LAB - Manual 10

Required Tools:

Bread board

wires.

Logic gates.

Battery / Power.

⇒ A flip flop is a electronic circuit units two stable states that can be used to state binary data.

⇒ To stored data be changed by applying varying inputs.

⇒ Flip flop maintain their ~~state~~ state indefinitely until an input pulse called trigger. is received.

⇒ When a trigger is received the flip flop outputs change state accordingly to defined rules and remain in these states until awaitkly trigger is received.

(Types of flip flop)

* RS flip flop
* clk flip flop
* D flip flop
* T flip flop

Clock

⇒ In synchronous device, the exact times at which any output change states are controlled by a signal commonly called clock.

⇒ clock signal are generally a rectangular a pulse train or square wave.

change state High to low is called negative transition

(Triggering Methods)

* Level triggering
* Edge triggering

1* level triggering:

circuit respond to change in their input (E) held at an active level which may be steady high or low.

SR - flip flop

Types of level triggering.

+ve level triggering.

⇒ output of a flip flop respond to its input changes only when clock inputs are high (1)

-ve level triggering:

⇒ output of a flip flop respond to the input changes only when clocks inputs are low (0) level.

(3) Edge triggering

⇒ Flip flop which changes their outputs only corresponding to +ve (rising) or -ve (falling) edge of the clock input.

Types of Edge triggering

-ve edge triggering

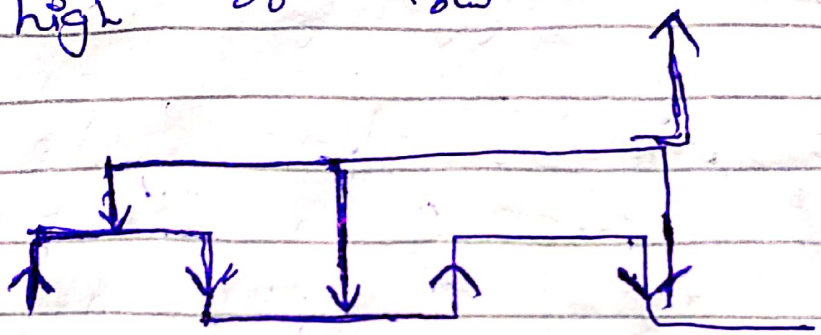
⇒ Flip flop which allows its output to change in response inputs only at the instants. corresponding to rising edge of clock.

(Positive spike) it output will not respond to change in inputs at any the instant of the time

-ve edge triggering :

Flip flop which responds only to the falling edge of clock (negative spikes) of the clock.

output change when clock input is high or low

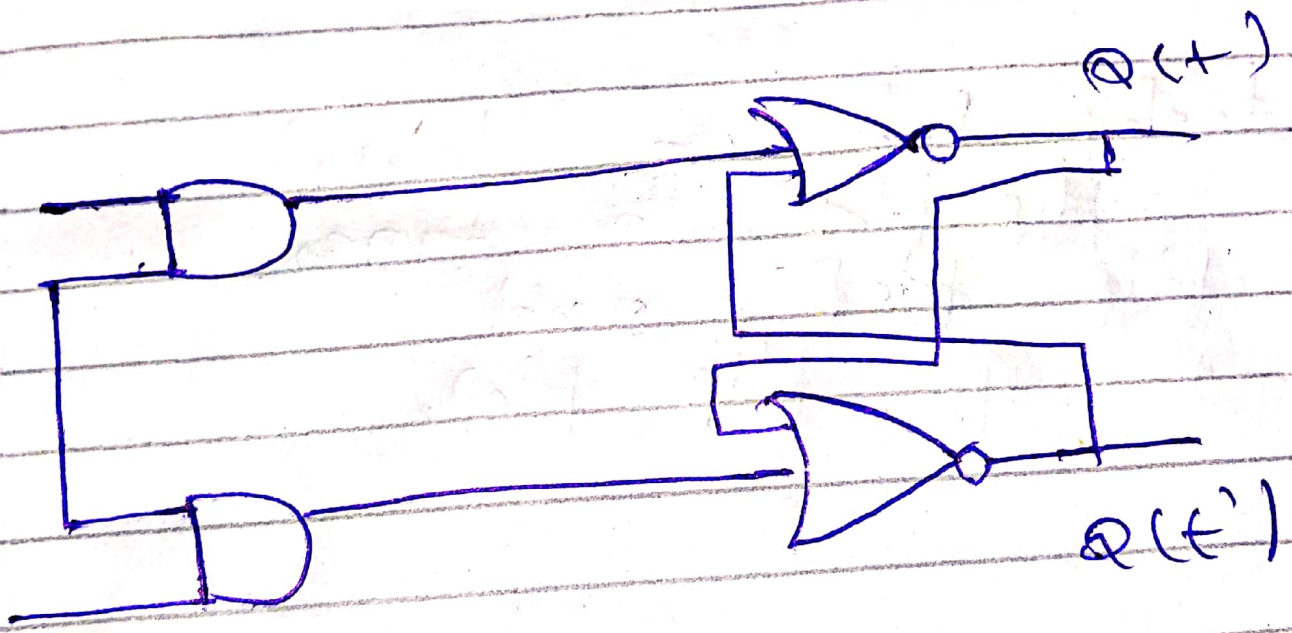


=> The edge triggered flip flop sample input at the +ve or -ve edge and changes its output according

(Difference b/w Latches and Flip flop)

* A latch and a flip flop is a gating or clocking mechanism.

* Latch is level-triggered and flip flop is edge triggered



Applications

* convertors
* frequency Dividers.
* Shift Registers.
* Storage Registers.
* Data storage

Conclusion

In today lab we learnt about flip flop its types of flip flop and working of flip flop.