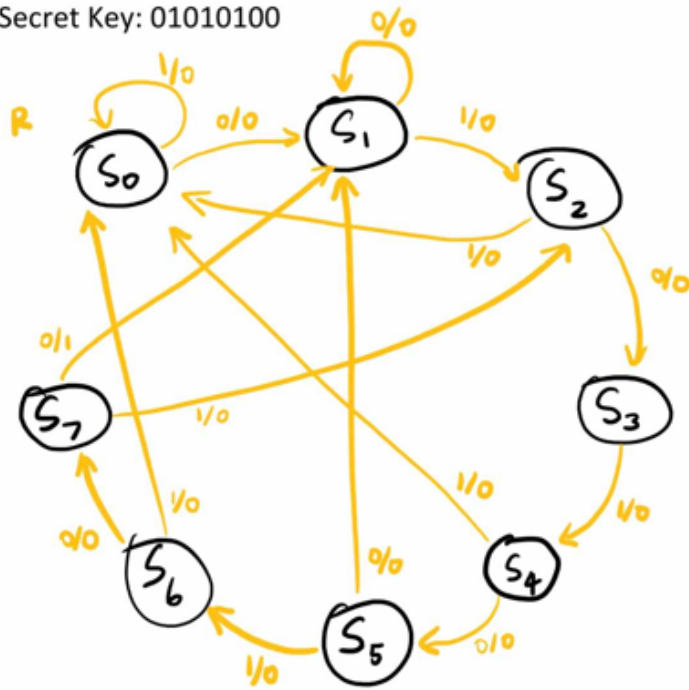


Secret Key: 01010100



D₁

$Q_3X \backslash Q_1Q_2$	00	01	11	10
00				1
01			1	
11		1		1
10				

0111
 1000
 1011
 1101

$$D_1 = Q_1 \bar{Q}_2 \bar{Q}_3 \bar{X} + Q_1 Q_2 \bar{Q}_3 X + \bar{Q}_1 Q_2 Q_3 X + Q_1 \bar{Q}_2 Q_3 X$$

D₂

$Q_3X \backslash Q_1Q_2$	00	01	11	10
00		1	1	
01				
11	1		1	1
10				

0100
 1100
 0011
 1011
 1111

$$D_2 = Q_2 \bar{Q}_3 \bar{X} + \bar{Q}_2 Q_3 X + Q_1 Q_3 X$$

D₃

$Q_3X \backslash Q_1Q_2$	00	01	11	10
00	1	1	1	1
01				
11				
10	1	1	1	1

0000
 0010
 0100
 0110
 1000
 1010
 1100
 1110

$$D_3 = \bar{X}$$

Present State Input Next State Output
 $Q_1Q_2Q_3$ X $Q_1Q_2Q_3$

S_0	000	0	S_1	001	0
S_0	000	1	S_0	000	0
S_1	001	0	S_1	001	0
S_1	001	1	S_2	010	0
S_2	010	0	S_3	011	0
S_2	010	1	S_0	000	0
S_3	011	0	S_1	001	0
S_3	011	1	S_4	100	0
S_4	100	0	S_5	101	0
S_4	100	1	S_0	000	0
S_5	101	0	S_1	001	0
S_5	101	1	S_6	110	0
S_6	110	0	S_7	111	0
S_6	110	1	S_0	000	0
S_7	111	0	S_1	001	1
S_7	111	1	S_2	010	0