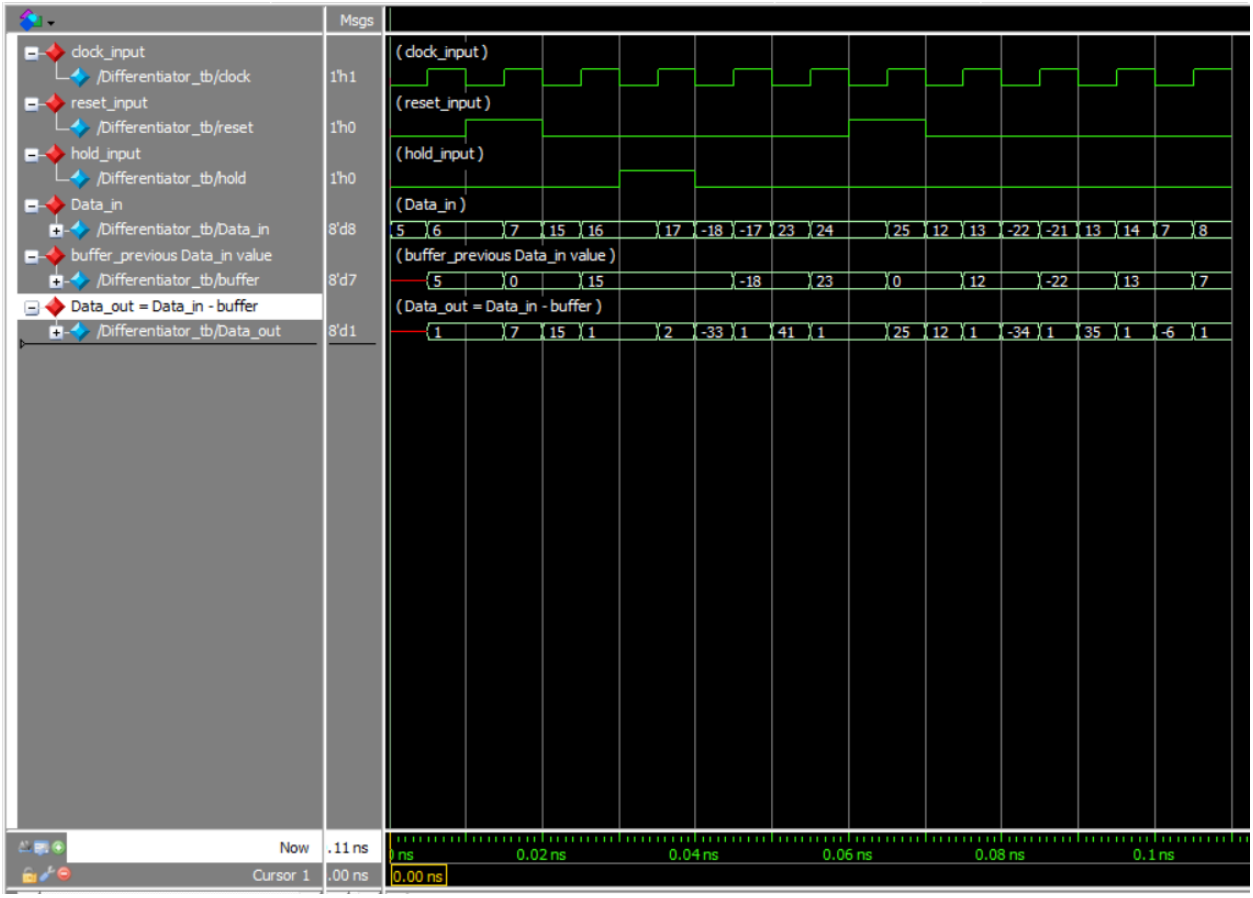
Output table

```
# @ Time =                    5  Data_in =   6  Buffer =   x  Data_out =   x
# @ Time =                   15  Data_in =   7  Buffer =   5  Data_out =   1
# @ Time =                   25  Data_in =  16  Buffer =   0  Data_out =  15
# @ Time =                   35  Data_in =  17  Buffer =  15  Data_out =   1
# @ Time =                   45  Data_in = 239  Buffer =  15  Data_out = 223
# @ Time =                   55  Data_in =  24  Buffer = 238  Data_out =  41
# @ Time =                   65  Data_in =  25  Buffer =  23  Data_out =   1
# @ Time =                   75  Data_in =  13  Buffer =   0  Data_out =  12
# @ Time =                   85  Data_in = 235  Buffer =  12  Data_out = 222
# @ Time =                   95  Data_in =  14  Buffer = 234  Data_out =  35
# @ Time =                  105  Data_in =   8  Buffer =  13  Data_out = 250
```

Note that some of the Data_in values and buffer values are missing. Below is the Bitwave show all Data_in values and buffer values. The table above is a little misleading because of the equation below

- buffer = Previous Data_in
- Data_out = Data_in – previous Data_in

Bitwave



Summary:

@ high reset the following will occur

- buffer goes to zero
- Data_in will keep its value since it is an external input but the buffer will remain zero
- Data_out will still be [Data_in - buffer] but since buffer is zero therefore Data_out will be Data_in
- This Means that no filtering is occurring at high reset

@ low rest and hold = 1 the following will happen

- buffer Keeps it current value
- Data_in is not transferred to buffer
- Data_out is still equal to [Data_in - buffer] but
- therefore @ hold = 1 the buffer is not updated

@ hold = 0 and reset = 0 the following will occur

- buffer will store the previous Data_in value
- Data_out will be (Data_in - buffer)
- therefore, the buffer is update when hold is low and reset is low