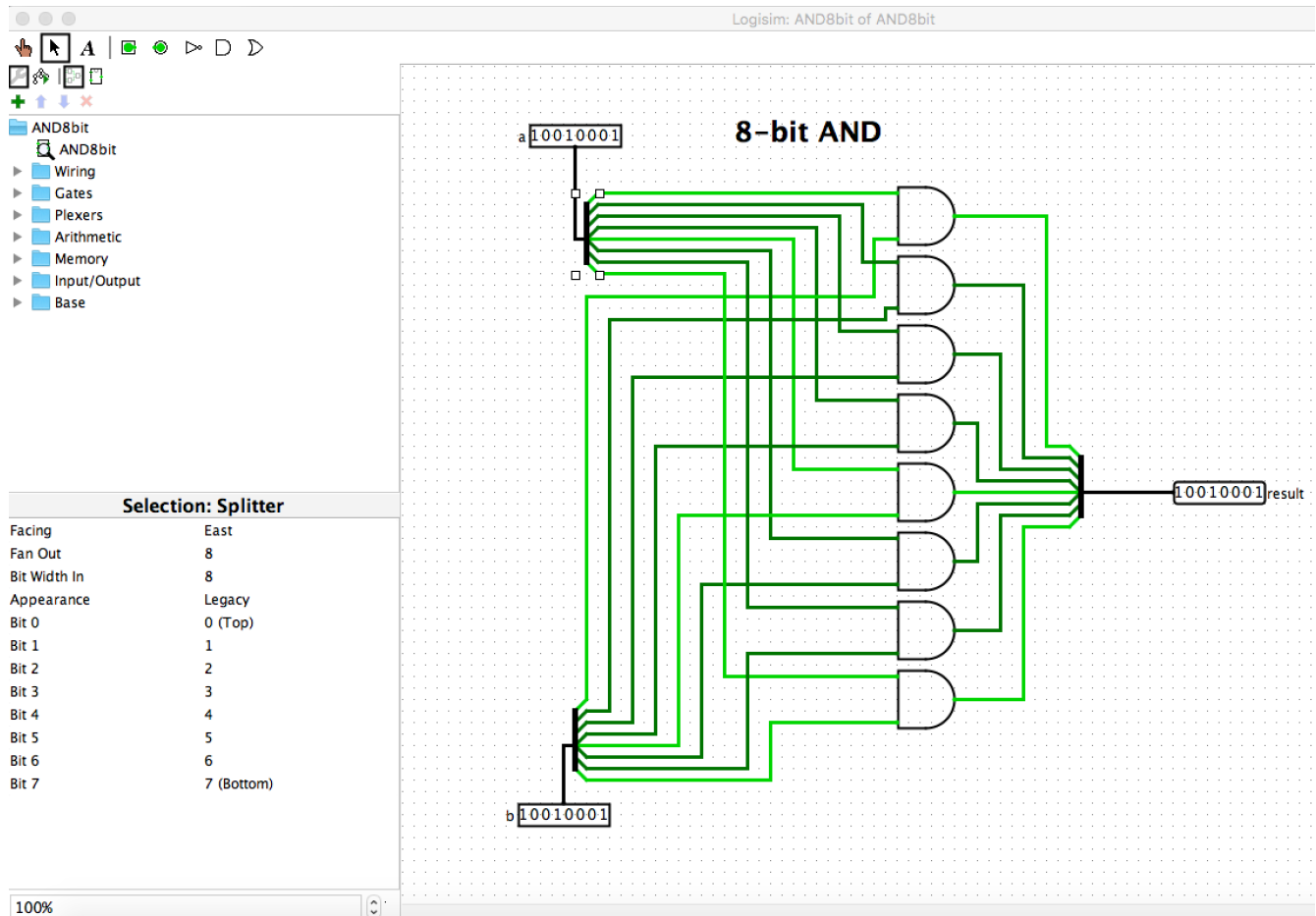


ASDV 1205, Intro to IT
Lab, 8-bit AND and 8-bit OR

Design the 8-bit ANDer shown. Every AND gate is 1-bit width and she ANDs 2 bits matching in significance from input a and input b. That is, the top AND gate ANDs the least significant bit of input a with the least significant bit of input b. Look to the Splitter's specifications at the lower left of the figure below. Name the circuit AND8bit (not main) and save it with that name.



- Click anywhere in the dots of the beard-box and on the left type in Shared Label AND, Facing North as shown below. This label will appear only when the AND chip appears(used) in another circuit, And we will use the 8-bit-AND to design the ALU.

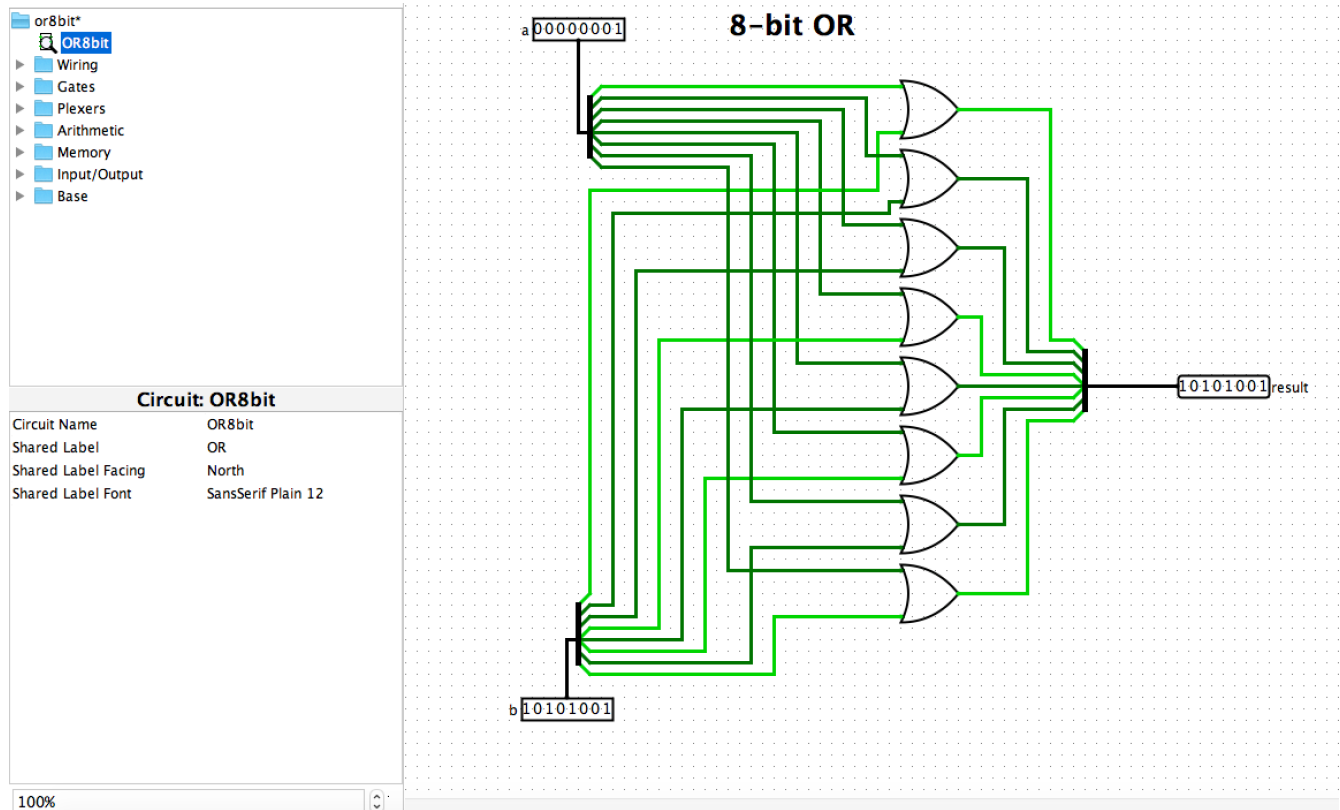
The screenshot shows the component browser for the 'AND8bit' component. The configuration table is as follows:

Circuit: AND8bit	
Circuit Name	AND8bit
Shared Label	AND
Shared Label Facing	North
Shared Label Font	SansSerif Plain 12

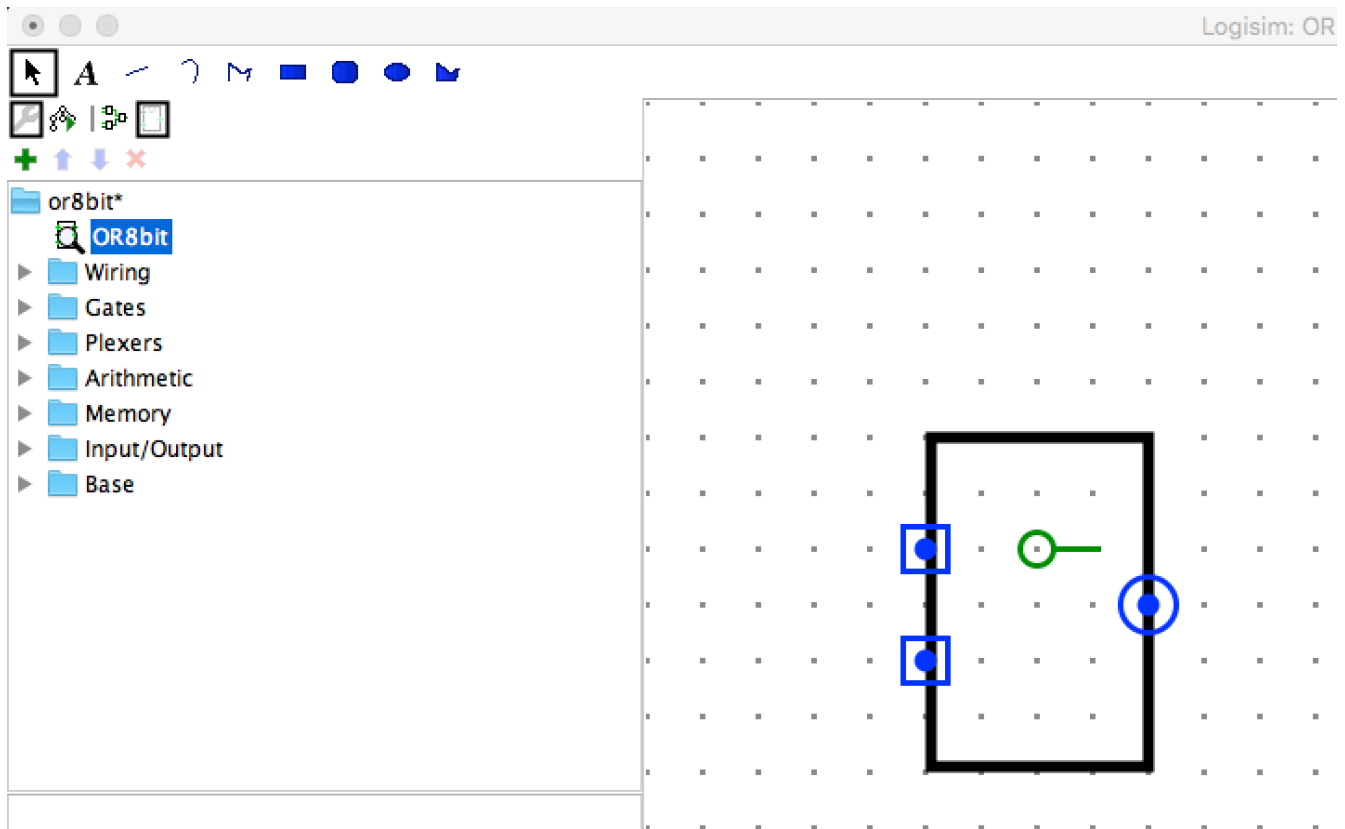
- Create the chip for the 8-bit AND. Width 5, Height 7, Exactly as shown below. Put no labels in it. The top input is a, the bottom input is b

The screenshot shows the Logisim workspace with a 5x7 grid. A black rectangle represents the 8-bit AND chip. The top input is labeled 'a' and the bottom input is labeled 'b'. The output is labeled 'z'. The chip is placed on the grid with its top-left corner at the intersection of the 3rd and 4th vertical lines and the 3rd horizontal line.

4. Design the 8-bit ORer shown below: Name it OR8bit and save it as OR8bit. Its Shared Label is OR and faces North as you did in the 8-bitAND.



5. Create its 5x7 8-bit OR chip as you did with the 8-bit-AND. The top input of the chip is a



6. Click File > New. Load the AND8bit and the OR8bit circuits and test them for multiple inputs a and b.

7. Put the value 10 in input a, and the value 8 in input b. Upload the circuit [aIs10bIs8.jpg](#).

