

CSE31: Project #1 – Word Search Puzzle

Overview

In this project, we will use all the topics we have learn about C to write a program to solve Word Search Puzzles.

Word Search Puzzle

A word search puzzle is a game that you are asked to find a given list of words from a grid of letters. If you do not know about this puzzle, please visit:

https://en.wikipedia.org/wiki/Word_search to find out more about how this puzzle works.

wordsearch.c

The main program (***wordsearch.c***) is given to you. Your tasks is to implement 2 functions to complete the program. When the program starts, it will read the puzzle grid from a text file and save it as a 2-D character array. It will also read a list of words from another text file and save the list into a string array. The program will search for words in **5 directions**: horizontal left to right (\rightarrow), Horizontal right to left (\leftarrow), vertical top to bottom (\downarrow), diagonal top left to bottom right (\searrow), and diagonal top right to bottom left (\swarrow).

Your tasks:

printPuzzle(char, int)** – This function takes in the puzzle grid with its dimension (assuming a square grid) and prints out its content. **Implement this function so that it will print out the content in the SAME format as the sample output.**

searchPuzzle(char, int, char**, int)** – This function is the core of solving the puzzle. It takes in the puzzle grid with its dimension and tries to find as many words listed in the word list (the 3rd input argument). Not all words will be found from the grid. **Whenever a word is found, your program will print it out as well as converting the word in the puzzle grid to *lower case*.**

YOU MUST NOT USE ANY ARRAY NOTATION ([]) IN THIS PROGRAM!

YOU MUST NOT USE ANY LIBRARY FUNCTIONS TO CONVERT CHARACTERS INTO LOWER CASE!

Feel free to create any helper functions to make simplify your searchPuzzle function.

Testing your program

After compiling ***wordsearch.c***, run the program by typing:

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./wordsearch puzzle1.txt
```

Where ***wordsearch*** is the executable file, and ***puzzle1.txt*** is the text file containing the puzzle grid. Feel free to create your own text files for test cases.

What to submit

- Your completed ***wordsearch.c***, any additional test files.
- Your assignment is closed **on 3/20, Friday** (at 11:59pm).
- You must demo your submission to your TA **within 7 days** after Spring Break ends. Try to do the demo during lab hours.

