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Assignment #9

(6.2, 6.4)

6.2) Systematic decomposition of subtracting two integers

Start

Initialize: Put both first integer and second integer into their own registers

Sign-Extend first integer to 8 bits

Sign- Extend second integer to 8 bits

True

If second integer is > 0

NOT second integer

False

ADD second integer to first integer

Store value in a register

Display the value in register on the monitor

Stop

6.4) Write a short LC-3 program that compares the two numbers in R1 and R2 and puts the value 0 in R0 if R1 = R2, 1 if R1> R2 and -1 if R1 < R2.

R0 = 0;

Not R3, R2;

ADD R3, R3, #1;

ADD R3, R1, R3;

Brz end;

Brp positive;

ADD R0, R0, #-1;

Brnzp end

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Positive ADD R0, R0, #1;

End Halt