Course: CSC258F

Professor: Steve Engels

Experimenter: Yuhao Yang

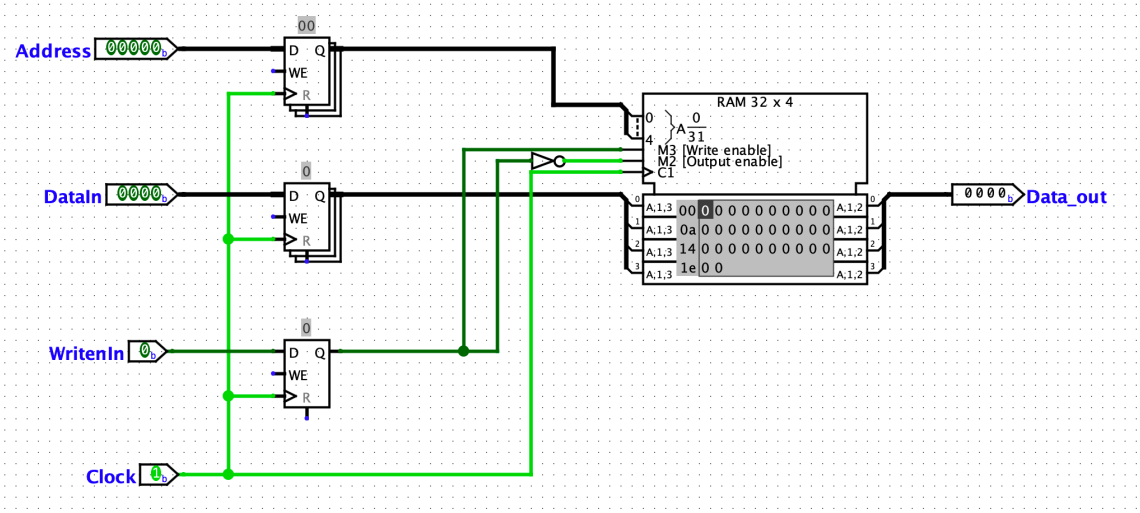
Student ID: 1005808057

Lab7

Pre-Lab Report

Part1:

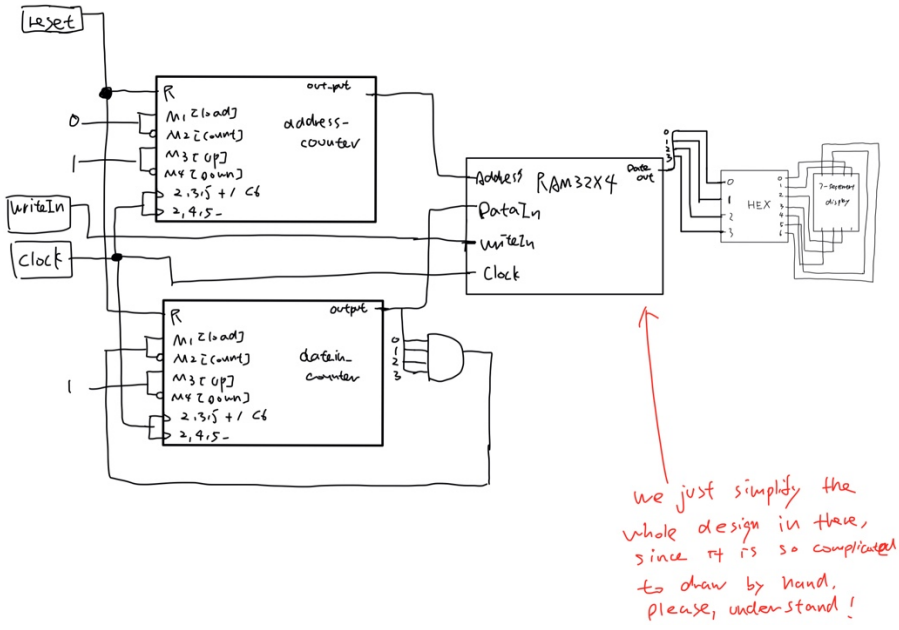
1. Create a 32 * 4 RAM module in Logisim.



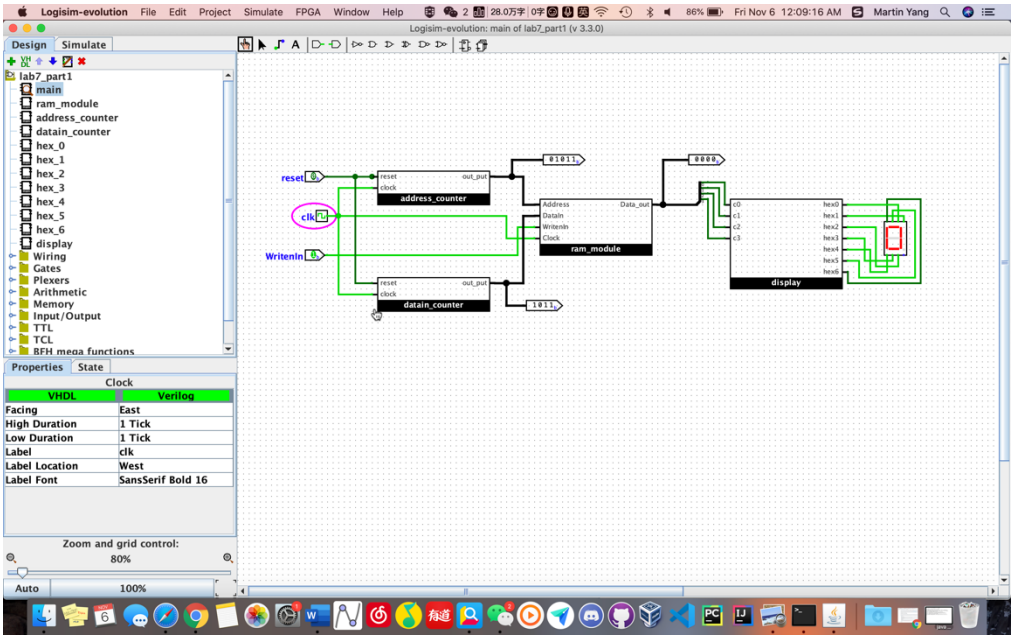
2. What happens if both signals are off when the clock goes high? What happens when both signals are on?

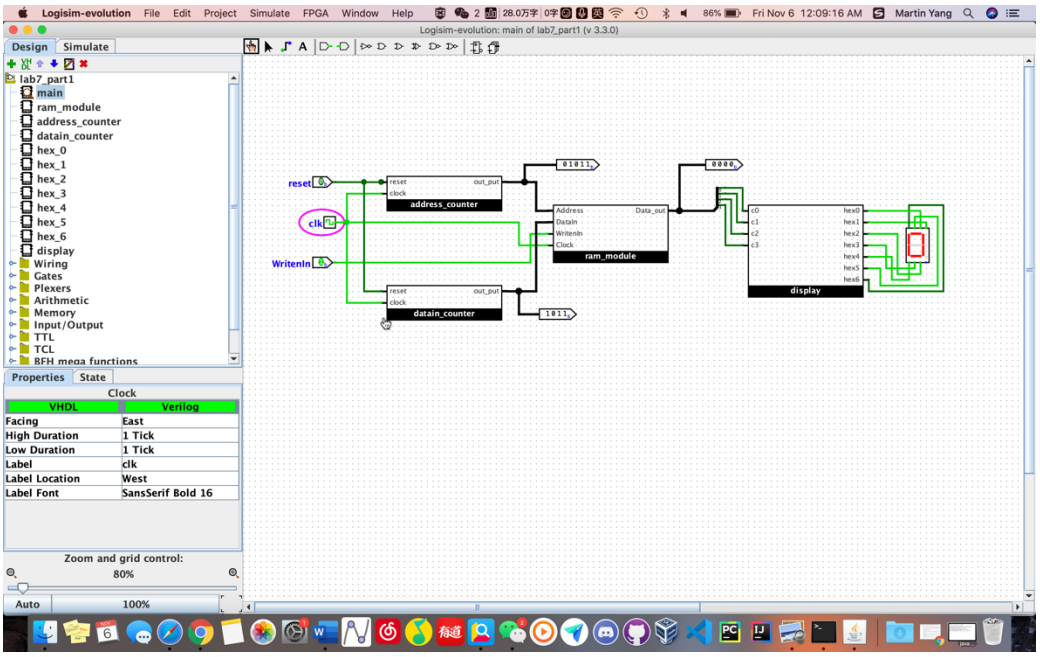
If both signals are off when the clock goes high, and then there is nothing will happen. In another case, if both signals are on when the clock goes high, then the DataIn will be written into RAM at the correct address and the output will be displayed as well.

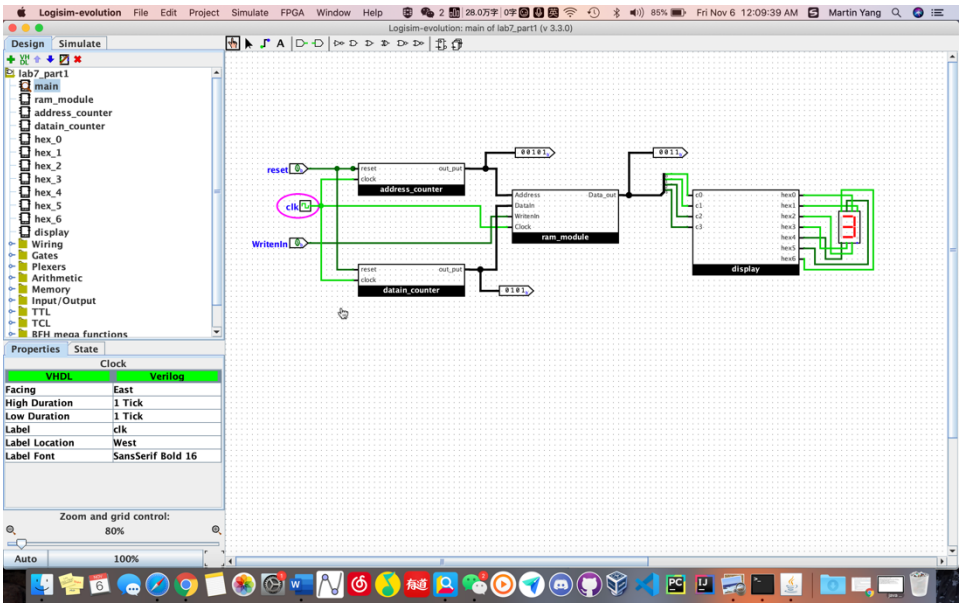
3. Draw a schematic.

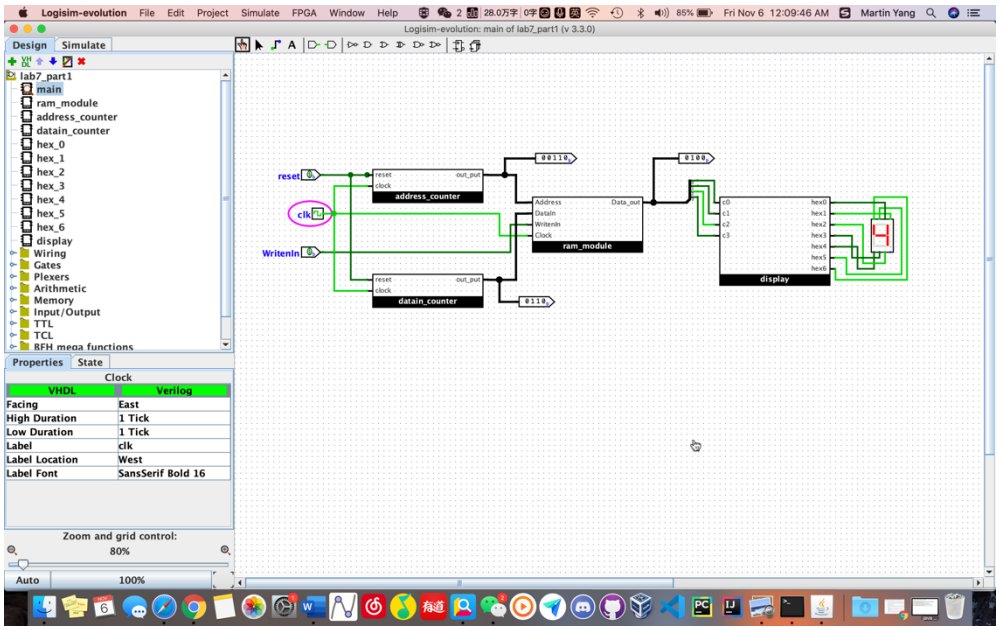


4. Test the circuit.






Logisim-evolution File Edit Project Simulate FPGA Window Help
Fri Nov 6 12:09:39 AM
Martin Yang
Logisim-evolution: main of lab7_part1 (v 3.3.0)
Design
Simulate
lab7_part1
main
ram_module
address_counter
datain_counter
hex_0
hex_1
hex_2
hex_3
hex_4
hex_5
hex_6
display
Wiring
Gates
Plexers
Arithmetic
Memory
Input/Output
TTL
TCL
BFH mega functions
Properties
State
Clock
VHDL
Verilog
Facing
East
High Duration
1 Tick
Low Duration
1 Tick
Label
clk
Label Location
West
Label Font
SansSerif Bold 16
Zoom and grid control:
80%
Auto
100%
reset
clk
WriteIn
address_counter
datain_counter
ram_module
display
00101
0011
0101
3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Martin Yang
Logisim-evolution: main of lab7_part1 (v 3.3.0)
Design
Simulate
lab7_part1
main
ram_module
address_counter
datain_counter
hex_0
hex_1
hex_2
hex_3
hex_4
hex_5
hex_6
display
Wiring
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Label
clk
Label Location
West
Label Font
SansSerif Bold 16
Zoom and grid control:
80%
Auto
100%
reset
clk
WriteIn
address_counter
datain_counter
ram_module
display
00110
0100
0110
4

Part2:

1. What happens if you don't turn Enable off before updating X and Y?

Some extra pixel will be drawn on the RGB board.

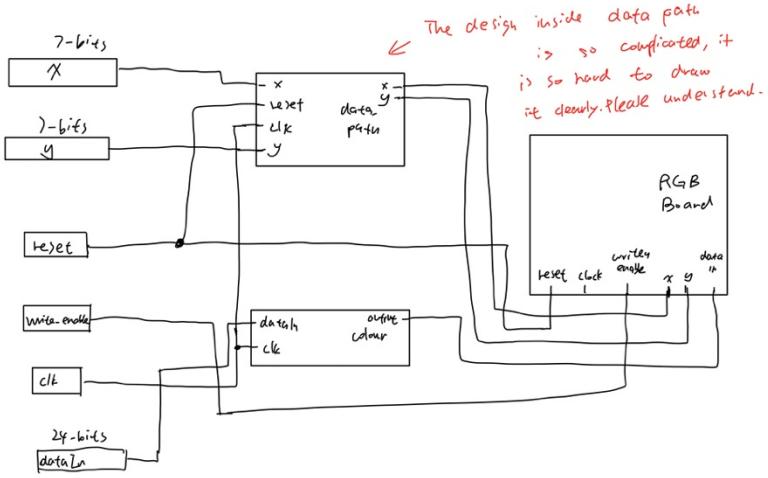
2. What happens if you turn Enable off before 256 clock cycles have passed?

The square you want to draw will not be complete, which means the rest of pixels will not be drawn on your RGB board.

3. What happens if you turn Reset on while Enable is on?

All pixels are you have drawn will be erased

4. Draw the schematic.



All other parts will be demonstrated in meeting. The circuit is like the blow.