

COSC2430 HW1: Array and Pointer

1. Introduction

You need to create a C++ program that can find out a subsequence of common characters from a list of strings.

2. Program and input specification

You will get a list of strings in an input file. Each line will be considered as a single string. You need to find out the length of the common subsequence of characters from those strings which is the longest one.

Assumptions:

- The input file is a small plain text file; no need to handle binary files.
- Each input file can have maximum 4 strings.
- A string can have maximum 1000 characters.
- An input file may contain empty lines between strings, then you will ignore it.
- The output should be exactly matched with the format.

The main C++ program will become the executable to be tested by the TAs. The Result file should be written to another text file (output file), provided with the Command line. Notice the input and output files are specified in the command line, not inside the C++ code. Notice also the quotes in the program call, to avoid Unix/Windows gets confused.

3. Input and Output

The input and output files are regular text files, where each line is terminated with a '\n' character. Each line will be treated as a string.

The output file will contain the output. The output will be "Len: " + *the length of the subsequence*. Note, in "Len: ", there is a space after the colon(:).

All records should be processed sequentially from beginning to end. Note that, input and output, all are case sensitive. Please, see examples to be clarified about the format.

4. Program Execution:

The general call to the executable is as follows:

Subsequence "input=input1.txt;output=output1.txt"

You can call the example with another command line type,

Subsequence input=input1.txt output=output1.txt

5. Examples

Example 1 of input and output,

Input11.txt

abcd321ABCD

abcD123ABCd

Command line:

Subsequence input=input11.txt output=output11.txt

Output11.txt

Len: 7

Example 2 of input and output,

Input12.txt

Data Structures Using C++

Data Structures Using Java

COSC 2430 is Data Structures course

Data Structures

Command line:

Subsequence input=input12.txt output=output12.txt

Output12.txt

Len: 15

Example 3 of input and output,

Input13.txt

Data Structures is an interesting course.

// empty line will not be counted

We love Data Structures course.

Command line:

Subsequence input=input13.txt output=output13.txt

Output13.txt

Len: 23

6. Requirements

- Homework is an individual. Your homework will be automatically screened for code plagiarism against code from the other students and code from external sources. If you copy/download source code from the Internet or a book, it is better for you to acknowledge it in your comments, instead of the TAs detecting it. Code that is detected to be copied from another student (for instance, renaming variables, changing for and while loops, changing indentation, etc) will result in "Fail" in the course and being reported to UH upper administration.
- timeout is set to 2s.

7. Hand over your homework

- Homework 1 needs to be handed over to our Linux server, follow the link here <http://cs.uh.edu/~rizk/homework.html>.
- Make sure to create a folder under your root directory, name it hw1 (name need to be lower case), only copy your code to this folder, no test case or other files needed. If you use ArgumentManager.h, don't forget to hand over it too.

PS. This document may have typos, if you think something illogical, please email TAs or Teacher for confirmation.