

Gate Power

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Dynamic Power Reduction Techniques

Circuit Parallelization

Voltage Scaling-based Techniques

Circuit Technology-independent Techniques

Circuit Technology-dependent Techniques

Circuit Parallelization

Memory Parallelization
Parallelized Shift Register
Serial-Parallel Converter
Linear Feedback Shift Registers
Double Edge Triggered FlipFlops

Voltage Scaling-based Techniques

Multiple Voltage Techniques
Low Voltage Swing

Circuit Technology-independent Techniques

Precomputation

Retiming

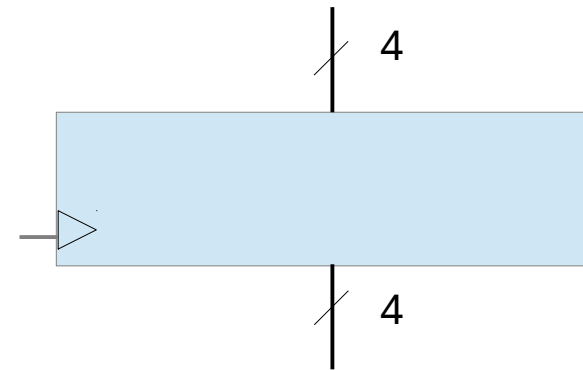
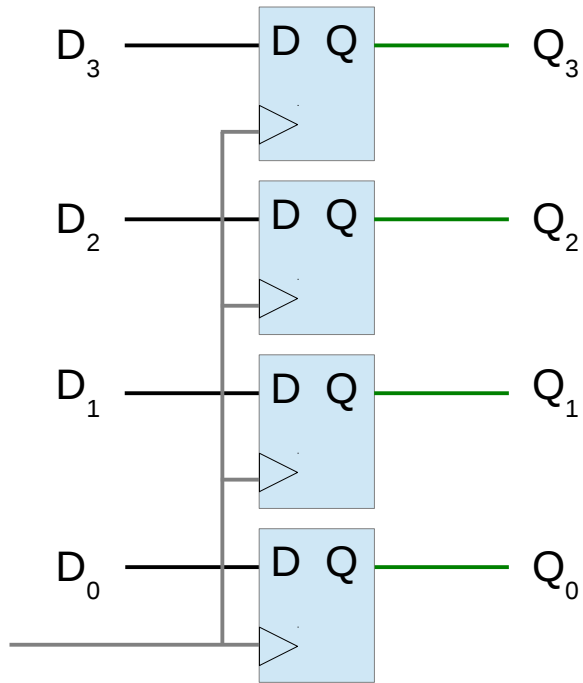
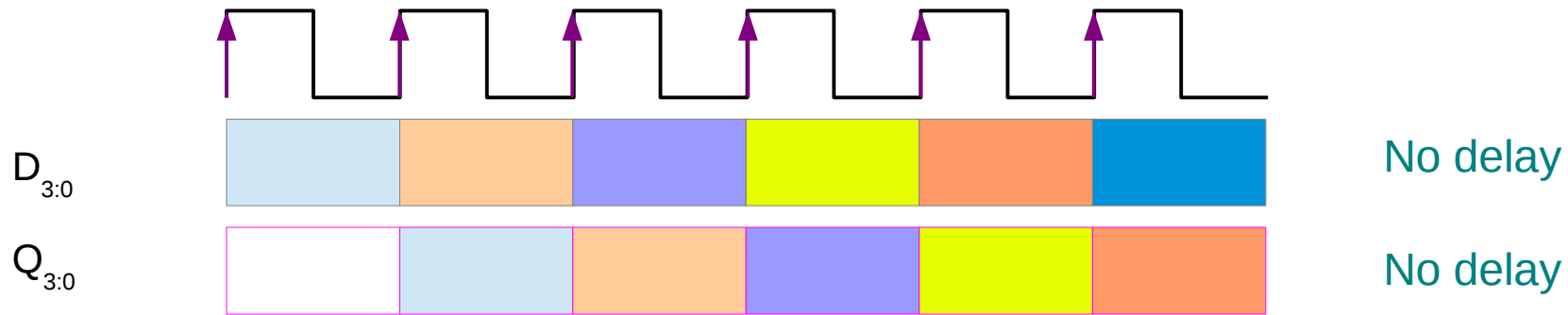
Synthesis of FSMs with Gated Clocks

Circuit Technology-dependent Techniques

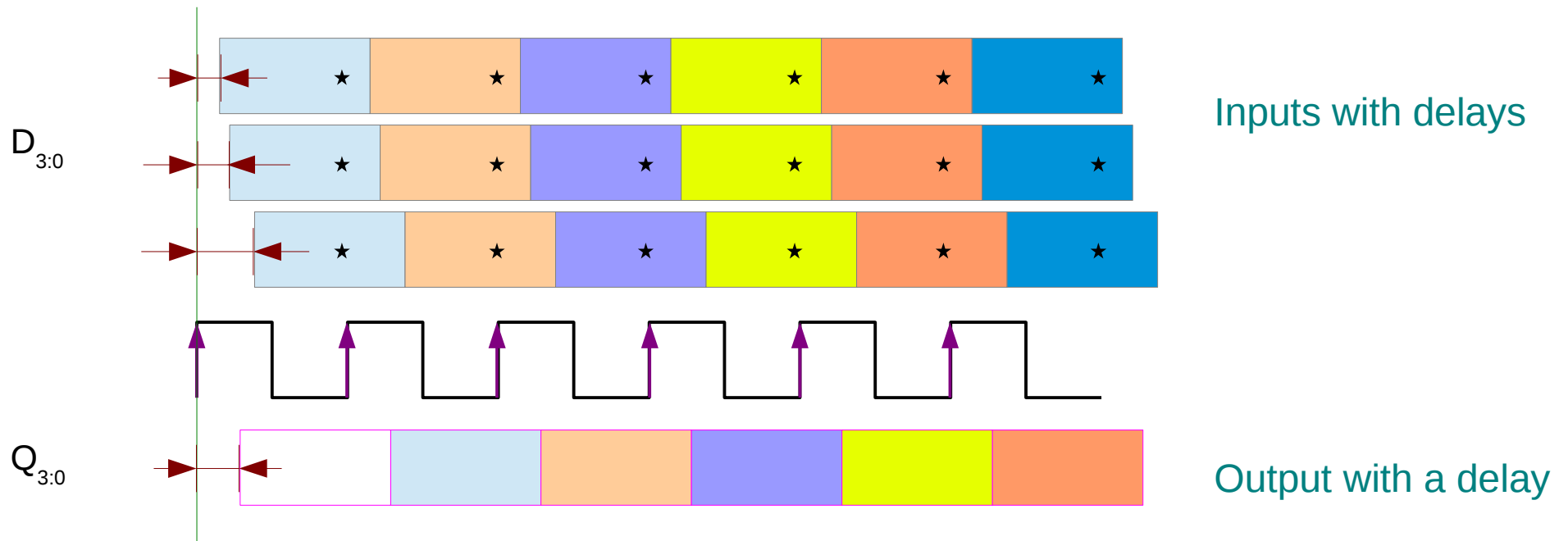
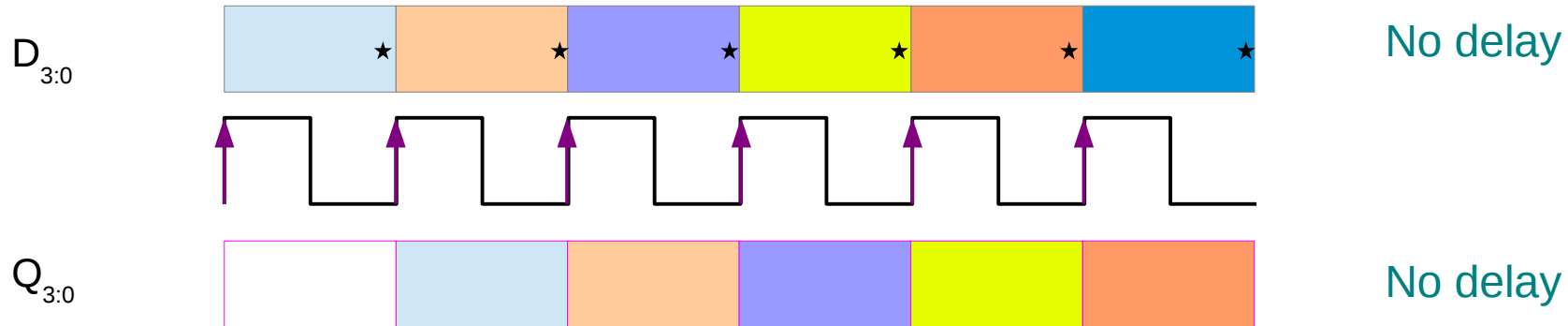
Path Balancing
Technology Decomposition
Technology Mapping

Pass Transistor Circuits

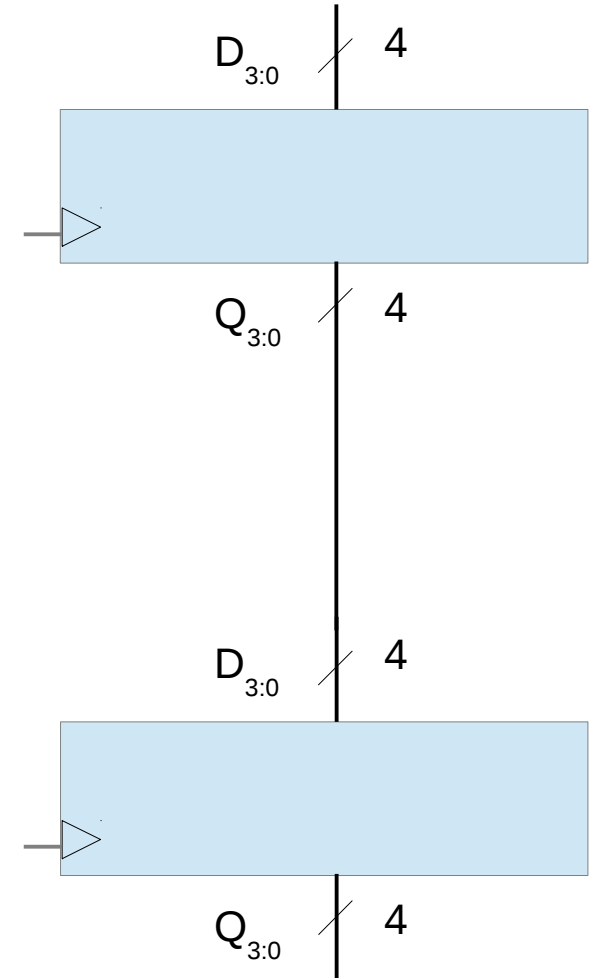
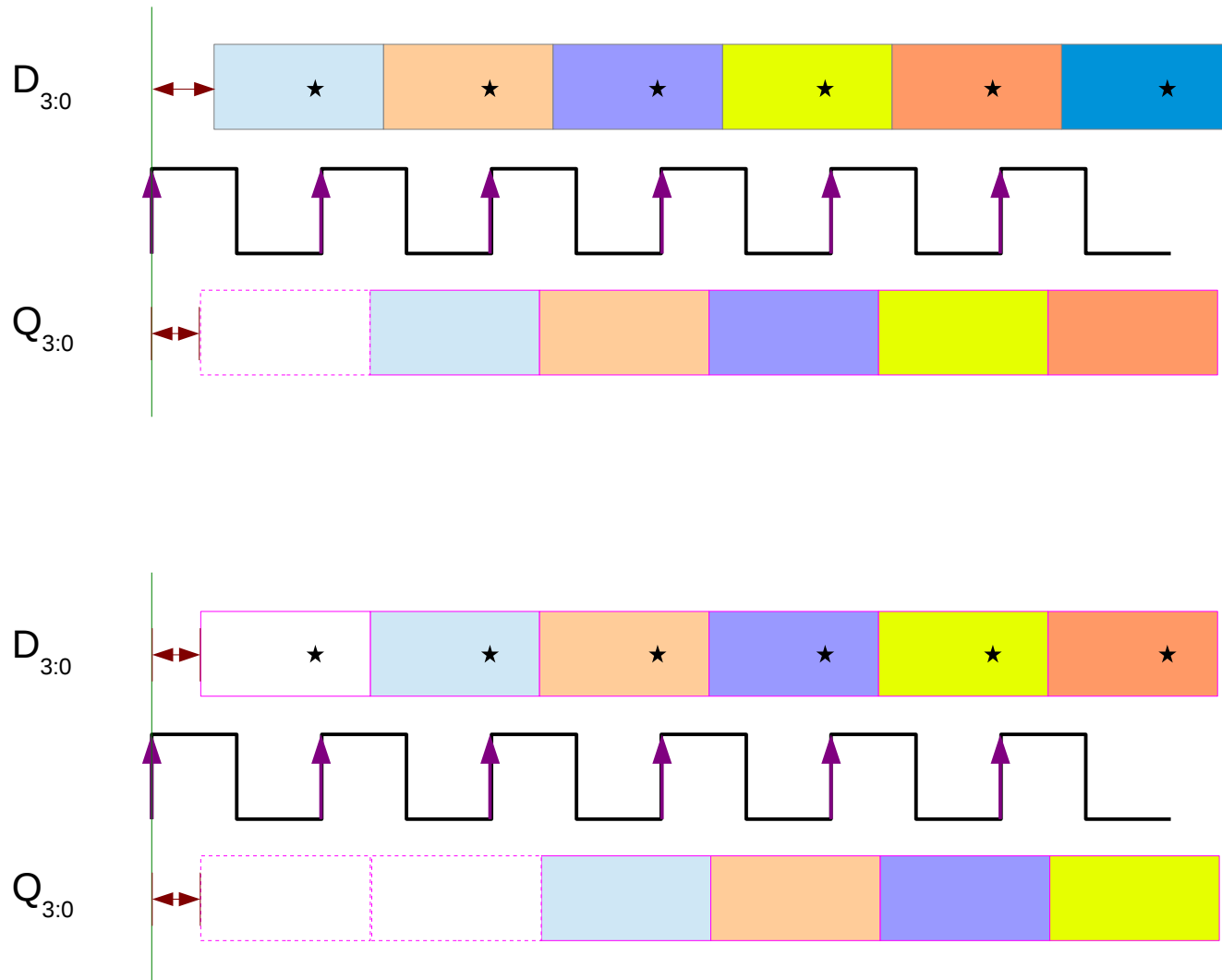
FF Timing (Ideal)



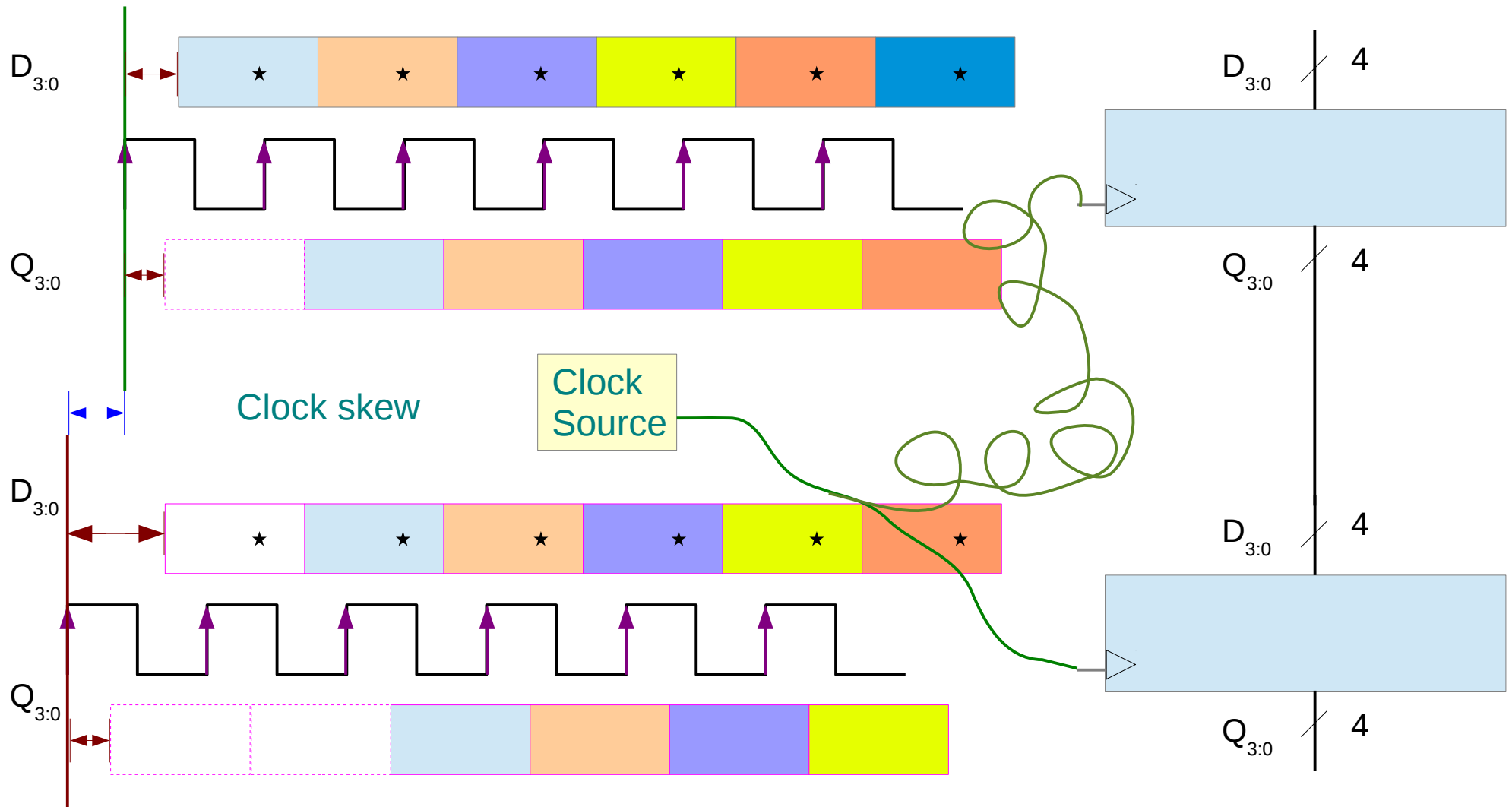
FF Timing (Delay)



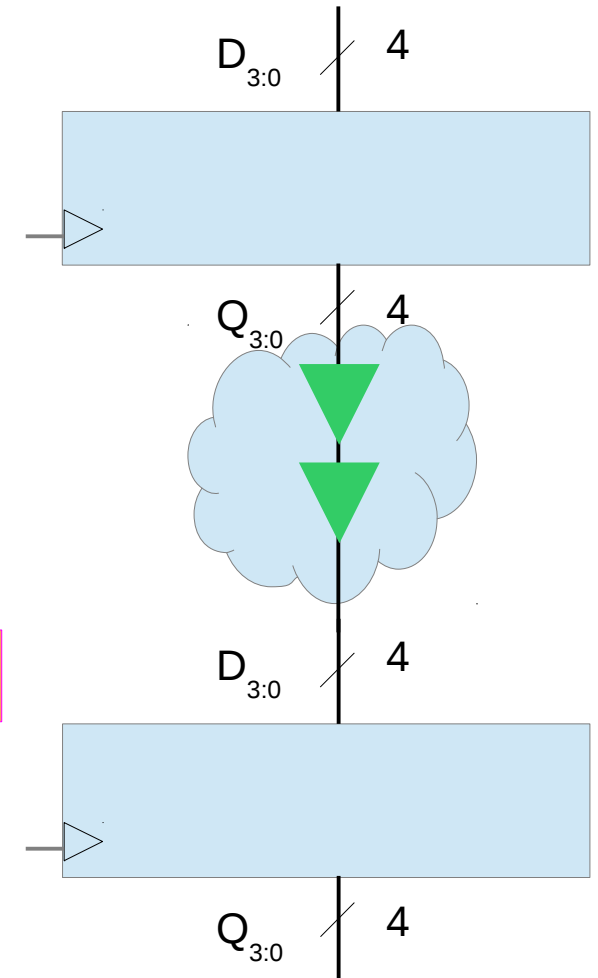
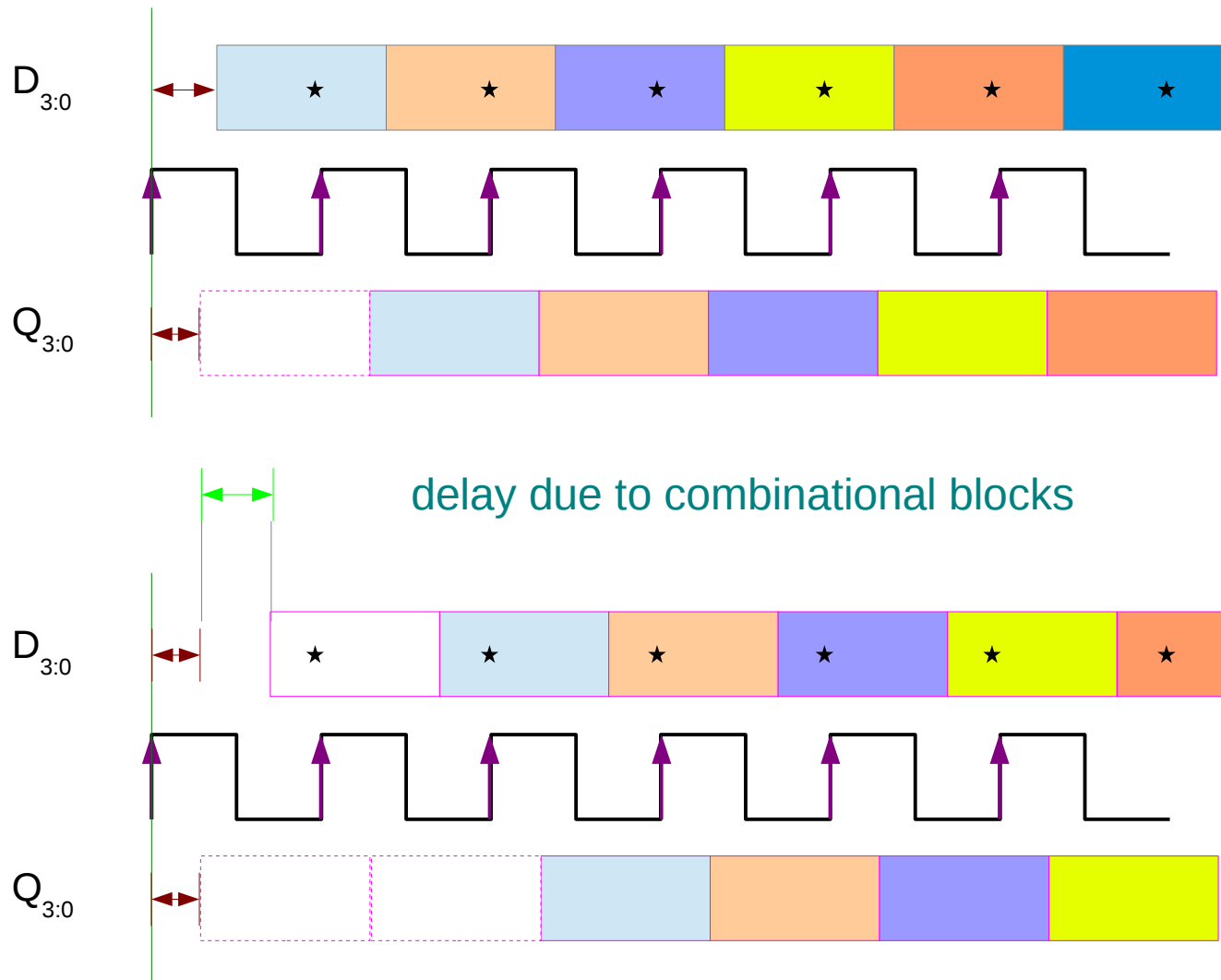
FF Timing (Delay)



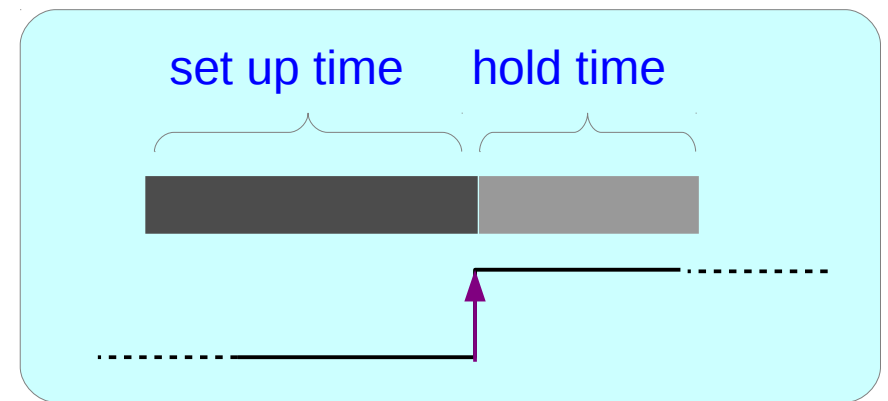
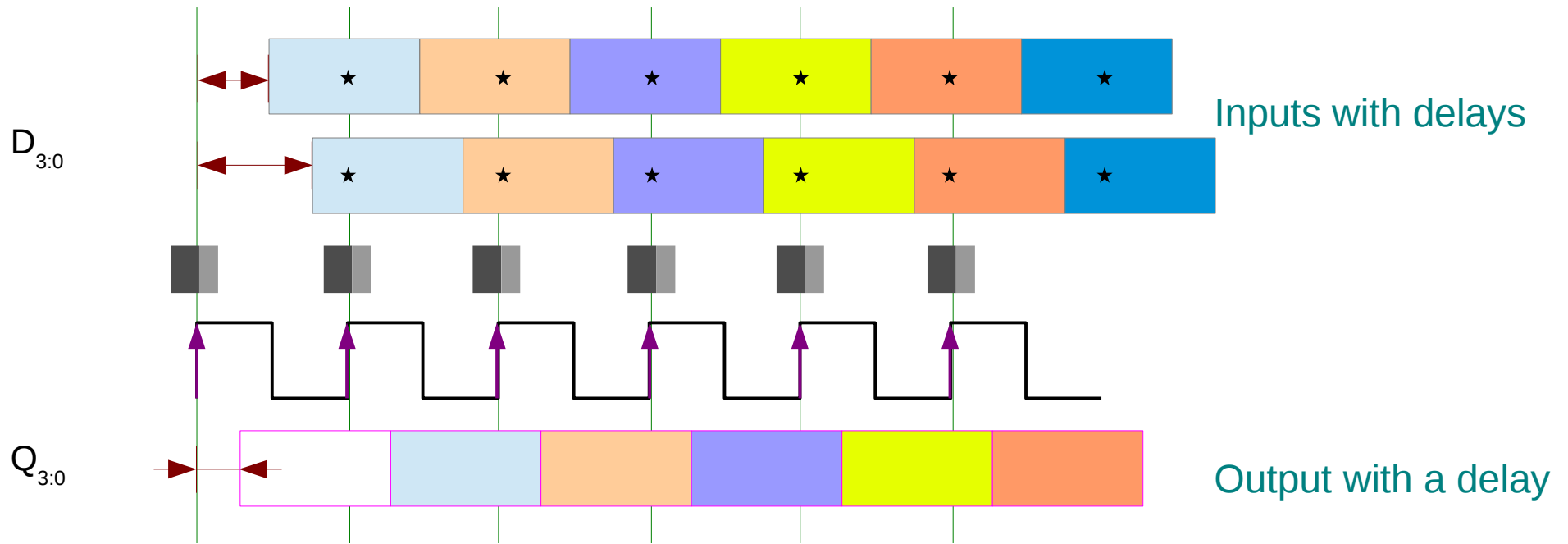
Clock Skew



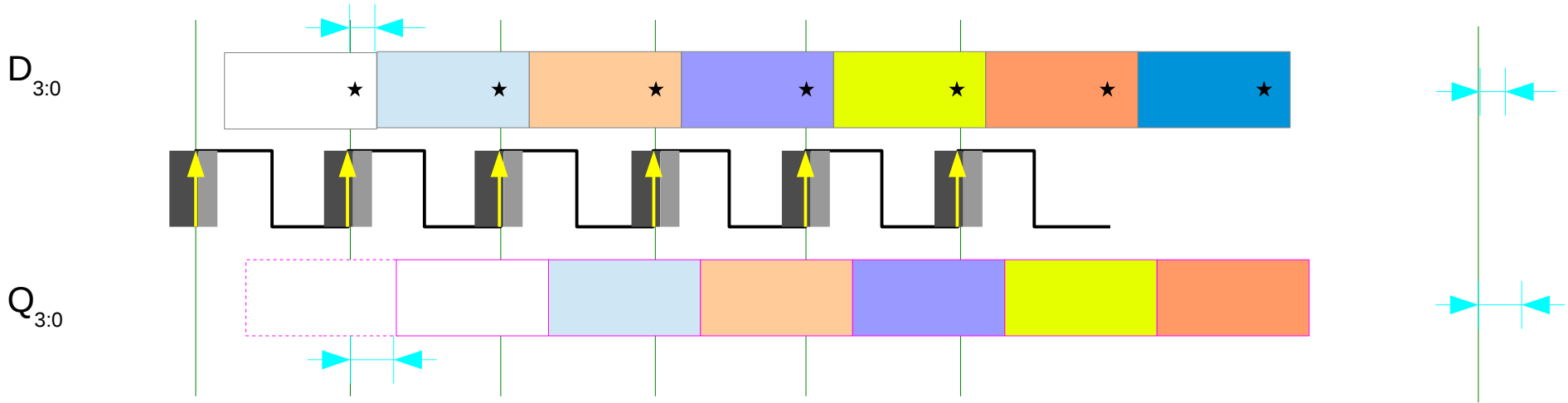
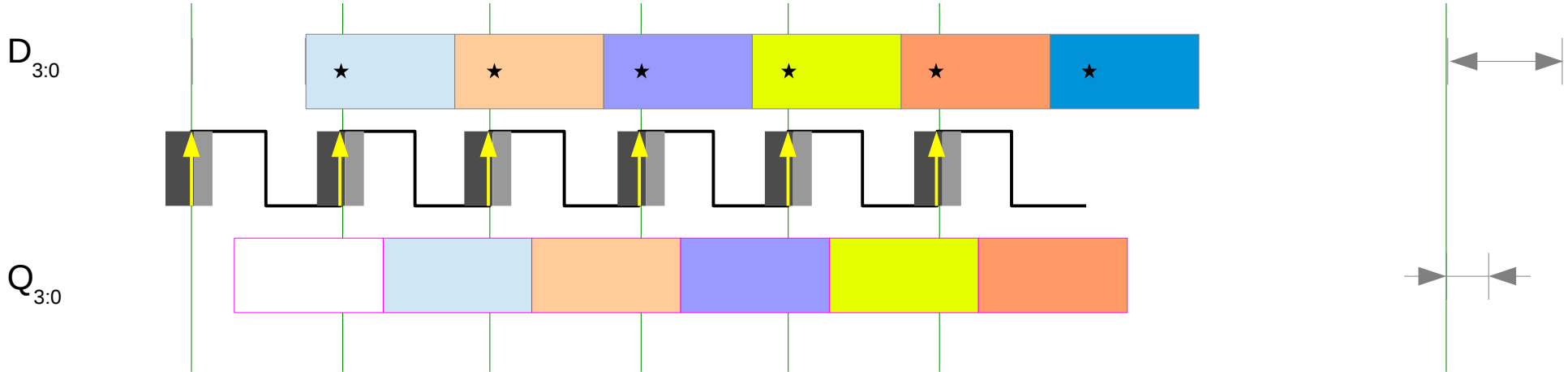
Path Delay



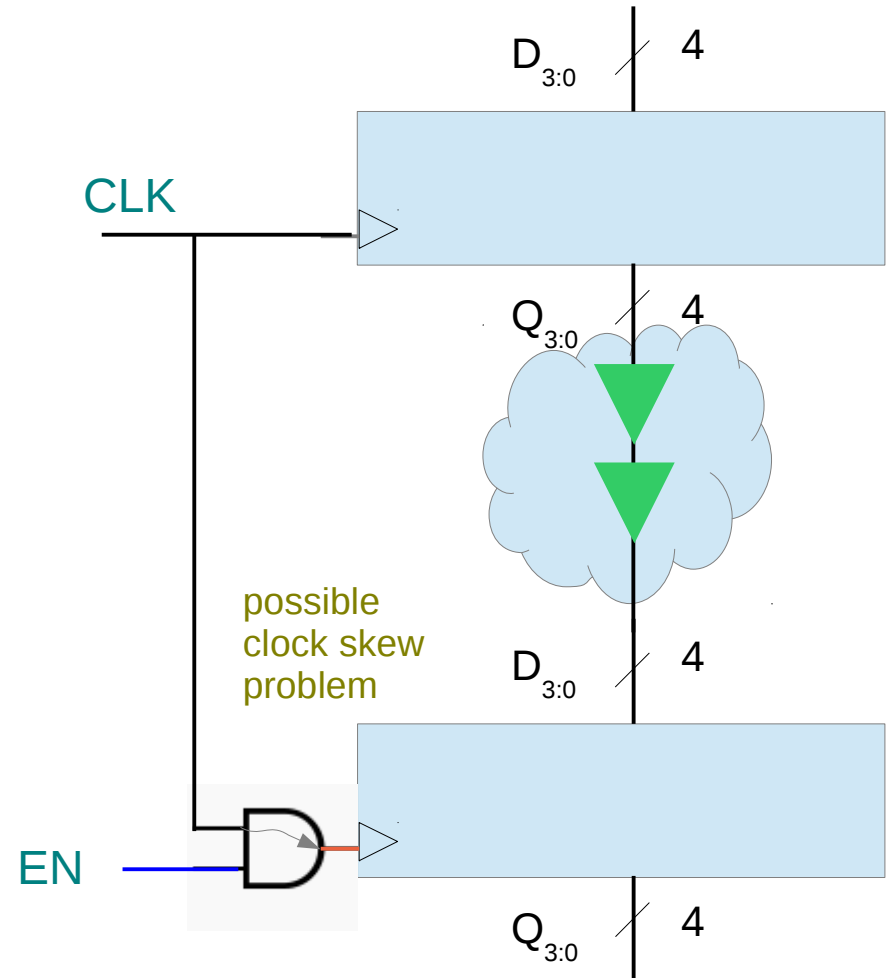
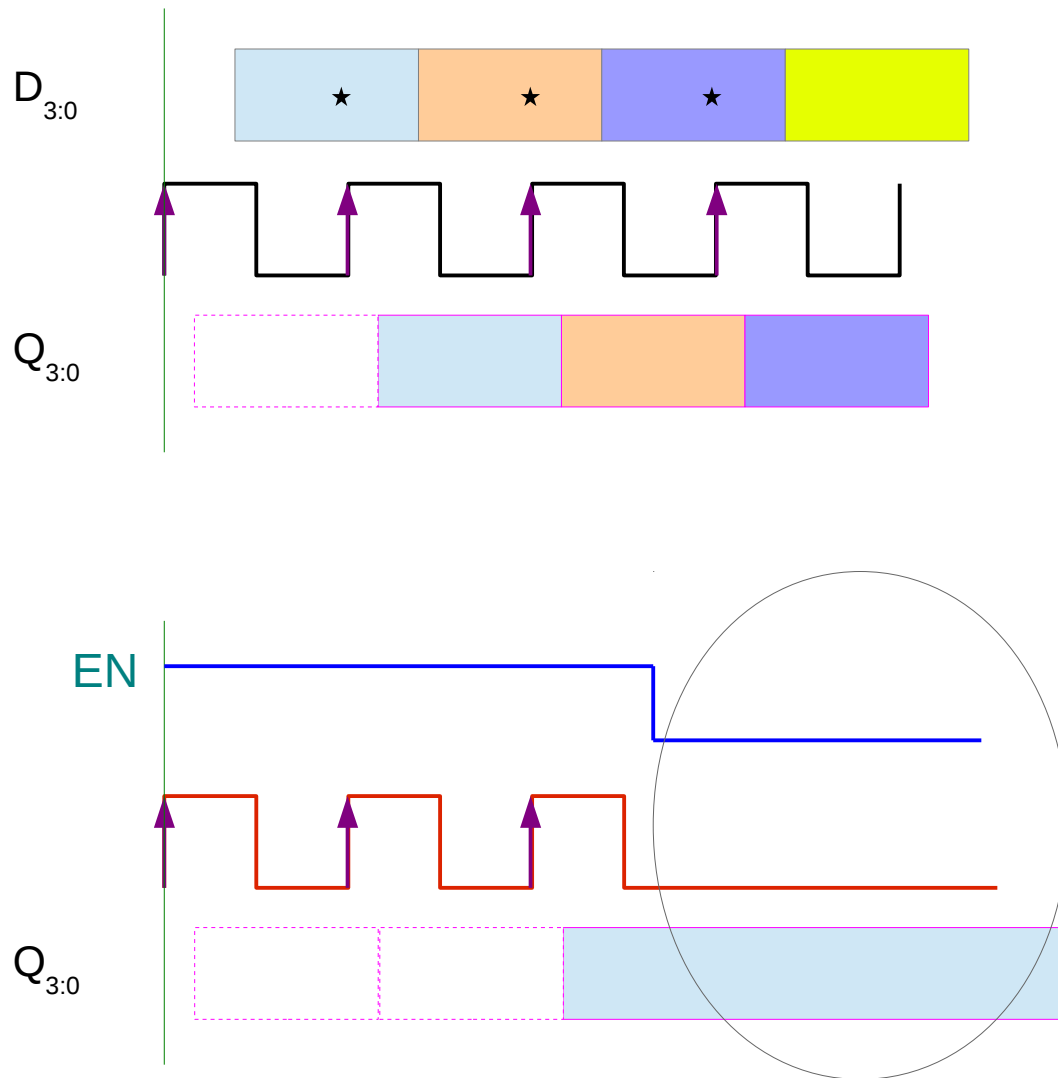
Setup & Hold Time (1)



Setup & Hold Time (2)



Clock Gating



References

- [1] <http://en.wikipedia.org/>
- [2] <http://www.allaboutcircuits.com/>
- [3] W. Wolf, "Modern VLSI Design : Systems on Silicon"
- [4] N. Weste, D. Harris, "CMOS VLSI Design: A Circuits and Systems Perspective"
- [5] J. P. Uyemura, "Introduction to VLSI Circuits and Systems"