

ECED 3204 Microprocessor

Assignment #3

<http://www.jasongu.org/3204/assignments.html>

Due date: October 11 2017. Late submission will not be accepted.

Assignment #3 contains the following problems:

E5.1 Write a subroutine that can create a time delay that is a multiple of 1 ms. The multiple is passed in register r16, assuming that the CPU clock is 16 MHz.

E5.3 Write a subroutine that can divide a 16-bit signed integer into another 16-bit signed integer. The dividend is passed in registers r16-r19, and r18-r19, respectively. The quotient is returned in registers r24-r25, and the remainder is returned in registers r22-r23, respectively.

E5.5 Write a subroutine that can divide a 32-bit signed integer into another 32-bit signed integer. The dividend is passed in registers r16-r19, and the divisor is passed in the stack. The quotient is returned in registers r22-r25, and the remainder is returned in registers r16-r19.

E5.7 Write a subroutine that finds the greatest common divisor of two 16-bit unsigned integers. Two registers are passed in registers r16-r17 and r18-r19, respectively. The gcd is returned in registers r22-r23.