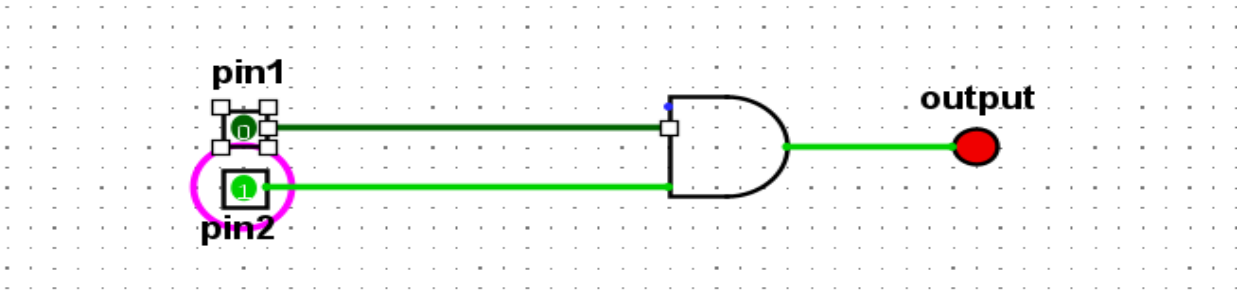
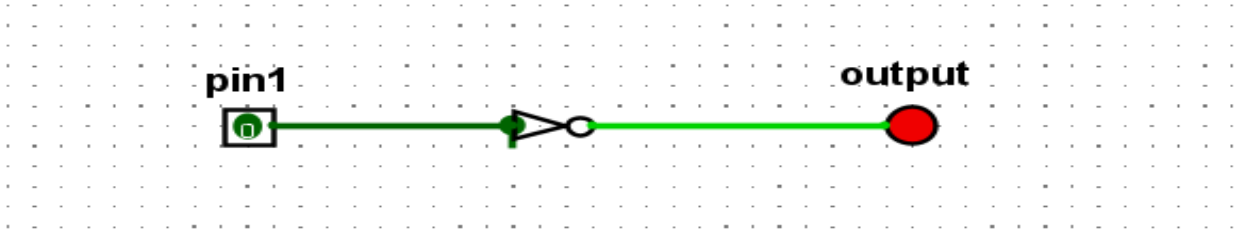
5.Test your circuit for all possible input combinations using a truth table like the one below (where the LED being red represents 1).

Pin 1	Pin 2	Output
0	0	0
0	1	0
1	0	0
1	1	1



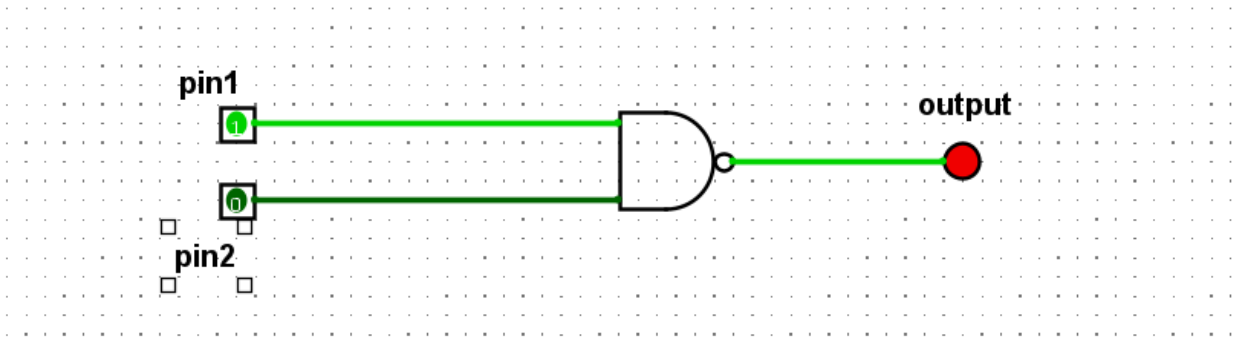
8. Connect up an inverter (NOT gate), a pin and an LED to the output.

Pin	Output
0	1
1	0



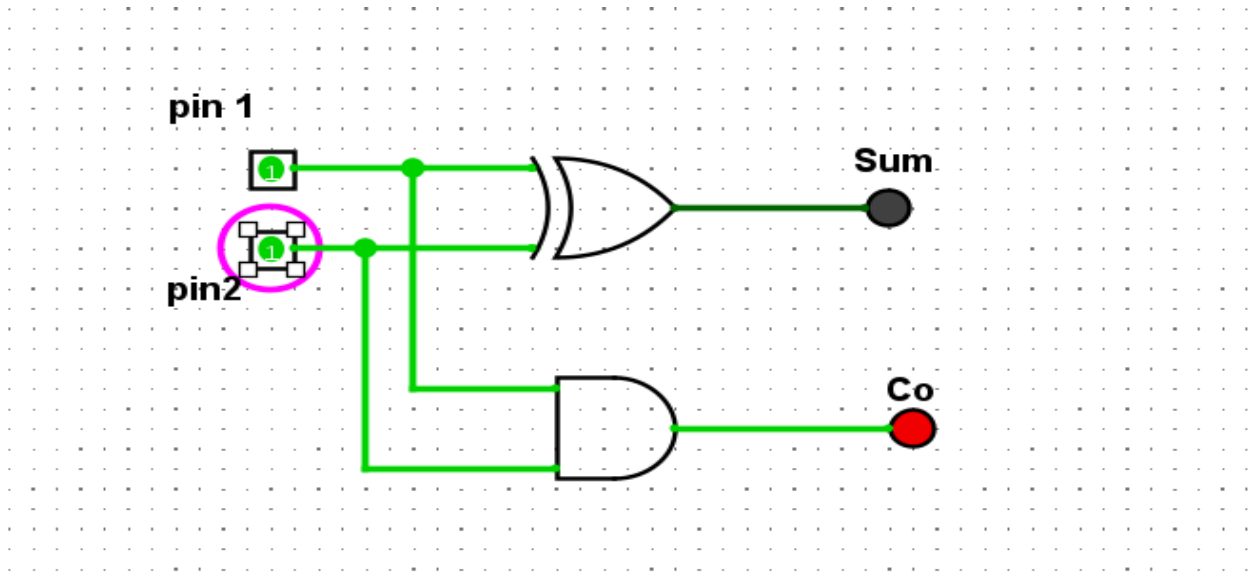
10. Connect up a 2-input NAND gate, connect a pin to each input and an LED to the output

Pin 1	Pin 2	Output
0	0	1
0	1	1
1	0	1
1	1	0



12. Using the lecture slides as a guide, construct a half-adder and test it.

Input 1	Input 2	Sum Output	Carry Output
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1



14. Now extend your half-adder to a full-adder, which in addition to the two input pins, also handles a carry-in bit.

Input 1	Input 2	Carry In	Sum Output	Carry Output
0	0	0	0	0
0	1	0	1	0
1	0	0	1	0
1	1	0	0	1
0	0	1	1	0
0	1	1	0	1
1	0	1	0	1
1	1	1	1	1