Introduction to Programming – Autumn 2019
Assignment 2: Simple Calculator

Submission Deadline: 24th September 2019, 9:00 pm

Problem Statement

Create a simple calculator application that takes three inputs: first input as operation name (i.e., +, -, *, /), second and third input will be two numbers (i.e., number1 and number2). Then application calculates and displays the operation and output based on the selected operation.

Input Format

- A character C ∈ {'+', '-', '*', '/'}
- Two numbers A, B such that |A * B| <= 10^{20}

Output Format

Print the operation and calculated value. In case of invalid inputs, output "Error" (without the quotes)

Sample Test Cases

a)

INPUT * 5 4
Output Multiplication 20

b)

INPUT + 20 2

Output Addition 22

c)

INPUT / 1 0
Output Division Error

d)

INPUT / 5 2
Output Division 2.5

Challenges:
There are few challenges in this assignment that you must solve:

1. It must be clear to you that the 2nd and 3rd inputs should be declared as ***int*** (integer) data-type. But it may not be immediately clear to you what should the first input (character) be declared as. This is a challenge that I urge you to find out by searching on the Internet or from the textbook.

2. The next issue arises with division of two 'int' values. Division of two integers in C will yield only an integer value. How will you obtain the result as a decimal value? You have to figure out this as well.

Submission Details:
Please submit the following information:

- **Source Code:** Your source program. The name of your file should be in this format: Calc-<roll no>.c where you replace "<roll no>" with your roll number.

- **Readme.txt:** In this file, you should explain how to compile and run your program. The name of your file should be in this format: Calc_Readme-<roll no>.txt where you replace “<roll no>” with your roll number.

- **Design.txt:** In this file, you explain the design of your program. This assignment is probably the first assignment where you have been asked to explain the design of your program. So, this might seem difficult. But I urge you to make an effort to explain the design of your program in the best possible manner. Your objective should be such that the TA reading this file should easily understand the working of your program.

Zip all these files and name it as Calc-<roll no>.zip. Please follow the naming convention strictly. Otherwise, your program will not be evaluated. Then, submit it on google classroom for this assignment by the above-mentioned deadline.

Evaluation Policy:
The TAs will use the following evaluation policy:

- Design: 30%
- Execution: 60%
- Indentation and Documentation (with comments): 10%

Late Submission Penalty:
For each day after the deadline, your submission will be penalized by 10 marks.