Stage 1: Project Description for CS 411 Team 73

1. Project Title

Web application for video game information

2. Project Summary:

The basic goal of this project is to develop a web application related to the theme of video games based on a relational database established applying raw datasets from Kaggle. Targeted to achieve certain functionalities such as searching for useful information like game sales and ranking video games based on different factors, this project will develop a useful and effective web application as a tool for gamers to browse video game related information.

Furthermore, in addition to obtaining information from the web application, the design of the database should be allowed to be updated according to more information provided by the users, or more functionalities expected from the users. In this sense, the web application should be user-interactive in the case of collecting data and inserting data into the database.

3. Description of an application of your choice.

- Backend
    - Database create/store
    - Data processing
    - Search engineering
        - Inverted index
    - API

This web application will contain backend design that includes creating databases and returning relevant data in advanced sql query. We will integrate the return data to an API for later processing. The search engine in the backend will utilize inverted-index for rapid text search according to the user needs. To help make our database more comprehensive, users are able to add new game information to the database.

- Frontend
    - Connect to API
    - UI Design

For the Web front-end development, the web will be able to access the database data through backend api. User Interface design will allow users to find detailed game information such as its platform, genre, publisher and so on. And the user interface will contain a search bar for users to search things they are interested in. We want to design a platform that explores all kinds of game information across different game platforms from all game companies.

4. ***Usefulness. Explain as clearly as possible why your chosen application is useful.***

This application is useful to find detailed game information such as its platform, genre, publisher and so on. There will also be a ranking system for all the games, where new gamers could browse the popular games and find what interests them. People can select different categories to explore different kinds of games. Furthermore, the sales information in different regions for each game will also be listed so users could view the sale information of each game.

There are some similar applications. For example, Steam, a world-known video game digital distribution service, has similar functionalities such as ranking systems and category selections. However, Steam focuses only on Windows, Linux, and MacOS systems. There is no information about other platforms such as Xbox, PlayStation, and Nintendo. In our application, there will be information about all the platforms, so the users could also classify the game by platforms. This is helpful because for example, a PS4 user would not want to see the games from Xbox since Xbox games cannot be played on PS4.

5. ***Realness. Describe what your data is and where you will get it.***

The two datasets which we will be working on are *Video Game Sales* data and *Top Video Games 1995-2021 Metacritic.* The dataset *Video Game Sales* contains a list of video games released from 1980 to 2020. Other attributes include sales rank, release platform, game genre, publisher(game design studio), sales data in Europe, North America, Japan and total worldwide sales. Source: Kaggle

We will combine the dataset Top Video Games 1995-2021 Metacritic with our first dataset. Top Video Games 1995-2021 Metacritic contains a list of video games with review data. Including games released from 1995 to 2021. Data attributes including releasing platform, release date, critic review and user review score. Source: Kaggle

To align these two datasets, games published from 1980 to 1995 and those without a specific publishing date will be removed. The ranking data will be reordered based on their user-review score after removing games without a valid review entry.

6. Description of the functionality that your website offers.

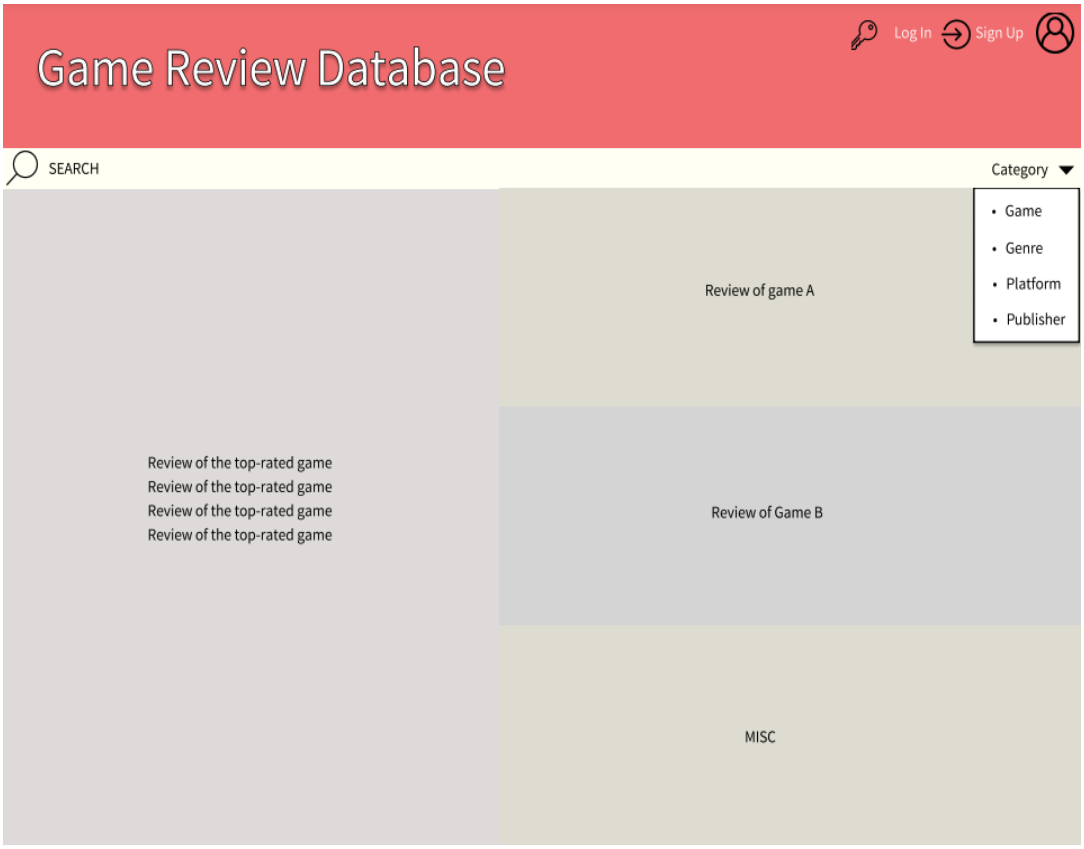
The basic functions of the web application include registering, logging in, searching, browsing lists of games information, inserting and updating game lists.

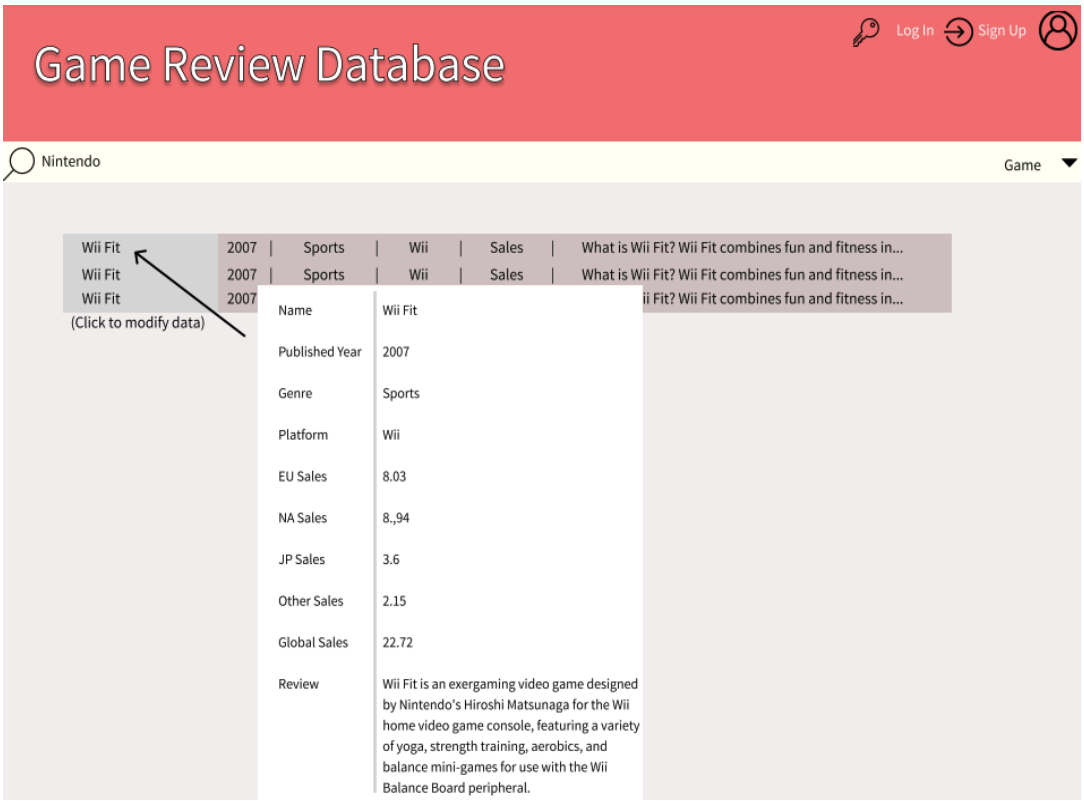
The creative component is that the users could compare the information of two different games by displaying the information of two games in one screen and showing the difference by different colors.

Here is a list of how users could interact with the application:

- Allow users to register and log in
- Allow users to search for information related to specific games using keyword search
- Allow users to create personal lists for storing different game information
- Allow users to add, update and delete stored games in lists
- Allow users to browse games using category selection
- Allow users to compare two games

7. *A low fidelity UI mockup*:





8. *Project work distribution*:

Overall, besides the specific functionalities assigned to each person, four major parts will each have one major person who takes care of them. Xinyi Ai will monitor the process of data clean up, finding useful datasets as needed while Bing Lin will take the major charge of building the database. The front end will be monitored by Xipeng Song. And Yanni Zhou will be the person in charge of the back end.

Xinyi Ai: I & II

Bing Lin: III & IV

Xipeng Song: III & V

Yanni Zhou: II & VI

I. Allow users to register and log in
II. Allow users to search for information related to specific games using keyword search
III. Allow users to create personal lists for storing different game information
IV. Allow users to add, update and delete stored games in lists
V. Allow users to browse games using category selection
VI. Allow users to compare two games