Project Proposal

Play Nexus: Steam Games Reviews

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Project Summary

The aim of our project is to build an integrated platform that combines a personalized game recommendation engine, a virtual item trading marketplace, a Steam market analysis tool, and a social hub for gamers to share news, guides, and more, streamlining the gaming experience and enhancing community interaction. Our goal is to streamline the gaming experience and foster a thriving gaming community, making it a one-stop destination for all things gaming.

Description of the Application

First, our personalized game recommendation engine will help players discover new games that suit their preferences. With so many games out there, finding the right one can be very difficult. Our engine will analyze user preferences, gaming habits, and game reviews to provide accurate and personalized game

recommendations, saving players time and ensuring they find a game they really like.

Second, our virtual item trading marketplace will provide players not only a platform for buying, selling, and trading in-game items but also a powerful tool to help users find the cheapest games available. We understand that gamers are always on the lookout for great deals and affordable gaming options. With our marketplace, users can easily browse and compare prices from various online retailers, ensuring they find the best deals on their favorite games. Our platform aggregates prices from multiple sources, including Steam and other reputable online stores, providing users with a comprehensive overview of the market. Meanwhile, users can swiftly navigate to complete transactions using the purchase links provided by the platform.

In addition, our Steam Market analysis tool will provide valuable insights into the trends and fluctuations of the Steam market. Players and traders often need to keep abreast of market values and prices to make informed decisions. Our tools will provide real-time data, historical trends and market forecasts, enabling players to make informed trading choices and maximize their investment.

Finally, our social hub will be a vibrant community platform for players to connect, share news, guides and participate in discussions. Building a strong gaming community is critical to fostering interaction, collaboration, and knowledge sharing. Our social hub will facilitate meaningful connections, allowing players to stay updated, seek advice, and share their experiences with like-minded people.

Together, our integrated platform is designed to simplify the gaming experience by providing personalized game recommendations, a secure marketplace for trading virtual items, full steam market analysis, and a thriving social hub. By addressing these challenges, we aim to enhance community engagement, simplify game discovery, and empower players to make informed decisions.

Usefulness

Compared with: IGN (Link: https://www.ign.com/)

- IGN (Imagine Games Network) is a prominent multimedia company focused on video games and pop culture. Known for articles, videos, podcasts, and events, IGN is a go-to source for gaming and entertainment enthusiasts worldwide.
- Compared to IGN, our project is more versatile and specialized. While IGN offers forums and comments, its primary focus is media news, with relatively limited social interaction. In contrast, PlayNexus, our project's website, combines multiple features, including game recommendations, virtual item trading, market analysis, and social interaction, offering users a comprehensive gaming experience.

Compared with: SteamDB (Link: https://steamdb.info/)

- SteamDB is a website dedicated to providing detailed data and analysis about Steam games and the marketplace. It offers extensive game information, price trends, and update history, making it highly valuable for users interested in gaining deeper insights into the Steam ecosystem.
- Compared to SteamDB, our website goes beyond providing game-related information and price trends. We introduce personalized game recommendations and feature vector similarity search

engine to help users quickly find their desired games, forming a comprehensive ecosystem that assists users in discovering new games (game recommendations and search engine), learning about new games (database with basic game information), purchasing new games (providing game prices information and purchase links), and sharing gaming moments (social interaction).

Realness

- **Data Source**: The game-related data comes from the Steam Platform and the dataset provided by this course. The review data is from the user input.
- **Data Attributes**:
    - Games
        - Game ID as the primary key
        - Title
        - Short Description
        - Detailed Description
        - Supported Languages
        - Publisher
        - Total Rating
        - Background Image
        - Poster Image
        - Trailer
        - Purchase link
        - Initial price
        - Final price
        - Embedding Vectors (pre-calculated representations for search engine)
    - Users
        - User ID
        - Username
        - Password
        - Email
        - Reviews
        - Gender
        - Region
        - Age
        - Languages
        - Search history
        - Viewed Game ID
        - Purchase History
        - Friend IDs
        - Chat History
    - Reviews
        - Review ID
        - User ID
        - Game ID

        - Comment
        - Rating
    - Posts
        - Post ID
        - User ID
        - Post Comments
        - Likings

Basic Functions of the Web Application

- User-friendly design and intuitive navigation
- Integration of a game store with discounted prices
- Review and rating system for games, with user engagement features including user registration, profile customization, and ability to create, delete, and update reviews. Create a user community.
- Personalized recommendations based on user profiles
- Regular updates and maintenance for latest games and discounts.

Creative Component

- **Search Engine powered by Document Embedding Vectors:** Select a pre-trained word embedding model such as FastText to map the game descirption to high-dimensional vectors, capturing semantic meanings. Then calculate the embeddings of keywords inputed by users. Use algorihtm like LSH forest （Locality Sensitive hash Forest） or KNN to find the top k matching results.
- **Filtering of Malicious Comments:** Integrate the ChatGPT Api in the review system. Use In-context learning and chain of thought to enhance ChatGPT's ability to detect malicious comments and remove them.
- **Personalized Recommendation:** Use user ratings, item purchase history, customized profile, and comments as the input data. Employ transformer-based model to analyze the data and generate the recommendation.

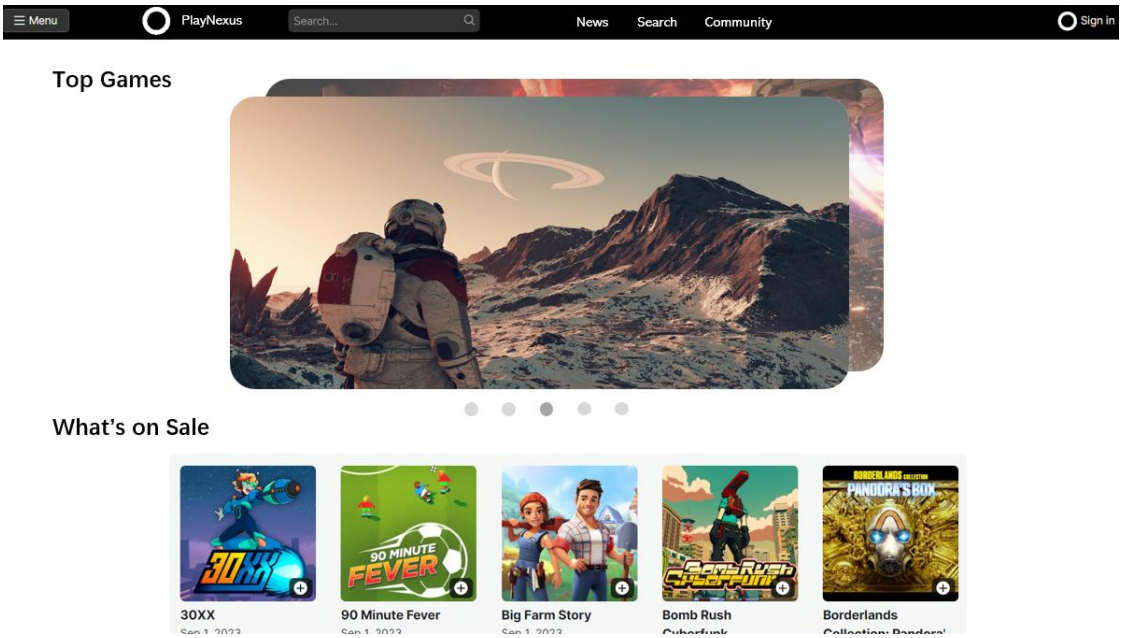
Functionality Description

The website should have a user-friendly design and intuitive navigation so that users can easily find the information they need. In addition, there should be an integration of a game store that offers discounted prices, allowing users to purchase games directly within the website. The website should also provide a review and rating system for games, along with user engagement features such as liking, commenting, and sharing. Users should have the ability to create, delete, and update various reviews on the website, as well as options for user registration and profile customization. The website can do personalized recommendations

based on user profile. Furthermore, the website should have an optimized search engine that ensures quick and accurate search results, allowing users to search with filters. Regular updates and maintenance should be conducted to provide users with the latest games and discounts.

Low-Fidelity UI Mockup

（Graph materials from IGN Link: https://www.ign.com/）



Backend System Distribution

Backend systems will be distributed across team members as follows:

- **sdong19:**
  Responsibilities: Community System and Malicious Comment Filtering
  - Develop and implement the community system within the platform, allowing users to connect, share news, guides, and participate in discussions.
  - Design and implement features for user interaction, such as commenting, liking, and sharing.
  - Develop a system for filtering and moderating malicious comments to ensure a safe and positive community environment.

- **fy10:**
  Responsibilities: Search Engine Optimization
  - Optimize the platform's website and content to improve visibility and ranking on search engine results pages.
  - Conduct keyword search and analysis to identify relevant and high-ranking search terms in the gaming industry.
  - Monitor search engine performance to make data-driven optimizations.

- **rw12:**
  Responsibilities: Registration and Login System
  - Design and develop a secure and user-friendly registration and login system for the platform.
  - Implement authentication and authorization mechanisms to ensure the privacy and security of user accounts.
  - Implement password recovery and account management functionalities to enhance the user experience.

- **jiayaol3:**
  Responsibilities: Recommendation Algorithm
  - Develop and implement the personalized game recommendation engine based on user preferences, gaming habits, and game reviews.
  - Design and implement algorithms to analyze user data and generate accurate and personalized game recommendations.
  - Continuously improve and refine the recommendation algorithms based on user feedback and data analysis.