

# EENG 4250/ENAS 8750 Introduction to VLSI System Design

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Fall 2025

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AVLSI

Manohar

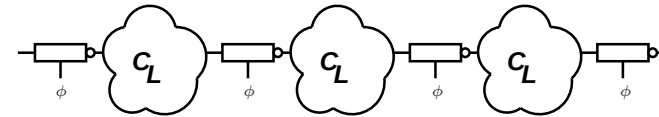
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## Single phase clocking

Simple pipeline:



Clock input:



Timing constraints for correctness? (race-through)

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## Single phase clocking

Better pipeline structure:



Clock input:



Timing constraints for correctness?

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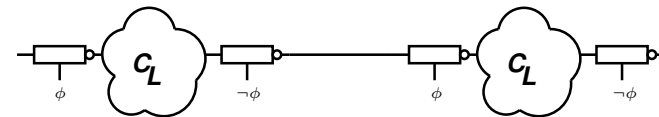
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## Single phase clocking

Special case:



Clock input:



Timing constraints for correctness?

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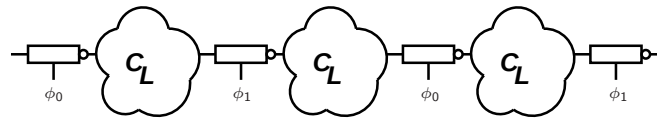
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## Two phase non-overlapping clocks

Safe pipeline structure:



Clock input:

