SteamNavigator: Your Guide to Steam Gaming

Project Summary

Our project is a website where users can access useful and important information regarding steam games in a centralized and easily accessible place. To differentiate our website from already existing ones such as steam's own website, we will not only provide simple static game information such as a game's description and price, but also display advanced game analytics such as price and player count history data. Such data will be displayed through sophisticated graphs, interactive maps, and raw text that will transform the way users search for games. In addition, the website will incorporate a recommendation system based on a user's preferences.

The main goal of this project is to develop a centralized hub where users can go to in order to get the most sophisticated and up to date information about a steam game.

Description

Some basic functions of our web application would include the ability to search for a game either by category or by name. In the case where a category is provided, the web application will output a list of games that match that category. In the case where a string or name is inputted, the search will return a list of games that closely or exactly match the string that was inputted. All results can then be filtered by aspects such as price or total player count.

Users would also have the ability to click on a specific game to learn more about it. Such actions would bring up a pop-up window that would display a brief or long description of the game, its publisher, time series graphs that present both price and player count data. In addition, a user has the choice to add a particular game to their favorites list which saves the game for future reference.

Some creative functions for our website could include a game recommendation system where the website recommends a particular game to a user based on their search history and/or their favorites list. Additionally, the website can also have an interactive map that displays countries and how many players are currently playing the game either presently or in the past.

Usefulness

With such an extensive set of features, our users can simultaneously discover new games and gain access to a copious amount of in-depth game analytics information that would be hard to find anywhere else. If a user is bored of their current roster of games, the recommender system can help the user figure out what to play next. In addition, if a user ever wants to purchase a game, but is not sure whether or not the price is right, they can always look at the pricing history graph that will be presented on our website for the game.

Not only will individual users benefit from such a site, but there will also be potential for gaming companies to benefit as well. Less popular games from less popular gaming companies could be made more popular with the recommendation system. In addition, data regarding user interactions with the site could potentially help businesses gauge the popularity of their game.

We hope that our website will be the premiere platform for gamers to search for and learn more about specific steam games. However, there are other platforms that exist that exhibit some of the proposed functionalities of our website. One such website is the steam official website which lists games and some relevant information such as price, brief descriptions and featured sales. Although the steam official website does share some similarities with ours, SteamNavigator will include a lot more features and data than what is available on steam. Such features include access to game analytics data, and personalized game recommendations.

Realness

In order for our website to include all of our proposed features, we would need to store all aspects of a game's information. This would first include a game's price over time. More specifically, a game's price on a certain date would be stored to represent this information. Moreover, a game's total and monthly active players would be included to measure the popularity of a game. Additionally, a brief description of a game, its category, and other miscellaneous non-time varying features would also be included. To get this information, we would purposefully extract it from a combination of the TA-proposed dataset "steam game datasets" (https://data.world/craigkelly/steam-game-data) and the "steam game price history" dataset (https://data.mendeley.com/datasets/ycy3sy3vj2/1) which can be found via the google dataset search engine. Conveniently, both datasets have an ID column that refers to a specific game in the steam library. For the TA-proposed dataset, this is listed as "queryid" and "appid" for the other dataset

To implement our game recommendation service, we would also require user accounts to be stored in our database. Furthermore, we would also require information about each individual user including but not limited to their search history, favorite games, and games on their watch list. Such information would come from the users themselves as they would be responsible for adding games to their favorites and indicating their preferences.

Functionality

SteamNavigator is at heart a very sophisticated game information system. A typical user interaction with the website would be having the user either create an account or logging in with an existing account. Once the user logs in, they would be greeted with a home page that displays either some recommended games or games that are on sale that were on their favorites list. If the user decides they would like to learn about a specific game, they would navigate to the search bar and type in the name of the game. Upon executing their search query, the website would display the results which could either be a specific game or a list of games that meet the specified query. If the user would like to learn more about the game they can always click on the game's icon to display a more detailed description of the game such as historic pricing or player count information.
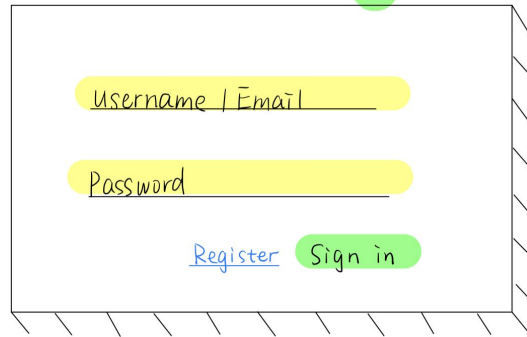
Project Work Distribution Table

Task	Responsible Team Member(s)
Developing Front End UI	Zhen Tang, Kevin Zhang, Xiao Wang, Bo-Wei Huang
Create Backend Tables/Design relational Schema	Zhen Tang, Kevin Zhang, Xiao Wang, Bo-Wei Huang
Writing/optimizing advanced SQL queries	Zhen Tang, Kevin Zhang, Xiao Wang, Bo-Wei Huang
Make Data Visualization Graphs	Kevin Zhang, Bo-Wei Huang
Develop recommendation model/algorithm	Xiao Wang
User login mechanisms	Zhen Tang

Because this project centers around the creation of a database schema from scratch and developing features that rely on it, all team members need to be familiar with how the schema is designed. As such, it makes sense for all team members to be involved with both the development of the schema as well as the writing and optimization of the SQL queries that extract information from the database. Since no team member has sufficient experience with front end development, all team members will also be involved with this task. Once the database schema is completed and all SQL queries are written, each individual group member will be assigned a specific feature to implement. Kevin and Bo will be responsible for implementing all the visualizations that were proposed in the project description such as the price history graph and the player count graph. Xiao will be responsible for developing a game recommendation algorithm to recommend games to users based on their favorite games or search history. Lastly, Zhen will be responsible for implementing a user login mechanism to store and handle user login information.
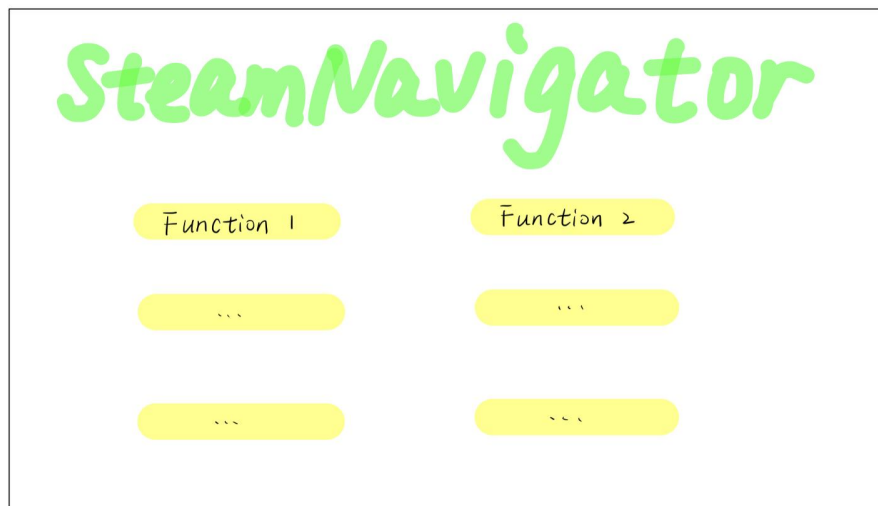
UI mockup
Login Page:

SteamNavigator

Username | Email

Password

Register   Sign in

Function menu:

SteamNavigator

Function 1   Function 2

...   ...

...   ...

Navigator Interface:

| Filter 1 | Filter 2 | Filter 3 | ⌕ Search |

Categories

Game 1
Demo

Game 2
Demo

Game Name

Click for more

Description

Rates

Selected Review

Price History Graph

☐ USD
☐ CAD
☐ ...