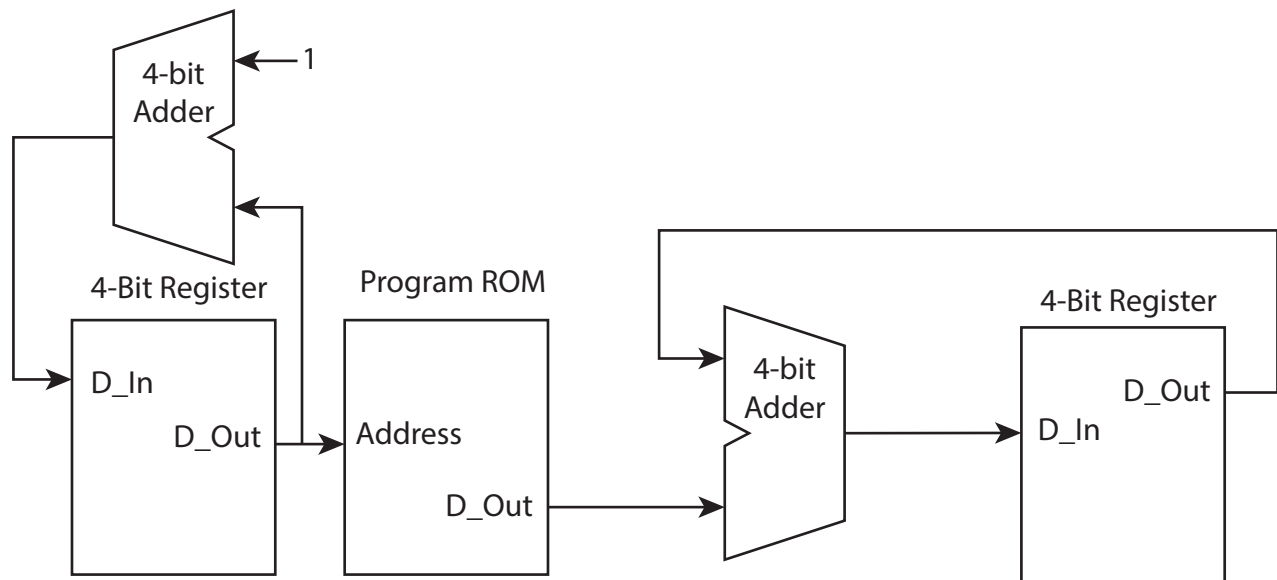


Homework 3

Due: February 9, 2022

Build an accumulator machine in Circuitverse based on the schematic below. The video called *Circuitverse Flip Flops* on comp264.org has instructions on how to do it. To get full credit on this assignment, you need to implement two instruction types: (i) add immediate to accumulator, and (ii) load immediate to accumulator. For 5 points of extra credit each, you can implement additional instructions from the table below.

In addition to building the CPU in circuitverse, you need to also write a program that demonstrates its functionality. Your program should be stored in two places when you submit your homework: (i) write it in a text box in Circuitverse, similar to what I did in the video, and (ii) store the encodings for your program in the ROM so I can run your program to grade it.



Instruction	Binary Format	Notes	Grade
Add immediate to accumulator	0000 XXXX	4-bit immediate XXXX	45 pts
Load immediate to accumulator	0001 XXXX	4-bit immediate XXXX	5 pts
Move accumulator to H	0010 0000		5 pts
Move accumulator to L	0011 0000		5 pts
Move accumulator to MEM[H:L]	0100 0000		5 pts
Move MEM[H:L] to accumulator	0101 0000		5 pts