

National Sun Yat-Sen University
ASSEMBLY LANGUAGE AND MICROCOMPUTER
Program #2
Due 11:59 PM Nov 24 2016

1. <**Programming Problem II**> Write an ARM assembly code to implement a *arithm* program which can compute the specified arithmetic function and output the result to the screen. The execution format of this program is: *arithm intA intB intp*. The function of the program is specified in the following table:

intp	Operation	function
0	addition	<i>intA + intB</i>
1	subtraction	<i>intA - intB</i>
2	Bit-reverse	<i>intA_[0:31] (intB ignored)</i>
3	division	<i>intA / intB</i>
4	maximum	<i>max(intA,intB)</i>
5	exponent	<i>intA^{intB}</i>
6	greatest common divisor	<i>gcd(intA,intB)</i>
7	Long-multiplication	<i>intA * intB</i>
8	least common multiply	<i>lcm(intA,intB)</i>

The input arguments **intA**, **intB** and **intp** are all positive integers. For example, if you execute the program as follows:

arithm 4 3 8

Then the screen should display the following results

Function 7: least common multiply of 4 and 3 is 12.

If you execute

arithm 4 3 4

Then the screen should display the following results

Function 4: maximum of 4 and 3 is 4.

Your code should follow the coding style for **switch** as shown in the bottom of page 171 of the textbook. For the division operation, you just need to provide the quotient.

Note:

- (a) Your assembly code should follow the APCS rules described in the textbook.
- (b) The submission of your homework should follow the method announced by TA before the deadline. Homework submitted after the deadline will not receive any score.