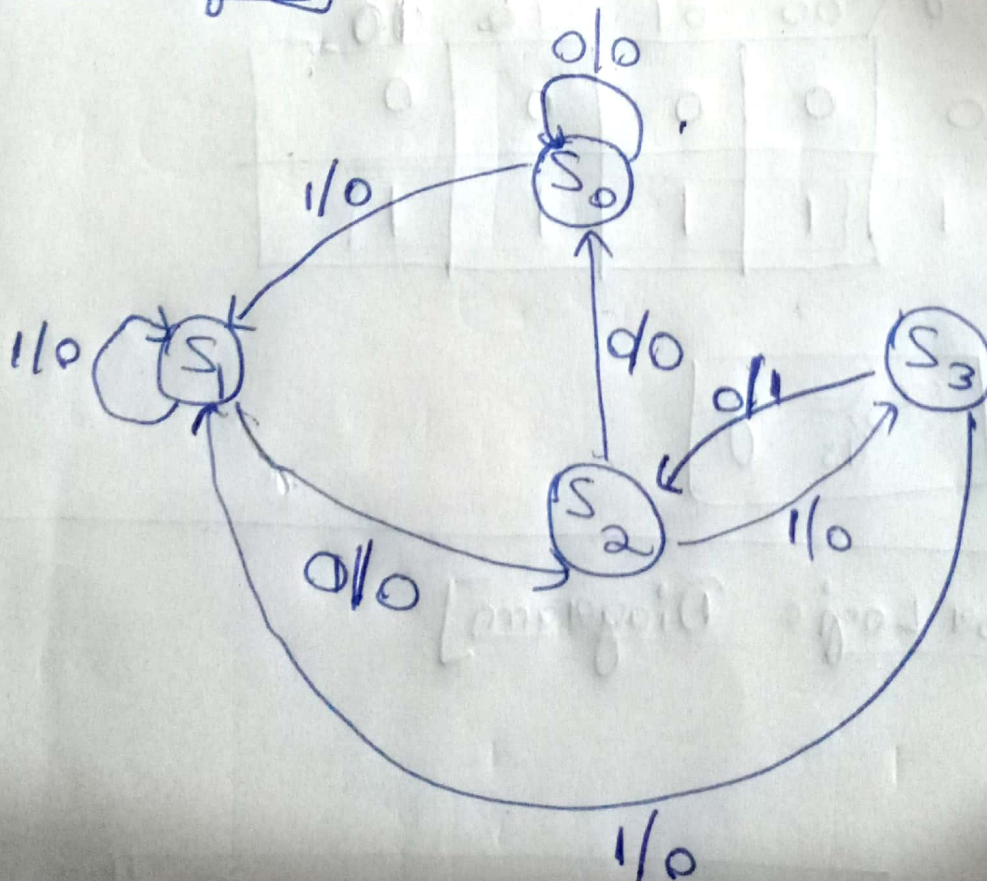


# Excitation Table

$S_0 = 00$   
 $S_1 = 01$   
 $S_2 = 10$   
 $S_3 = 11$

PS	I/p	NS	Output
$S_0$	0	$S_0$	0
$S_0$	1	$S_1$	0
$S_1$	0	$S_2$	0
$S_1$	1	$S_1$	0
$S_2$	0	$S_0$	0
$S_2$	1	$S_3$	0
$S_3$	0	$S_2$	1
$S_3$	1	$S_1$	0

# State Diagram



# Transition and Output Table

PS	NS		O/P	
	0	1	0	1
$s_0$	$s_0$	$s_1$	0	1
$s_1$	$s_2$	$s_1$	0	0
$s_2$	$s_0$	$s_3$	0	0
$s_3$	$s_2$	$s_1$	1	0



# K-map

① Output (z)

$y \backslash x_1 x_2$	00	01	11	10
0	0	0	1	0
1	0	0	0	0

$$z = \bar{y} x_1 \bar{x}_2$$

② Next State

\*  $(x_1)_{NS}$

$y \backslash x_1 x_2$	00	01	11	10
0	0	1	1	0
1	0	0	0	1

$$(x_1)_{NS} = \bar{y} x_2 + y x_1 \bar{x}_2$$

\*  $(x_2)_{NS}$

$y \backslash x_1 x_2$	00	01	11	10
0	0	0	0	0
1	1	1	1	1

$$(x_2)_{NS} = y$$

# [Circuitry or Logic Diagram]

