**EE422C Project 3 (Word Ladder) Test Plan**

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Test plan summary What was your goal, methodology, and conclusion? 1 paragraph. Example: Did you use JUNIT? Did you test modules or the whole thing all at once? What areas did you feel you covered in your final test suite? What did you not cover?

**BFS Tests**

1. longBFSLadder

a) longBFSLadder

b) It tests that longs ladders don’t run for too long and that the number of rungs is correct.

c) It needs to run initialize to generate the adjacent list and start a timer.

d) A good module will run in <30 seconds and give 11 as a number of rungs.

e) The fail criterion is for BFS to take over 30 seconds to run and for it to display a wrong number of rungs.

f) Uses the words SMART and MONEY.

2. emptyLadderA

a) emptyLadderA

b) It tests for an aloof word not to have any ladder.

c) It needs to run initialize to generate the adjacent list and start a timer.

d) An good module will return an empty ladder and run in under 30 seconds.

e) The fail criterion is for BFS to take over 30 seconds to run and for it to display a wrong number of rungs.

f) Uses the words SMART and ALOOF

3. emptyLadderB

a) emptyLadderB

b) It tests for an aloof word not to have any ladder.

c) It needs to run initialize to generate the adjacent list and start a timer.

d) An good module will return an empty ladder and run in under 30 seconds.

e) The fail criterion is for BFS to take over 30 seconds to run and for it to display a wrong number of rungs.

f) Uses the words JAZZY and MONEY

4. zeroRungA

a) zeroRungA

b) It covers the case where the art word and the end word are adjacent to each other.

c) It needs to run initialize to generate the adjacent list and start a timer.

d) The expected output for the module is for it to return a ladder of length 2.

e) The fail criterion is for BFS to take over 30 seconds to run and for it to display a wrong number of rungs.

f) Uses the words START and SMART

5. normalLadder

a) normalLadder

b) It covers the general case for a ladder to be found

c) It needs to run initialize to generate the adjacent list and start a timer.

d) It expects a rung number of 9.

e) The fail criterion is for BFS to take over 30 seconds to run and for it to display a wrong number of rungs.

f) Any comments, if any. Test is expected to run in 2 seconds or less.

**DFS Tests**

1.

a) DFSLadder1

b) Checks to see if path can be found between

c) Initialize the word lookup list and adjacency list and start timing

d) Returns a ladder between the 2 words in a reasonable amount of time

e) The pass/fail criterion for the test. No stack overflow, ladder has no duplicates and the ladder is correct.

f) Start word is Smart and end word is money

2.

a) emptyLadderDFS1

b) Checks to see that the DFS search returns an empty arraylist indicating no path between words

c) Initialize the word lookup list and adjacency list and start timing

d) Returns a ladder between the two words

e) No stack overflow. Ladder of size 0 returned.

f) Start word is smart end word is aloof.

3.

a) emptyLadderDFS2

b) Checks to see that he DFS search returns an empty arraylist indicating no path between words

c) Initialize the word lookup list and adjacency list and start timing

d) Returns a ladder between the two words

e) No stack overflow. Ladder of size 0 returned.

f) Start word is jazzy, end word is money

4.

a) zeroRungDFS

b) Checks to see DFS returns right result if words are adjacent to each other

c) Initialize the word lookup list and adjacency list and start timing

d) Returns a ladder between the two words

e) No stack overflow. Ladder of size>0 is returned. Acceptable ladder

f) Start word is smart end word is start; ideal result is a 2 rung ladder

5. DFSLadder2

a) Checks to see if DFS returns a correct ladder

b) Checks to see that the DFS returns an acceptable ladder between 2 words

c) Initialize the word lookup list and adjacency list and start timing

d) Returns a ladder between two words

e) No stack overflow. Ladder of size>0 is returned. Acceptable ladder

f) Start word is smart end word is brain

**General Tests**

1. BFSTest

a) BFSTest

b) It covers general BFS cases using

c) Doesn’t run initialization , uses keyboard and parse.

d) Expected the ladder for the different values entered using BFS.

e) Ladder is found is our test criterion

f) General case

2. ParseTest

a) ParseTest

b) Verifies that we get correct input from the keyboard

c) Make a scanner connected to the keyboard.

d) Expected the two words inputed to be printed, they are also turned into uppercase.

e) System exits with /quit and words are printed when entered.

f) Any comments, if any. Test is expected to run in 2 seconds or less.

3. PrintLadder

a) PrintLadder

b) The test checks if the printer prints the ArrayList of a ladder

c) It needs to run a BFS beforeto obtain an ArrayList that is a ladder (or isn’t).

d) Expected output is the console to properly print the ladder and number of rungs.

e) The pass criterion for the Test is for the ladder to be outputted and for it to be complacent with the standards given for output

f) Checked for the corner case of no ladder, or when two words are right next to each other.

4. PermutationTest

a) PermutationTest

b) The test covers the helper module that checks whether a word is a permutation of the other (if it is adjacent.)

c) Starts the keyboard to get two words.

d) Expects to output true if the two words are adjacent, false if they are not

e) Pass criterion is that if two words are adjacent (ie. START SMART) it returns true. If not adjacent (SMART ALOOF) it returns false

f) Any comments, if any. Test is expected to run in 2 seconds or less.

5. InitializationTest

a) InitializationTest

b) It tests the initialization of the adjacentList.

c) Starts a timer to see how long it takes for the adjacentList to be created.

d) Expected output for good module is for the initialization to actually return.

e) If the initialization does not return, it fails.

f)

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a) Test name (LONG\_LADDER\_DFS)

b) What feature does the test cover – 1-2 phrases or sentences. Checks for correct printing of a long ladder of over XXX words.

c) Set up for the test – initialization. None.

d) Expected output for a good module. Ladder between XXX and YYY. Ladder checked for duplicate words.

e) The pass/fail criterion for the test. No stack overflow, ladder has no duplicates. Ladder correct, as checked by 'ladder checker'.

f) Any comments, if any. Test is expected to run in 2 seconds or less.

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