**Assignment 2 – MSP430 Low Power Modes**

Due: Due Before the start of WEDNESDAY’s class (January 15, 2020)

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

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

After you instructor finishes the lecture portion, open the **How Do I Use Low Power Mode** document (on Blackboard) and follow the instructions. Get signoff, answer questions, and do the coding as described in the document and below. This is an individual assignment, but you may collaborate with your classmates on the solution.

1. Ok Challenge time! Design a program (make a design flowchart) that accomplishes the following:
2. Stop the watchdog
3. Enable P1.0 to be an output with the red LED initially off
4. Enable P1.1 to be an input for the push-button switch. (Do not forget to select the pull-up resistor!)
5. Set up the timer to generate an interrupt every 50ms (0.05s). This will require a TA0CCR0 value of about 2000 (use ACLK and do not use the #define SLOW). 50ms / 25µs = 2000
6. Put the microcontroller into Low Power Mode 0.
7. Every 50ms, the program will jump to the Timer0 interrupt service routine.
8. Each time you are in the ISR, check to see if the P1.1 push-button is pushed.
9. If the button is not pushed, make sure the red LED is off, and end the ISR to go back to main() to return to low power mode.
10. If the button is pushed, turn on the red LED and end the ISR to go back to main() to return to low power mode.

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

1. 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 file) to Blackboard. Also submit this coversheet with the Honor Code filled in and signed (a script font for your signature is fine).