4 Bit Signed Comparator

SPECIFICATIONS:

Create a circuit in Logisim that will take the following inputs:

A : 4 bit signed binary number (2's complement)

B : 4 bit signed binary number (2's complement)

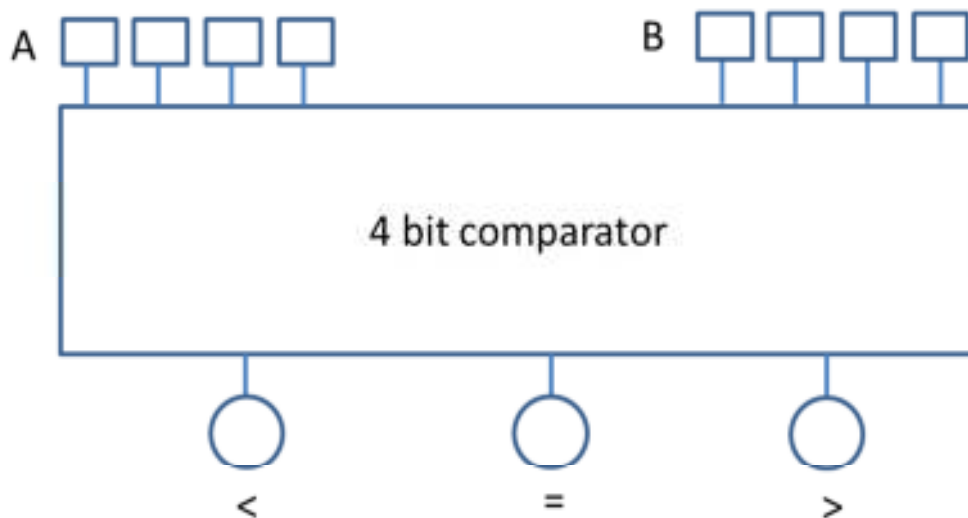It will compare the two numbers and send put a '1' to the corresponding output:

< : if **A** is less than **B**

= : if **A** is equal to **B**

> : if **A** is greater than **B**

Your circuit will look something like this:

You may only use the basic gates: NOT, AND, OR, XOR. You may use these gates to build larger sub-circuits of your own: ADDER, MULTIPLEXER, etc. and incorporate these into your main circuit.

You are not allowed to use Logisim's built-in circuits: ADDER, MULTIPLEXER, etc., but you are free to build your own using the basic gates.

This is NOT a team project. Each student is expected to do his/her own work.

TURNING IN YOU PROJECT:

Your finished project should be a single Logisim CIRC file. ZIP up this file and name it: CS240_Lastname_Firstname.ZIP. (i.e. if your name is John Smith, the file name will be CS240_Smith_John.ZIP). Upload this file to class's Blackboard site. Failure to follow these simple instructions will result in a deduction of 5 points.

Once you have uploaded your project, I highly recommend that you download and test it from another PC to make sure it works. There have been instances in the past where a student uploaded files that did not work. If it doesn't work, I can't grade it…