

SystemC & Behavior Coding

Assignment 2, 2021-10-08

Abstract

Develop two (2) C programs. First one analyzes a given text using while and string functions. The second one is a practice in using pointers.

Please read carefully. All outputs required are described in the text. Five (5) points will be taken for each bug, missing required output and behavior.

I. Text Processing

Description

1. Open a file (the text file) by command input, e.g. `run TheTextFile`.
2. Implement **a function** to count in the file
 - How many lines
 - How many characters (alphanumeric characters only or all characters that can be typed char)
 - How many uppercase letters
 - How many words
3. Then implement **another function** that turns all the text into upper case and writes to a file named **"UPPER"**.

II. Pointers

Description

1. Use `void* malloc(size_t size);` to allocate `argv[1]` bytes of memory, i.e. `argv[1]` is the second input argument. Notice that you need to turn `argv[1]`, a `char*` type data, into integer type to process.
2. Use `char*` and a `for` loop, assign to the block of memory, byte-by-byte, 'A' to 'Z' then '1' to '9' repeatedly, until the memory runs out.
3. Then use `int*` and a `do-while` loop, to print the memory content, in list of integers. After the printing is done then for each integer accessed, **subtract 1** from it.
4. In the integer process loop, you need to implement a guard to prevent from segmentation fault.

Please turn in the source codes only. Do not turn in the executable.

Due date

2:00PM, October 15th, 2021

Score weight (towards the final grade) 5%