LAB 0

BINARY DIVISOR

Your Mission:

Write a program in LC-3 machine language with a hex editor (like xxd, wxHexEditor, 010Editor etc.), in order to perform a 1-bit arithmetic right shift on the given value.

Details:

- A 16-bits signed integer input value will be given in R0 register. And the output value must also go there.
- Your program will be loaded and executed from x3000.
- The last instruction executed should be HALT.
- R7 register should remain the same after the execution.

Examples:

	Before Execution	After Execution
R0	x8a9c	xc54e
R7	x6666	x6666

Scoring Criterion:

50% of score will depend on the correctness of your program. 25% of score will be calculated from the size of your program. The last 25% is for your report.

The size of your program will be scaled into score using Fréchet distribution. So, try your best to eliminate every redundant byte.

Additional Requirements:

FBI WARNING: If you don't comply with these requirements, the lab may be counted as an invalid work.

1. Please write down your name in and only in your report.
2. The report shall contain at least 3 parts: How do you work out the algorithm? How do you write the program? And how do you design your own test cases to ensure the program works fine?
3. Save your report in pdf format and name it with your student number in uppercase (e.g. PB17001001.pdf).
4. Your program must be saved in binary form and renamed to "program.bin".
5. Put all above in a directory named after your student number in uppercase and pack it using TAR with GZIP compression (e.g. tar cvzf PB17001001.tar.gz PB17001001/).

Better Pigeon Than Cheat!!!

FBI WARNING: If you are found cheating in this assignment, Your FINAL SCORE will be affected ENORMOUSLY!

All programs will be checked by SSDEEP (a fuzzy hashing) and some will be also checked manually.