

Computer Logic 1

Lab 2 - Deliverable

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Truth Table and Schematic

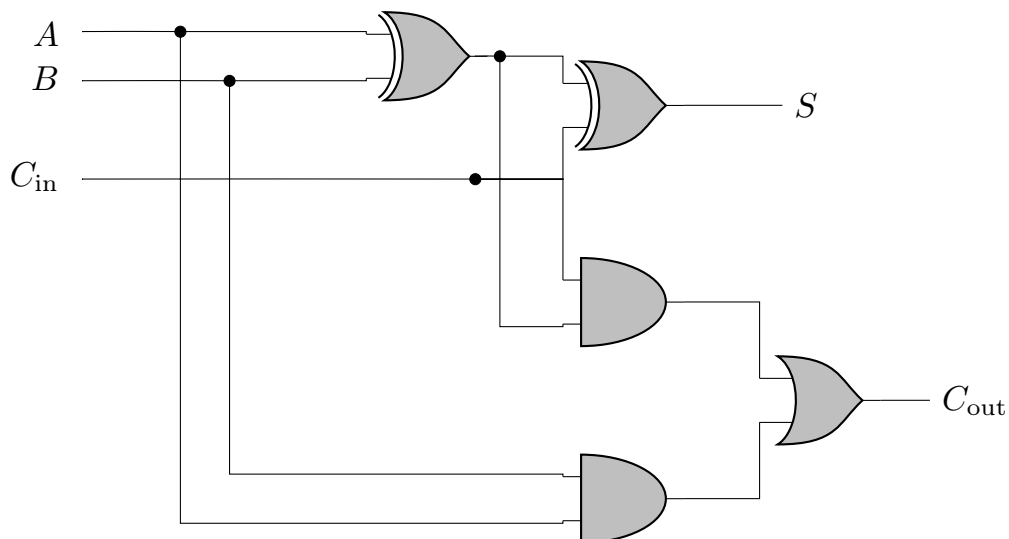
Below are the worked out values of the truth table for the boolean expressions

$$S = (A \oplus B) \oplus C_{\text{in}}$$

$$C_{\text{out}} = A \cdot B + C_{\text{in}} \cdot (A \oplus B)$$

and its representation in a schematic using logic gates.

A	B	C_{in}	S	C_{out}
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1



Tinkercad Schematic

My breadboard setup for this lab session.

All possible input combinations

Figure 1. All switches are off. $A = 0$, $B = 0$ and so $F = 0$.

Figure 2. Only switch 1 is turned on. $A = 1$, $B = 0$ and so $F = 1$.

Figure 3. Only switch 2 is turned on. $A = 0$, $B = 1$ and so $F = 1$.

Figure 4. All switches are turned on. $A = 1$, $B = 1$ and so $F = 1$

