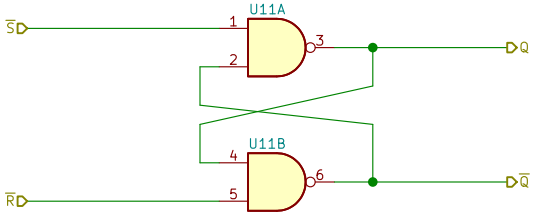
RS Latch



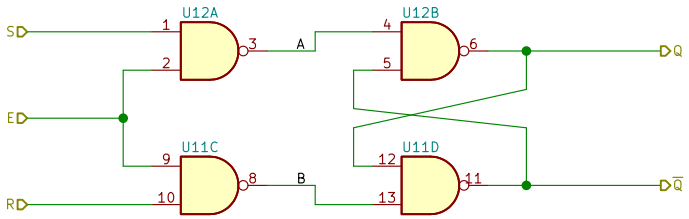
$\overline{R}$	$\overline{S}$	Q	$\overline{Q}$	
0	0	1	1	(illegal state!)
0	1	0	1	
1	0	1	0	
1	1	Q	$\overline{Q}$	(no change)

Sheet: /
File: 21-latches.sch

Title: RS Latch

Size: USLetter	Date: 2020-02-18	**Rev: 1.5**
KiCad E.D.A. kicad 5.1.5+dfsg1-2build2		Id: 1/4

Gated RS Latch



R	S	E	Q	$\overline{Q}$	
X	X	0	Q	$\overline{Q}$	(no change)
0	0	1	Q	$\overline{Q}$	(no change)
0	1	1	1	0	
1	0	1	0	1	
1	1	1	1	1	(illegal state!)

Similar to RS but Q can only change when E is 1

Sheet: /GatedRS/
File: GatedRS.sch

Title: Gated RS Latch

Size: USLetter	Date: 2020-02-18	**Rev: 1.6**
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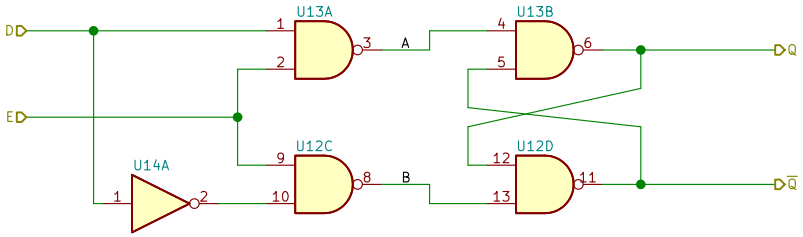
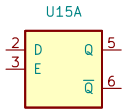
D Latch



D	E	Q	$\overline{Q}$	
X	0	Q	$\overline{Q}$	(no change)
1	1	1	0	
0	1	0	1	

Similar to a gated RS but sets Q to D when E is 1.
(Sometimes called a 'transparent latch' because
Q will track D as long as E is high.)



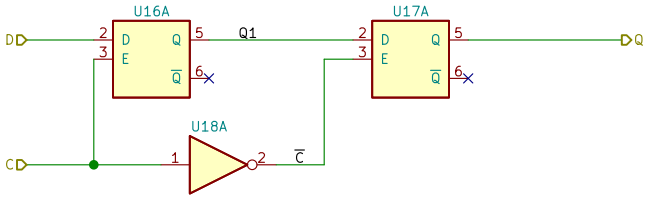
Symbol for a D Latch

Sheet: /DLatch/
File: DLatch.sch

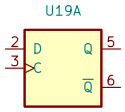
Title: D Latch

Size: USLetter	Date: 2020-02-18	**Rev: 1.5**
KiCad E.D.A. kicad 5.1.5+dfsg1-2build2		Id: 3/4

D Flip Flop (Edge Triggered)



Q can only change at the point in time
when C transitions from high to low.
We say "Q changes on the falling/trailing edge of C"



Symbol for a D Flip Flop

Sheet: /DFlipFlop/
File: DFlipFLop.sch

Title: D Flip Flop (Edge Triggered)

Size: USLetter	Date: 2020-02-18	**Rev: 1.5**
KiCad E.D.A. kicad 5.1.5+dfsg1-2build2		Id: 4/4