DSMM Term 2
BDM2053 (Big Data Algorithm and Statistics) – Group 12
Lambton College Mississauga

Video Games Trend Analysis (Recommendation System)

30th March 2023

OVERVIEW

With the increasing number of demands on the gaming industry, this project aims to conduct a comprehensive analysis of the video games industry and identify current trends. The analysis will cover different genres, platforms, ratings, ang critic and user scores to provide a holistic view of the industry.

This project is intended to provide recommendations to users who would like to explore other types of games.

GOALS

This project aims to provide insights into the video games industry by analyzing trends and patterns in genres, platforms, ratings, and critic and user scores and ratings. By using machine learning techniques, we will build predictive models that can provide recommendation of game titles to users. Our findings will be useful for the gamers who would like to explore different games based on the given features, and retailers who would like to understand the dynamics of the video games industry.

SCOPE

The project will focus on analyzing publicly available data from reputable sources, such as Kaggle and VGChartz. The analysis will use statistical techniques and data visualization tools to identify patterns and correlations in the data. The project will use a dataset covering a 40-year span of video game releases from 1980 to 2020 in order to obtain a thorough understanding of the industry's patterns and to develop game recommendations for the users.

DELIVERABLES

The project will deliver the following output:

- A report summary containing analysis results, comprising game genre and platform, as well as trends, sales demographics, and model for game recommendations.

- Data visualizations, such as charts and graphs, to illustrate the trends and patterns identified in the analysis.
- A presentation summarizing the key insights, and trained model for game recommendations based on the results of the analysis.

METHODOLOGY AND MILESTONES

The project will be divided into five Data Science milestones, namely Ask, Get, Explore, Modelling, and Share.

1. Ask

We will formulate research questions that will guide our analysis. Some of the questions to be addressed are as follows:

- What methods can we implement to narrow down user options to a specific set of recommended games?
- Shall we consolidate genres that share similar attributes into one category (e.g. "Racing" genre can be a subset of "Sports")?
- What are the most popular video game genres and platforms?
- How has the video games industry evolved over the years?
- Shall we get input from the users or rely solely on the predictive model?

2. Get

We will gather data from different sources that will support our formulated questions.

- **Kaggle**: https://www.kaggle.com/datasets/rush4ratio/video-game-sales-with-ratings
- **VGChartz**: https://www.vgchartz.com/

3. Explore

We will use data visualization tools and descriptive statistics to explore the data and identify patterns and trends. We will also conduct statistical analysis and uncover relationships between variables.

4. Modelling

We will use the machine learning techniques to build predictive model(s) that can recommend game titles to the users based on a variety of features. We will utilize the supervised machine learning algorithm such as KNN (K-Nearest Neighbor) and/or the unsupervised machine learning algorithm such as Nearest Neighbors (similar to KNN) to create video game recommendations.

Note: We may use one or both for the final report

5. Share

We will share our findings with the stakeholders. The results will be presented in a comprehensive report, which includes different data visualizations, statistical analysis and predictive model(s).

The table below shows the timeline of the project per milestone.

Timeline	**Date**
Milestone 1: Ask	March 16, 2023
Milestone 2: Get	March 17, 2023 – March 23, 2023
Milestone 3: Explore	March 24, 2023 – March 30, 2023
Milestone 4: Modelling	March 31 – April 6, 2023
Milestone 5: Share	April 13, 2023: Presentation April 20, 2023: Final Submission