Word Search Program Notes

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1 Program Description

The *word-search* is a program in c++ that solves the problem of searching words in a soup of characters. The *soup* is defined as a matrix of characters of size $N \times M$, or equivalently in c++, $char[N][M]$. The words to be searched are movie titles given as a vector of strings: $vector < strings > movies\_in\_soup$. Then the words are searched in the soup and the program will know which movies are in the soup and which are not.

2 Program Structure

word-search will be divided in the following parts:

1. The input loader
2. The parser.
3. The solver.
4. The output handler.

2.1 Input Loader

The input loader will define how input is handled and introduced. For the moment the case considered would be the input given as a *string* in *cin*

3 Input File Format

The word-search program will have as input .txt files and potentially user-typed movie titles. But in priory, the input will be a .txt file given as a *string*. Input files are assumed to be already included in the same directory as the program. The format of the .txt file will be as follows:

1. The first block is a single line with a pair of numbers N and M separated by a space. N is the number of rows and M is the number of columns.

2. The second block is a matrix of N rows and M columns with the letters of the word search.

3. The third block is a list of words to be searched in the matrix.

Now consider that the file may have comment lines anywhere including inside the blocks of inputs. Comment lines should be treated as if the parser had never seen them.

I will define the parser to be a set of functions that will take as input the .txt file and will return all the useful information interpretet as c++ data types. Such information could be:

1. The entry size of the matrix N and M.

2. The declaration of the characters of the matrix.

3. The list of words to be searched.