

CS2810 Homework 6 - 30 points - Due by midnight October 21. Submit each program (source code .asm file) as a separate file through Eagle.

For this homework assignment you may work individually or in a group of up to 3 students. If working in a group, be sure that when you turn in your homework through Eagle you include the names of everyone in the group.

Write a MARS compatible MIPS program to read in two integers (positive or negative), add them together, and then output their sum in the following manner:

- If the sum does not produce overflow, output the message:

“SUM OK, SUM = #####”

Where ### is their sum.

- If the sum produces an overflow, output the message

“OVERFLOW/UNDERFLOW, MAX/MIX = #####”

The following is a sample output stream. Your program must mirror this type of output stream. Items underlined represent user input. Obviously, in your program, you do not need to underline this portion. You should assume that the individual integer inputs are not larger than can be represented. On input of two integers, both of value -1 and -1, the program should stop execution and output the message “GOODBYE”

Welcome, this is an integer addition overflow checker

Input an integer: 1749  
Input an integer: 51  
SUM OK, SUM = 1800

Input an integer: 2999999999  
Input an integer: 2999999999  
OVERFLOW, MAX = <output here the maximum representable MIPS integer>

Input an integer: -2999999999  
Input an integer: -2999999999  
UNDERFLOW, MIN = <output here the minimum representable MIPS integer>

Input an integer: -1749  
Input an integer: 51  
SUM OK, SUM = -1698

Input an integer: -1  
Input an integer: -1  
GOODBYE