

# Subsystems : Adder (3G)

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Transistor Level Design

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# Subsystem Examples

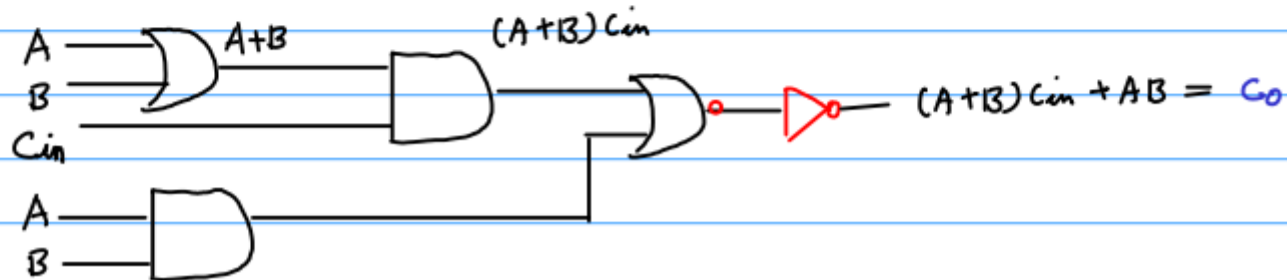
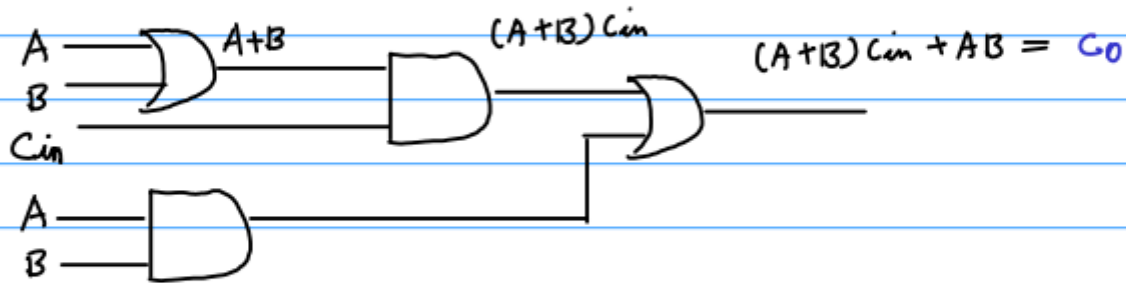
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Adders  
Multipliers  
Memories  
Clock  
PLL  
DLL  
I/O

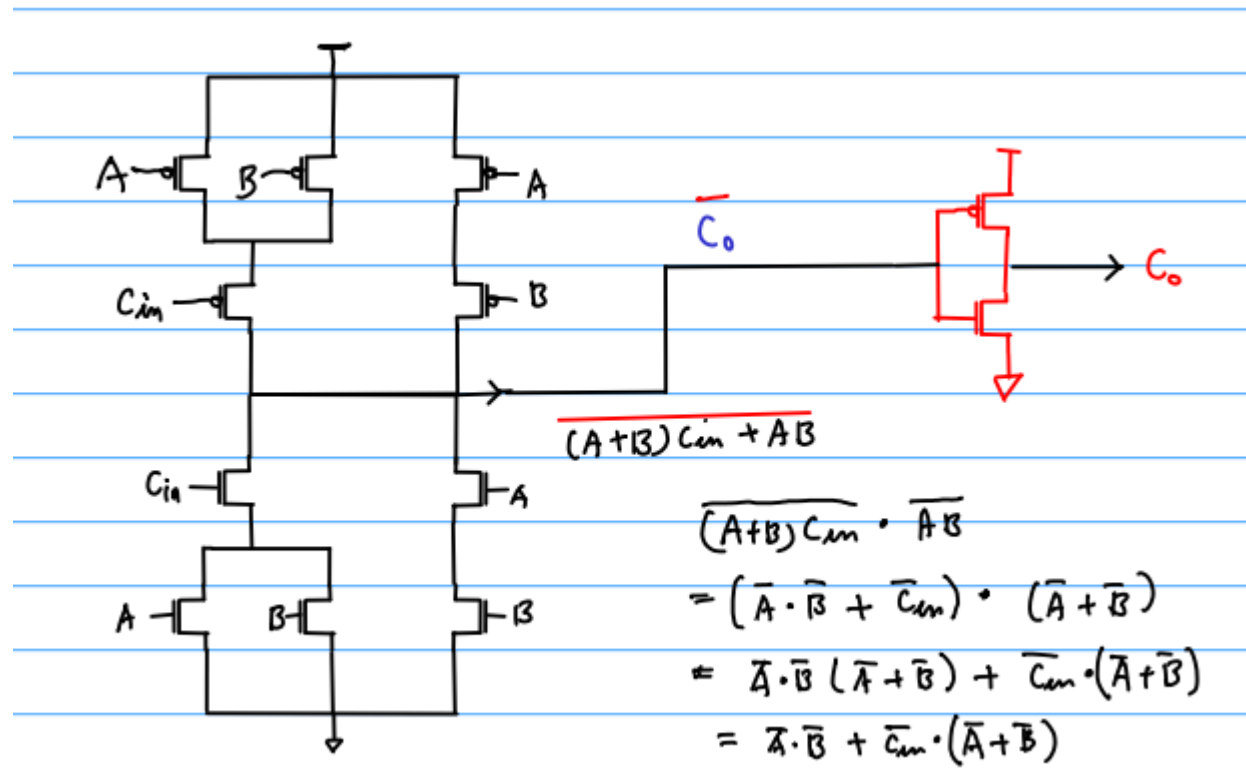
# 4-bit Binary Adder

$$C_0 = A C_i + B C_i + AB$$

$$S = \bar{C}_0 \cdot (A + B + C_i) + A \cdot B \cdot C_i$$



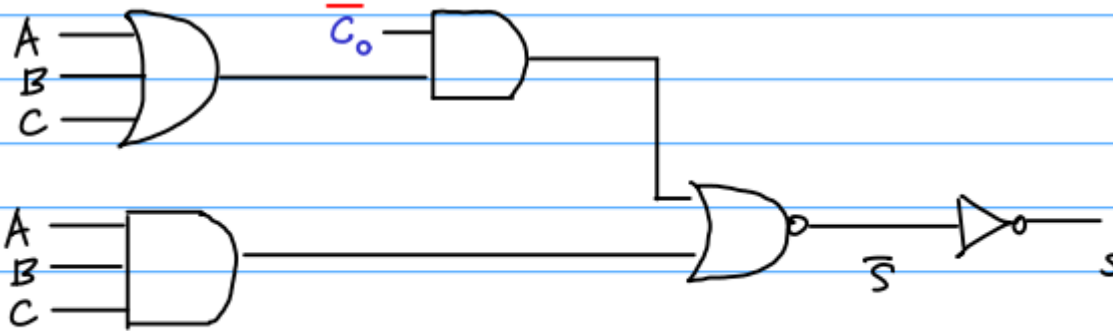
# 4-bit Binary Adder



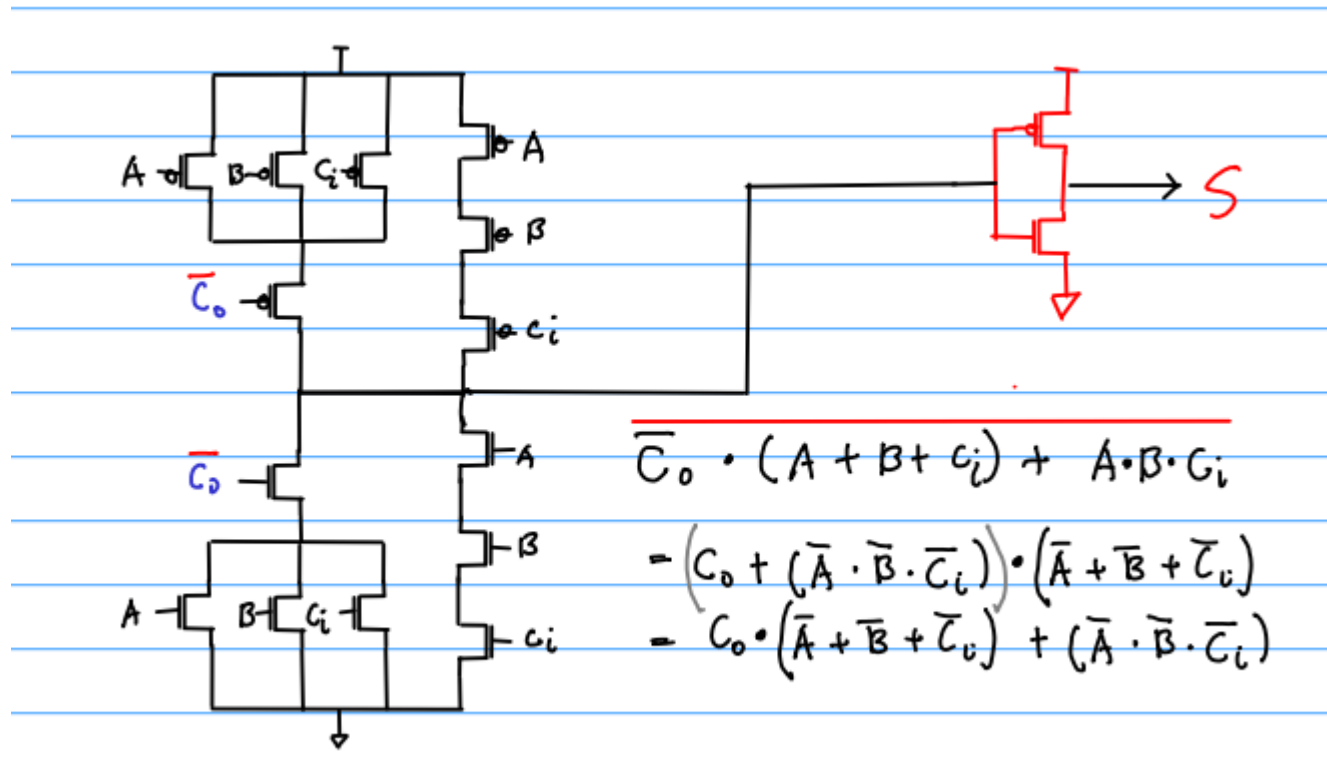
# 4-bit Binary Adder

$$C_o = A C_i + B C_i + AB$$

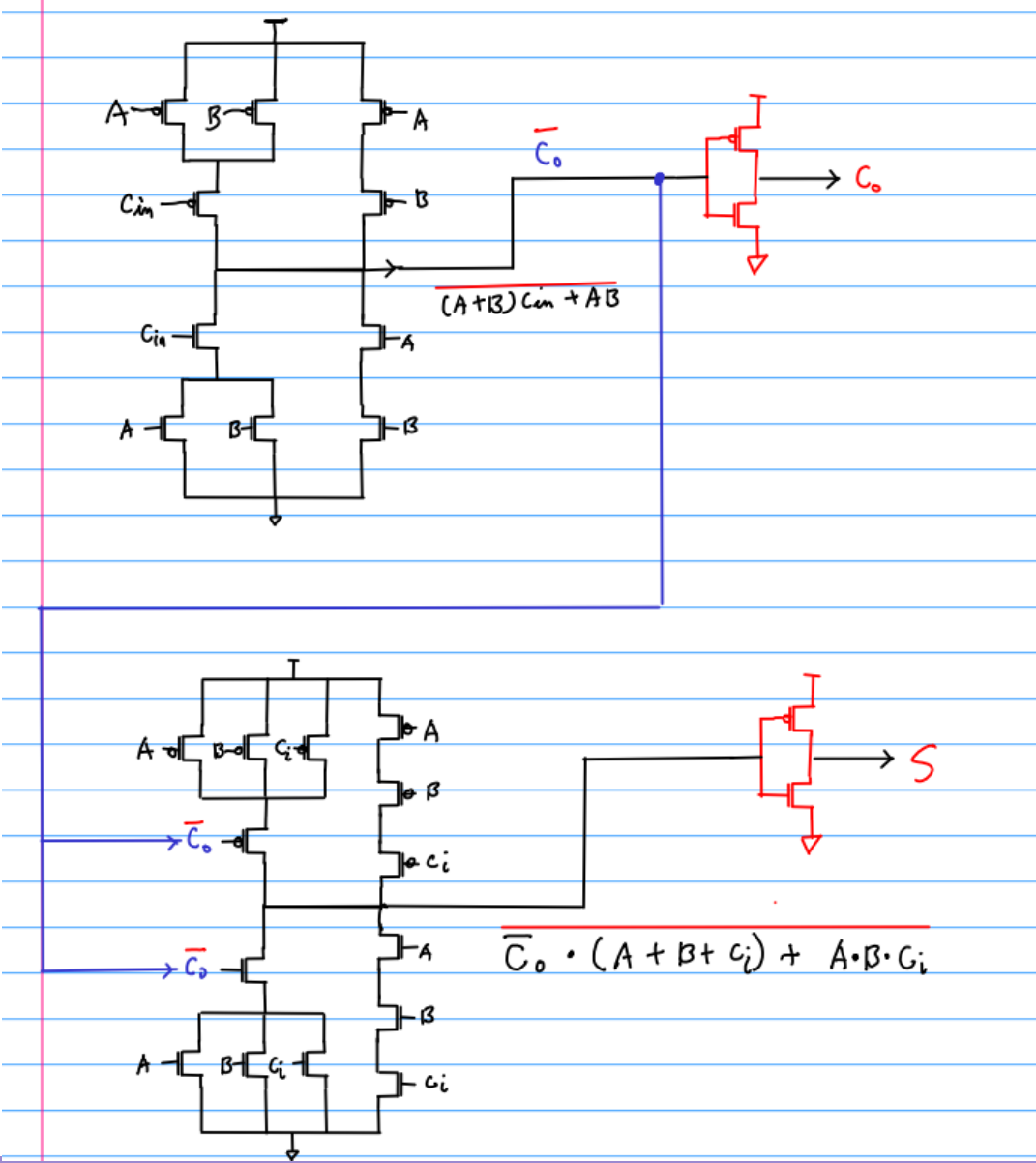
$$S = \bar{C}_o \cdot (A + B + C_i) + A \cdot B \cdot C_i$$



# 4-bit Binary Adder



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# 4-bit Binary Adder

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# 4-bit Binary Adder

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## References

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