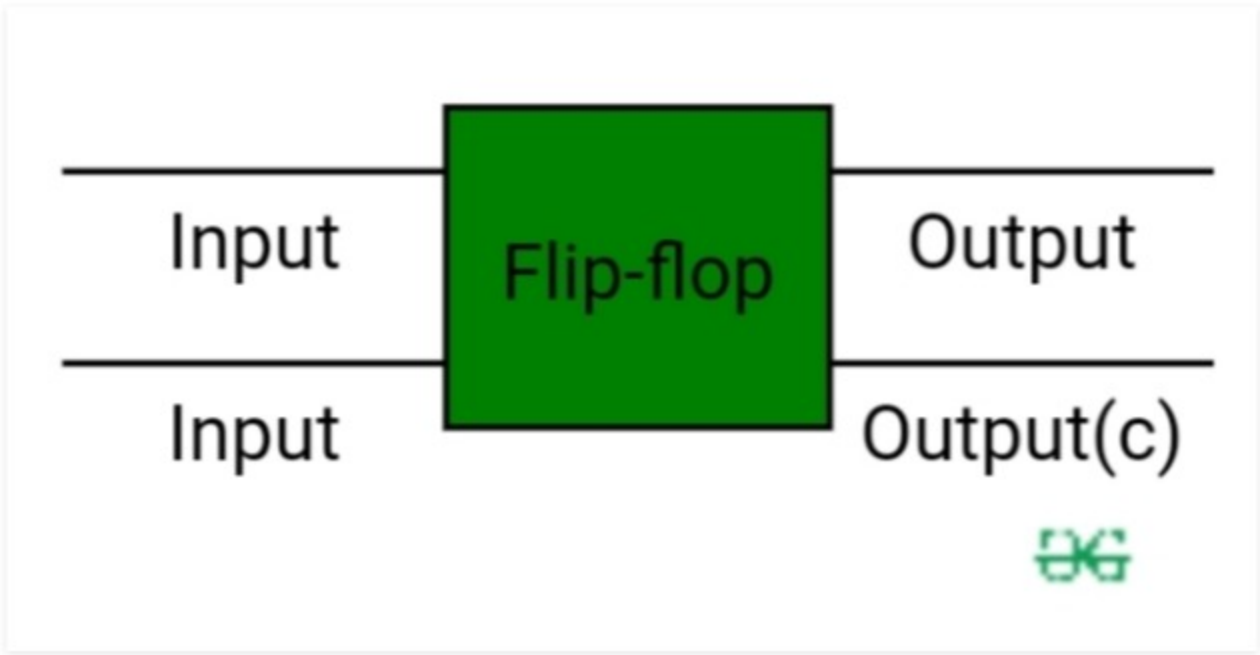


# Difference between Flip-flop and Latch

## Flip-Flop :

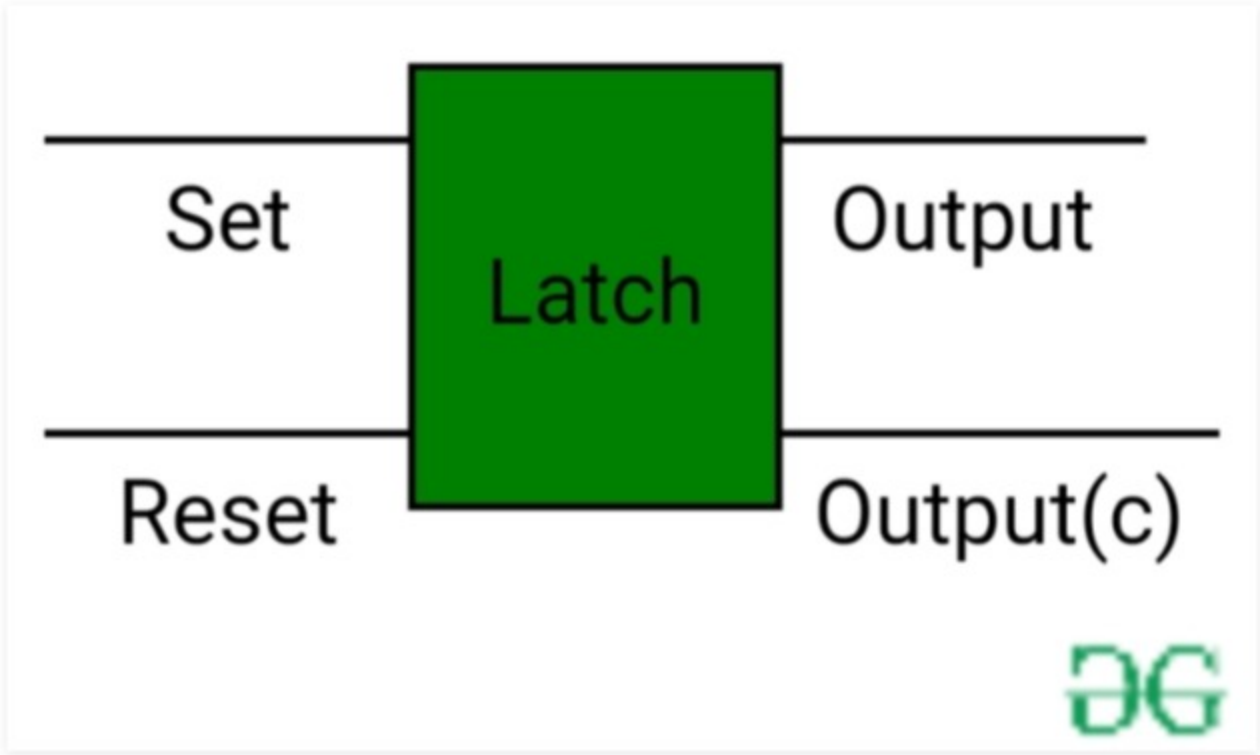
Flip-flop is a basic digital memory circuit, which stores one bit of information. Flip flops are the fundamental blocks of most sequential circuits. It is also known as a bistable multivibrator or a binary or one-bit memory. Flip-flops are used as memory elements in sequential circuit.

The output is obtained in a sequential circuit from combinational circuit or flip-flop or both. The state of flip-flop changes at active state of clock pulses and remains unaffected when the clock pulse is not active. In particular, clocked flip flops serve as memory elements in synchronous sequential Circuits and unclocked flip-flops (i.e., latches) serve as memory elements in asynchronous sequential circuits.



## Latch :

Latch is an electronic device, which changes its output immediately based on the applied input. It is used to store either 1 or 0 at any specified time. It consists of two inputs namely “SET” and RESET and two outputs, which are complement to each other.



## Difference between Flip-flop and Latch :

SNO	FLIP-FLOP	LATCH
1	Flip-flop is a bistable device i.e., it has two stable states that are represented as 0 and 1.	Latch is also a bistable device whose states are also represented as 0 and 1.
2	It checks the inputs but changes the output only at times defined by the clock signal or any other control signal.	It checks the inputs continuously and responds to the changes in inputs immediately.
3	It is a edge triggered device.	It is a level triggered device.
4	Gates like NOR, NOT, AND, NAND are building blocks of flip flops.	These are also made up of gates.
5	They are classified into asynchronous or synchronous flipflops.	There is no such classification in latches.
6	It forms the building blocks of many sequential circuits like counters.	These can be used for the designing of sequential circuits but are not generally preferred.
7	a, Flip-flop always have a clock signal	lathe doesn't have a clock signal
8	Flip-flop can be build from Latches	Latches can't build from gates
9	ex:D Flip-flop, JK Flip-flop	ex:SR Latch, D Latch