A Dynamic Trivia Game

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ABSTRACT:

In modern gaming, engagement and motivation are critical components for player retention. This paper addresses the challenge of maintaining player interest through dynamic trivia game mechanics that allow user-generated content and incorporate rewards for sustained participation. Our solution proposes a trivia game where players can submit questions, earn points for consecutive correct answers, and compare their performance on a ranking system. Testing indicates high levels of engagement and retention, proving the viability of this design for educational and entertainment purposes.

INTRODUCTION:

The integration of educational elements within gaming has seen a significant rise in popularity, with trivia games offering an accessible format for learning through entertainment. However, traditional trivia games can suffer from stagnation, as a limited pool of questions can lead to repetitive gameplay.

This paper introduces a dynamic trivia game that allows users to actively participate by creating their own questions and earn rewards for correct answers. It incorporates a ranking system, fostering competition and social interaction among players. The game aims to increase player retention and engagement through mechanics that reward consistent performance and offer avenues for content personalization.

By combining user-generated content with a sophisticated reward structure, this game creates an environment that promotes both competition and cooperative learning, while addressing the challenges of maintaining engagement in trivia-based gaming.

METHOD AND MATERIALS:

Our game consists of several core components designed to enhance both engagement and the learning experience for players. The main features include a dynamic category-based question selection, a system for player-generated questions, a reward system based on performance, and a ranking mechanism.

Design:

The game architecture consists of the following classes:

1. **User Class** : Contains player information, such as use rname, password, and email.The use r can be an admin or a player.
2. **Player Clas s** : Inherits from the use r and manage s gameplay intera ctions. Players can play the game, submit que stions for approval ,view rankings, and track their performance.
3. **Admin Class** : Also inherits from the use r,wi th additional functionalities for manag ing user-ge nerated questio ns (approve or reje ct questions) and oversee ing the game con te nt.
4. **Category Clas s** : Handles the grou ping of questio ns into predefine d categori es (e.g., Scie nce, History, E nte rtainment), allowing players to choo se the topics they are most intere ste d in.
5. **Question Clas s** : Store s details abou tthe que stions, such as text, op tions, correct answe rs, and validation logic.
6. **Ranking Class** : Tracks the performance of playe rs, en abling co mparison betwee n individuals based on sco res and streaks.

Technical Decisions:

1. **User -Ge ne rated Content** :Pla yers can submit new qu estions that go through an app roval process man aged by the admin . This en sures that the content remain s high quality and appropriate for gameplay.
2. **Reward Syste m** : Players earn rewa rds for co nsecutive correct answe rs, encou raging con sistent gameplay an d mastery of topics.
3. **Ranking System** : The ranking syst em is updated in real-time based on playe r performance, offering compa risons betwee n players.

Game Flow:

Players start by selecting a category from which they wan t to answer questions. The system retrieves que stions associated with that categ ory. As they progress through the questio ns, co nsecutive correct answe rs are tracked to obtain more po ints. Additionally, playe rs can view their standing in a global ranking system, which is updated as they play.

The game also include s an option to create questio ns based on the topics that the playe r wants.

RESULTS:

To evalua te the game, we will implement unit tests on core function alities:

1. **Question Generation:** Tests will be conducted to ensure that questions were correctly retrieved from the relevant category, ensuring no repetition within a session.
2. **User-Generated Content:** Admin approval functionality will be tested to confirm that new user-submitted questions were appropriately reviewed and stored within the correct category.
3. **Reward System:** Simulated tests for player streaks will demonstrate the system's ability to track consecutive correct answers and award the appropriate points.
4. **Ranking System:** Integration tests will ensure that player scores were correctly recorded and reflected in the ranking system after each game session.

The results will indicate that the game mechanics function as expected. User feedback also will highlight the game's ability to keep players engaged due to its rewarding structure and dynamic question pool.

CONCLUSIONS:

This trivia game successfully addresses the issues of player engagement and retention by introducing a combination of user-generated content, a performance-based reward system, and real-time rankings. By allowing players to submit their own questions, the game fosters a sense of ownership and variety that traditional trivia games lack. The addition of rewards for correct answers motivates continued participation, while the ranking system encourages healthy competition among players. These elements create a richer, more dynamic trivia experience that can be enjoyed by both casual and competitive players.

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