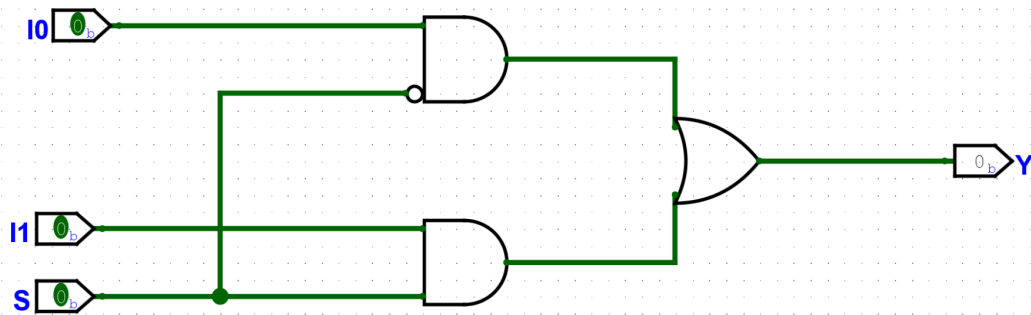
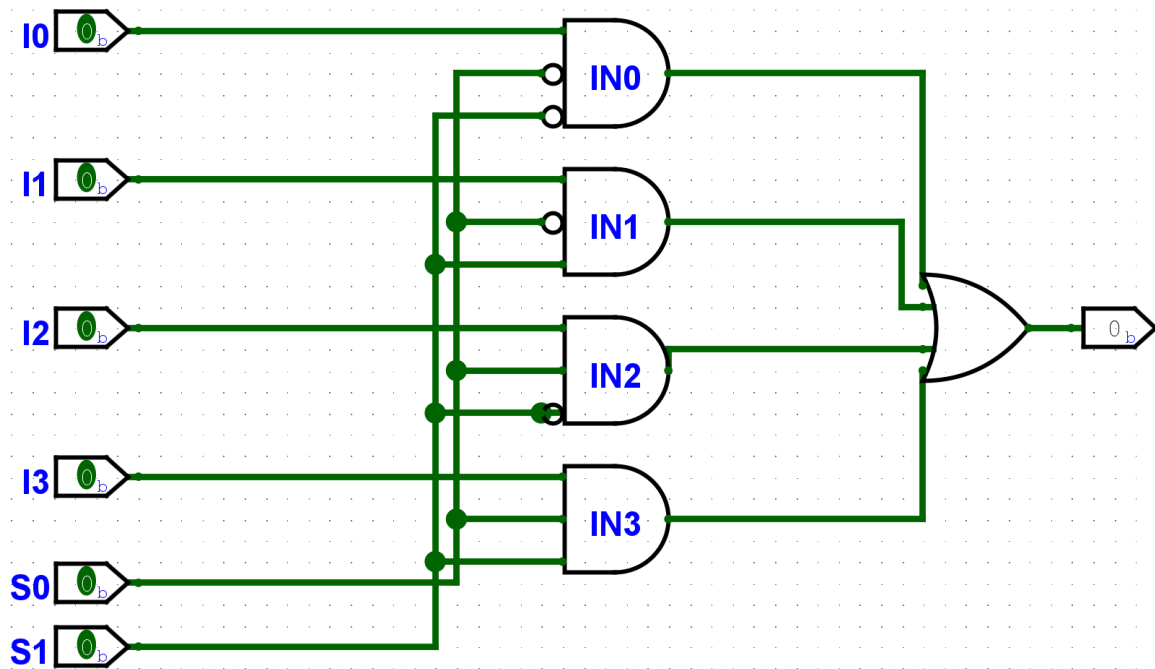


### 1 Bit Multiplexer



A multiplexer is a way you can choose which input to let through a circuit. For example, you see here a one bit multiplexer. When Sum is 0, it allows the Input  $I_0$  to go through. Here is an example of a 2 bit multiplexer.

### 2 Bit Multiplexer



$S$  determines which input to allow to be the "output".

1 bit multiplexer truth table

### Truth Table

$S_0$	$I_0$	$I_1$	Y
0	0	X	0
0	1	X	1
1	X	0	0
1	X	1	1

2 bit multiplexer truth table

s1	s0	d3	d2	d1	d0	q
0	0	0	0	0	1	1
0	1	0	0	1	0	1
1	0	0	1	0	0	1
1	1	1	0	0	0	1