ASM Homework 1

Simple Calculator

In homework 1, you are asked to design a simple calculator, which supports addition, subtraction, multiplication and division operations.

Your program should take two integers m and n as inputs, then outputs the sum of m plus n, the difference of m minus n, the product of m by n and the quotient of m over n, respectively.

Both m and n are in the range of 1 to 65535, and you can assume that $m = nk$ (k is a positive integer).

You can only use the following instructions in your program:
mov, ***add***, ***sub***, ***inc***, ***dec***, ***loop, call, exit***

Do not use the built-in multiplication and division instructions, and all the other instructions that are not listed above.

Try to utilize ***add***, ***sub*** and ***loop*** to implement multiplication and division operations.

I/O Procedures

You can use the following procedures to perform I/O operations.

ReadDec – Read an unsigned decimal integer from the console.
WriteDec – Write an unsigned decimal integer to the console.
WriteString – Write a string to the console.

For further information, please refer to chapter 5.3 in the textbook.

I/O Format

Inputs are two lines, where the first line is the integer m, and the second line is the integer n.

You should output four lines as the following format, where v_i (i = 1 to 4) are the results of the corresponding operations.

$$m + n = v_1$$
$$m - n = v_2$$
$$m * n = v_3$$
$$m / n = v_4$$

I/O Example

4 // Input, the integer m.

2 // Input, the integer n.

4 + 2 = 6

4 - 2 = 2

4 * 2 = 8

4 / 2 = 2

// Your outputs.

Report

Write a brief report to introduce how you implement the multiplication and division operations.

Grading

- Addition: 30%
- Subtraction: 30%
- Multiplication: 15%
- Division: 15%
- Report: 10%

Requirements

1. The testing environment is Microsoft Visual Studio 2010, so make sure that your program can correctly run on it.
2. Submit your souce code (.asm) and report (.pdf, .doc, or .docx) on the E3 platform.
3. The deadline is 2013/3/27 (Wed.) 23:59, no late work will be accepted.
4. DO NOT PLAGIARIZE, or you will get ZERO in this work.