Question: 06
DATE: October 6, 2017
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1 Background

Repeat (7) with with blocking statements converted to non-blocking statements. Discuss your observation.

2 Implementation

The provided code was directly used to implement the module in Part 8, and can be found in the `scripts' directory. **$display** statements were added after each assignment statements and all the blocking statements were replaced with non-blocking statements in the module.

A sample of the waveform generated is provided:

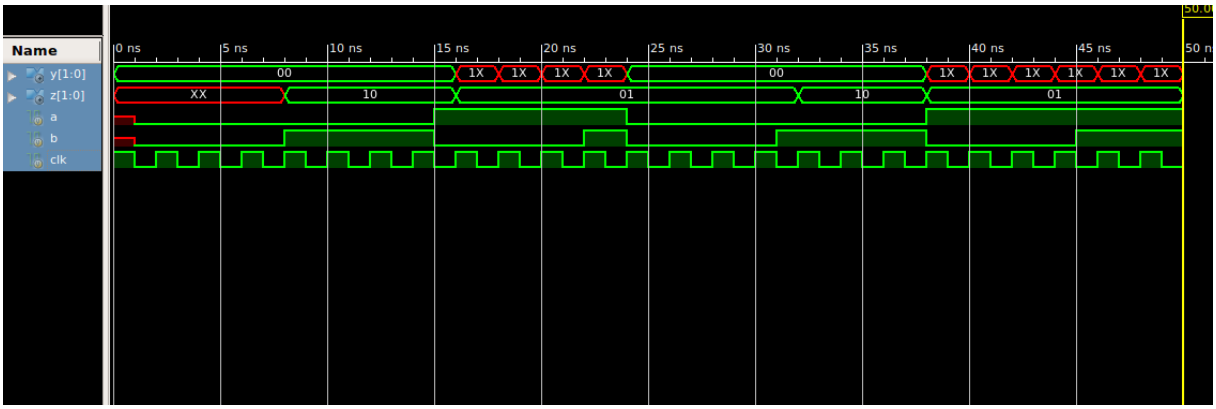

Figure 1: Waveform Generated from Part 8 Test Bench

The following output is dumped from the test bench as well, demonstrating the swapping of the bits:

time	a	b	y	z
2000	0	0	00	xx
3000	0	0	00	xx
4000	0	0	00	xx
6000	0	0	00	xx
8000	0	1	00	xx
8000	0	1	00	xx
8000	0	1	00	xx
8000	0	1	00	xx
10000	0	1	00	10
10000	0	1	00	10
10000	0	1	00	10
10000	0	1	00	10
10000	0	1	00	10

12000	0	1	00	10
12000	0	1	00	10
12000	0	1	00	10
12000	0	1	00	10
14000	0	1	00	10
14000	0	1	00	10
14000	0	1	00	10
14000	0	1	00	10
16000	1	0	00	10
16000	1	0	00	10
16000	1	0	00	10
16000	1	0	00	10
17000	1	0	1x	01
18000	1	0	00	01
18000	1	0	00	01
18000	1	0	00	01
18000	1	0	00	01
20000	1	0	00	01
20000	1	0	00	01
20000	1	0	00	01
20000	1	0	00	01
22000	1	1	00	01
22000	1	1	00	01
22000	1	1	00	01
22000	1	1	00	01
24000	0	0	00	01
24000	0	0	00	01
26000	0	0	00	01
26000	0	0	00	01
28000	0	0	00	01
30000	0	0	00	01
32000	0	1	00	01
32000	0	1	00	01
32000	0	1	00	01
32000	0	1	00	01
33000	0	1	00	10
34000	0	1	00	10
34000	0	1	00	10
34000	0	1	00	10
34000	0	1	00	10
36000	0	1	00	10
36000	0	1	00	10
36000	0	1	00	10
36000	0	1	00	10
38000	1	0	00	10
38000	1	0	00	10
38000	1	0	00	10
38000	1	0	00	10
40000	1	0	00	01
40000	1	0	00	01
40000	1	0	00	01
40000	1	0	00	01
40000	1	0	1x	01
42000	1	0	00	01

42000	1	0	00	01
42000	1	0	00	01
42000	1	0	00	01
44000	1	0	00	01
44000	1	0	00	01
44000	1	0	00	01
44000	1	0	00	01
46000	1	1	00	01
46000	1	1	00	01
46000	1	1	00	01
46000	1	1	00	01
47000	1	1	1x	01
48000	1	1	00	01
48000	1	1	00	01
48000	1	1	00	01
48000	1	1	00	01

3 Observations

The addition of **$display** obviously generates a greater amount of output, where it outputs when it notices change in any variables.