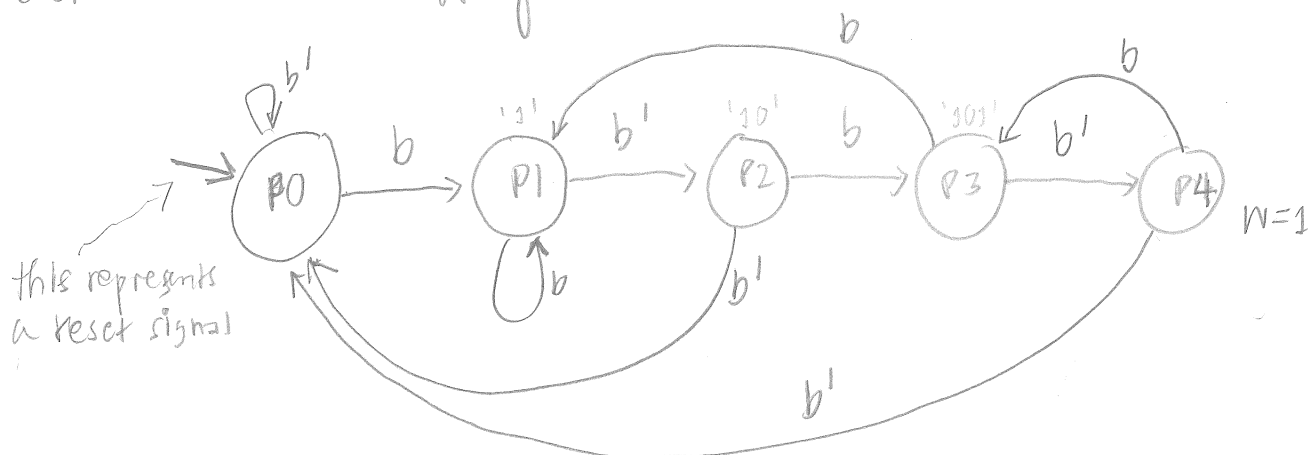


detect 1010 (overlapping allowed)



There are 5 states: use 3 bits to encode the states

let p0 be 000

p1 001

p2 010

p3 011

p4 100

s2	s1	s0	b	W	n2	n1	n0
0	0	0	0		0	0	0
0	0	0	1		0	0	1
0	0	1	0		0	1	0
0	0	1	1		0	0	1
0	1	0	0		0	0	0
0	1	0	1		0	1	1
0	1	1	0		1	0	0
0	1	1	1		0	0	1
1	0	0	0	1	0	0	0
1	0	0	1	1	0	1	1
1	0	1	0		0	0	0
1	0	1	1		0	0	0
1	1	0	0		0	0	0
1	1	0	1		0	0	0
1	1	1	0		0	0	0
1	1	1	1		0	0	0

Equations:

$$W = s2s1's0'$$

$$n2 = s2's1s0b'$$

$$n1 = s2's1s0'b + s2's1's0b' + s2s1's0'b$$

s2s1	s0b
00	00 01 11 10
00	1
01	1
11	
10	1

$$n0 = s2'b + s1's0'b$$

s2s1	s0b
00	00 01 11 10
00	1 1
01	1 1
11	
10	1