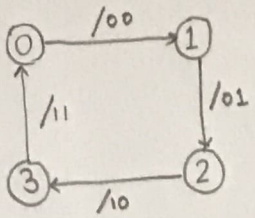


$M = \{I, O, S, S_0, \delta, \lambda\}$

$I = \phi$ (No Input; rst & clk are directly fed to D-Flipflops)

$O = \{00, 01, 10, 11\}$ (count is the output)

$S = \{0, 1, 2, 3\}$ #states = 4 → #state variables = 2

$S_0 = 0$

	s_1	s_0
0 →	0	0
1 →	0	1
2 →	1	0
3 →	1	1

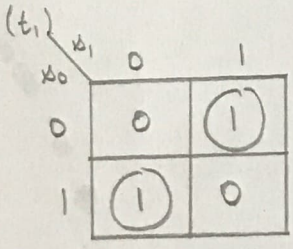
Transition and Output Table

s_1	s_0	t_1	t_0	$count_1$	$count_0$
0	0	0	1	0	0
0	1	1	0	0	1
1	0	1	1	1	0
1	1	0	0	1	1

Very clearly,

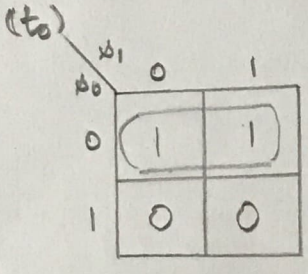
$\lambda_1(s_1, s_0) = s_1$

$\lambda_0(s_1, s_0) = s_0$



$\delta_1(s_1, s_0) = s_1 \cdot \bar{s}_0 + \bar{s}_1 \cdot s_0$

$= s_1 \oplus s_0$



$\delta_0(s_1, s_0) = \bar{s}_0$