

## Test Plan

In order to test my program, we will write two JUnit test files. The first will be a black box test to make sure the functionality of my word ladder maker is correct by only knowing the input and outputs. The second will be a white box test to make sure that all corner cases are covered by knowing how the function works.

For the black box test, we created the WordLadderBlackBox.java file with multiple test cases. All of the test cases for the make ladder were tested for the correct output for each input. We checked if it was null if there was no solution, and tested each word in the word ladder to make sure the adjacent words were only one off. We tested the start and end words with valid, invalid, and mixed dictionary words, words that were longer than 5 or shorter than 5, capital words, and words that were one step away from each other. We created methods to check the solution list to complete the test.

For the white box test, we created the WordLadderWhiteBox.java file with multiple test cases as well. All of the test cases tested for the input and output print statements of the make ladder where corner cases would occur. By reading the console and the code for the print statements, we tested the correct word ladder solution prints, no word ladder solution prints, string with nulls and the corresponding handling prints, and same word prints. We created methods to check the solution print to complete the test.