Lab 2

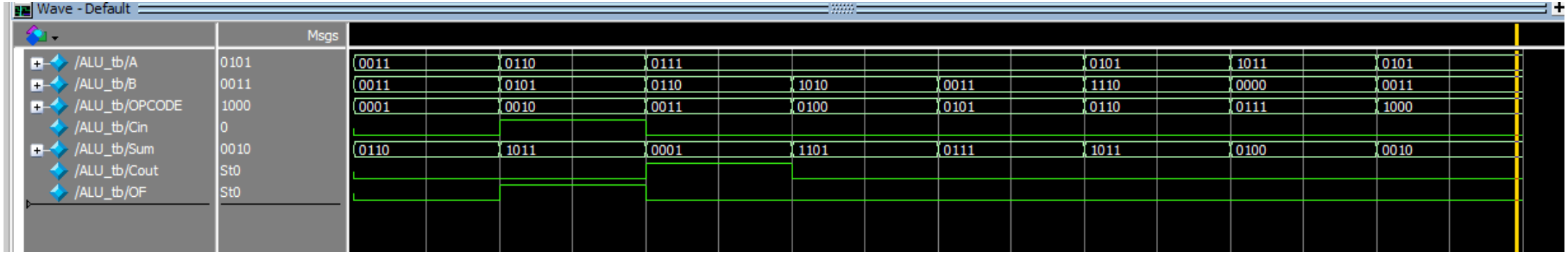
Pranav Nadimpalli

ALU Test Bench 1-8

Operation	Aluin_a	Aluin_b	Cin	Alu_out	Cout	OF
Add	0011	0011	0	0110	0	0
Add with Cin	0110	0101	1	1011	0	1
Sub b from a	0111	0110	0	0001	1	0
Bitwise NAND	0111	1010	0	1101	0	0
Bitwise OR	0111	0011	0	0111	0	0
Bitwise XOR	0101	1110	0	1011	0	0
Bitwise NOT	1011	0000	0	0100	0	0
Logical right shift	0101	0000	0	0010	0	0

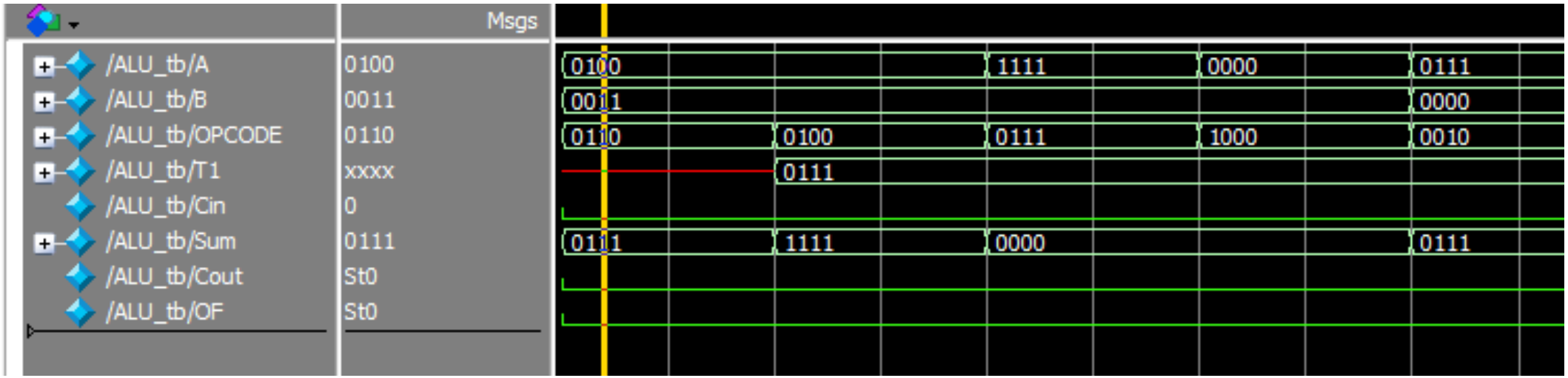
ALU Test Bench Waveforms (1-8)

- All Waves in Order of Table Operations

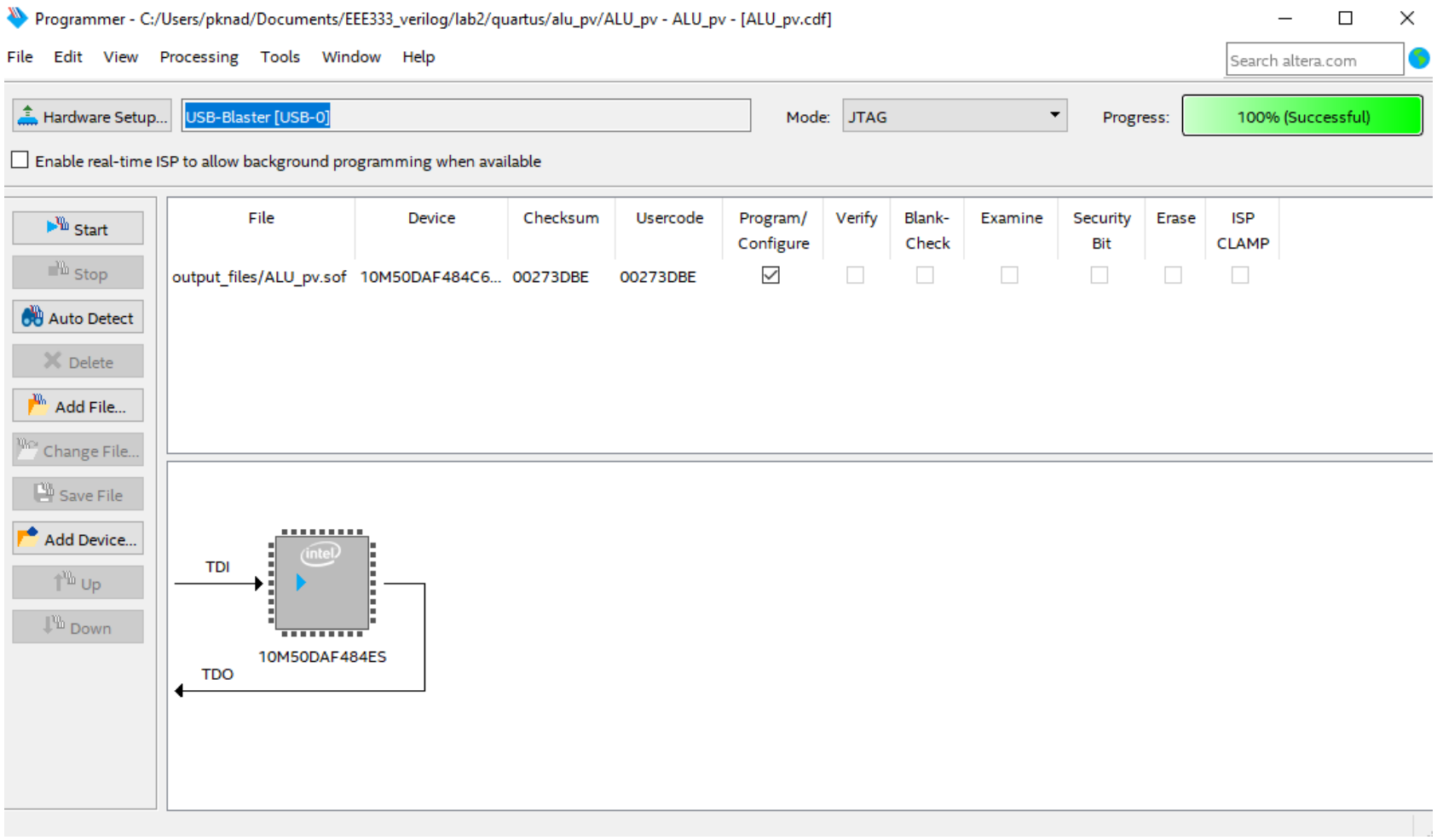


ALU Test Bench 9 + Waves (Series of operations to Get to Final Output)

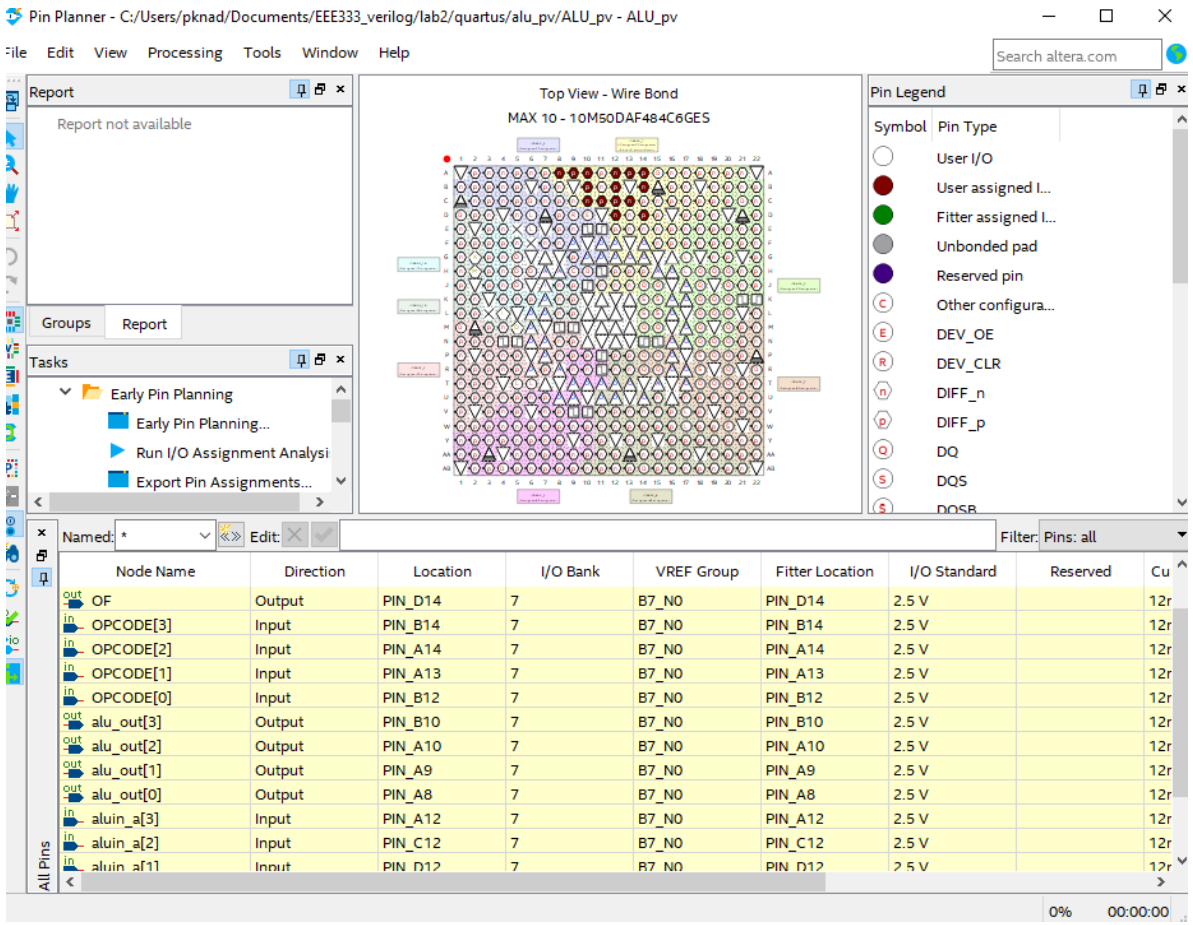
Operation	Aluin_a	Aluin_b	Cin	Result	Carry Out	Overflow
(a^b) + ((a&b)>>1)	0100	0011	0	0111	0	0



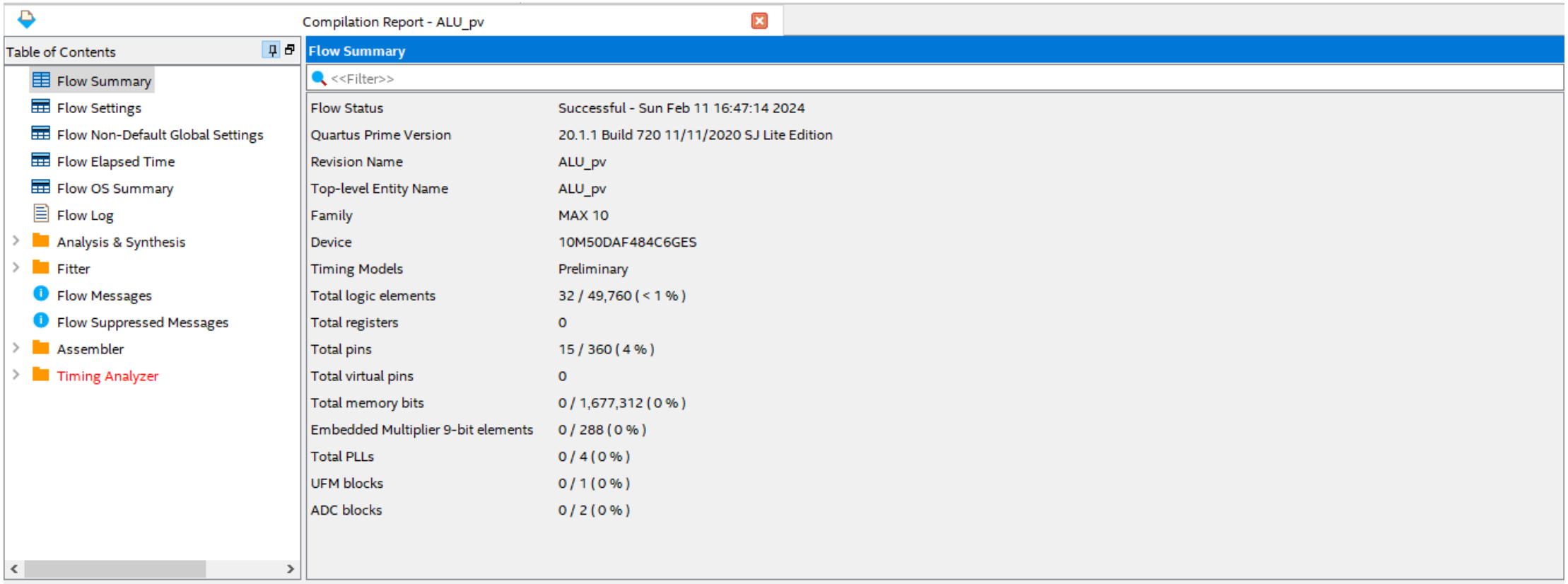
Board Programming



Pin Assignment



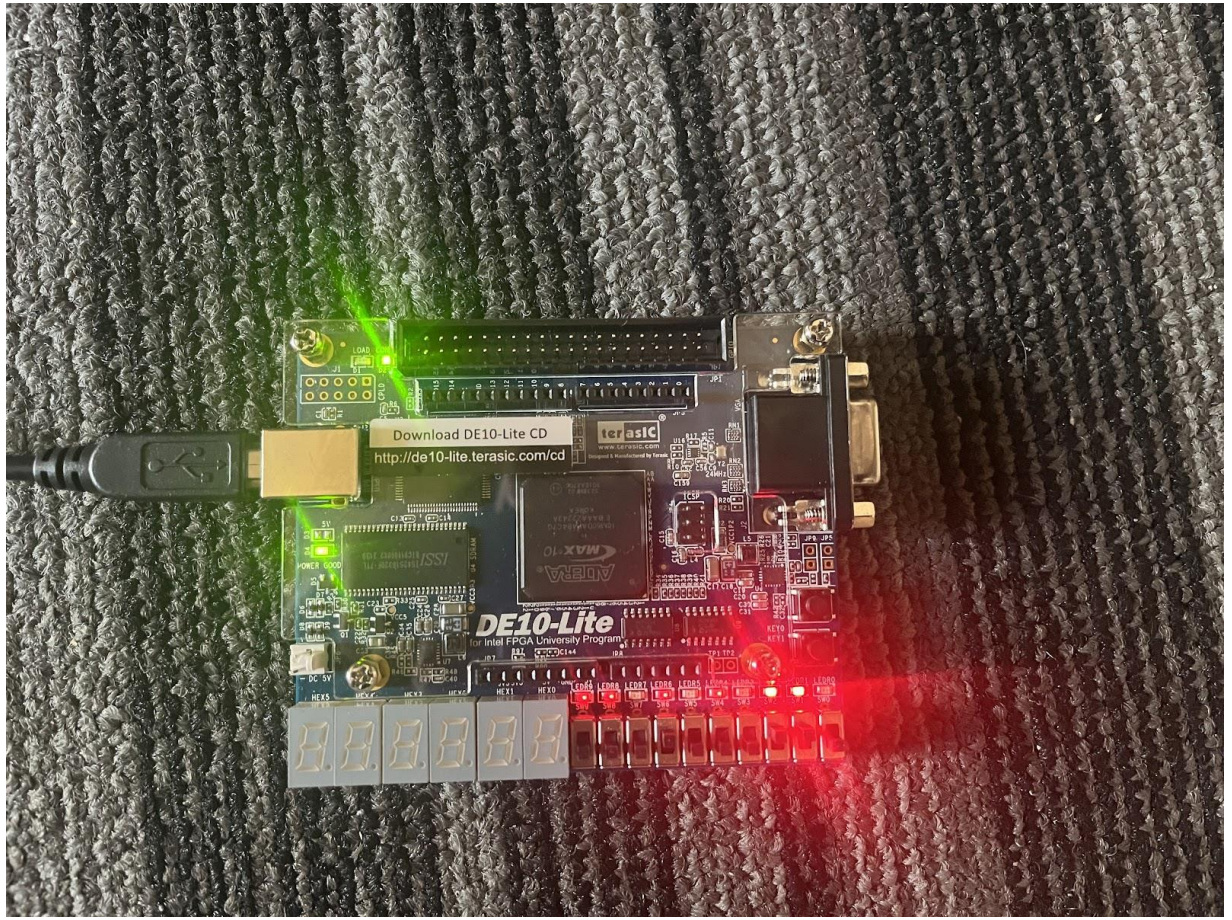
Flow Summary



Physical Validation Table

Operation	A	B	Cin	Out	Cout	OF
Add	0011	0011	0	0110	0	0
Add with Cin	0011	0011	1	0111	0	0
Sub b from a	0111	0011	0	0100	1	0
NAND	0110	0011	0	1101	0	0
OR	0110	0011	0	0111	0	0
NOT	1111	0011	0	0000	0	0
Logical Shift Right	0101	0011	0	0010	0	0

Add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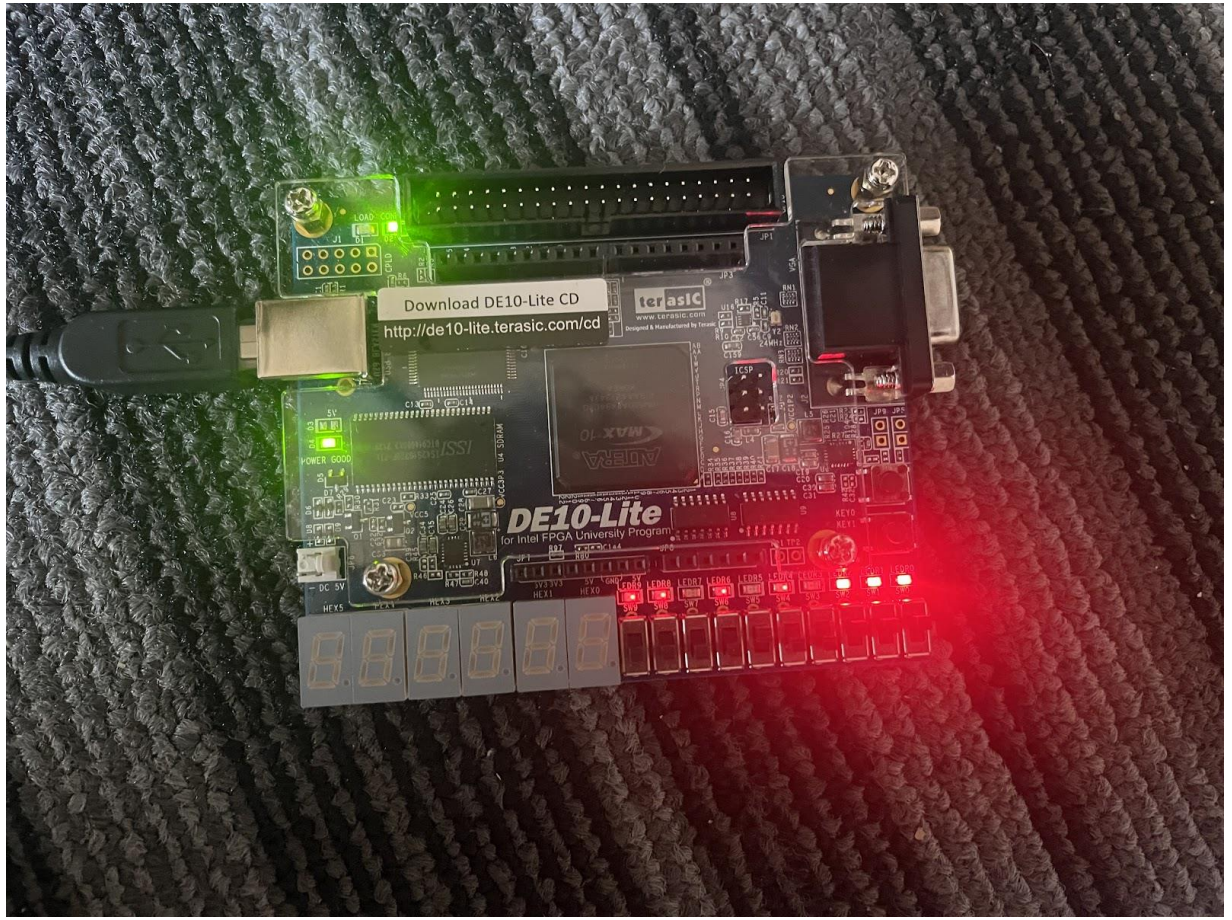
Add with Cin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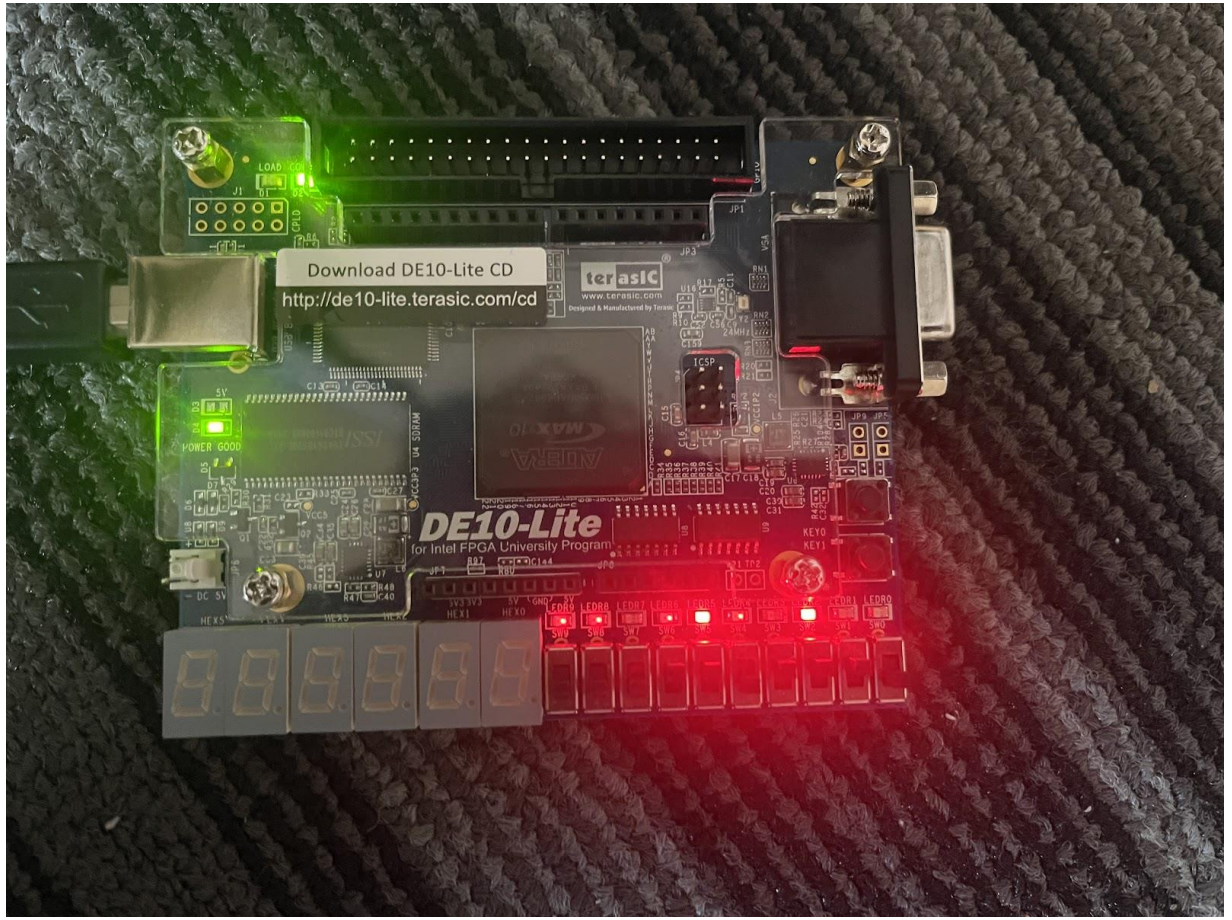
Sub B From A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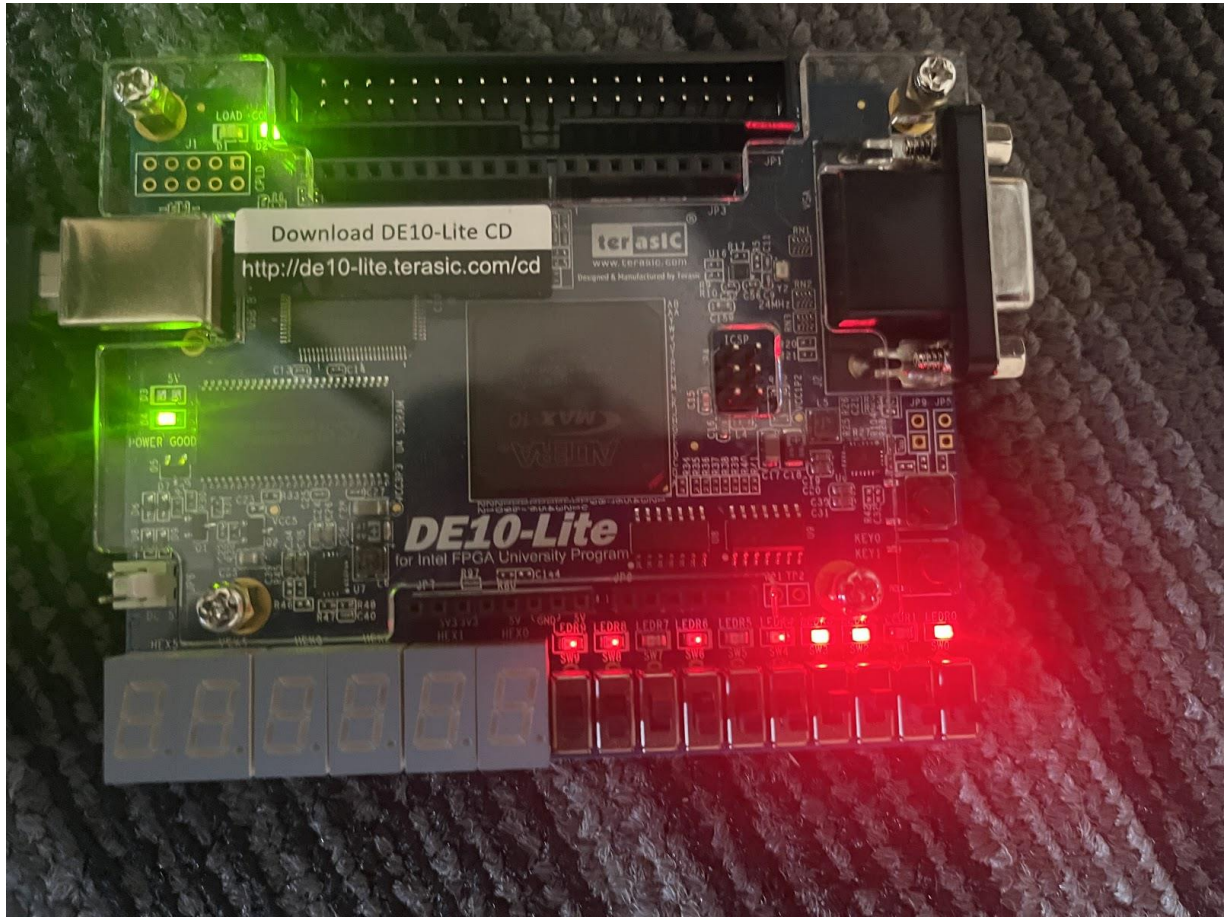
NAND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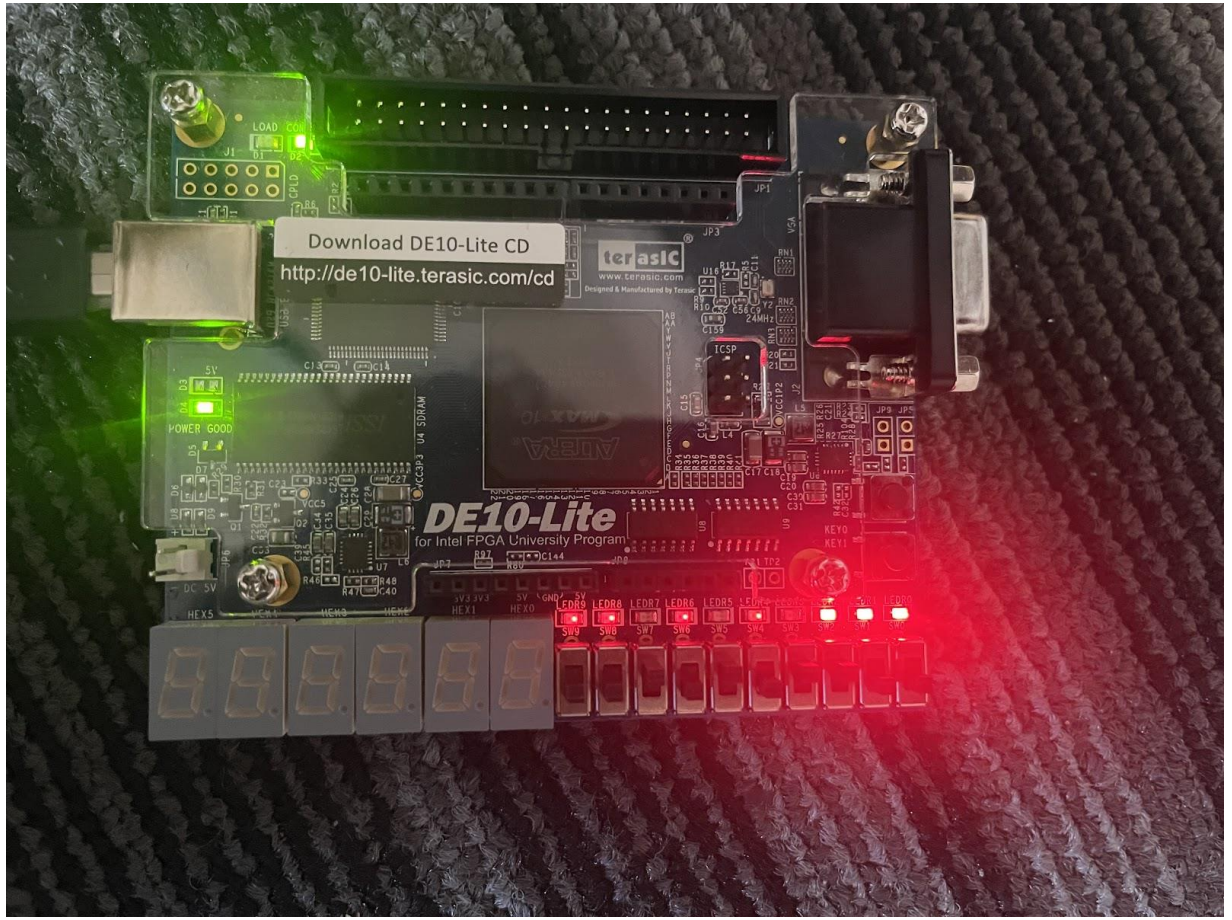
OR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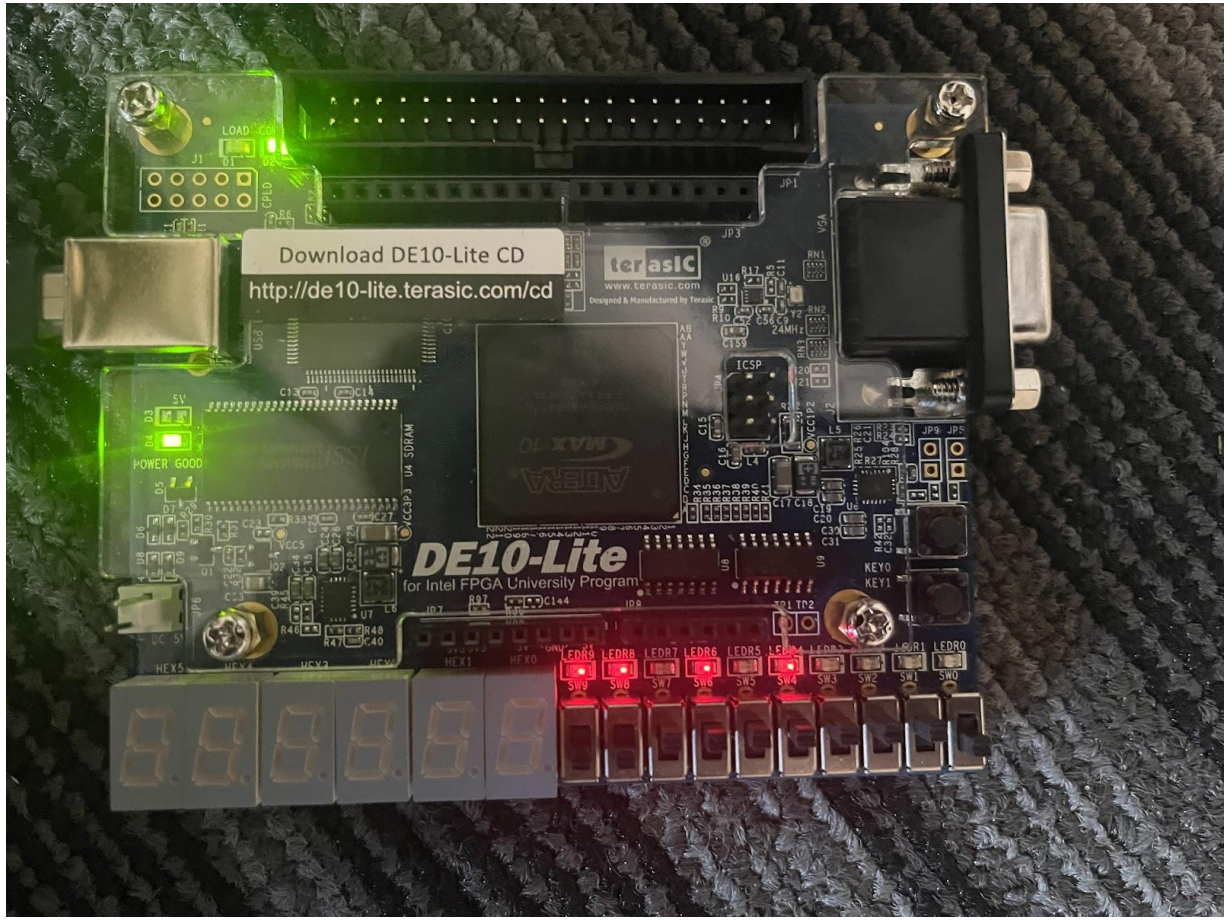
POWER GOOD

NOT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Logical Shift Right