PreLab 4: Simple Arithmetic Logic Unit

ECEN 248 - 505

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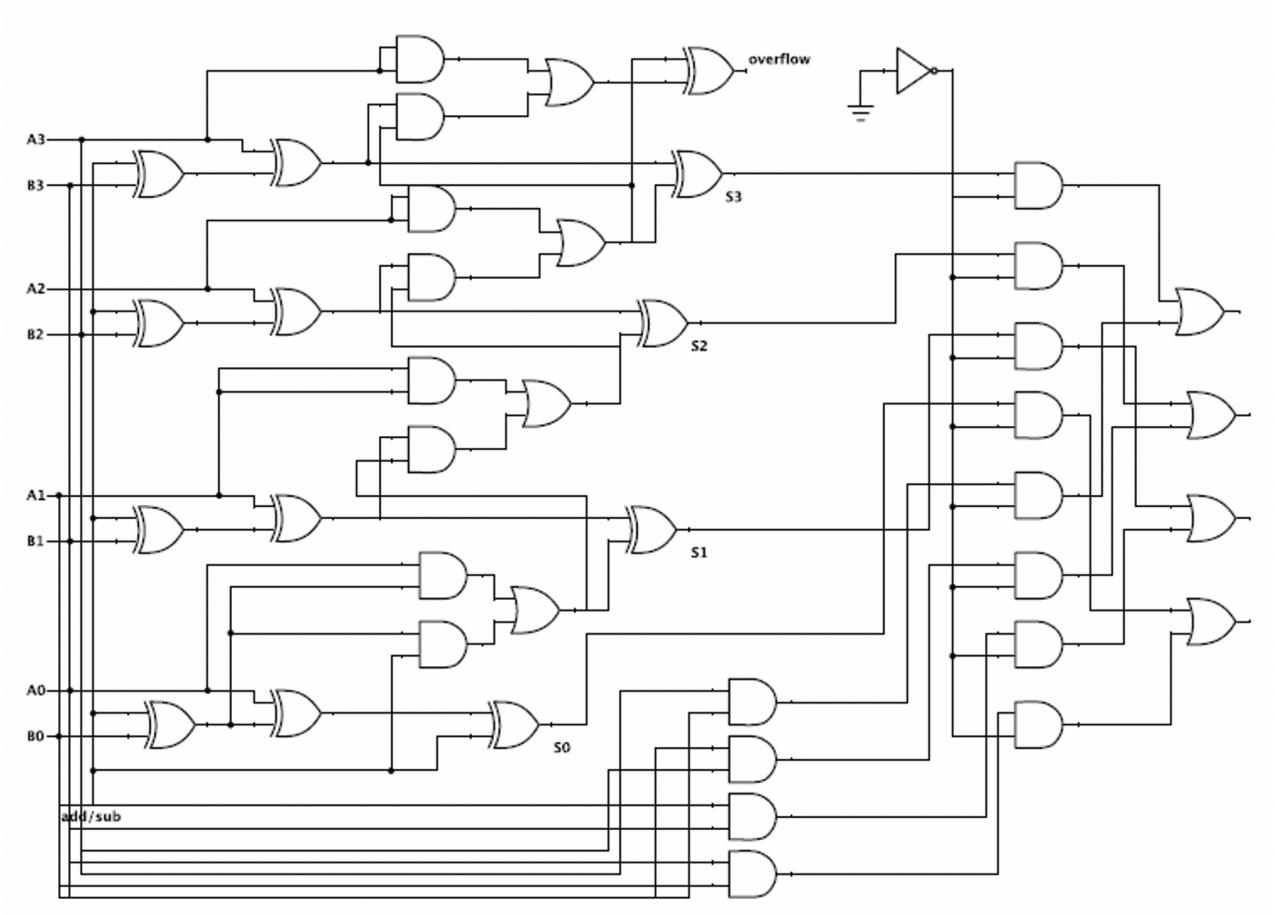
1. Examples demonstrating how the circuit in Figure 5 adds and subtracts.

2. Truth table and minimized Boolean expression for a 1-bit wide 2:1 MUX.

S	A	B	F
0	0	0	0
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	0
1	1	1	1

3. Gate-level schematic for the final ALU design.



4. Create a table with three columns: C_0, C_1 and OP, such that C_0 and C_1 correspond to the ALU control signals and OP is the operation it will perform, like AND.

C_0	C_1	OP
0	0	Addition
0	1	Subtraction
1	0	AND
1	1	AND