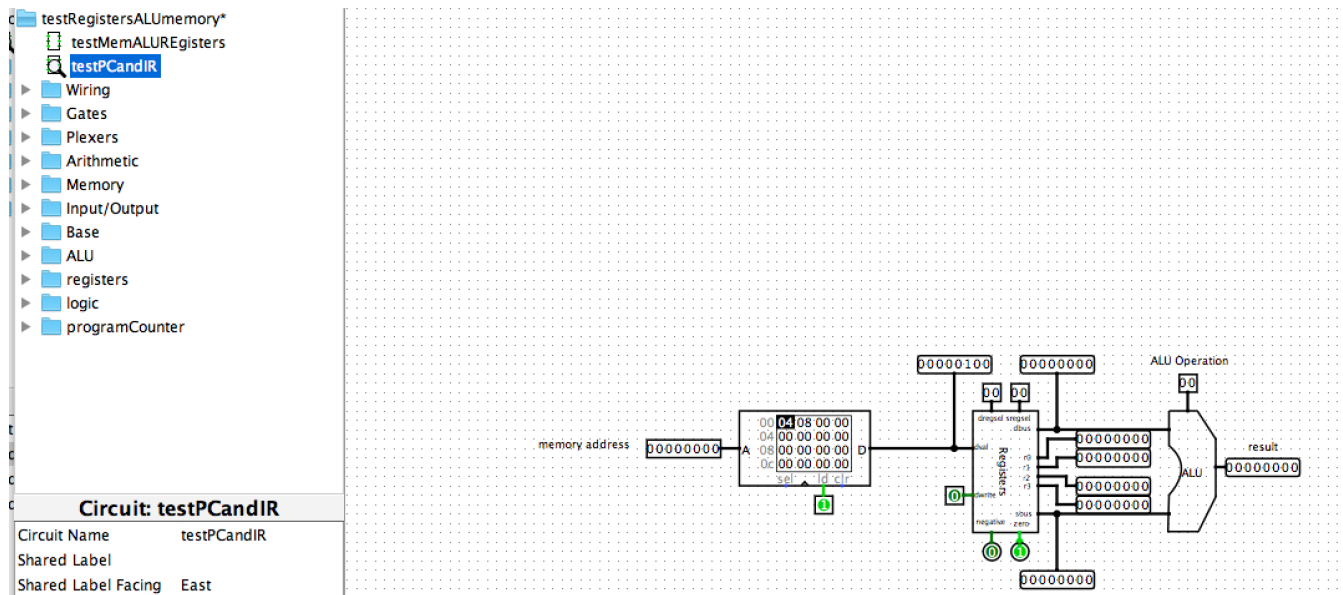**ASDV 1205, Intro to IT**
**Lab, Program Counter and Immediate Register**

1. Open your last circuit testMemALURegisters.circ. Click Project Add Circuit. Name the circuit TestPCandIR.circ ( Short for Test Program Counter and Immediate Register)

2. Go to testMemoAluRegisters.cir, select all and copy. Then paste into the newly created circuit.



3. Create a new Circuit, save it as programAdder. The circuit adds 1 to an 8-bit adder. Use the Adder (shown under Arithmetic adder and drop it in your circuit. The shared name is + .
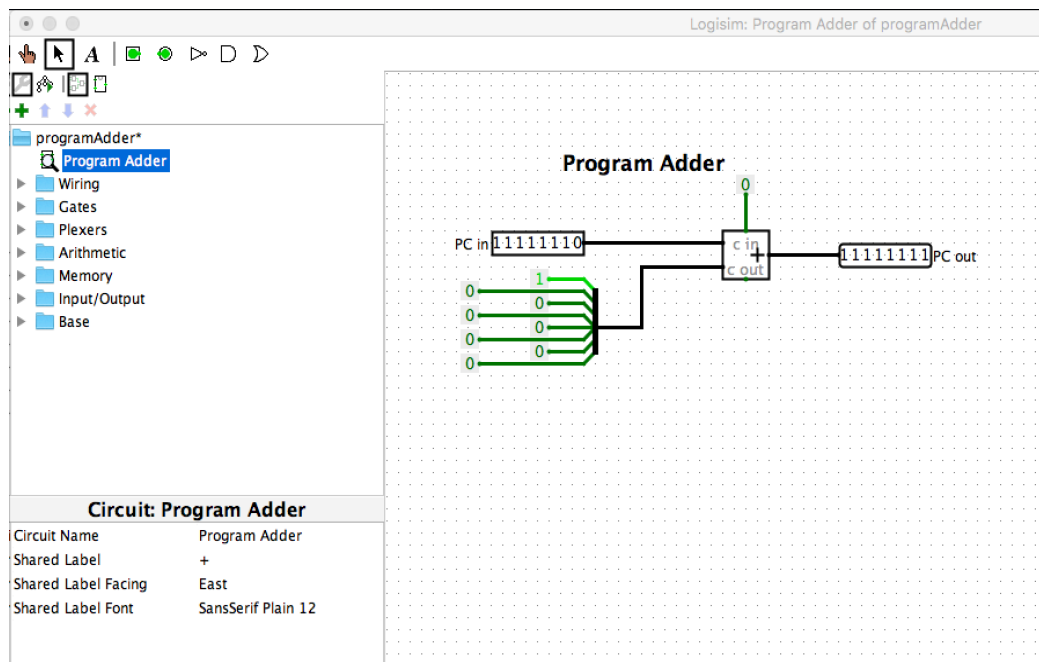
4. Create a 4x5 chip for the Program Adder.

programAdder
  Program Adder
▶  Wiring
▶  Gates
▶  Plexers
▶  Arithmetic
▶  Memory
▶  Input/Output
▶  Base

## Circuit: Program Adder

| Circuit Name | Program Adder |
|---|---|
| Shared Label | + |
| Shared Label Facing | East |
| Shared Label Font | SansSerif Plain 12 |

5. Load the library propramAdder.circ into the testPCandIR.circ and put it in( FACE WEST) as shown below.

6. Connect a D Flip Flop( 8-bitRegister) with the RAM to hold what comes out of memory and propagate it to either the Registers or the Program Counter. Depending of what comes out of memory( we will decode it) ans pass it to the Registers if needs arithmetic, or to to the Program Counter if what comes out is an address. The explanation of this circuit in class.



7 .Upload a jpg called pcAndImmmediateRegister