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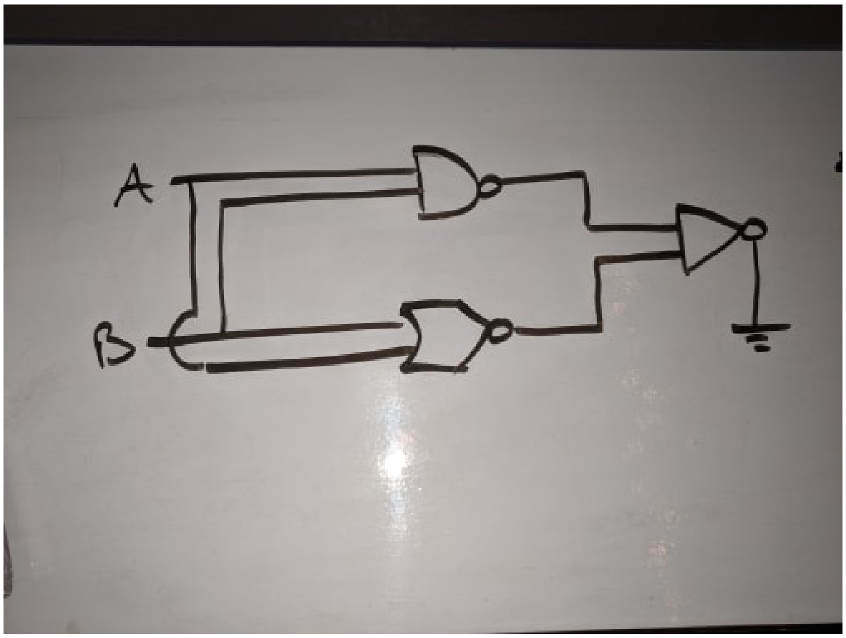
CS353

Homework 1

2.2:

Google Pixel: 5 volts at 3 amps or 9 volts at 2 amps

2.3:



2.4:

A	B	And (1)	XOR(1)	C in	And (2)	XOR (2) // Sum	OR // C out
0	0	0	0	0	0	0	0
0	0	0	0	1	0	1	0
0	1	0	1	0	0	1	0
0	1	0	1	1	1	0	1
1	0	0	1	0	0	1	0
1	0	0	1	1	1	0	1
1	1	1	0	0	0	0	1
1	1	1	0	1	0	1	1

2.8:

7 maximum output bits

2.11:

When using only 2 inputs, *nor* gates don't have many possibilities to keep electricity flowing. One of four combinations will keep electricity flowing when using 1 *nor* gate with 2 inputs. I can imagine that using an extra *nor* gate will come in handy is when both inputs will be logical 0 and having the output be logical 1. The opposite idea can be done too-- keeping the flow of electricity from happening. Since only one of four combinations result in logical 1, that means three of four combinations result in logical 0. Taking advantage of the nature of the *nor* gate, you can keep electricity from flowing throughout the circuit much easier.