstar Games	Rockstar North	9.4			20.32	6.37	0.99	9.85	3.12	9/17/2013	
7	/games/bc	Frogger Series	Action	Konami	Konami	Parker Brothers   SCE Cambridge			20						10/23/1981	2/26/2020
8	/games/bc	Grand Theft Auto IV	PS4	Action	Rockstar Games	Rockstar North	9.7			19.39	6.06	0.6	9.71	3.02	11/18/2014	1/3/2018
9	/games/bc	Grand Theft Auto V	PS2	Action	Rockstar Games	Rockstar North	9.5		17.3						10/26/2004	
10	/games/bc	Uncharted 2: Among Thieves	PS4	Action	Sony Interactive Entertainment	Naughty Dog	9.2		16.25						5/10/2016	9/23/2018
11	/games/bc	Grand Theft Auto: San Andreas	PS2	Action	Rockstar Games	Rockstar North	9.6			16.15	8.41	0.47	5.49	1.78	10/28/2002	
12	/games/bc	Grand Theft Auto: Vice City	X360	Action	Rockstar Games	Rockstar North				15.86	9.06	0.06	5.33	1.42	9/17/2013	

# The World of Data Visualization



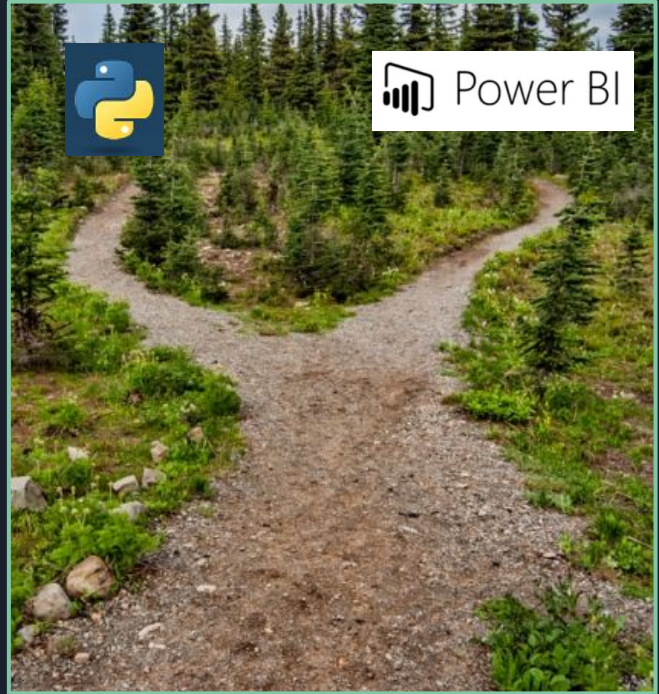
# Choosing Your Weapon



# Data Visualization Options

## Two Paths:

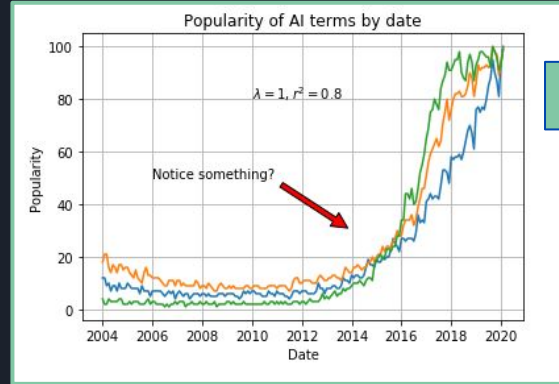
1. Python + Libraries
  - a. Matplotlib
  - b. Seaborn
  - c. plotly.py
2. Formal Business Intelligence software
  - a. Tableau
  - b. Microsoft Power BI
  - c. SAS Business Intelligence
  - d. Oracle BI



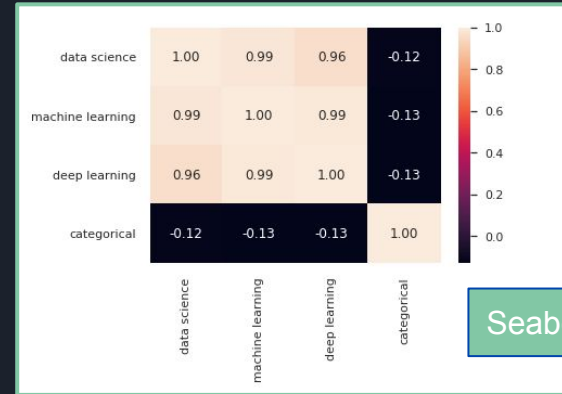


# Python

- Matplotlib
  - 2D plots
  - Great starting point
- Seaborn
  - Built atop matplotlib
  - Aimed at statistical representations
- Plotly.py
  - Open source library from Plotly
  - 3D charts, finance data, statistical charts



Matplotlib line chart



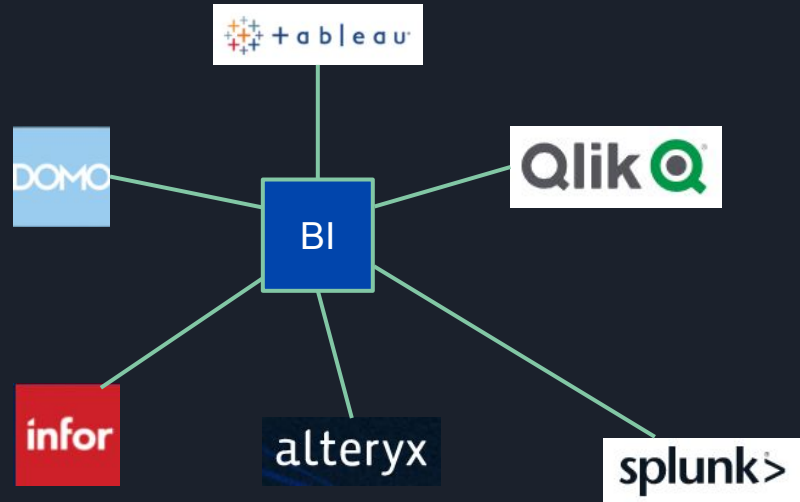
Seaborn heatmap

# Business Intelligence

*“Business intelligence (BI) leverages software and services to transform data into actionable insights that inform an organization’s strategic and tactical business decisions.”*

*- Mary K. Pratt and Josh Fruhlinger, CIO Group*

- Key Features:
  - Intuitive
  - Visualization
  - Predictive analytics
  - Reporting
  - Data mining
  - Event processing
  - Large datasets



# Tableau Prep

**1**

**2**

**3**

**Union 1** 19 fields 116K rows

Keep Only Exclude Edit Value Replace with Null

Settings Changes (0)

**Inputs**

- vgchartz-6\_23\_2020
- vgchartz-7\_7\_2020

**Resulting Fields**

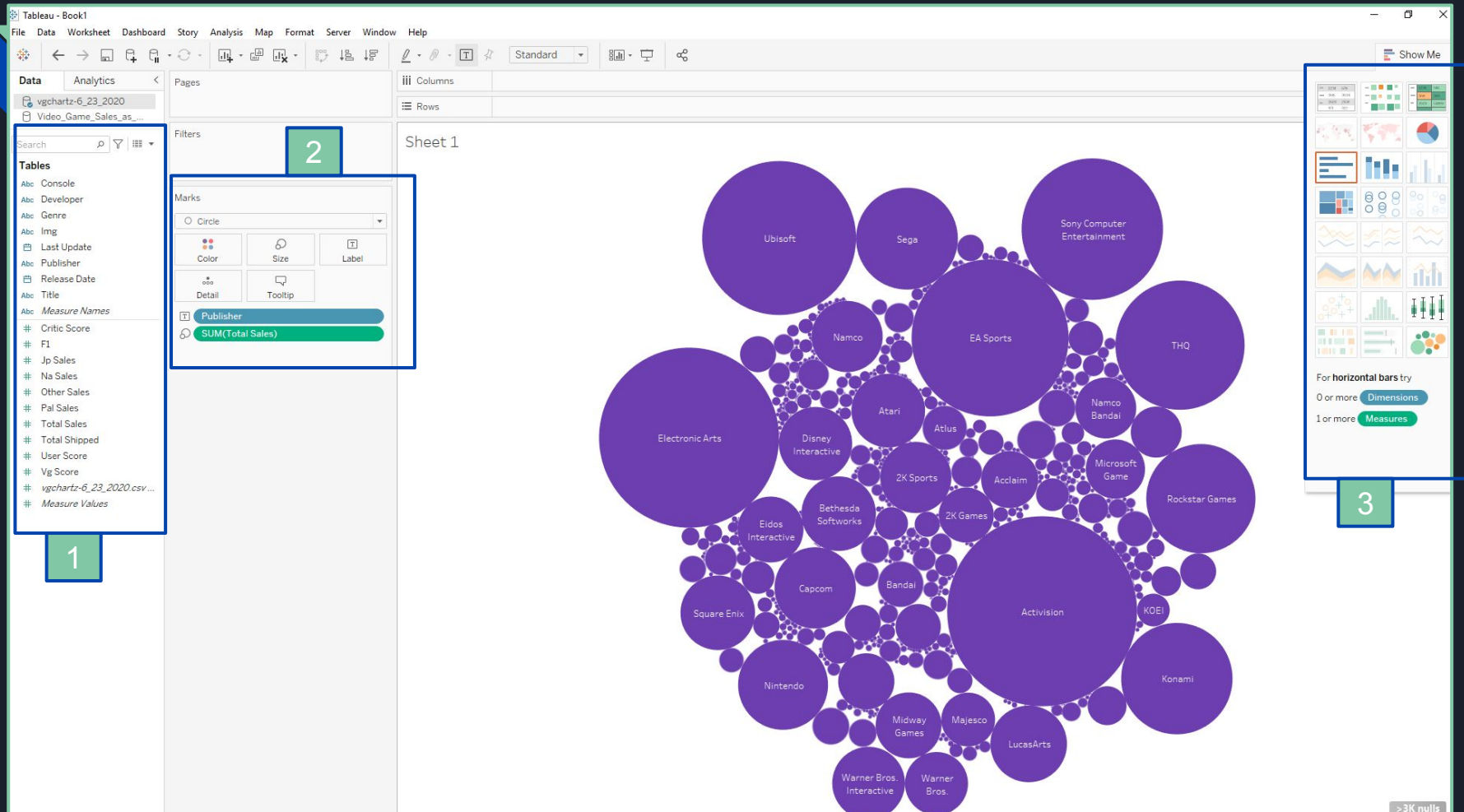
0 Mismatching fields from 19 resulting fields.

**Union Results** ☐ Show only mismatched fields

title	console	genre	publisher	developer	vg_score	critic_score	user_score
hack//G.U. Vol.1//Rebirth	DS	Action	[[ Games	3909 LLC	null	null	null
hack//G.U. Vol.2//Rebirth	DSi	Action-Adventure	@unepic_fran	3A Studios Inc	5	3	3
hack//G.U. Vol.2//Rebirth	DSiW	Adventure	100 Gates	3AGames	6	6	6
hack//G.U. Vol.3//Rebirth	FMT	Board Game	10TACLE Studios	3D People	9	9	9
hack//Infection Part 1	GB	Education	10tons	3D Realms			
hack//Link	GBC	Fighting	10tons Ltd	3D Realms Entertainment			
hack//Mutation Part 2	GC	Misc	11 bit studios	3d6 Games			
hack//Outbreak Part 3	GEN	MMO	1337 Game Design	3DClouds.it			
hack//Quarantine Part...	GG	Music	13cm	3Division			
'70s Robot Anime: Gep...	GIZ	Party	14 Degrees East	3DO			
'98 Koshien	Int	Platform	17-Bit	3F Interactive			
'99 Koshien		Puzzle	1C Company	3G Studios			

Table Names	F1	img	title	console	genre	publisher	developer	vg_score	critic_score	user_score
vgchartz-6_23_2020.csv	147	/games/boxart/8299340ccc.jpg	The Incredibles	GBA	Action	THQ	Helixe	null	5.4	null
vgchartz-6_23_2020.csv	185	/games/boxart/full_8403039AmericaFrontccc.jpg	2 Games in 1 Double Pack: The Incredibles	GBA	Action	THQ	Helixe / Altron	null	null	null
vgchartz-6_23_2020.csv	197	/games/boxart/full_5849481AmericaFrontccc.jpg	Final Fantasy Tactics Advance	GBA	Action	Nintendo	Square Enix	null	null	null
vgchartz-6_23_2020.csv	200	/games/boxart/1789636ccc.jpg	Harry Potter and the Sorcerer's Stone	GBA	Action	Electronic Arts	Griptonite Games	null	6.6	null
vgchartz-6_23_2020.csv	233	/games/boxart/3801642ccc.jpg	The SpongeBob SquarePants Movie	GBA	Action	THQ	WayForward	null	null	null
vgchartz-6_23_2020.csv	294	/games/boxart/3998788ccc.jpg	SpongeBob SquarePants: Revenge of the	GBA	Action	THQ	Vicarious Visions	null	null	null
vgchartz-6_23_2020.csv	318	/games/boxart/full_8705226AmericaFrontccc.jpg	LEGO Star Wars: The Video Game	GBA	Action	Eidos Interactive	Amaze Entertainment	null	7.4	null
vgchartz-6_23_2020.csv	336	/games/boxart/4632781ccc.jpg	Disney's Lilo & Stitch	GBA	Action	Disney Interactive Studios	Digital Eclipse	null	8	null
vgchartz-6_23_2020.csv	352	/games/boxart/full_334756AmericaFrontccc.jpg	Teenage Mutant Ninja Turtles	GBA	Action	Konami	Konami	null	null	null

# Tableau



Questions?





# Sources

- (1) Mordor Intelligence. *Gaming Market - Growth, Trends, COVID-19 Impact, and Forecasts (2021 - 2026)*; 2021.
- (2) Babb, J.; Terry, N. Comparing Video Game Sales by Gaming Platform. *Southwest. Econ. Rev.* **2013**, 40 (1), 25–46.
- (3) Cox, J. What Makes a Blockbuster Video Game? An Empirical Analysis of US Sales Data. *Manag. Decis. Econ.* **2014**, 35 (3), 189–198. <https://doi.org/10.1002/mde.2608>.
- (4) Pratt, M; Fruhlinger J. 2019. *What is business intelligence? Turning data into business insights*. (October 2019). Retrieved July 5, 2021 from <https://www.cio.com/article/2439504/business-intelligence-definition-and-solutions.html>
- (5) Tanner, G. 2019. *Introduction to Data Visualization in Python*. Retrieved July 7, 2021, from <https://towardsdatascience.com/introduction-to-data-visualization-in-python-89a54c97fbed>