CprE 186: Wordsearch

Names: _____ Sec:_____ Demo: _____

You work for the local newspaper. The paper publishes a daily word search for its readers. Until now, the paper has purchased a daily puzzle, but the rates have increased and you have been assigned the job of writing a program that generates word search puzzles. The editor will give you a file of words (less than 50), one per line. Each word will be no longer than 12 characters.

Your program should prompt the user for this file's name and the two dimensions of the puzzle (each will be less than 61). Your program will read the words from the file, place them randomly in the puzzle, and then fill the empty puzzle with random characters. Words can be placed in reverse or forward order in up/down, horizontal, or diagonal directions. They may overlap as long as they cross where characters are the same. Your program should print the solution (a puzzle without the randomly added characters) and then the puzzle with the added characters. It is possible that the program might not succeed in placing a word, try no more than 100 times to place a word and then fail.

Write a modular program to do this. You will be required to **demo the working program to a TA** and **submit the C file on Blackboard**.

Include sample output for a 40 by 40 puzzle with the following words:

SQUEAMISH

OSSIFRAGE

ARRAY

STRING

COMPILE

FROZEN

SEGMENTATION

FAULT

INTEGER

FLOAT

DOUBLE

DOCTOR

DANIELS

> Hint: To get random integer values, use C's rand() function. To do so, #include <stdlib.h>
>
> rand() will return an integer. You can choose a random character as folllows:
>
> c = 'A' + (rand() % 26);
>
> To get a random integer value from 0 to k, you can use the expression (rand() % (k+1))