

GAINING INSIGHTS FOR GAME CREATORS

Submitted by Group – 9:-

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Abstract

Video games are interactive digital entertainment products that can be played on a variety of devices, including computers, consoles, and mobile-phones. In day-to-day life, there's a dramatic increase in its popularity among people of all demographics. A notable reason for such is that its competence in providing engaging and immersive experiences for players. The features viz., rich storylines, intricate gameplay mechanics, and stunning visuals that can captivate players for hours on end. Hence, with an ever-lasting opportunity in such arena, an attempt was made to acquire, analyze and interpret the data for gaining insights accordingly.

Research Question

To determine what is the popular game genre and platform is and find out the leading publishers in the market, thereby levy the information for either an existing publisher looking to expand their horizons or an upcoming publisher looking to launch into the market. Through these insights, one can replenish their strategies for achieving success and sustain in the market for a longer period.

Selection of the Dataset

Later the framing of problem statement / research question, we explored various sources for acquiring the data with the following requirements / columns / attributes.,

- Game Genre
- Gaming platform
- Game company / Publisher
- Sales
- Ratings / Reviews etc.

Selection of the Dataset

With potential exploration for a dataset, we found a reliable source on Kaggle.

Source link:

<https://www.kaggle.com/datasets/gregorut/videogamesales?resource=download>

Specific reasons for choosing the dataset:

- It contained a set of desired attributes.
- The essentiality of code book was fulfilled.
- A good amount of data was found.

Overview of the dataset

| vgsales | | | | | | | | | | |
|---------|--|----------|------|--------------|-----------------------------|----------|----------|----------|-------------|--------------|
| Rank | Name | Platform | Year | Genre | Publisher | NA_Sales | EU_Sales | JP_Sales | Other_Sales | Global_Sales |
| 1 | Wii Sports | Wii | 2006 | Sports | Nintendo | 41.49 | 29.02 | 3.77 | 8.46 | 82.74 |
| 2 | Super Mario Bros. | NES | 1985 | Platform | Nintendo | 29.08 | 3.58 | 6.81 | 0.77 | 40.24 |
| 3 | Mario Kart Wii | Wii | 2008 | Racing | Nintendo | 15.85 | 12.88 | 3.79 | 3.31 | 35.82 |
| 4 | Wii Sports Resort | Wii | 2009 | Sports | Nintendo | 15.75 | 11.01 | 3.28 | 2.96 | 33 |
| 5 | Pokemon Red/Pokemon Blue | GB | 1996 | Role-Playing | Nintendo | 11.27 | 8.89 | 10.22 | 1 | 31.37 |
| 6 | Tetris | GB | 1989 | Puzzle | Nintendo | 23.2 | 2.26 | 4.22 | 0.58 | 30.26 |
| 7 | New Super Mario Bros. | DS | 2006 | Platform | Nintendo | 11.38 | 9.23 | 6.5 | 2.9 | 30.01 |
| 8 | Wii Play | Wii | 2006 | Misc | Nintendo | 14.03 | 9.2 | 2.93 | 2.85 | 29.02 |
| 9 | New Super Mario Bros. Wii | Wii | 2009 | Platform | Nintendo | 14.59 | 7.06 | 4.7 | 2.26 | 28.62 |
| 10 | Duck Hunt | NES | 1984 | Shooter | Nintendo | 26.93 | 0.63 | 0.28 | 0.47 | 28.31 |
| 11 | Nintendogs | DS | 2005 | Simulation | Nintendo | 9.07 | 11 | 1.93 | 2.75 | 24.76 |
| 12 | Mario Kart DS | DS | 2005 | Racing | Nintendo | 9.81 | 7.57 | 4.13 | 1.92 | 23.42 |
| 13 | Pokemon Gold/Pokemon Silver | GB | 1999 | Role-Playing | Nintendo | 9 | 6.18 | 7.2 | 0.71 | 23.1 |
| 14 | Wii Fit | Wii | 2007 | Sports | Nintendo | 8.94 | 8.03 | 3.6 | 2.15 | 22.72 |
| 15 | Wii Fit Plus | Wii | 2009 | Sports | Nintendo | 9.09 | 8.59 | 2.53 | 1.79 | 22 |
| 16 | Kinect Adventures! | X360 | 2010 | Misc | Microsoft Game Studios | 14.97 | 4.94 | 0.24 | 1.67 | 21.82 |
| 17 | Grand Theft Auto V | PS3 | 2013 | Action | Take-Two Interactive | 7.01 | 9.27 | 0.97 | 4.14 | 21.4 |
| 18 | Grand Theft Auto: San Andreas | PS2 | 2004 | Action | Take-Two Interactive | 9.43 | 0.4 | 0.41 | 10.57 | 20.81 |
| 19 | Super Mario World | SNES | 1990 | Platform | Nintendo | 12.78 | 3.75 | 3.54 | 0.55 | 20.61 |
| 20 | Brain Age: Train Your Brain in Minutes a Day | DS | 2005 | Misc | Nintendo | 4.75 | 9.26 | 4.16 | 2.05 | 20.22 |
| 21 | Pokemon Diamond/Pokemon Pearl | DS | 2006 | Role-Playing | Nintendo | 6.42 | 4.52 | 6.04 | 1.37 | 18.36 |
| 22 | Super Mario Land | GB | 1989 | Platform | Nintendo | 10.83 | 2.71 | 4.18 | 0.42 | 18.14 |
| 23 | Super Mario Bros. 3 | NES | 1988 | Platform | Nintendo | 9.54 | 3.44 | 3.84 | 0.46 | 17.28 |
| 24 | Grand Theft Auto V | X360 | 2013 | Action | Take-Two Interactive | 9.63 | 5.31 | 0.06 | 1.38 | 16.38 |
| 25 | Grand Theft Auto: Vice City | PS2 | 2002 | Action | Take-Two Interactive | 8.41 | 5.49 | 0.47 | 1.78 | 16.15 |
| 26 | Pokemon Ruby/Pokemon Sapphire | GBA | 2002 | Role-Playing | Nintendo | 6.06 | 3.9 | 5.38 | 0.5 | 15.85 |
| 27 | Pokemon Black/Pokemon White | DS | 2010 | Role-Playing | Nintendo | 5.57 | 3.28 | 5.65 | 0.82 | 15.32 |
| 28 | Brain Age 2: More Training in Minutes a Day | DS | 2005 | Puzzle | Nintendo | 3.44 | 5.36 | 5.32 | 1.18 | 15.3 |
| 29 | Gran Turismo 3: A-Spec | PS2 | 2001 | Racing | Sony Computer Entertainment | 6.85 | 5.09 | 1.87 | 1.16 | 14.98 |
| 30 | Call of Duty: Modern Warfare | PS2 | 2003 | Shooter | Sledgehammer Games | 6.26 | 4.66 | 3.13 | 1.66 | 14.76 |

Code book for the dataset

The screenshot shows the Kaggle website interface. On the left is a sidebar with navigation links: Create, Home, Competitions, Datasets (which is selected), Models, Code, Discussions, Learn, and More. Below these are sections for Your Work and Recently Viewed datasets. The main content area displays the 'Video Game Sales' dataset. At the top, there's a search bar, a user profile icon, and a 'Data Card' tab which is currently active. Other tabs include 'Code (1319)' and 'Discussion (37)'. To the right of the tabs are buttons for '5246' (with an upward arrow), 'New Notebook', 'Download (390 kB)', and a more options menu. The dataset title 'Video Game Sales' is prominently displayed. The 'About Dataset' section contains a brief description of the dataset and its source, followed by a list of fields. The 'Fields include' list is as follows:

- Rank - Ranking of overall sales
- Name - The game's name
- Platform - Platform of the game's release (i.e. PC, PS4, etc.)
- 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.

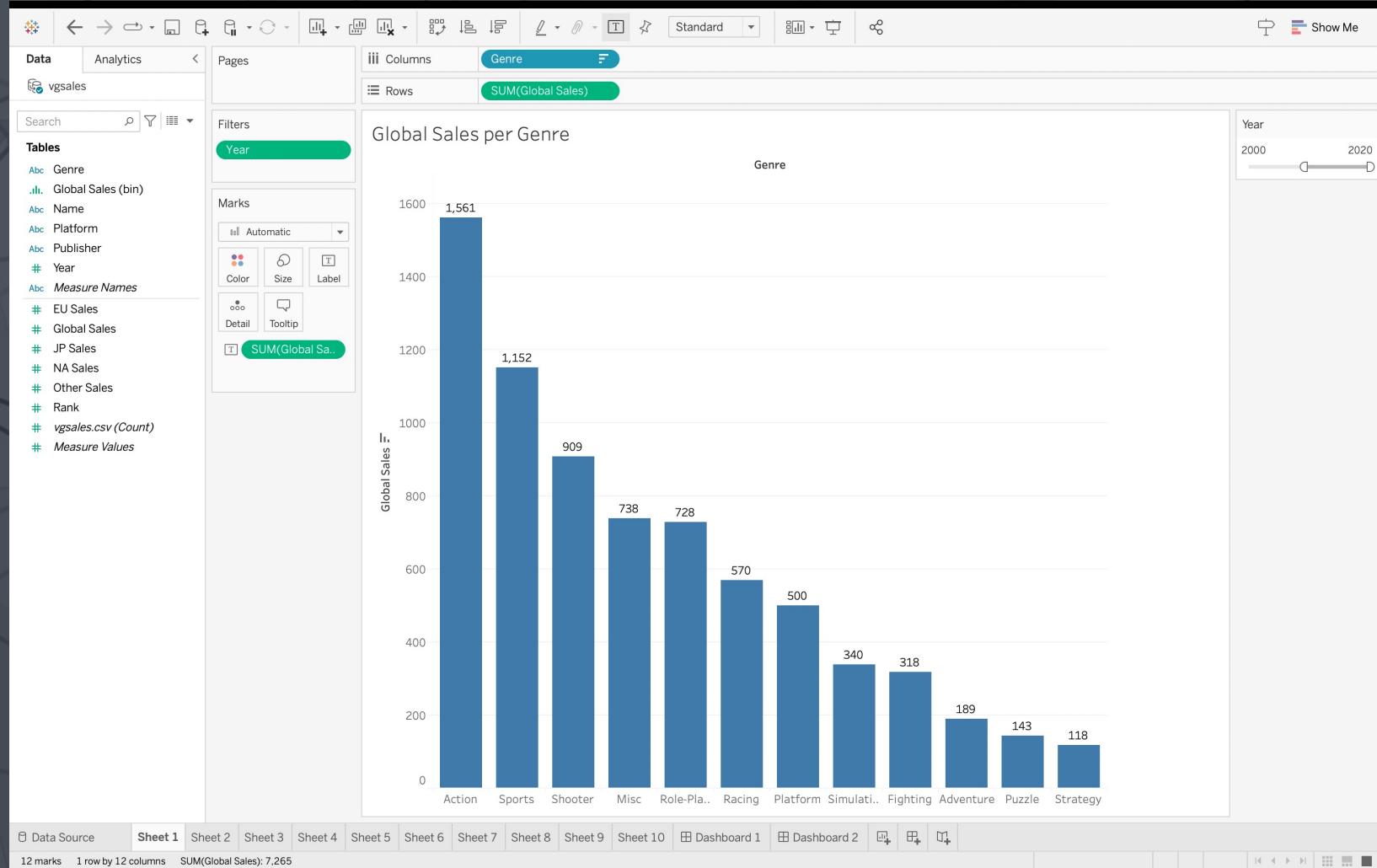
Below this, there's a note about the scraping script and information about the dataset size.

Usability 5.88

License Unknown

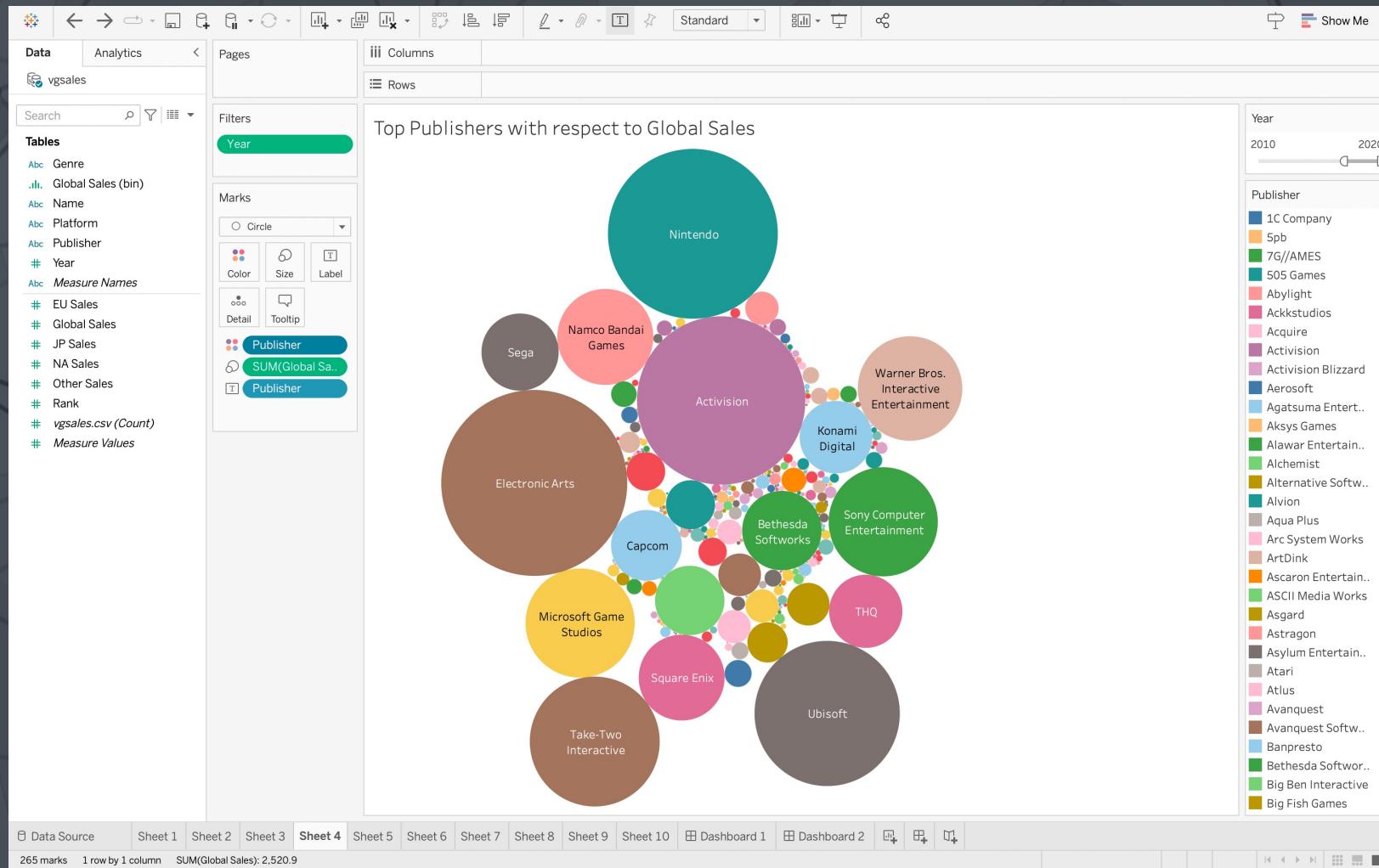
Expected update frequency Not specified

Visualizations



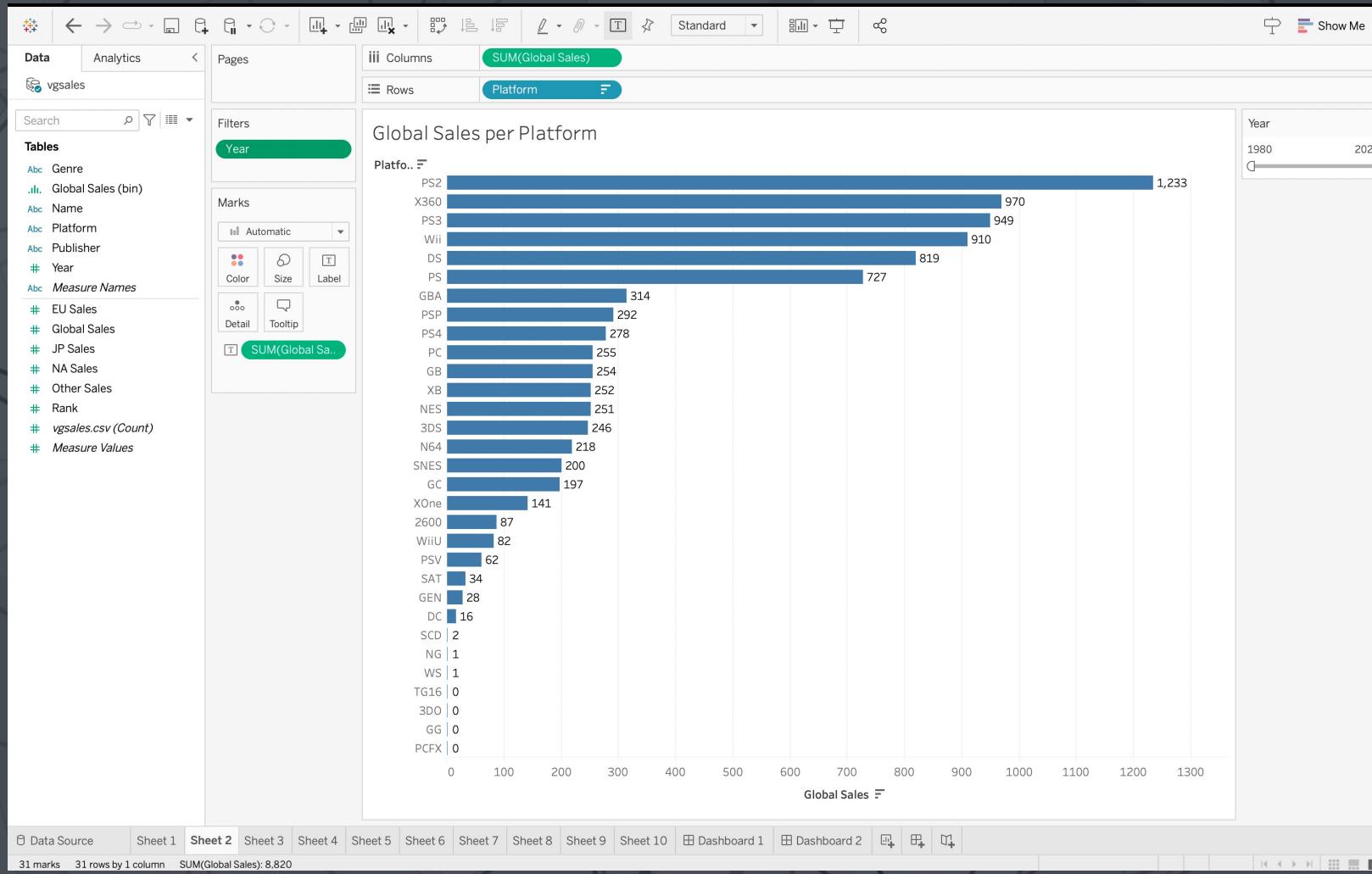
A bar graph plotted between Genre and Global sales for the period from 2000 – 2020.

Visualizations



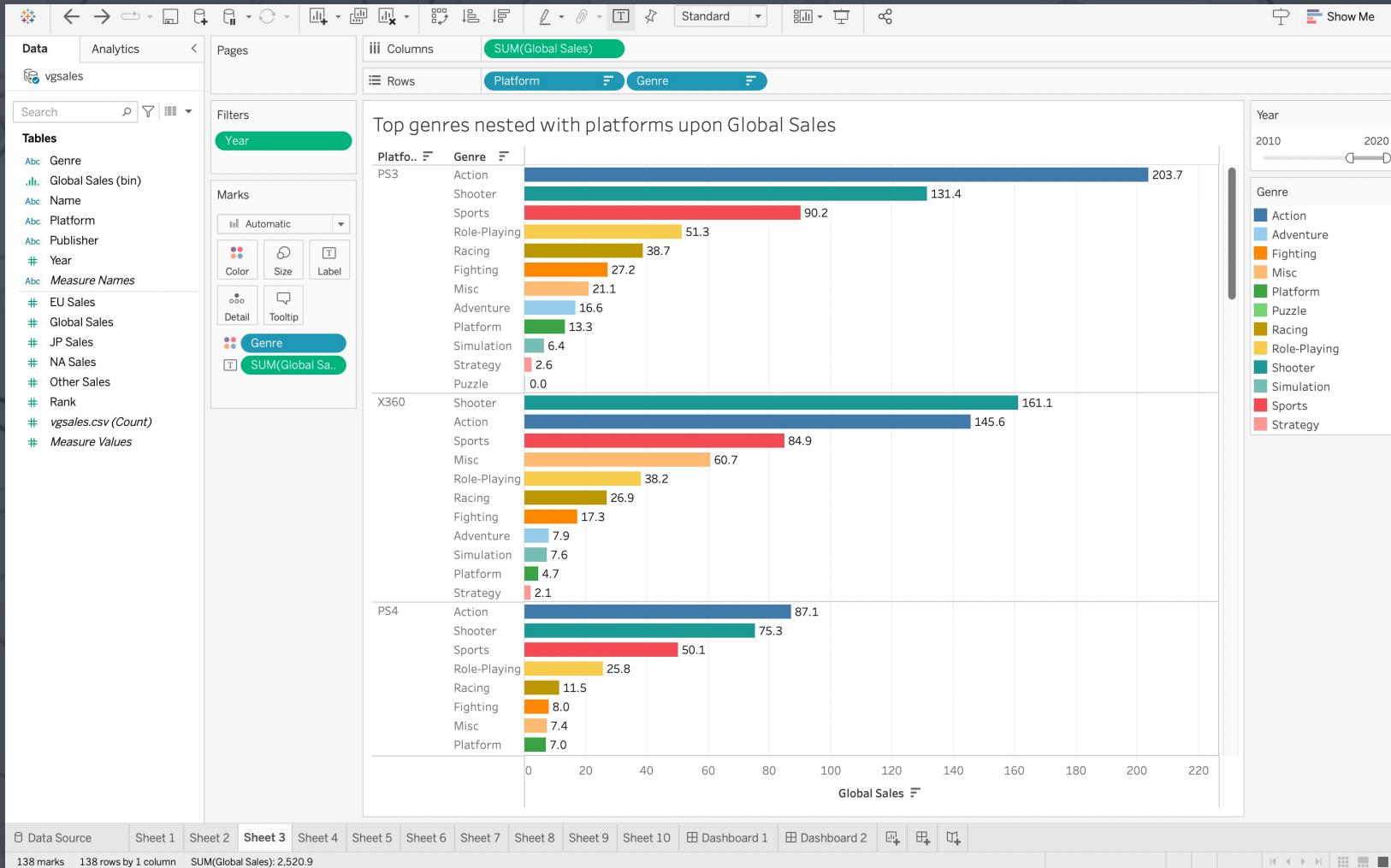
This bubble graph displays the leading publishers in the decade of 2010 to 2020.

Visualizations



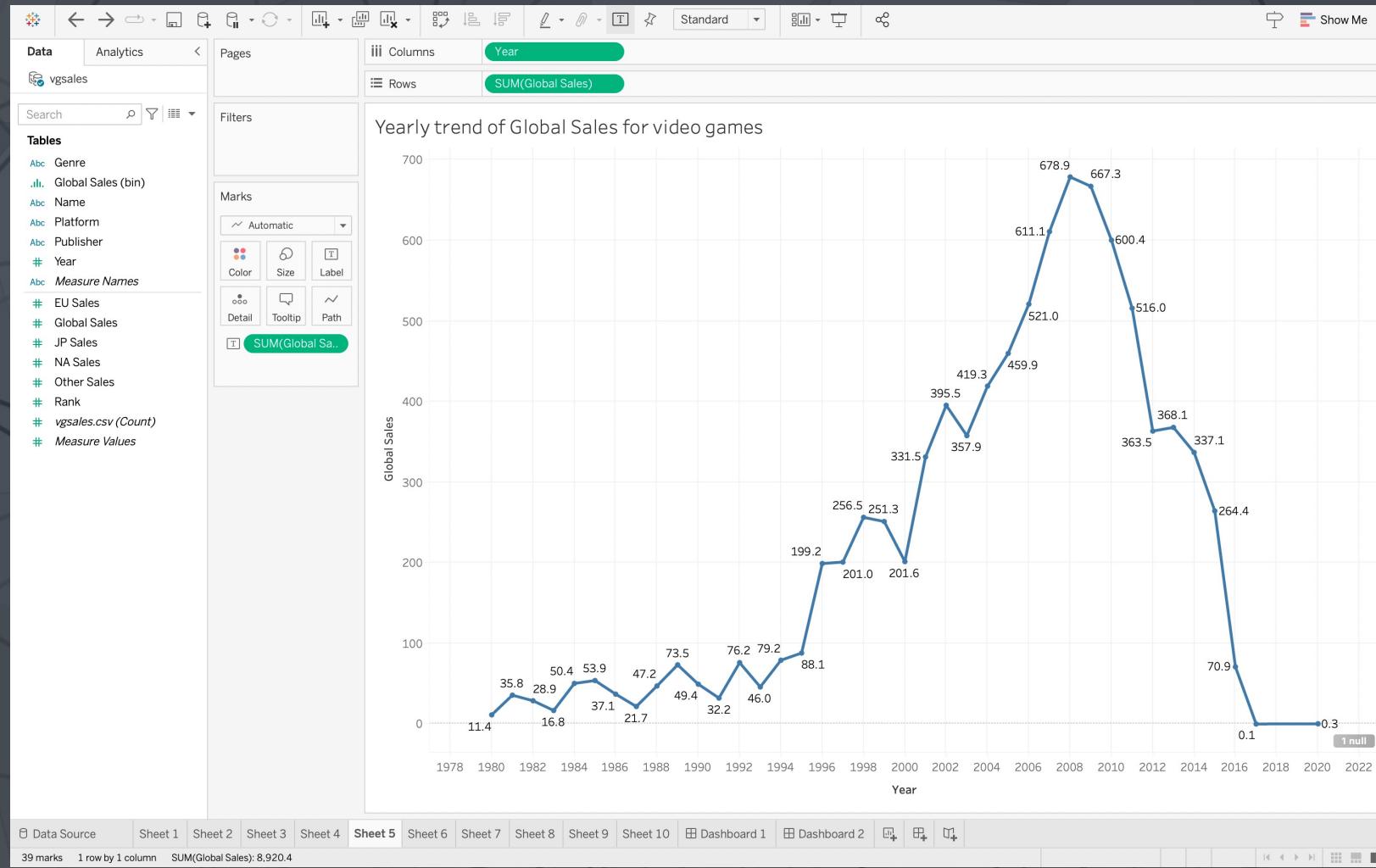
A horizontal bar graph plotted between Platform and Global sales for the entire period.

Visualizations



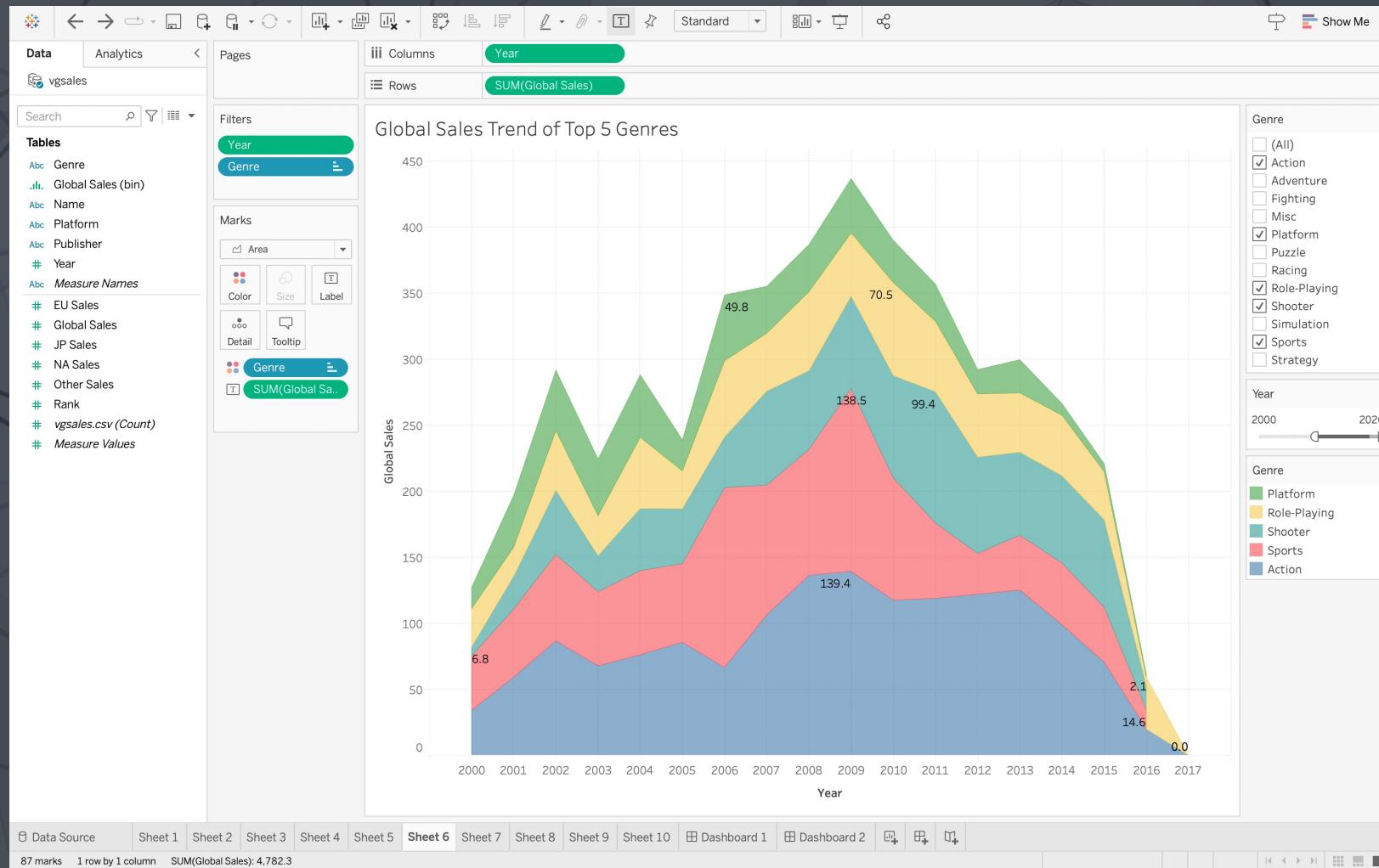
This visualization allows individual to draw conclusion regarding the top genres with respect to a specific game platform within recent times.

Visualizations



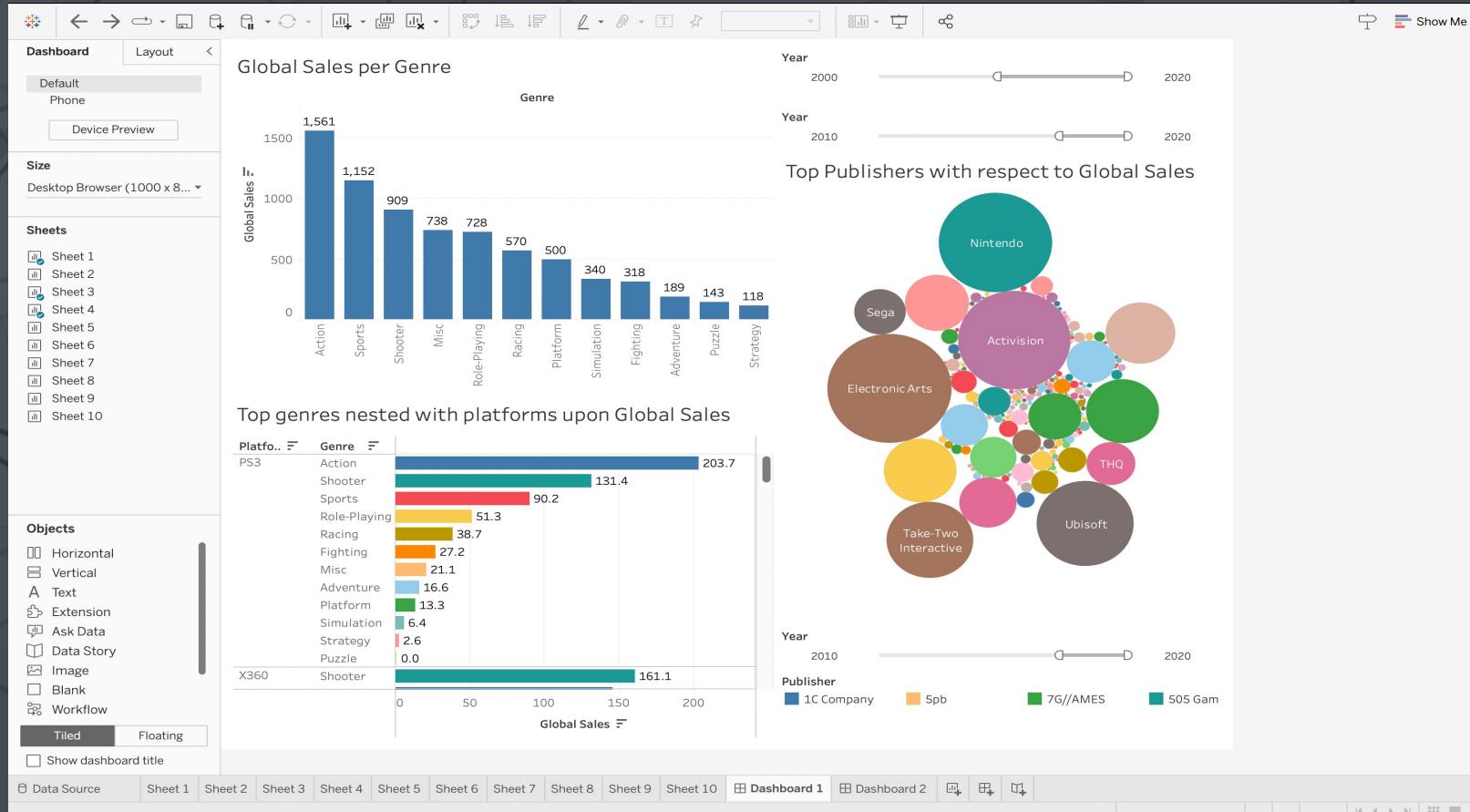
This line graph shows the global sales relative to the video games.

Visualizations



An area chart displaying the Global sales trend with respect to the top 5 genres.

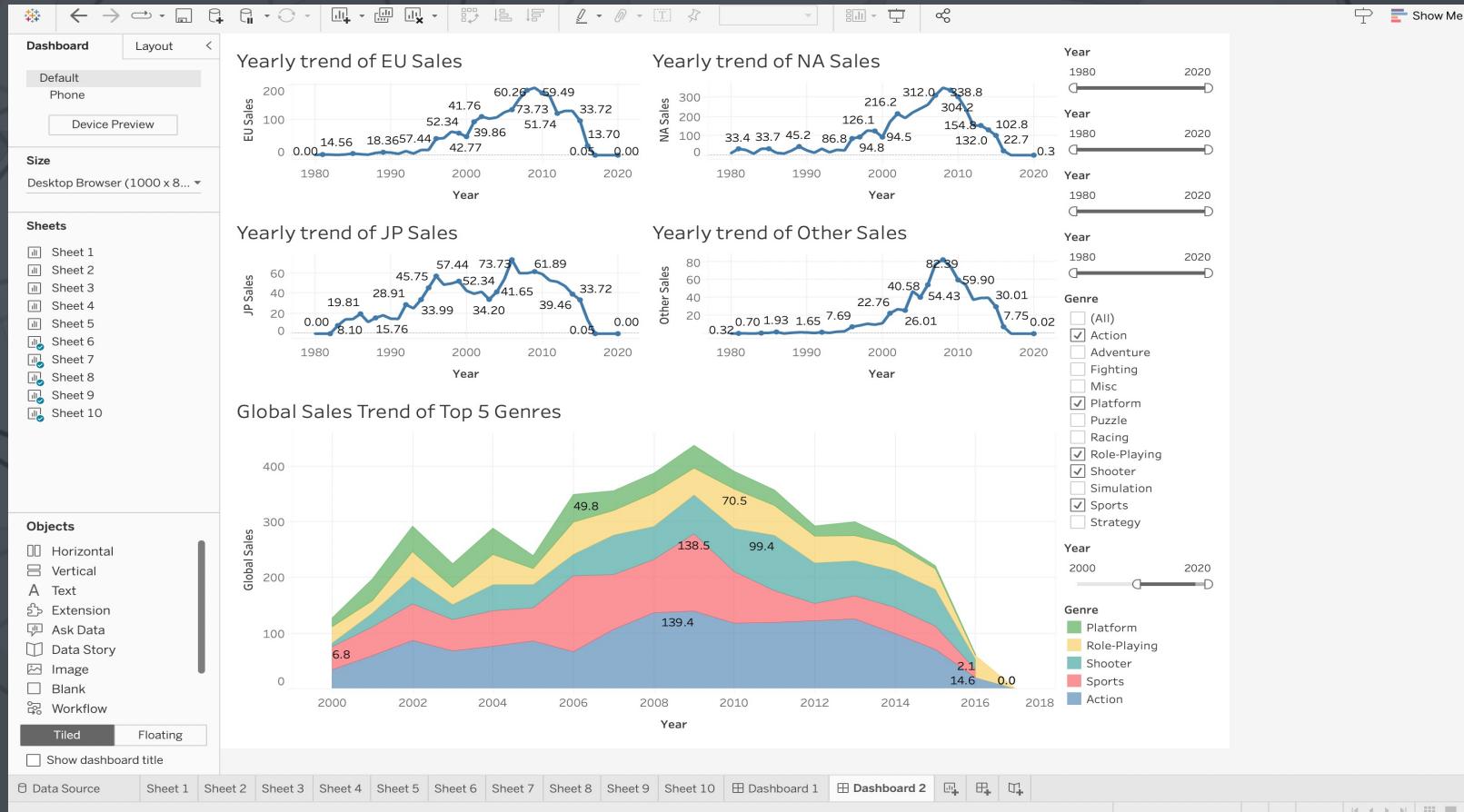
Dashboard - 1



https://public.tableau.com/app/profile/dheeraj.pittala/viz/Dashboard1_16826315767480/Dashboard1?publish=yes

Dashboard of the
global sales to view
at a glance.

Dashboard-2



https://public.tableau.com/app/profile/dheeraj.pittala/viz/Dashboard2_16826318472390/Dashboard2?publish=yes

Dashboard of the
global sales with
respect to top 5 genres
along with all sales.

Conclusion

With the aid of created visualizations, the game creators can identify the genre of the game, which is more likely to succeed enhancing them to focus, frame and design the games accordingly.

Future scope of development

- The insights can be more reliable if an attribute relating to Reviews & Ratings was involved for interpretation.
- Inclusion of Data preprocessing can also make the visualizations more accurate.
- Can be a significant source for predicting various futuristic trends in sales etc.

Thank you. . .

Queries. . . ?