Bidirectional Counter

Theory:

In digital logic and computing, a counter is a device which stores (and sometimes displays) the number of times a particular event or process has occurred, often in relationship to a clock signal.

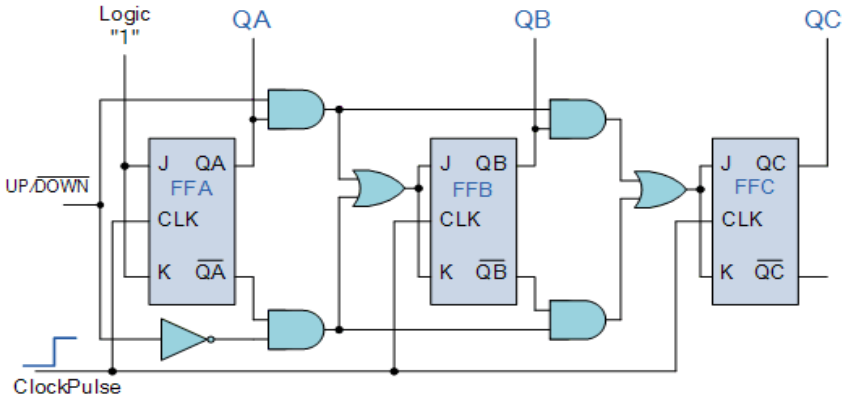
In practice, there are two types of counters:

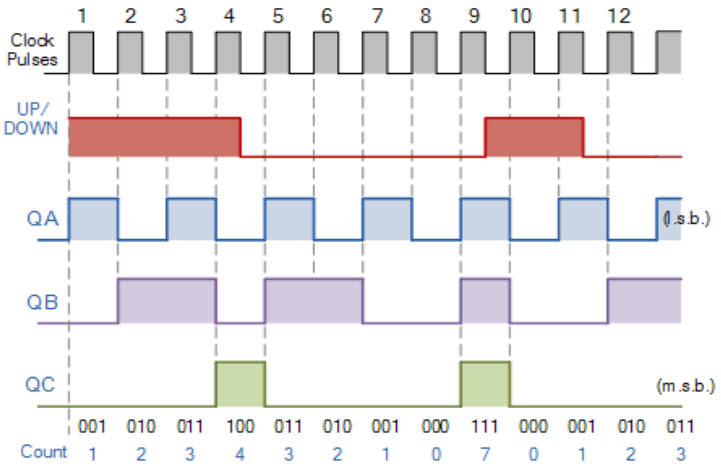
• Up counters, which increase (increment) in value

• Down counters, which decrease (decrement) in value

A counter that can change state in either direction, under the control of an up–down selector input, is known as an up–down counter. When the selector is in the up state, the counter increments its count and when the selector is in the down state, the counter decrements the count.

Both Synchronous and Asynchronous counters are capable of counting "Up" or counting "Down", but there is another more "Universal" type of counter that can count in both directions either Up or Down depending on the state of their input control pin and these are known as Bidirectional Counters. Bidirectional counters, also known as Up/Down counters, are capable of counting in either direction through any given count sequence and they can be reversed at any point within their count sequence by using an additional control input as shown below.





References:

http://www.electronics-tutorials.ws/counter/count_4.html