COSC 2430 Lab 1: File

1. Introduction

You will create a C++ program to read input from a text file and perform binary math operation on characters. The purpose of this lab is for you to get familiar with input/output file stream. Two ASCII characters and the type of operation (addition, subtraction) will be given. Your program will first check if the input file exists, then perform the necessary operation and write the result to a file.

2. Input and Output

a. Input file

The input is a single text file that consist of two lines.

- First line will consist of a single number **1** or **2** associates with **addition** and **subtraction** respectively.
- Second line will consist of two ASCII characters, separated by a space.
  A list of ASCII characters and their respective integer value can be found here: http://www.asciitable.com/

b. Output file

The output is a single text file containing the integer result of the operation.

3. Operations and Examples

- Your program should be able to identify the right mathematic operation to be execute by reading the first line of the input file.
- Each ASCII character represent an integer to be used in the operation. Your program should perform the calculation using the respective integer of the given character.

  For Example 1 below:
  The first line contains the number 1, meaning addition.
  The second line contain "A" and "B", your program should be able to parse character into integer value of 65 for A and 66 for B.
  Your program will calculate the expression "65 + 66" to get the result.

- The result will be a single integer (n > 0) printed to new output text file.
- The input file **may not exist.**
- Existing files will always have 2 lines.
- The result **cannot** be a negative integer.
- In the case of a missing input file or a negative integer result, your program should be able to detect the problem and print out a message ("ERROR: File not found" or "ERROR: negative result") accordingly using **try, throw, and catch statements**.

Example 1:
input1.txt
1
A B

output1.txt
131

Example 2:
input2.txt
2
A B

output2.txt
ERROR: negative result

Example 3:
input3.txt (Doesn't exist)

output3.txt
ERROR: File not found

4. Turn in your lab assignment

Lab 1 needs to be turned in to our Linux server, follow the link here
https://rizk.netlify.app/courses/cosc2430/2_resources/
Make sure to create a folder under your root directory, name it lab1 (name need to be lower case), only copy your code to this folder, no testcase or other files needed.

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