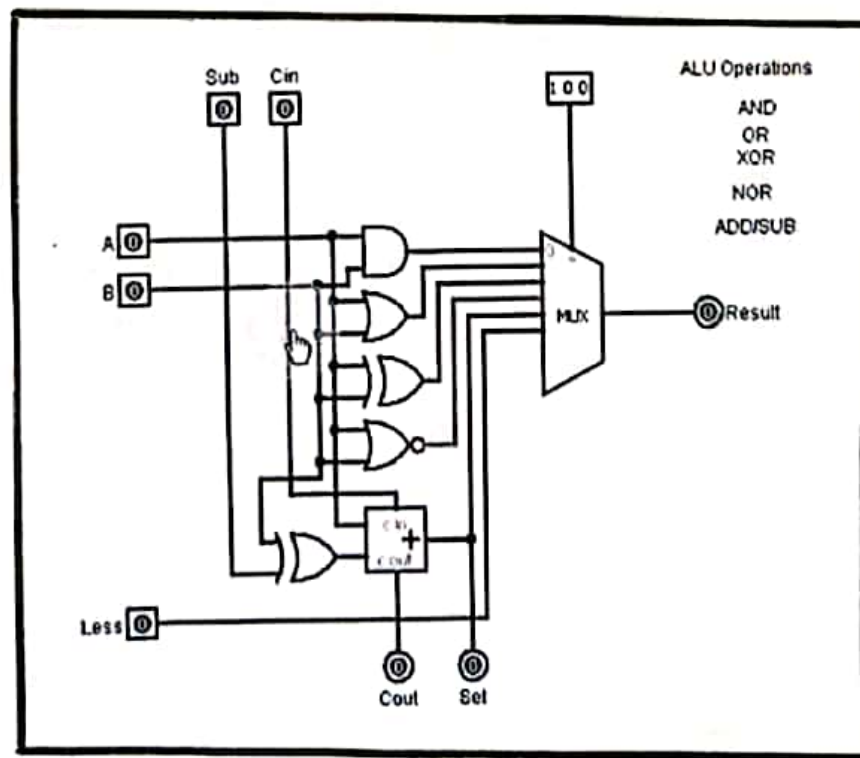
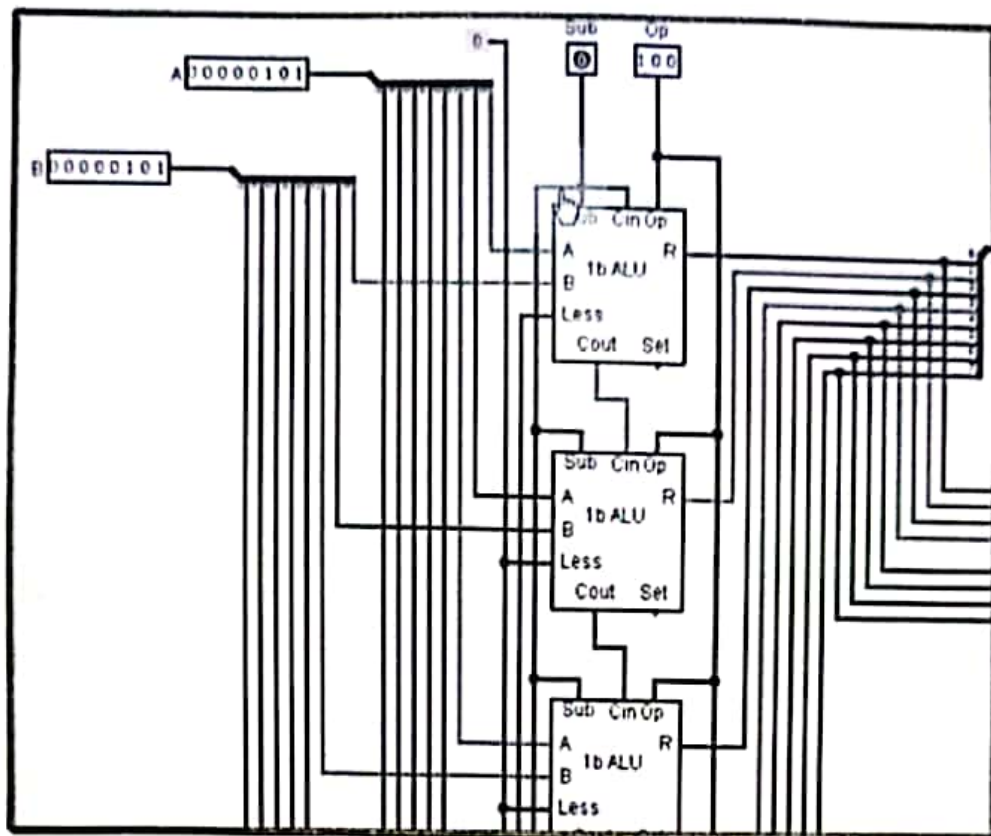


3) List out the steps in designing ALU

1. Add the 2 input pins. Name them A & B.
2. Add or, and, ex-or, nor gates and a 1-bit adder.
3. Connect the A's and B's of all the gates to their respective pins.
4. Add an output pin and name it result.
5. Add a 1 bit multiplexer with 3 select bit.
6. Connect output of all the gates to the mux.
7. Connect 3 bit input pin to mux.
8. Add input pin to Cin, and output pin to Cout.
9. Add an ex-or gate. Connect its output to Cout. The first input must be connected to B and second to another input pin sub.
10. Add another input & name it Less. Connect it to the mux.
11. Add an output pin and name it sel. Connect it to the output of adder circuit.

Snapshots.

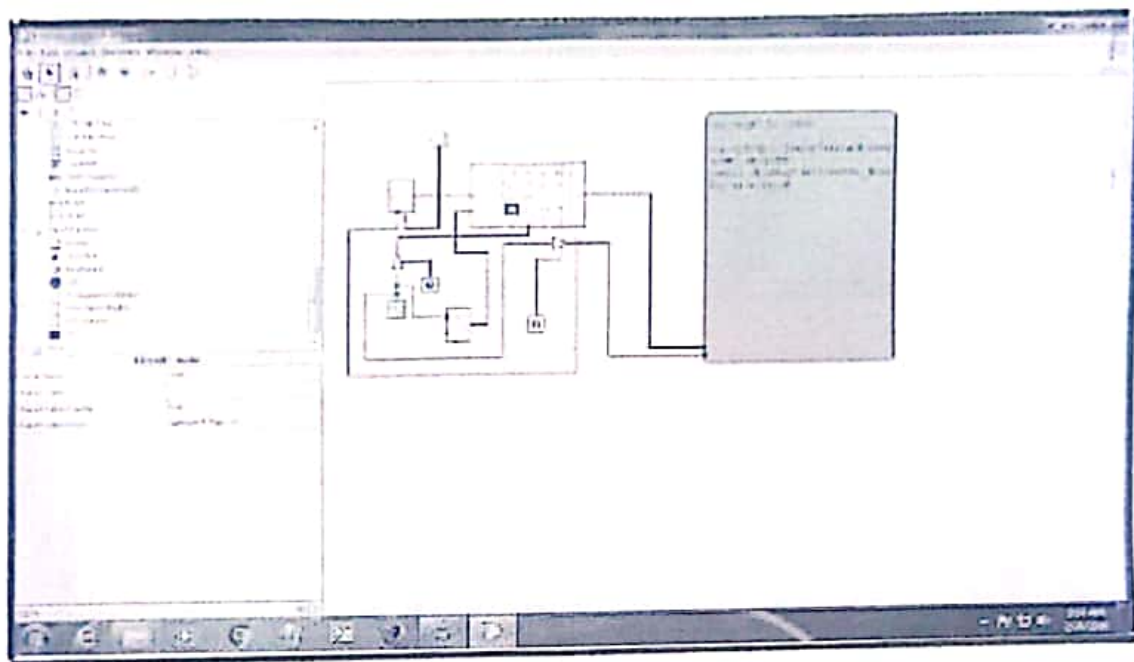


## Activity 8 V.1

1. List out the steps in designing memory system

- 1] Add a RAM with separate load and store selected
- 2] Add a counter and connect Q to A of the RAM
- 3] Add a controller button and connect its output to the RAM.
- 4] Add a clock and connect to the input of the button
- 5] Add a TTY unit with 32 rows and columns make the connections with RAM
- 6] Add a 7-bit Random number generator connect Q to D
- 7] Add another controlled button connect to TTY, also add an i/p pin to the button.
- 8] Connect the output of the second button to the counter
- 9] connect a button to the counter

Snapshots :



# Program

lw \$10, 20(\$1)

sub \$11, \$2, \$3

add \$12, \$9, \$4

lw \$13, 20(\$1)

add \$14, \$5, \$6

CC1 CC2 CC3 CC4 CC5 CC6 CC7 CC8 CC9

Instruction  
Fetch

Instruction  
Decode

Execution

Data  
Access

Write  
Back

Fetch

Decode

Execution

Data  
Access

Write  
Back

Fetch

Decode

Execution

Data  
Access

Write  
Back

Fetch

Decode

Execution

Data  
Access

Write  
Back

Fetch

Decode

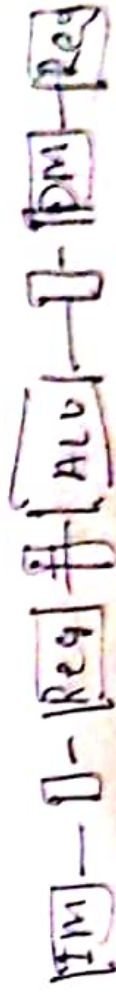
Execution

Data  
Access

Write  
Back



Time in clock cycle



### Snapshots:

