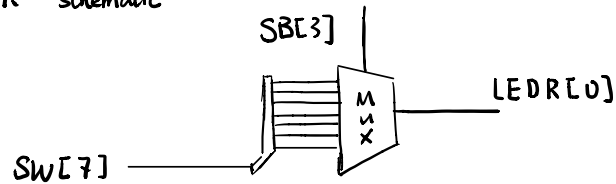


Lab 3

Chenyue Li
1004767558

Part 1:

1. schematic



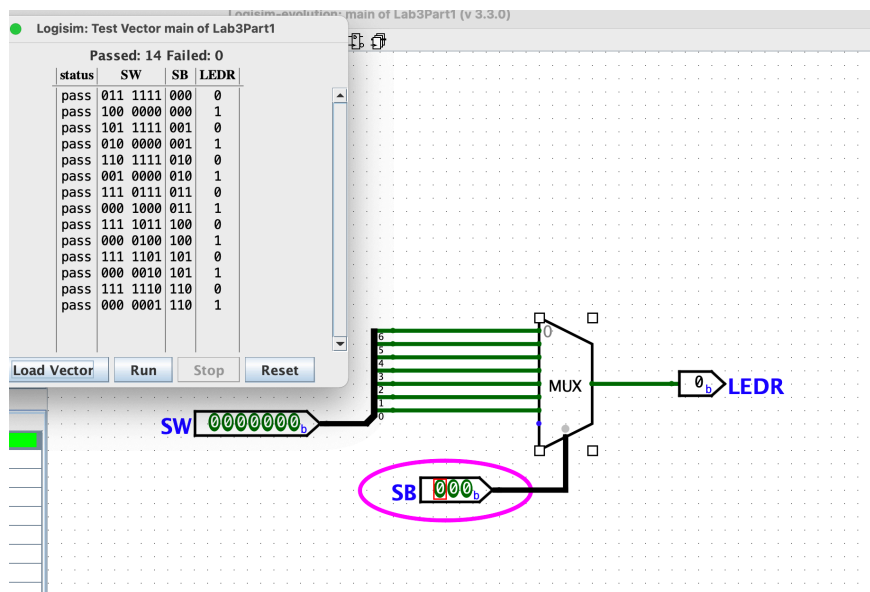
b) (b) How big does the multi-bit input need to be to provide all the inputs to the 7-to-1 multiplexer?
Provide your answer in your report. (PRELAB)

7 data bits for multi-bit input

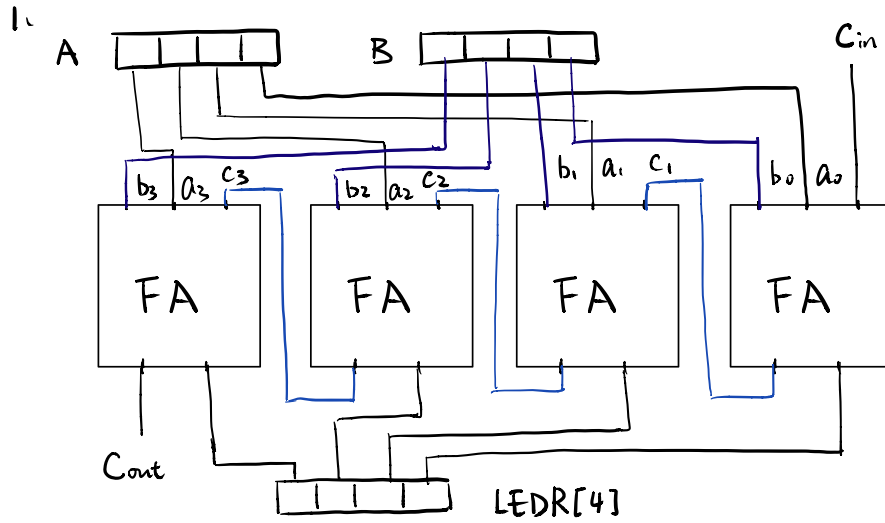
3 data bits for select bits

2. Logism

3.

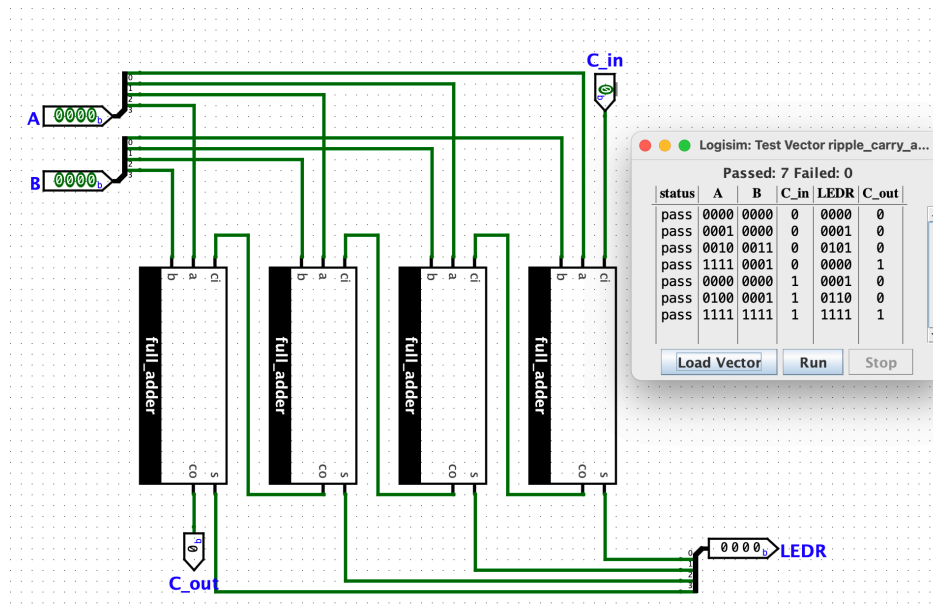


Part 2



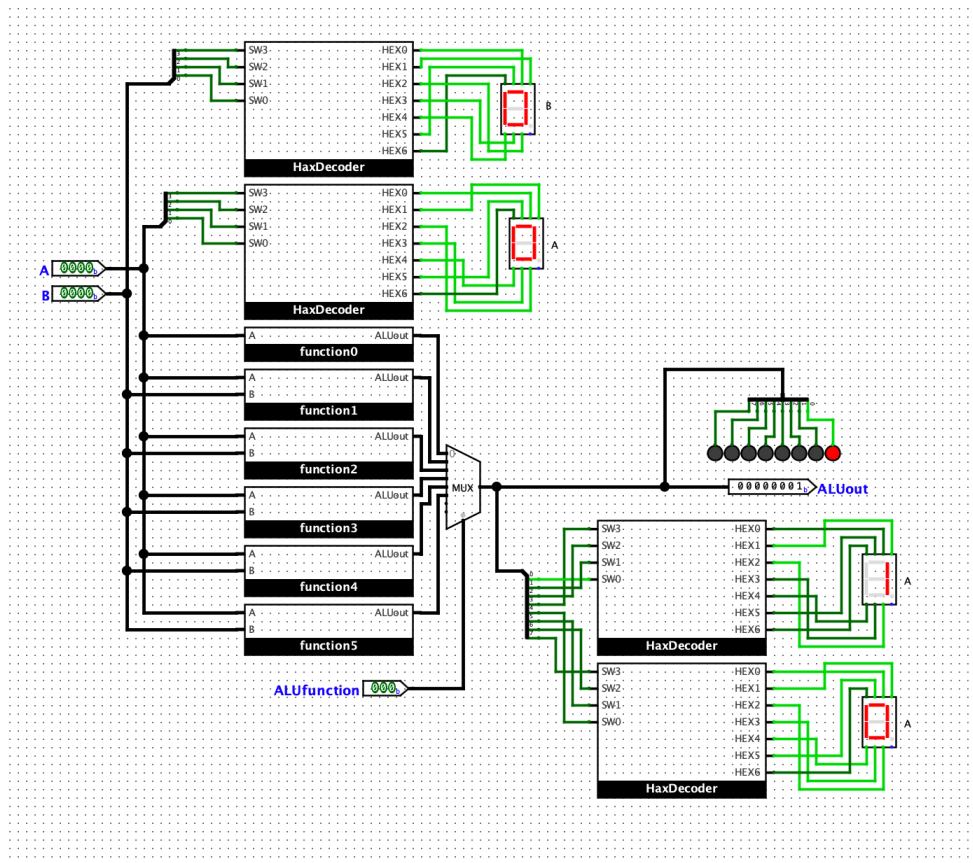
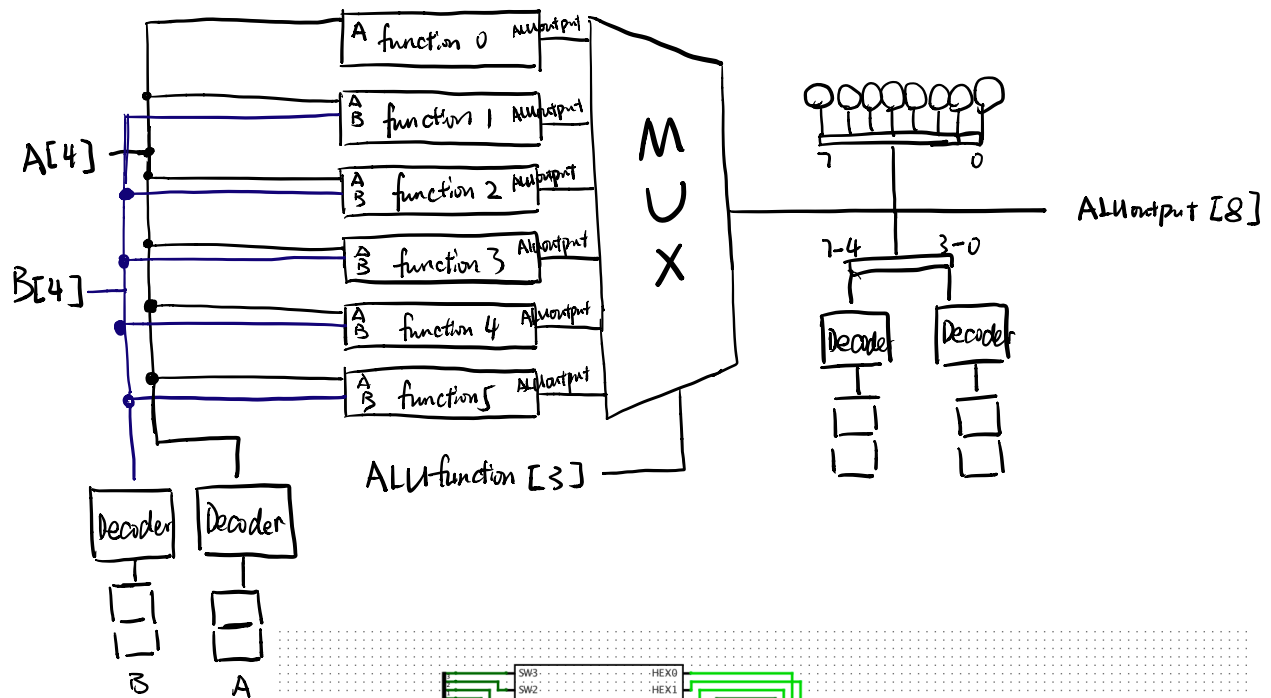
2. Logisim

3.



Part3

1. Schematic



er

2

Logisim: Test Vector ALU of Lab3Part3

Passed: 18 Failed: 0

| status | A | B | ALUfunction | ALUout |
|--------|------|------|-------------|-----------|
| pass | 0000 | 0000 | 000 | 0000 0001 |
| pass | 0010 | 0101 | 000 | 0000 0011 |
| pass | 1111 | 1111 | 000 | 0001 0000 |
| pass | 0101 | 0101 | 001 | 0000 1010 |
| pass | 0111 | 0000 | 001 | 0000 0111 |
| pass | 1111 | 1111 | 001 | 0001 1110 |
| pass | 0101 | 0101 | 010 | 0000 1010 |
| pass | 0111 | 0000 | 010 | 0000 0111 |
| pass | 1111 | 1111 | 010 | 0001 1110 |
| pass | 0000 | 1111 | 011 | 1111 1111 |
| pass | 1111 | 1111 | 011 | 1111 0000 |
| pass | 0101 | 1111 | 011 | 1111 1010 |
| pass | 0000 | 0000 | 100 | 0000 0000 |
| pass | 1000 | 0000 | 100 | 0000 0001 |
| pass | 1111 | 1111 | 100 | 0000 0001 |
| pass | 1010 | 0101 | 101 | 1010 0101 |
| pass | 1111 | 0000 | 101 | 1111 0000 |
| pass | 0000 | 1111 | 101 | 0000 1111 |

Load Vector Run Stop Reset

