010 Detector

3 I/O ports

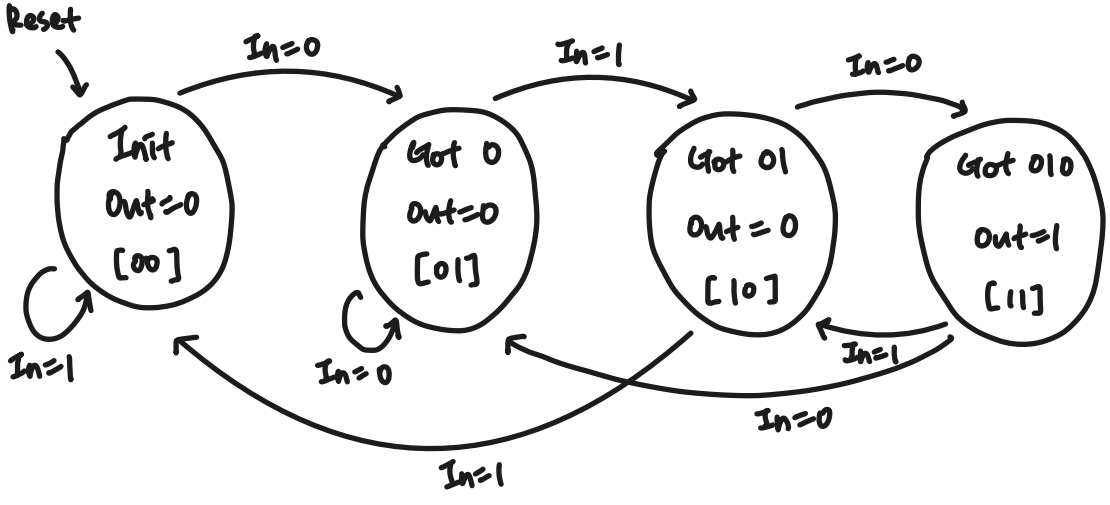
- 1 bit input In
- 1 bit input Reset
- 1 bit output Out

Pattern Detector

Current State	Next State In=0	Next State In=1	Out
Init	Got 0	Init	0
Got 0	Got 0	Got 01	0
Got 01	Got 010	Init	0
Got 010	Got 0	Got 01	1

Pattern Detector (binary)

($q_1 q_0$) Current State	($q_1' q_0'$) Next State		Output
	In = 0	In = 1	
00	01	00	0
01	01	10	0
10	11	00	1
11	01	10	0



Truth Table for next states

→ next state combinational logic

S_1	S_0	In	S_1'	S_0'
0	0	0	0	1
0	0	1	0	0
0	1	0	0	1
0	1	1	1	0
1	0	0	1	1
1	0	1	0	0
1	1	0	0	1
1	1	1	1	0

Truth table for next states

→ output combinational logic

S_1	S_0	output
0	0	0
0	1	0
1	0	0
1	1	1