**Video Game Sales and Engagement Analysis**

**Project Overview**

This project focuses on analyzing and visualizing video game sales and user engagement data to discover key trends related to popularity, user behavior, and platform performance. By merging sales and engagement datasets, we uncover valuable insights that can inform marketing, product development, and resource allocation strategies in the gaming industry.

**Objectives**

* Understand factors that contribute to game popularity and sales.
* Identify trends in user engagement such as wish lists, backlogs, and ratings.
* Compare performance across platforms, genres, and regions.
* Build a robust dashboard to visualize and interact with these insights.

**Tools Used**

* **SQL**: For data querying, transformation, and analysis.
* **Python (Pandas, Matplotlib, Seaborn)**: For data cleaning and initial exploration.
* **Power BI**: For dashboard creation and visual storytelling.

**Datasets**

* vgsales.csv: Contains video game sales data including rank, name, platform, year, genre, publisher, and regional/global sales.
* games.csv: Contains engagement data including title, rating, plays, backlogs, wishlist, platform, team, release date, and genres.

**Data Cleaning and Preprocessing**

Performed using Python:

* Removed special characters like ", [, ], and ().
* Normalized column names and fixed casing issues.
* Filled missing values:
  + Median year for missing release years.
  + Mean values for ratings and engagement metrics.
* Dropped rows with missing critical information such as game name or title.

**Problem Statement**

This project analyzes and visualizes video game sales and engagement data to uncover trends in popularity, user behavior, and platform performance. By combining sales and engagement datasets, we aim to provide actionable insights into how game features, genres, and platforms influence wish lists, ratings, and global sales.

**Business Use Cases**

**🌟 Game Marketing Strategy**

* Identify top-performing genres and platforms.
* Understand rating and wishlist patterns.
* Guide region-specific marketing campaigns.

**🎮 Product Development**

* Assess impact of game attributes (genre, developer, rating).
* Benchmark features of successful game launches.

**💡 Resource Allocation**

* Invest in high-return platforms and genres.
* Spot opportunities in underrepresented regions or categories.

**Visualizations and KPIs (Power BI)**

* Total Sales by Region and Platform
* Genre-wise Sales and Engagement Levels
* Top 10 Rated and Most Wishlisted Games
* Year-over-Year Trends in Game Releases
* Correlation between Ratings and Global Sales

**Outcomes**

* Clear insights into user behavior and market trends.
* Data-backed recommendations for marketing, development, and strategy teams.
* An interactive dashboard for stakeholders to explore and filter data dynamically.

**Conclusion**

This project demonstrates the power of combining multiple datasets and tools to generate business intelligence in the gaming industry. The approach and methodology can be replicated for other entertainment segments or refined further for predictive modeling and advanced analytics.