Homework 1-P

Write a program to solve the following search problem: You are given two words of equal length and a dictionary of legal English words. At each step, you can change any single letter in the word to any other letter, provided that the result is a word in the dictionary; you cannot add or remove letters. Your program should print the shortest list of words that connects the two given words in this way (if there are multiple such paths, any one is sufficient).

For testing on the department's Linux machines there is a dictionary at `/usr/share/dict/words`. Or use this [smaller version](#))

I/O format

- Name your program **hw1.(py/java)**. Your code should take 3 arguments: The dictionary's file name, the start word, and the target word.
- You should then print the chain of words that leads from the start word to the target word. Print each word an a newline.
- If it impossible find a path then output: "No solution"
- You can assume you will be given valid start and target words.

For example:
python3 hw1.py /usr/share/dict/words harp ramp
harp
carp
camp
ramp

Write up

Along with your code, submit the result of searching `cold` to `warm` and the results from `small` to `short` Put this in a .txt or .pdf file.

Submission

Zip up your source code and the writup and submit it via mycourses.