Lab03

GREATEST COMMON DIVISOR

Your job:

Write a program in LC-3 assembly language and assemble it into LC-3 object file using an assembler. The program is used to calculate the greatest common divisor of two positive numbers.

Details:

- Two positive16-bit signed integers will be given in R0 and R1 register. And the output value should be put in R0.
- DO NOT access any part of memory other than x3000–xFDFF.
- The program should be ended with HALT.
- R7 register should remain the same after the execution.

Examples:

	Before Execution	After Execution
R0	x0008	x0002
R1	x0006	x1234
R7	x6666	x6666

Requirements:

- Try to speed up your program. "Speed" is calculated from the average instructions executed in several test cases. So, an AND instruction is considered as fast as an LDI instruction.
- Analyze the space and time complexity of your algorithm in your report.
- Think about handling negative and zero inputs in your report.

Submit your program:

The program you submit to our server is the object file, the source code file and the report.

Save your .obj file, and give it the name **ID_Lab03.obj**.

Save your .asm file, and give it the name **ID_Name_Lab03.asm**.

Give your report the name **ID_Name_Lab03.pdf**.

Your scores:

Correctness	50%
Report	40%
Great ideas	10%