

### Testing Report

The Assignment 4 code will go through white-box and black-box testing. The former is to test the control flow of the code while the latter is to ensure that the appropriate output is given for the appropriate input. A list of test cases is shown below. The reason for why each pair of words was used is detailed under Purpose and the last column classifies each test case as White-box or Black-box.

<u>Test Case</u>	<u>Purpose</u>	<u>White-box or Black-Box</u>
"money" -> "honey"	This should produce a valid word ladder consisting only of the two input words.	Black-box
"dears" -> "fears"	If two words are only one letter off, execution should go to MakeLadder, and the BFS algorithm should be unnecessary.	White-box
"stone" -> "money"	A valid word ladder should be produced and output to the screen.	Black-box
"money" -> "smart"	Creating this word ladder should execute the BFS code in MakeLadder	White-box
"devil" -> "angel"	The code should output that a valid word ladder could not be found.	Black-box
"atlas" -> "zebra"	The code should throw a NoSuchLadderException inside MakeLadder.	White-box
"heart" -> "heart"	A ladder consisting only of the two inputs should be returned by MakeLadder without the function using BFS.	White-box
"babes" -> "child"	When outputting the ladder, the tester should look for asterisks to ensure printLadder was called.	White-box
"mumbo" -> "ghost"	The code should imitate the results of the "atlas" -> "zebra" test case.	White-box
"ryan" -> "joe"	A NoSuchLadderException should be thrown inside computeLadder and a	White-box

	message regarding the validity of the inputs should be output to the console.	
"hello" -> "buddy"	Control should flow from Driver -> computeLadder -> MakeLadder -> computeLadder -> main -> validateLadder -> main	White-box
"hello" -> "world"	Control should flow from Driver -> computeLadder -> MakeLadder -> NoSuchLadderException -> main	White-box
"heads" -> "tails"	A valid word ladder should be output to the console.	Black-box
"abate" -> "aback"	A valid word ladder should be output to the console.	Black-box
"aback" -> "agora"	This should throw an exception after going through the BFS.	White-box
"john" -> "elway"	This should throw an exception that one of the words is invalid (so inside computeLadder)	White-box