Week 4 Report

- (___/1pt) Give a URL links to an existing online puzzle/game that is similar to your product.
  - https://www.thewordfinder.com/wordle-solver/
- (___/1pt) Indicate if the existing online puzzle/game does provide solutions to users.
  - Yes, it does provide a solution to the user, but it does not provide any suggestions and probability of the answer.
- Assume that your program is solving the same problem that are given to users. (___/2pt) What is your approach (algorithm)?
  - The initial solution space consists of all possible words that could be the answer. This space is created by enumerating all valid words of the correct length. These words can be stored in a data structure like a list or a hash set for efficient access and search.
  - Use frequency analysis to prioritize guesses based on the commonality of letters in the language or within the set of possible answers. This strategy involves choosing words that contain the most frequently occurring letters, under the assumption that these letters are more likely to appear in the solution.
- (___/1pt) Is your algorithm the optimal ? Why or Why not?
  - Yes, it is optimal than the brute force strategy. The brute force approach has all the elements or words stored. But here, we use frequency of the letters that appears in a language, and based on that we display the probability of the word. Hence it is more optimal.
- (___/1pt) Give the proved or estimated time complexity of your algorithm.
  - O(N) - For building initial frequency tables.
  - O(N) - For evaluating potential guesses and pruning solution space.
  - Total - O(N)