

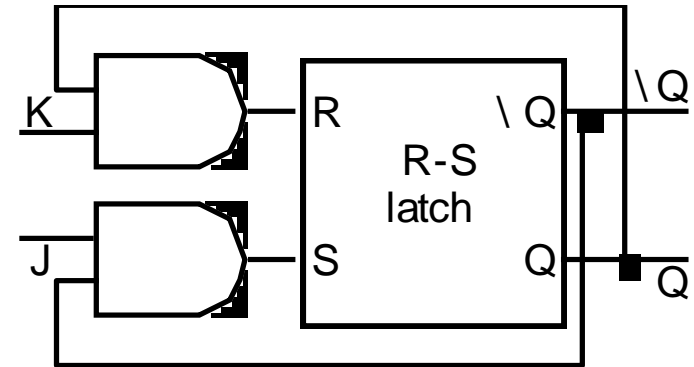
Sequential Switching Networks

J-K Flipflop

How to eliminate the forbidden state?

Idea: use output feedback to guarantee that R and S are never both one

J, K both one yields toggle



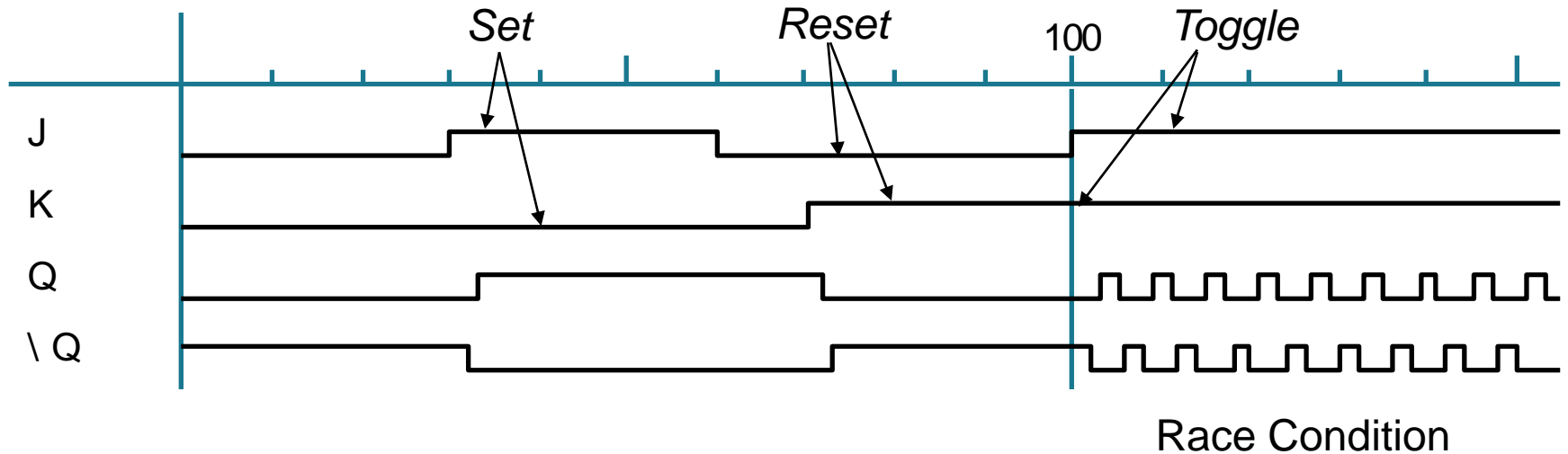
J	K	Q_t	Q_{t+1}
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

Characteristic Equation:

$$Q_+ = Q \bar{K} + \bar{Q} J$$

Sequential Switching Networks

J-K Latch: Race Condition



Toggle Correctness: Single State change per clocking event

Solution: Master/Slave Flipflop