Flip Flop Circuits

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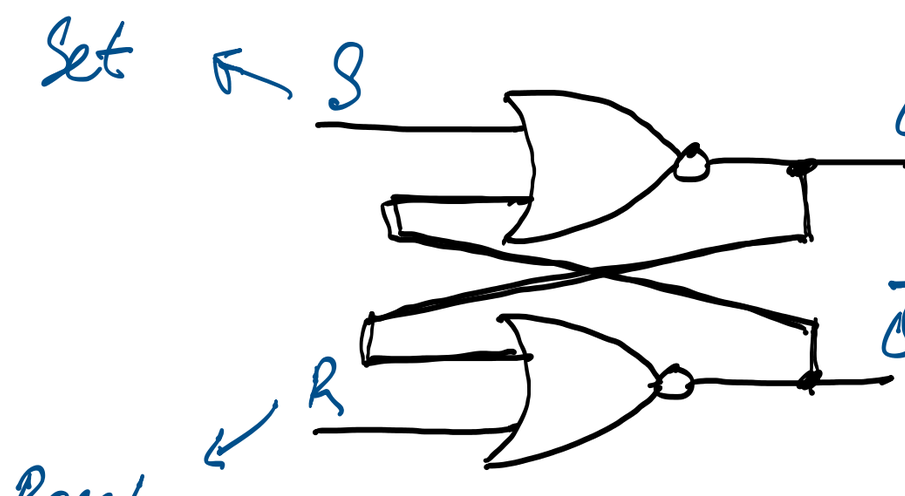
- Flip flop circuits are used to hold data in computer's memory
- These are sequential circuits. Means their behaviour depends over their output.
- Computer's cache memory (RAM inside microprocessor) is also made up of flip flops.
- Flip flops use either NOR or NAND gates.

NOR Logic:



SR Flip Flop

TRUTH TABLE

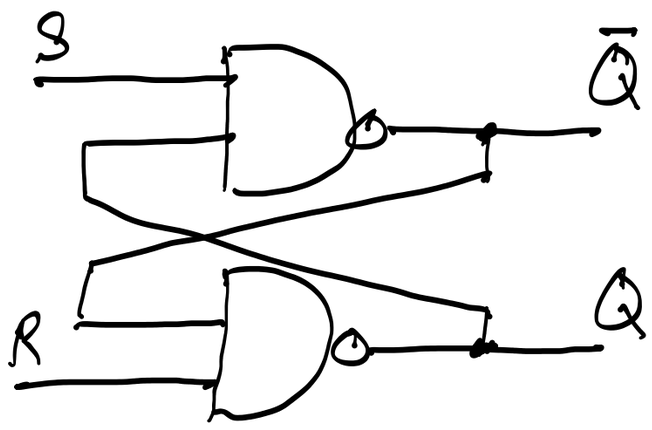
	S	R	Q	$\bar{Q}$	
One change at a time	1	0	1	0	Set
	0	0	1	0	Latch
	0	1	0	1	Reset
	0	0	0	1	Latch
	1	1	0	0	Race/Error.

- Single flipflop represents one bit of storage
- Only one input (S,R) out of two can be changed at a time.
- If there is an error occurs, both Q and Q' becomes same.

Keywords:

Set : Saving 1
Reset : Saving 0
Latch : Hold a bit
Race : An error occured

NAND LOGIC:



SR Flip Flop

TRUTH TABLE

	S	R	Q	$\bar{Q}$	
One change in input only.	0	1	1	0	Set
	1	1	1	0	Latch
	1	0	0	1	Reset
	1	1	0	1	Latch
	0	0	1	1	Race/Error.