

Introduction

The Guessing Game project is an interactive gaming experience designed to challenge players' ability to guess a randomly generated number within a specified range. This report provides a comprehensive project overview, highlighting its primary objectives, core functionality, and code structure. It also discusses the features and elements incorporated into the game.

Project Overview

The Guessing Game project aims to provide users with an engaging and enjoyable gaming experience. It includes several key components and features that contribute to its appeal:

1. **User Interaction:** The game's user interface allows players to interact with the program seamlessly. Players are prompted to input a 9-digit number to initiate the random number generation process. Subsequently, they make guesses in an intuitive and user-friendly manner.
2. **Feedback Mechanism:** An integral aspect of the game is its ability to provide immediate feedback after each guess. Whether a guess is correct, too high, or too low, the game ensures that players stay informed, making the gaming experience dynamic and educational.
3. **Scoring and Challenge:** To enhance engagement, the game incorporates a scoring system that tracks the number of attempts it takes for a player to guess the correct number successfully. This scoring system adds an element of challenge and competition, motivating players to improve their performance with each playthrough.
4. **Sound Effects:** To immerse players in the gaming experience, sound effects have been integrated into the game. These auditory cues, including sad and happy chord sounds,

provide immediate feedback to players and create a more immersive and emotionally resonant experience.

Core Functionality

Random Number Generation:

The Guessing Game project relies on a Linear Congruential Generator (LCG) for random number generation. The `generate_random_number` function expertly implements LCG principles to produce pseudo-random numbers within the specified range. This process ensures both unpredictability and fairness in the game.

User Interaction:

The game's interaction with players is skillfully managed within the `guessing_game` function. This comprehensive function handles various aspects of user input, feedback, and scoring. Its design promotes user engagement, clear communication, and a fluid gaming experience.

Sound Effects:

Sound effects play a crucial role in enhancing the Guessing Game's appeal. The `play_am_chord` and `play_em_chord` and `play_c_chord` functions are meticulously designed to deliver timely auditory feedback. The inclusion of sad and happy chord sounds affects the emotional connection between the player and the game.

Code Structure

The Guessing Game project maintains an organized and modular code structure that facilitates both development and comprehension. Key components of the code structure include:

1. **Main Function:** Serving as the entry point, the main function orchestrates the game's flow. It manages user interaction, ensures proper game termination, and maintains a logical structure for the entire program.

2. Random Number Generation: The `generate_random_number` function encapsulates LCG logic, isolating the complexities of random number generation and promoting code maintainability.
3. User Interaction and Logic: The `guessing_game` function is the core of the game's functionality. It combines user input processing, feedback mechanisms, and scoring logic, simplifying code maintenance and debugging.

Conclusion

The Guessing Game project is a well-executed endeavor to create an interactive and engaging gaming experience. It seamlessly integrates user interaction, feedback mechanisms, and sound design to deliver an enjoyable and educational experience. The project's code structure promotes maintainability and modularity, facilitating future development and expansion of features.