EE422C Project 3 (Word Ladder) Test Plan

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Git URL: https://github.com/mxchen2001/422-project3-pair41.git
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Test plan summary

The Tests were written with JUNIT and meant to test for special edge cases such as rare, words, and common words. We also wrote parsing Test that tests the input handling. Finally there was a random test written that generates 2 words inside the Dictionary, and tests for a valid word ladder. We did not test for invalid words or inputs of one letter difference or same word as start and end.

Note: JUNIT was ran with 1024m of both Stack and Heap memory.

1. parseFull Passed 8.73s
    a. Tests input of "nears niton" for Main.parse(); and Main.getWordLadderDFS();
    b. Global Initialization, Create a scanner with input: "nears nitton"
    c. Expected output: ArrayList from parse as {"nears", "niton"} and no ladder found…
    d. Passes with valid ArrayList and ladder with only start and end
2. parseQuit Passed 7.45s
    a. Tests input of "/quit" for Main.parse(); and Main.getWordLadderDFS();
    b. Global Initialization, Create a scanner with input: "/quit"
    c. Expected output: empty ArrayList
    d. Passes with an empty ArrayList
3. singleToCommonBFS Passed 6.93s
    a. Tests inputs of "sperm cares" because sperm does not have any neighbors with BFS
    b. Global Initialization
    c. Expected output no ladder found …
    d. Passes with ladder with only start and end
4. singleToCommonDFS Passed 7.25s
    a. Tests inputs of "sperm cares" because sperm does not have any neighbors with DFS
    b. Global Initialization
    c. Expected output no ladder found …
    d. Passes with ladder with only start and end
5. commonToSingleBFS Passed 6.83s
    a. Tests inputs of "cares sperm" because sperm does not have any neighbors with BFS
    b. Global Initialization

    c. Expected output no ladder found …
    d. Passes with ladder with only start and end
6. commonToSingleDFS Passed 6.62s
    a. Tests inputs of “cares sperm” because sperm does not have any neighbors with DFS
    b. Global Initialization
    c. Expected output no ladder found …
    d. Passes with ladder with only start and end
7. commonToCommonBFS Passed 6.55s
    a. Tests inputs of “dines cares” because both words have many neighbors with BFS and test if the smallest path is found
    b. Global Initialization
    c. Expected output “2 rung ladder found”
    d. Passes with valid word ladder with not repeats and one letter difference and word ladder is of size 2
8. commonToCommonDFS Passed 6.36s
    a. Tests inputs of “dines cares” because both words have many neighbors with DFS
    b. Global Initialization
    c. Expected output “n rung ladder found”
    d. Passes with valid word ladder with not repeats and one letter difference
9. rareToRareBFS Passed 6.82s
    a. Tests inputs of “gadje oorie” because both words have few neighbors but greater than 2
    b. Global Initialization
    c. Expected output no ladder found …
    d. Passes with ladder with only start and end
10. rareToRareDFS Passed 6.56s
    a. Tests inputs of “gadje oorie” because both words have few neighbors but greater than 2
    b. Global Initialization
    c. Expected output no ladder found …
    d. Passes with ladder with only start and end
11. similarWord1BFS Passed 6.68s
    a. Tests inputs of “great gloat” because both words have a 2 letter difference from each other and test if the smallest path is found
    b. Global Initialization
    c. Expected output “1 rung ladder found”
    d. Passes with valid word ladder with not repeats and one letter difference and a ladder size of 1
12. similarWord1DFS Passed 7.14s
    a. Tests inputs of “great gloat” because both words have a 2 letter difference from each other
    b. Global Initialization
    c. Expected output “n rung ladder found”
    d. Passes with valid word ladder with not repeats and one letter difference

13. stackOverflowDFS1 Passed 7.47s, stackOverflowDFS2 Passed 9.88s , stackOverflowDFS3 Passed 9.26s, stackOverflowDFS4 Passed 7.99s, stackOverflowDFS5 Passed 9.38s, stackOverflowDFS6 Passed 7.46s
    a. Tests a variety of rare words that would cause StackOverflow for an unoptimized DFS
    b. Global Initialization
    c. Expected output: no StackOverflowError
    d. Passes with no StackOverflowError
14. randomTest Passed 31.47s
    a. Test 2 different random word inside the Dictionary, looped by “private final int TEST_SIZE”;
    b. Global Initialization
    c. Expected output: valid word ladder
    d. Passes if no Expections(StackOverflow for DFS) and valid word ladders