

CS 315-02 Components

Midterm High 96

Mean 66

"C" for passing is 55

Final \rightarrow if you do better than your score on midterm

$$\text{midterm_new} = \frac{\text{final} + \text{midterm}}{2}$$

For example midterm ~~60~~ 70
final 80

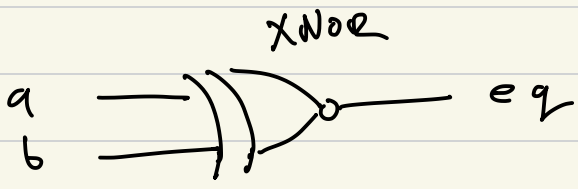
Projects Static Program Analysis

Combinational Logic

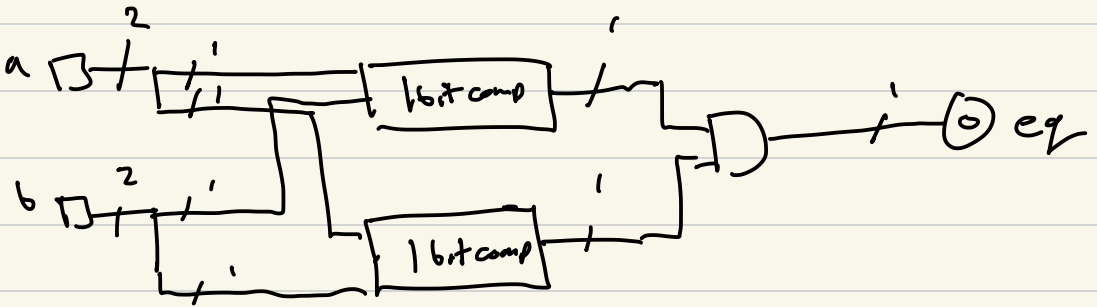
Comparator is $a = b$:

a	b	eq?	XOR	XNOR ←
0	0	1	0	1
0	1	0	1	0
1	0	0	1	0
1	1	1	0	1

1 bit comparator

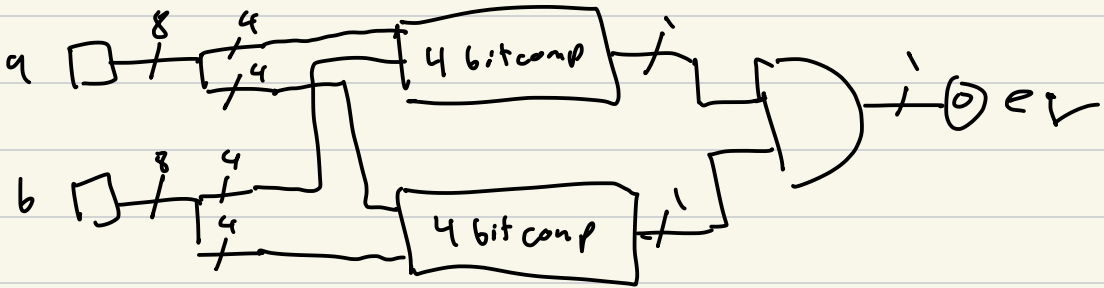


2-bit Comparator

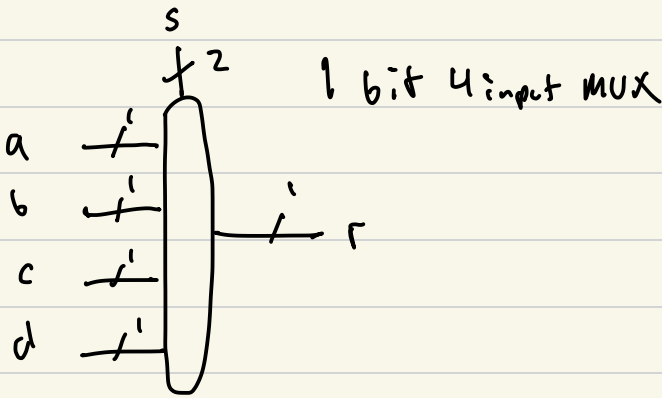
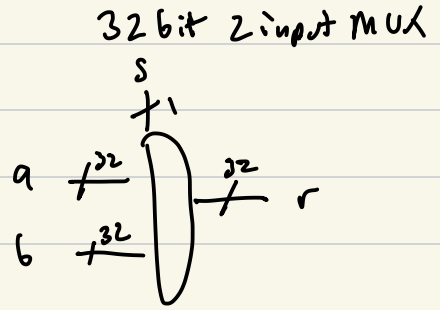
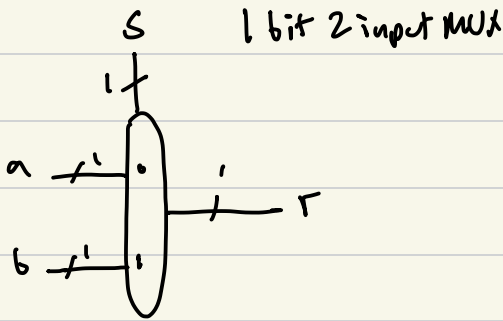


N-bit comparators

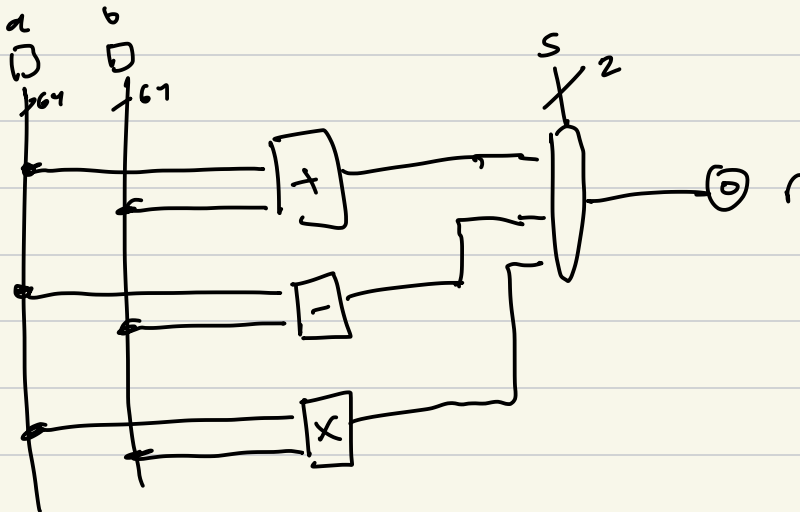
8 bit Comparator



Multiplexor (MUX)



ALU Arithmetic Logic Unit

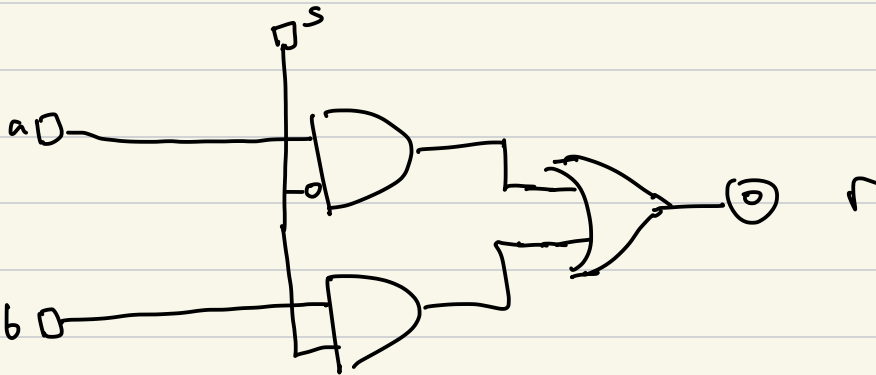


1 bit 2 input MUX

a	b	s	r
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1

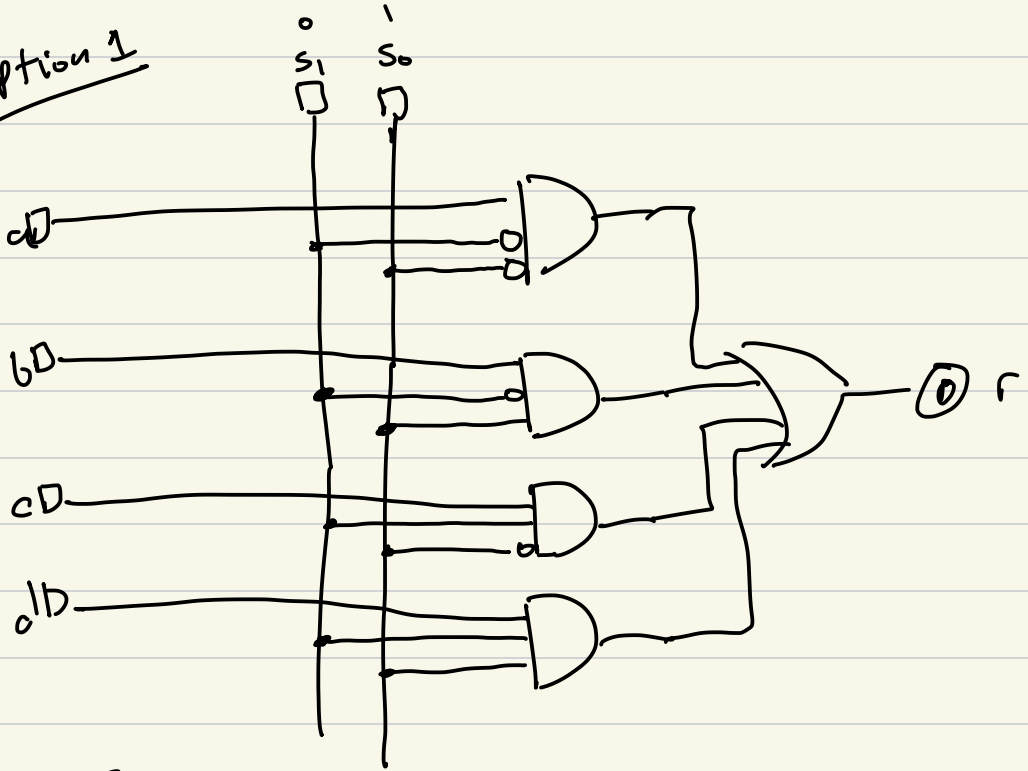
Sum-of-products

Direct implementation

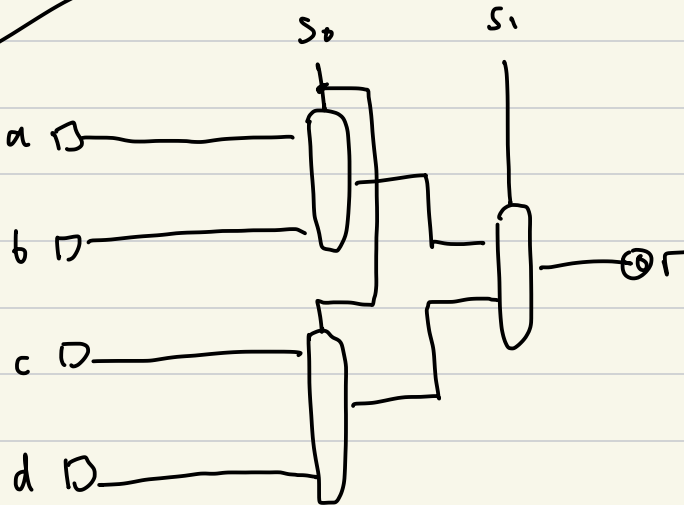


1 bit 4 input MUX

option 1



option 2



00
01
10
11

2 bit 2 input MUX

