

Specifically, the input will be of the form:

Yourfile.py #x# # dict.txt (words)

Here is what all the arguments represent:

- #x# represents the size of the crossword puzzle, first height then width.
- # represents the number of blocked squares you must place.
- dict.txt is the name of the dictionary used. (You should test this on both dictionaries you have.)
- (words) stands for any number (including zero) of word strings. Each word string is formatted as follows – H#x#word or V#x#word. H or V stand for horizontal or vertical, and #x# locates the first letter of the word. The first number is the word's row, zero-indexed, and the second number is the word's column, zero-indexed. The given words may not be words in the dictionary you're using; this should not cause your program to malfunction.

For example, this string:

Cword.py 11x13 27 scrabble.txt H0x0begin V8x12end

...will generate a crossword puzzle with 11 rows and 13 columns, with 27 blocked squares, using the dictionary in scrabble.txt, with the word "BEGIN" horizontally from the top left corner and the word "END" going down from the square on row 8 and the last column down into the bottom right square.

Some details:

- We're just looking for the completed word grid; you don't have to print out clues or anything.
- Your code has a time limit of one minute.
- The grader will accept either a single long string or an output that is printed in actual rows with newlines at the end and any amount of space characters anywhere. Use a period for a blocked square, and use only upper case letters when printing.
- If you want to output half-finished crosswords along the way, this is fine: only your final output will be graded.
- The total credit for the puzzle is determined as follows. Out of a total number of possible points that is two times the number of spaces, you get points equal to the sum of the lengths of each correct word, horizontally or vertically. (As a result, there's a cheap version of this task that's worth 50% where all the horizontal words are words and you pay no attention to vertical at all. A slight upgrade is to pick your left-most vertical words, then fill horizontals from there, for a little more than 50%.)
- To get full credit, your crossword puzzle may not have any duplicate words; duplicate words will receive no points.
- You can place the blocking squares anywhere as long as they have 180 degree rotational symmetry and as long as the word squares form a single connected block. Ie, you can't cut the board in half with blocking squares and make two smaller puzzles. (See any actual crossword for examples of how this should look.)
- A word must be at least three letters long. Any words in the given dictionary that contain non-letter characters are valid as long as the non-letter characters are removed (ie, "witch's" can go in the puzzle as "witchs").