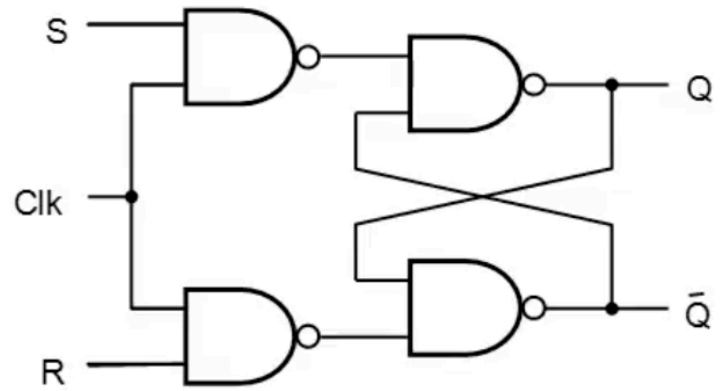
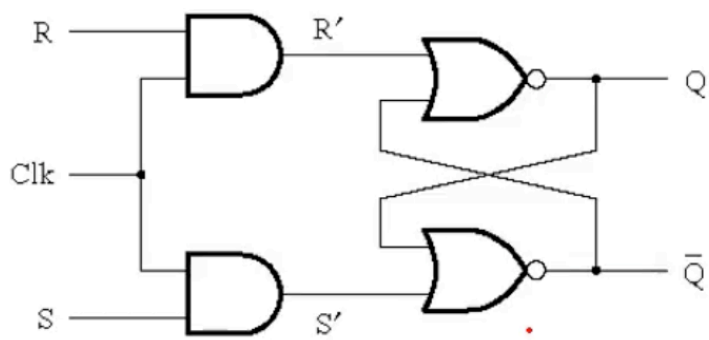
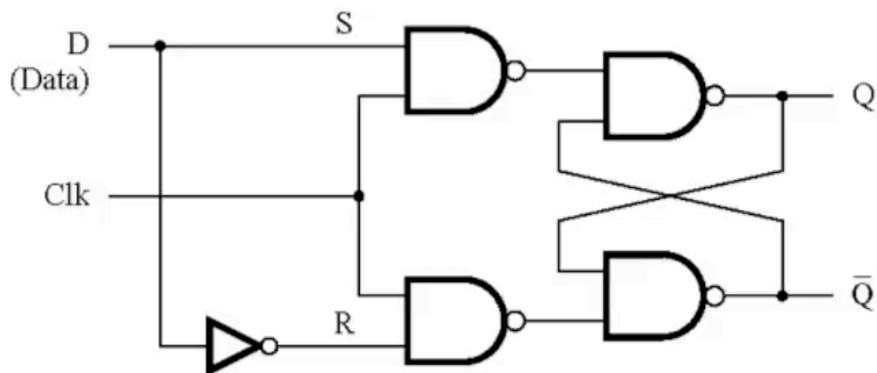


# Gated SR Latch

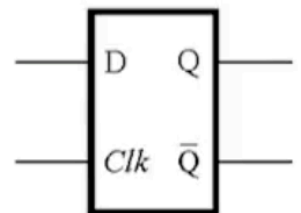


Clk	S	R	$Q(t+1)$
0	x	x	$Q(t)$ (no change)
1	0	0	$Q(t)$ (no change)
1	0	1	0
1	1	0	1
1	1	1	x

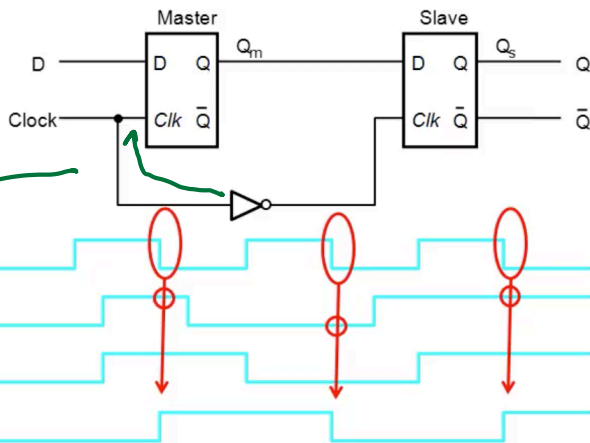
# Gated D Latch



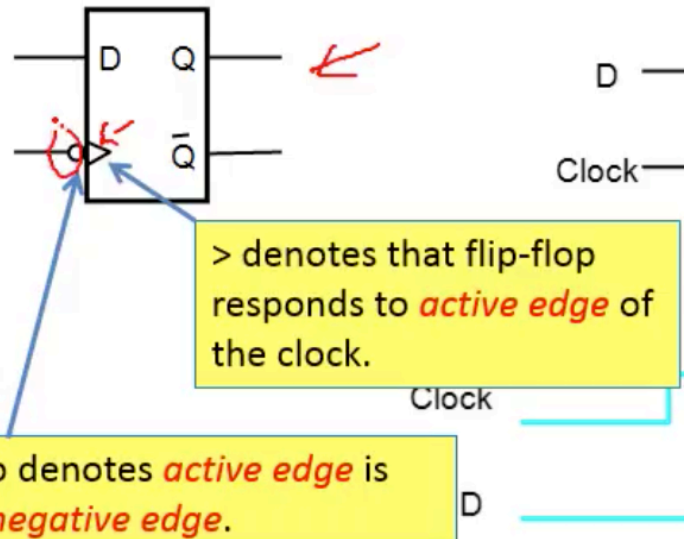
Clk	D	$Q(t+1)$
0	x	$Q(t)$
1	0	0
1	1	1



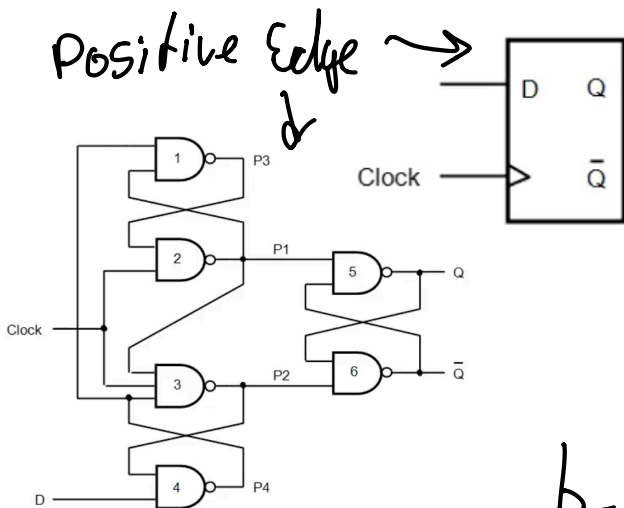
# Master-Slave D Flip-Flop with 2 gated D Latches



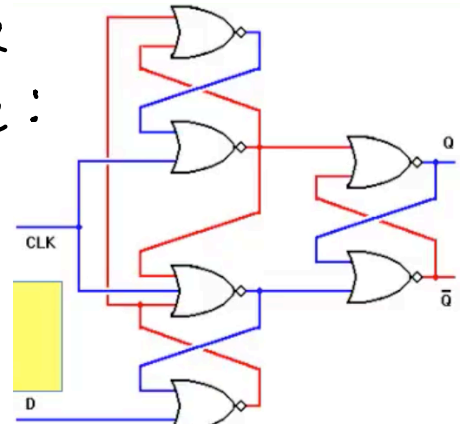
moving not gate turns negative edge into positive edge



Positive Edge



Negative Edge:



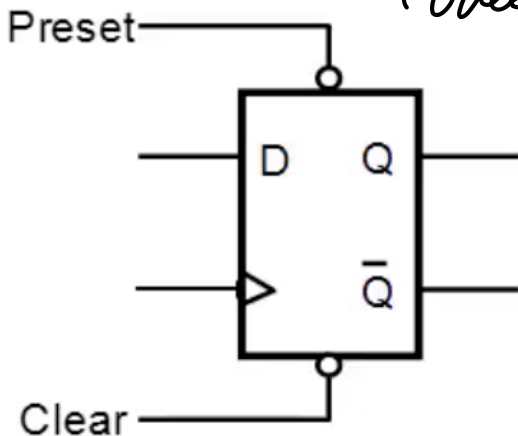
$\triangleright$  - activated by 'high' (positive edge triggered)  $\triangleright$  - activated by low (negative edge triggered)

Async:

Preset = 0 forces the flip-flop into the state  $Q = 1$

Clear = 0 forces the flip-flop into the state  $Q = 0$

(Overwrites value of D)



Sync with Clock

