Week 4 - Individual Report

GitHub URL: *https://github.com/navaneethnivol/cs-161-individual-letter-detective*

(___/1pt) Give a URL link to an existing online puzzle/game that is similar to your product.

- *https://thewordsearch.com/hangman*

(___/1pt) Indicate if the existing online puzzle/game does provide solutions to users.

- *This game gives the solution after 8 incorrect guesses.*

(___/2pt) What is your approach (algorithm)?

- *At the start, a topic is chosen from a predefined list, and a word is randomly selected based on that topic. This word serves as the puzzle to be solved. During gameplay, the player guesses letters to unveil the word. Each correct guess is checked against the the word and if the letter is present in the word then the positions of the letters are revealed. The game continues until the word is fully guessed, resulting in a win or loss, respectively. After the game ends, the player can choose to restart with a new topic and word.*

(___/1pt) Is your algorithm the optimal ? Why or Why not?

- Yes it is Optimal, We can store the letter positions in a hashmap to find out of the letter is present in the word and also their positions in constant time.

(___/1pt) Give the proved or estimated time complexity of your algorithm.

- O(n) - where n is the number of distinct letters in the word.