Assignment 1

Implement your own light-weight wc utility, called lwc.c, in C (not C++)

- (1%) lwc only supports three options -l, -w, and –c; lwc assumes at least one option is provided; lwc only process files (ignore stdin)
- (3%) lwc supports multiple options; lwc ignore the order of options. The no. lines is always printed first, followed by the no. words and characters. run wc on Ubuntu to make sure that your outputs are identical to it!
- (1%) If an invalid option or filename is given, lwc prints the same error message wc would print to stderr, and return the same non-zero exit status

Submit your lwc.c in iLMS. Your code must be compiled with zero warning and error on our Ubuntu 16.04 LTS, to get any points.

Some notes about assignment 1:

1. Your lwc only needs to process a single file at a time, but you will get additional point (1 point) if your lwc can process multiple files.

2. Your outputs should be identical to wc (wc ubuntu version 23~25). Please consider the following cases (but not limit to them) in your implementation.

(1.) "./lwc -l -w <file>" should be identical to the output of "./lwc -lw <file>" or "./lwc <file> -lw"

(2.) Please consider these input case:

input file: test5.txt (2 lines, 2 words, 13 bytes)

case 1: ./lwc test5.txt -lwc
output: " 2 2 13 test5.txt" =>each integer will take two digits(hint: number of digit in byte count, in this case is 13) and a space after it

case 2: ./lwc test5.txt -l
output: "2 test5.txt" => each integer will take only one digit and a space after it

case 3: ./lwc test5.txt -lw
output: " 2 2 test5.txt" => each integer will take two digits

and a space after it

(3.) Please make sure that your implementation can handle invalid arguments and file and print the corresponding error message to the terminal.

e.g. "./lwc -s note7" should print

wc: invalid option -- 's'
Try 'wc --help' for more information.

3. You don't have to print the help menu. The test case will not cover "--help", but you will have to print the error messages includes invalid arguments and not existed file:
Invalid arguments:
"wc: invalid option -- 's'
Try 'wc --help' for more information."
File no existed:
"wc: Not_existed.txt: No such file or directory"

We will only test above error messages.

4. All the outputs can be fitted in integer size and your lwc don't have to handle binary file.

5. You cannot call wc from your code and print the results directly.

6. We attach some test cases and make sure you can pass all of them.