**Assignment 4 – MSP430 Calling Assembly Functions From C**

**Due: Due Before the start of MONDAY’s class (February 3, 2020)**

Honor Code: \_\_\_\_\_\_I have neither given or received, nor have I tolerated others’ use of unauthorized aid. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: \_\_\_Joe Leveille\_\_\_\_\_\_\_\_\_ Signature: \_\_\_\_Joseph Leveille\_\_\_\_\_\_\_

Design a program (make a design flowchart) that accomplishes the following:

1. In C Code:
2. Stop the watchdog
3. Enable P1.0 to be an output with the red LED initially off
4. Enable P9.7 to be an output with the green LED initially off
5. Enable the P1.1 button as an input
6. Enable the P1.2 button as an input
7. Store two unsigned 16-bit integers as variables
8. In an infinite loop or an interrupt:
9. On the P1.1 button press decrement variable 1 and call and pass the two variables to an assembly function
10. On the P1.2 button press increment variable 1 and call and pass the two variables to an assembly function
11. In your Assembly Function:
12. If variable 1 is greater than or equal to variable 2, turn on the Green LED (turn off the Red)
13. If variable 1 is less than variable 2, turn on the Red LED (turn off the Green)
14. Return to the calling function (return to your loop in your C code)

**Submit your final Design Flowchart** to Blackboard as a PDF document.

Implement your flowchart design in C in CCS. Revise and edit your design (and your design flowchart) as necessary to get it working. Submit **your final working code** (main.c and assembly files) to Blackboard. Also submit this coversheet with the Honor Code filled in and signed (a script font for your signature is fine).