

CITS3001 Algorithms, Agents and Artificial Intelligence

Labsheet 4: Uninformed search algorithms

A common form of word puzzle is so-called “word chess”. Starting from an English word w , and changing only one letter at a time, derive a second word w' . All intermediate stages must also be valid English words.

So given e.g. SICK and WELL, one solution would be:

S I C K
S I L K
S I L L
S E L L
W E L L

Other examples include SOFT → LOUD, WEEK → YEAR, CENT → DIME, and DRY → WET. Note that some of these puzzles require more moves than the number of letters in the words, but it is easy to spot the minimum possible number of moves.

Implement a program that can solve these word puzzles using each of the search strategies from Lecture 6.

You will need a word-list to check for valid English words and their conjugations. Note that this is not just a dictionary: it includes e.g. *take, takes, taking, taken, took, etc.* Either find a list on the web, or use the one given on the CITS3001 Resources page.