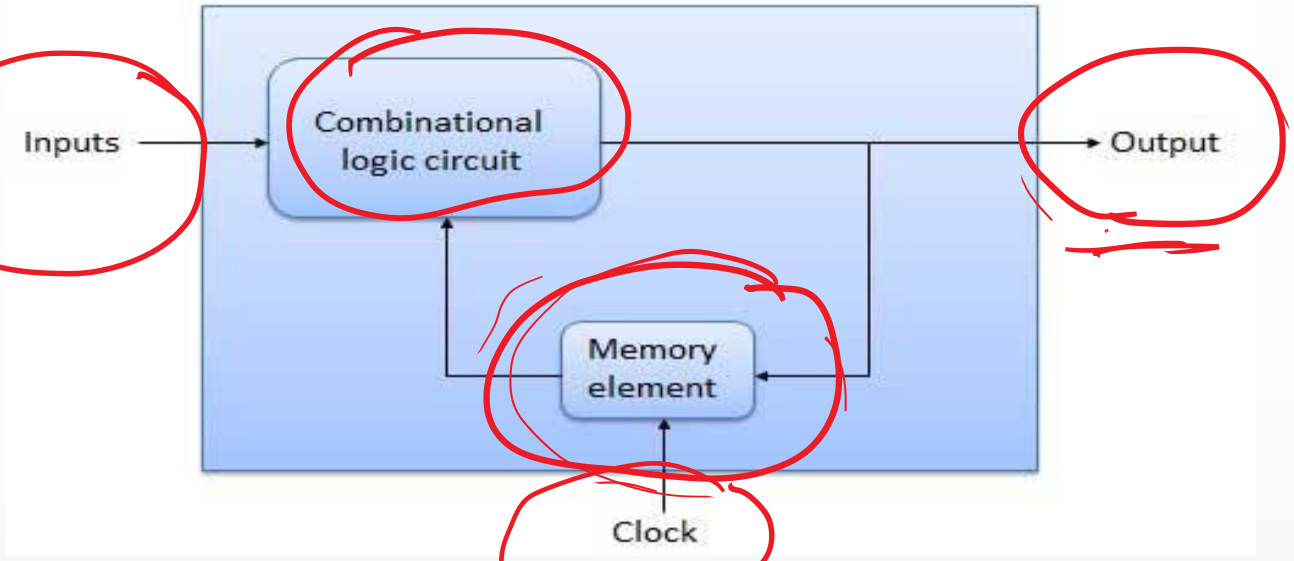
SEQUENTIAL CIRCUITS

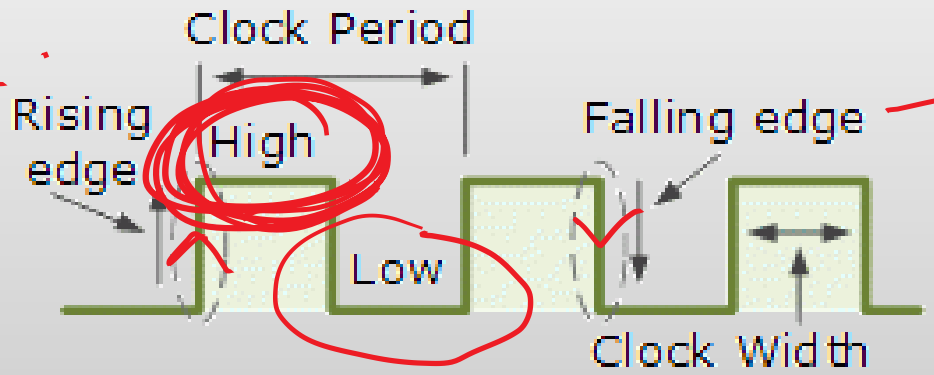
- NAND Latch
- NOR Latch
- SR, D, JK, T flip flop

Sequential circuits:

- Outputs are dependent on current inputs and previous outputs.

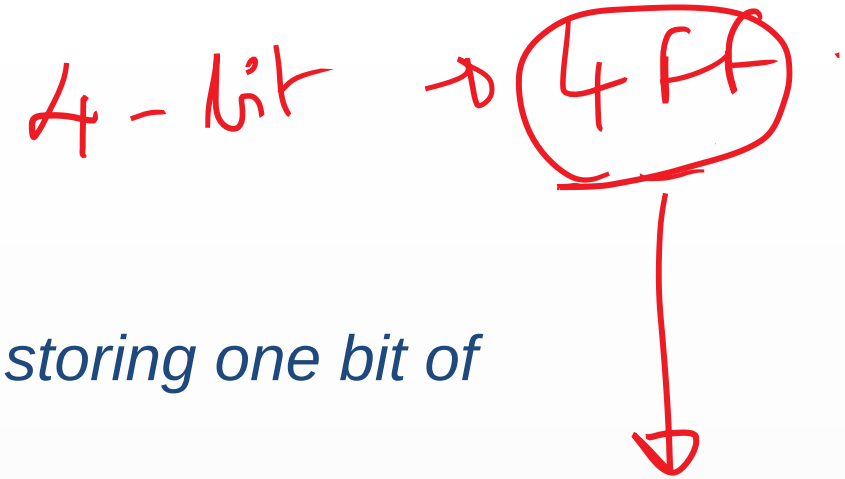


- Storage elements : Devices capable of storing binary information
- Clock Signal: Is a periodic rectangular pulse train or a square wave.

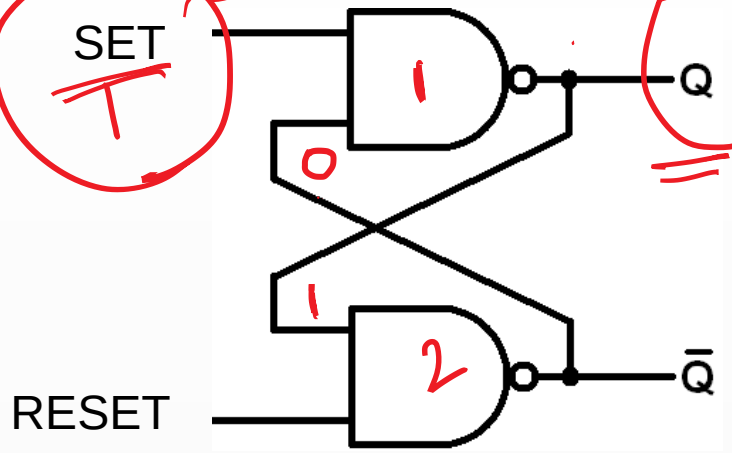


- Two types of sequential circuits:
  - *Asynchronous sequential circuits:* The output of the logic circuits can change state at any time when one or more of the inputs change.
  - *Synchronous sequential circuits:* The exact times at which any output can change states are determined by a signal called the clock.

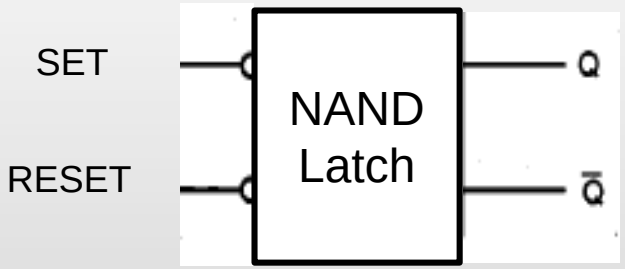
- Flip Flop:
  - *Is a binary storage element capable of storing one bit of information*
- Latch:
  - *Basic type of flip flop is referred as Latch*



NAND Latch (Active Low latch)

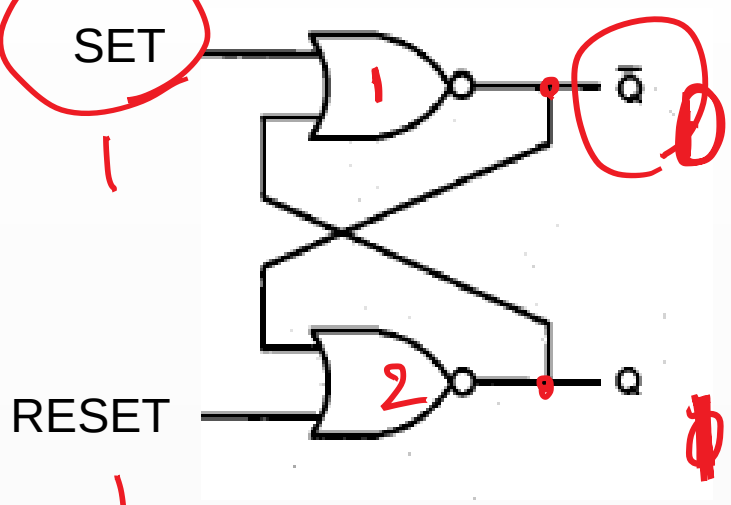


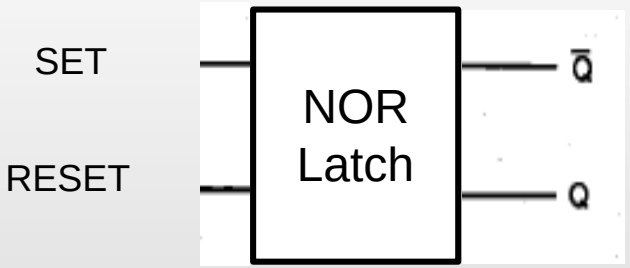
SET	RESET	Q(t)	Q(t+1)	Q'(t+1)
0	0	0	1	1
0	0	1	1	1
0	1	0	1	0
0	1	1	1	0
1	0	0	0	1
1	0	1	0	1
1	1	0	0	1
1	1	1	1	0



Function table		
SET	RESET	Output
0	0	Indeterminate
0	1	Set
1	0	Reset
1	1	No Change

NOR Latch (Active high Latch)





SET	RESET	Q(t)	Q(t+1)	Q'(t+1)
0	0	0	0	1
0	0	1	1	0
0	1	0	0	1
0	1	1	0	1
1	0	0	1	0
1	0	1	1	0
1	1	0	0	0
1	1	1	0	0

Function table		
SET	RESET	Output
0	0	No Change
0	1	Reset
1	0	Set
1	1	Indeterminate

invalid or undefined