Video Game Sales Project

Project Overview

This project analyzes video game sales data across different platforms, genres, publishers, and years. The main goal is to identify sales trends and understand how different factors affect global sales performance.

Objectives

1. Explore and clean the dataset.
2. Analyze global, regional, and platform-specific sales.
3. Visualize trends over time and across genres.
4. Derive insights to understand the gaming market better.

Dataset Information

The dataset used is 'VideoGamesSales.csv', which contains information about video games such as title, platform, year of release, genre, publisher, and sales figures (Global, NA, EU, JP, and others).

Technologies Used

- Python 3.8+
- Pandas
- Matplotlib
- Seaborn
- Jupyter Notebook / VS Code

Data Cleaning Steps

1. Load the dataset using pandas.
2. Check for missing and duplicated values.
3. Remove duplicates using df.drop_duplicates().
4. Handle missing data (fill or drop as appropriate).
5. Convert data types where necessary (e.g., Year to int).

Exploratory Data Analysis (EDA)

The analysis includes:

- Distribution of sales by platform and genre.
- Yearly global sales trend.
- Top-selling games and publishers.
- Regional preferences across North America, Europe, and Japan.
- Correlation heatmaps to explore relationships among features.

Visualization Examples

Several charts and graphs are created using Matplotlib and Seaborn, such as:

- Line chart: Global Sales over the years.
- Bar chart: Top 10 best-selling games.
- Heatmap: Correlation between regional sales.
- Pie chart: Sales distribution by genre.

Key Insights

- Action and Sports genres tend to dominate global sales.
- A noticeable peak in sales occurred around 2008-2009.
- Nintendo, Sony, and Microsoft remain leading publishers.
- North America shows distinct preferences for certain platforms compared to Japan.

Future Improvements

- Implement predictive models to forecast future game sales.
- Add interactive visualizations using Plotly or Dash.
- Include sentiment analysis of player reviews for deeper insights.

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