

PS	NS		Z	
	X=0	X=1	X=0	X=1
init	init	s0	0	0
s0	s0	s0	0	0
s1	init	s2	0	0
s2	s1	s3	0	0
s3	s1	s4	0	0
s4	s5	s0	0	0
s5	init	s6	0	0
s6	s7	s3	0	0
s7	init	s8	0	0
s8	s0	s2	1	0

s_0	$s_1 = \text{init}$								
s_1	$s_2 = s_0$	$s_1 = \text{init}$ $s_0 = s_2$							
s_2	$s_1 = \text{init}$ $s_0 = s_3$	$s_0 = s_3$	$s_2 = s_5$ $s_1 = \text{init}$						
s_3	$s_1 = \text{init}$ $s_0 = s_4$	$s_4 = s_0$	$s_1 = \text{init}$ $s_4 = s_2$	$s_3 = s_4$					
s_4	$s_5 = \text{init}$	$s_5 = 1$	$s_5 = \text{init}$ $2 = 0$	$s_5 = 1$ $3 = 0$	$s_5 = 1$ $4 = 0$				
s_5	$0 = 6$	$\text{init} = 1$ $6 = 0$	$6 = 2$	$\text{init} = 1$ $6 = 3$	$\text{init} = 1$ $6 = 4$	$\text{init} = 5$ $6 = 6$			
s_6	$7 = \text{init}$ $3 = 6$	$7 = 1$ $3 = 0$	$7 = \text{init}$ $3 = 2$	$7 = 1$ $3 = 3$	$7 = 1$ $3 = 4$	$7 = 5$ $3 = 6$	$7 = \text{init}$ $3 = 6$		
s_7	$8 = 0$	$1 = \text{init}$ $8 = 0$	$2 = 2$	$1 = \text{init}$ $3 = 6$	$1 = \text{init}$ $4 = 8$	$\text{init} = 5$ $2 = 0$	$8 = 6$	$7 = \text{init}$ $8 = 3$	
s_8	X	X	X	X	X	X	X	X	X
	init	s_0	s_1	s_2	s_3	s_4	s_5	s_6	s_7

$\text{init} = 0000$

~~$s_0 = 0000$~~

~~$s_1 = 0010$~~

~~$s_2 = 0101$~~

~~$s_3 = 0101$~~

~~$s_4 = 0110$~~

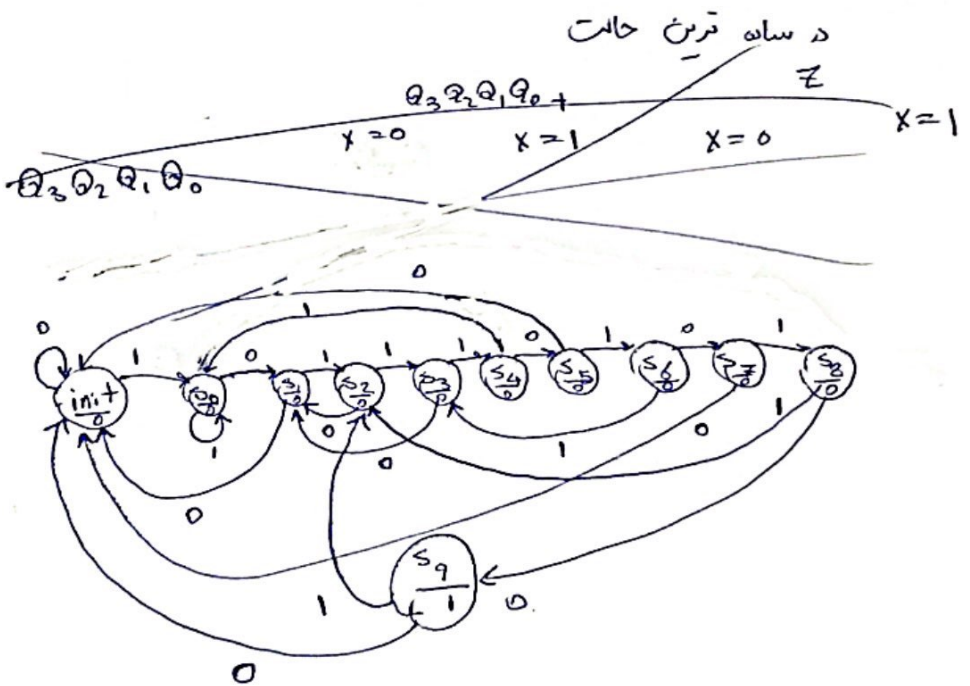
~~$s_5 = 0111$~~

~~$s_6 = 1000$~~

~~$s_7 = 1001$~~

~~$s_8 = 1010$~~

~~$s_9 = 1011$~~



	$Q_3 Q_2 Q_1 Q_0$	$Q_3 Q_2 Q_1 Q_0$		$D_3 D_2 D_1 D_0 +$		Z
		$X=0$	$X=1$	$X=0$	$X=1$	
init	0 0 0 0	0000	0001	0000	0001	0
s_0	0 0 0 1	0010	0001	0010	0001	0
s_1	0 0 1 0	0000	0011	0000	0011	0
s_2	0 0 1 1	0010	0100	0010	0100	0
s_3	0 1 0 0	0010	0101	0010	0101	0
s_4	0 1 0 1	0110	0001	0110	0001	0
s_5	0 1 1 0	0000	0111	0000	0111	0
s_6	0 1 1 1	1000	0100	1000	0100	0
s_7	1 0 0 0	0000	1001	0000	1001	0
s_8	1 0 0 1	1010	0011	1010	0011	0
s_9	1 0 1 0	0000	0011	0000	0011	1

$Q_3 Q_2$		$Q_1 Q_0$			
$Q_3 Q_2$	$Q_1 Q_0$	00	01	11	10
	00	0	0	X	0
	01	0	0	X	1
	11	0	1	X	X
	10	0	0	X	0

$X = 0$

$Q_3 Q_2$		$Q_1 Q_0$			
$Q_3 Q_2$	$Q_1 Q_0$	00	01	11	10
	00			X	1
	01			X	
	11			X	
	10			X	

$X = 1$

D_{3+} - Kmap

$$D_{3+} = X Q_3 \bar{Q}_1 \bar{Q}_0 + \bar{X} Q_3 \bar{Q}_1 Q_0 + \bar{X} Q_2 Q_1 Q_0$$

$Q_3 Q_2$		$Q_1 Q_0$			
$Q_3 Q_2$	$Q_1 Q_0$	00	01	11	10
	00			X	
	01		1	X	
	11			X	X
	10			X	

$X = 0$

$Q_3 Q_2$		$Q_1 Q_0$			
$Q_3 Q_2$	$Q_1 Q_0$	00	01	11	10
	00		1	X	
	01			X	
	11	1	1	X	X
	10		1	X	

$X = 1$

D_{2+} - Kmap

$$D_{2+} = X Q_2 \bar{Q}_1 \bar{Q}_0 + X Q_2 Q_1 \bar{Q}_0 + \bar{X} Q_2 \bar{Q}_1 Q_0$$

$\begin{smallmatrix} 32 \\ 10 \end{smallmatrix}$	00	01	11	10
00		1	X	
01	1	1	X	1
11	1		X	X
10			X	

$X=0$

$\begin{smallmatrix} 32 \\ 10 \end{smallmatrix}$	00	01	11	10
00			X	
01			X	1
11			X	X
10	1	1	X	1

$X=1$

$D_{1+} - K_{map}$

$$D_{1+} = X Q_3 Q_0 + X Q_1 \bar{Q}_0 + \bar{X} \bar{Q}_3 Q_2 \bar{Q}_1 + \bar{X} \bar{Q}_3 \bar{Q}_2 Q_0 + \bar{X} \bar{Q}_1 Q_0$$

$\begin{smallmatrix} 32 \\ 10 \end{smallmatrix}$	00	01	11	10
00			X	
01			X	
11			X	X
10			X	

$X=0$

$\begin{smallmatrix} 32 \\ 10 \end{smallmatrix}$	00	01	11	10
00	1	1	X	1
01	1	1	X	1
11			X	X
10	1	1	X	1

$X=1$

$D_{0+} - K_{map}$

$$D_{0+} = X \bar{Q}_1 + X Q_1 \bar{Q}_0$$

32

10

Q₁

	00	01	11	10
00	0	0	X	0
01	0	0	X	0
11	0	0	X	X
10	0	0	X	1

$$Z = Q_3 Q_1$$

Z
Kmap