Trexquant Hangman Challenge "Guess" Method Documentation

Algorithm Explanation

By: - Isha Choudhary | shahooda637@gmail.com

Overview

The "guess" method is a crucial component of the Hangman game algorithm, responsible for making intelligent guesses based on the current state of the word being guessed. The algorithm leverages various strategies to optimize the selection of letters and enhance the chances of guessing the word correctly.

Method Parameters

self: The instance of the Hangman game class.

word: The current state of the word being guessed, represented as a string with underscores for unknown letters.

Method Functionality

1. Clean the Word:

The method starts by cleaning the input word, stripping away space characters and replacing underscores with "." to indicate any character in regular expressions.

2. Initialize Dictionaries:

The algorithm initializes dictionaries to manage possible words based on length and letter occurrences.

3. Update Current Dictionary:

The method updates the current dictionary of possible words based on the cleaned word.

4. Letter Count and Regular Expression Matching:

The algorithm uses helper functions (letter_count and re_match) to count occurrences of letters and filter words based on regular expression matching.

5. Guess Strategy:

The method employs multiple strategies to guess letters:

- Guess the most frequently occurring letter in all possible words that hasn't been guessed yet.
- If the word has a high vowel ratio (>0.55), prioritize vowels.

- If no suitable guess is found, fallback to ordering letters based on their frequency in the full dictionary.

6. **Finalize Guess:**

The algorithm finalizes the guess and updates internal state information.

Conclusion

The "guess" method showcases a sophisticated approach to making intelligent and strategic guesses in the Hangman game. By considering various factors such as letter occurrences, word length, and vowel ratios, the algorithm maximizes its chances of success in correctly guessing the target word. The method's flexibility and adaptability contribute to an engaging and challenging Hangman game experience.