CANOS Project 3

x86 Calculator

(complete this project in groups of up to 3)

In this lab, you will write a “calculator” program in the 16-bit 8086 architecture described in class. Rather than being a general-purpose calculator, this calculator will perform one of three user-specified functions.

Design Criteria

- The calculator program should start by accepting two numbers A and B from the user via a prompt created using one of the interrupt functions.
- The calculator should then use an interrupt to allow the user to select one of three operations to perform on the numbers. For the first two operations, select and implement two operations as procedures from the following list:
    - Multiplication (A x B = result)
    - Division (A / B = result, discard remainder)
    - A modulo B
    - (A + B)/2, round down

Helpful Resources:

*** Emu8086 Emulator**

***** DOS interrupts supported by EMU8086

* Complete 8086 instruction set

* Emu8086 example code

Your submission should contain:

1.) (10 pts) Your working .asm assembly code. You are encouraged to document your code with comments and make it easy to understand.

2.) (5 pts) A brief explanation of how the work was divided amongst your teammates. **If you derived any code from another source, such as the GitHub examples or an AI tool, you must name the source(s).**

3.) (5 pts) A paragraph or two of explanation about your design process. How did you set about designing this program? Did you try anything that ultimately did not work and had to be revised? What did you learn through completing this project?

4.) (5 pts) Include a printout of the code as it appears after going through the assembler. How is it different from the code you originally wrote? What did you learn?