YZV102E - Introduction to Programming for Data Science (python) Project proposal

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Project Topic and Goal

As the term project, I am going to make a web-based word finding game called “Word Hunter”. This project is for English learners to practice vocabulary while having fun. In this game players are obliged to find words that are 4, 5, or 6 letters long. There are two modes in the game which are one-word and four-word modes. In one-word mode there is only one word to be found but in four-word mode there are four words to be found simultaneously. According to the word length chosen by the user, boxes will appear on the screen and the player will be given the right to guess according to the length of the word. The user will be asked to guess the word, and then it will be reported for each letter that the position of the entered letter is correct or letter is misplaced or that letter is not found in the word. Player must find out the word or words before guesses run out.

The Problem Specifications

- Data source: Finding a comprehensive and reliable data source for English words can be a challenge. It is important to have a diverse and extensive list of words to ensure the game is challenging and engaging for the players.

  Solution: Using the "nltk" library in Python to access the English words corpus and importing the list of words into the game.

- User interface: Creating both a visually appealing and working user interface for the game can be difficult. The game will require buttons, text boxes, color changing to provide a seamless user experience.

  Solution: Using Django or Flask web frameworks to create a web-based interface for the game. This will allow for easier implementation of buttons, text boxes as well as providing the ability to add additional features such as a leaderboard.

- Game logic: Designing the logic for the game can be complex, especially when considering factors such as scoring, guess limits, and word validation.

  Solution: Using Python to create the game logic and incorporating algorithms to validate player input and calculate scores.

Tasks

- A detailed search to determine the libraries I need and the overall algorithm
- Learning one of web design libraries of Python: In order to visualize the game and make it web-based, I am going to have a Django or Flask course.
- Writing general algorithm
- Designing the web page using the necessary libraries
- Testing the game for detection of errors and omissions
- Writing the project report