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EE422C Project 3 (Word Ladder) Team Plan

Mustafa Irfan did the BFS module initially, and Tung To did the DFS module initially. We both sat together and debugged each respective module together, and then debugged each others modules separately. 5 of the test cases were written by Mustafa Irfan, and 5 by Tung To, with Mustafa Irfan designing 3 BFS based tests, and 2 DFS based tests. Tung To also had a similar split in the 5 tests he contributed. We spent approximately 10 hours together in the same room, and were in consistent contact throughout messenger. Final testing(after all the test cases were written) was done together.

Our BFS method takes in the starting word, and places it on the queue. We then find all the adjacent words to the word at the head of the queue, converting each word into an object that also holds the parent word. We continue to pop the queue, and find the adjacent nodes, traversing each level, until we either find the final word, or the entire dictionary had been traversed. If we find the final word, then we use the parent aspect of the dictionary, to trace the path back to the original node. The path is then reversed and printed out as the word ladder.

Our DFS method uses a stack and is done recursively. It takes an adjacent word, and pushes it on the stack. Then it sees if the next word is the output, otherwise it recursively calls. Once the output is called, the functions return back resulting in an array list ladder, which is then passed into a method that shortens the Ladder.