

CCT211: Proposal

GUI application - Spelling game: Spell Well

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GUI application - Spelling Game

Purpose

We have decided to create a GUI application that solves a real problem, for those who are struggling with keeping up with school work and need a new or unique way of studying. This idea uses a similar feature of “quizlet” where the users are able to input information and descriptions of what they need to memorize. In our application, users can input words that they need practice (or help with) along with their definitions, then during gameplay, players will try to guess words based on the definition that shows on screen. Furthermore, if users would like to play but don’t have specific words to study, there will be an option for playing with preset random words. This game will help improve players’ spelling and memorize definitions of terms.

Target Segment

The target segment is ideally young children from the ages of 5 to 12 who are learning new vocabulary in school and students in medical school who need help with memorizing complicated words.

Usability

Users can find this idea or game as a leisure activity that can be educational and yet played as a game. Some users will find it useful in memorizing vocabulary and some users will find it helpful as they are forced to remember spelling of the words.

This GUI application is different and customizable to users’ needs. This is because users are able to input words along with their definitions that they need to memorize or learn the spelling of in order to practice and succeed in memorizing the spelling. They will be able to create groups of words to test, in case they want to focus on practicing a certain set of vocabulary. We hope that users will feel that the game is both educational and entertaining.

Meeting Project Requirements

Important Classes

- Game ~ handles gameplay using pygame embedded in tkinter
- GroupInput ~ handles user input of words
- WordGroup ~ contains words/definitions and also read/write to word group csv files
- Leaderboard ~ keeps track of past records

Important Windows

- Main Menu ~ choose to input words, play game, or check scores
- Word Input ~ input words and definitions
- Game ~ play spelling game
- Score History ~ view history of scores

Handling Data

- Data entry ~ users input their own vocabulary and definitions.
- Data persistence ~ word groups and scores are saved after termination of program
- Data analysis ~ we will use Matplotlib or Pandas to display past scores

Quality of Code

- follow PEP8 and keep code organized
- Well tested code
- Create UI that is easy to understand, along with a README documentation

Features/Qualities for a successful ‘A’ project

- Playable game that requires spelling words based on given definition
- Play the game using a random list of preset words and vocabulary
- Inputting original words along with their definitions
- Create different groups of words to test
- Timer
 - count down from a time limit based on the number of words
- Score System
 - Based off of time left or 0 if failed to complete
- Visuals showing past scores for each group of words
- Save word groups and scores

Technologies & Libraries of Interest

- PyGame
- Tkinter
- Matplotlib or pandas

GitHub Repo

<https://github.com/echo-neko/CCT211-SpellWell.git>

References

Hunter, J. D. (2003). Matplotlib (Version 3.5.0) [Computer software]. <https://matplotlib.org/>.

McKinney, W. (2008). pandas (Version 1.4.1) [Computer software]. <https://pandas.pydata.org/>.

Shinners, P., et al. (2000). Pygame (Version 2.1.2) [Computer software].

<https://www.pygame.org/>.