



Faculty of Engineering and Technology
Department of Electrical and Computer Engineering

ENCS 2110

EXP 5 Pre-Lab: Sequential Logic Circuits

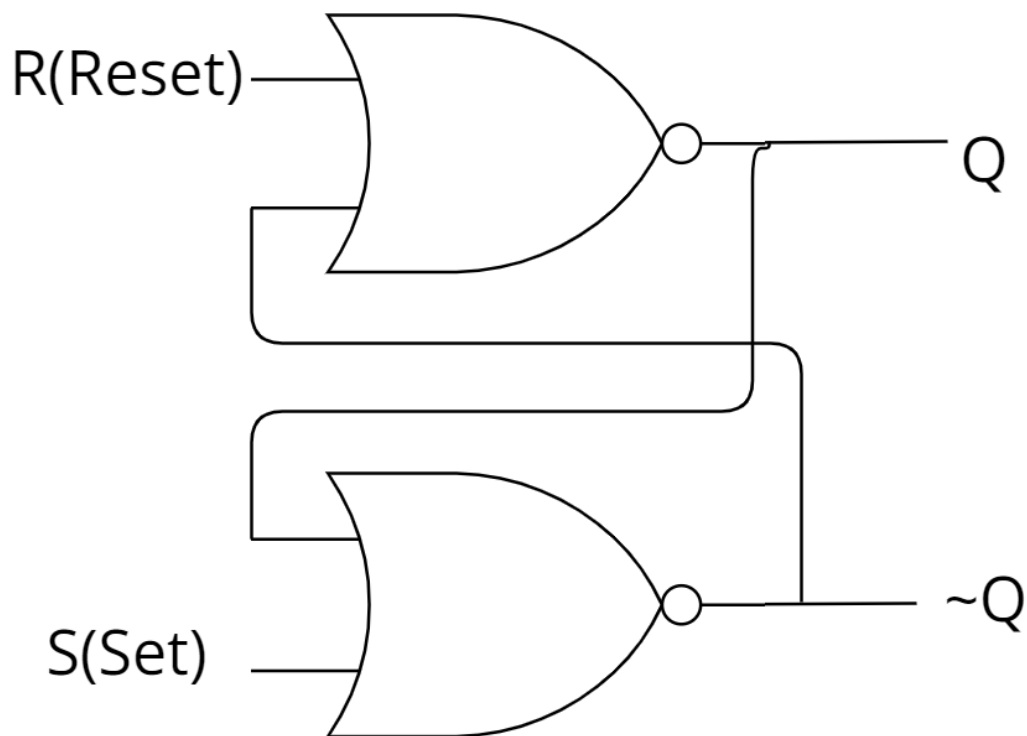
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- ✓ Design the Logic Diagram, function table of the SR latch using NOR gates, and explain how it works.



S	R	Q	$\sim Q$	State
1	0	1	0	Set State
0	0	1	0	
0	1	0	1	Reset State
0	0	0	1	
1	1	0	0	Undefined

SR latch with NOR gate Truth table.

how it works?

❖ Two inputs: S (Set) and R (Reset)

❖ Two outputs: Q and $\sim Q$

If $S = 1$ and $R = 0$ then **Set** ($Q = 1, \sim Q = 0$)

If $S = 0$ and $R = 1$ then **Reset** ($Q = 0, \sim Q = 1$)

When $S = R = 0$, Q and $\sim Q$ are **unchanged**

When $S = R = 1$, Q and $\sim Q$ are **undefined** (should never be used)