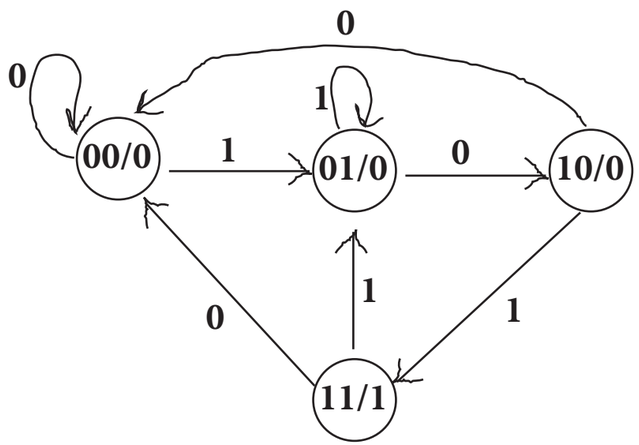
Problem 5.8

Design a Moore sequence recognizer that detects the nonoverlapping sequence "101." Use binary encoded state labels and design and draw the circuit schematic similar to the one shown in Fig. 5.16.

Moore FSM



State Table

$q_1\ q_0$	x = 0 $q_1 q_0$	x = 1 $q_1\ q_0$	z
00	00	01	0
01	10	01	0
10	00	11	0
11	00	01	1

d_1

x \ $q_1 q_0$	00	01	11	10
0	0	1	0	0
1	0	0	0	1

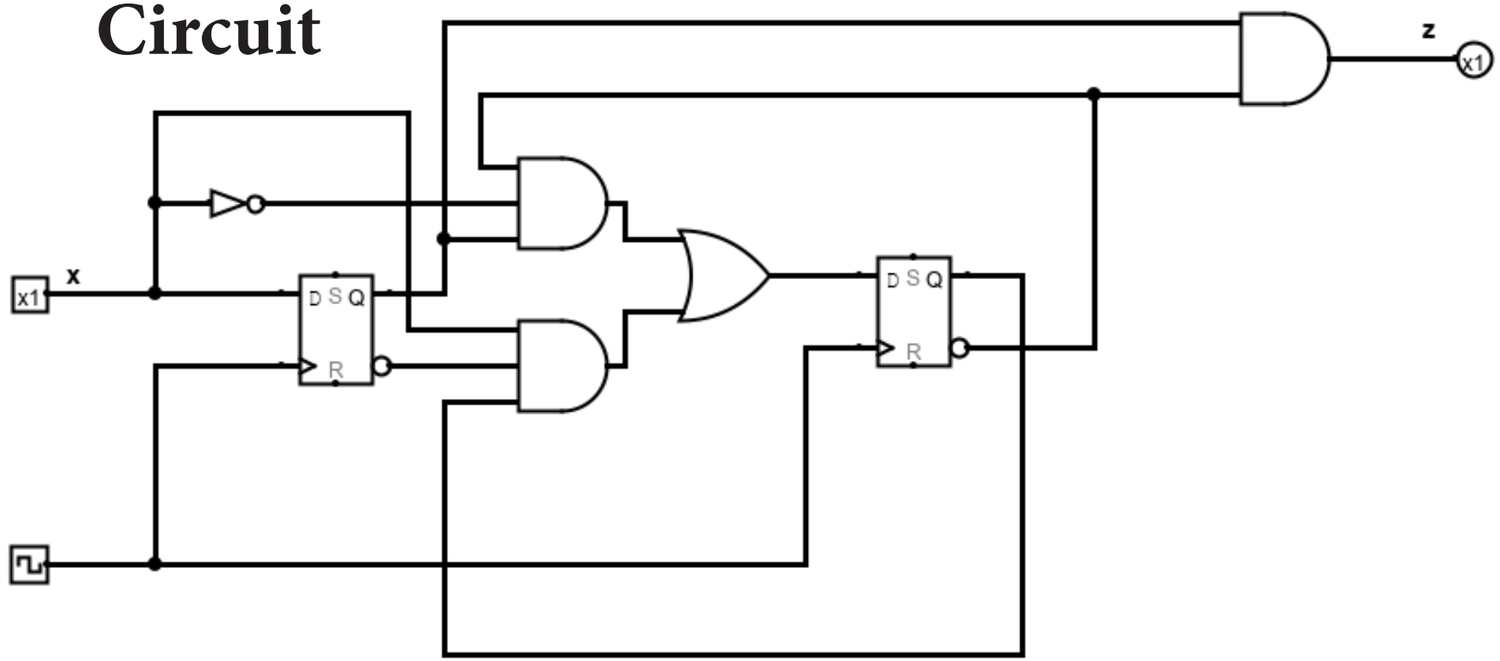
$$d_1 = q_1' q_0 x' + q_1 q_0' x$$

d_0

x \ $q_1 q_0$	00	01	11	10
0	0	1	0	0
1	1	1	1	1

$$d_0 = x$$

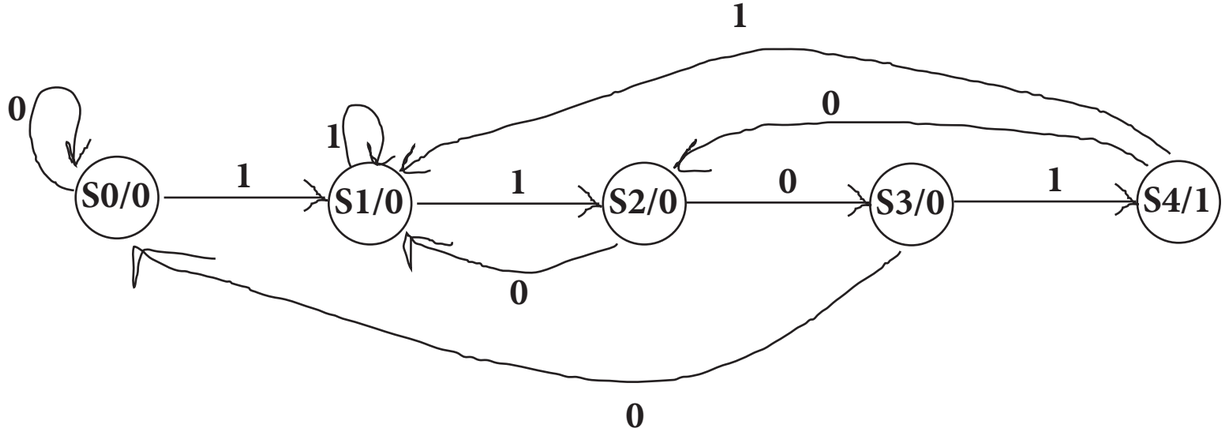
Circuit



Problem 5.10

Design a Moore sequence recognizer that detects the overlapping sequence "1001." Use binary encoded state labels.

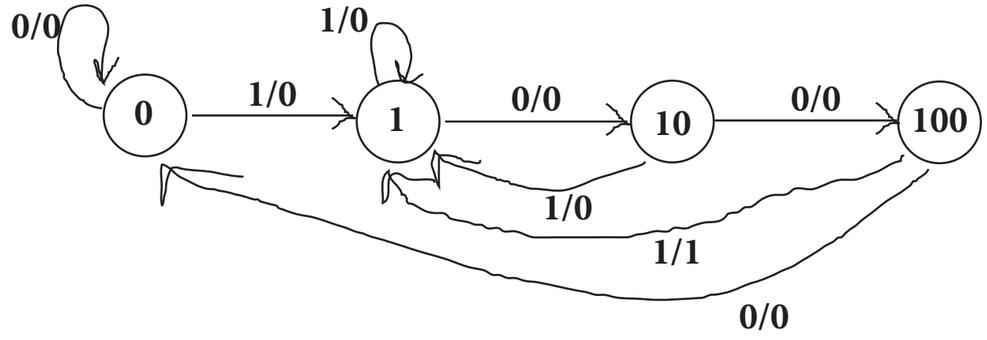
Moore FSM



Problem 5.10

5.11. Design a Mealy sequence recognizer that detects the overlapping sequence "1001." Use binary encoded state labels.

Mealy FSM



Problem 5.17, p 1

Present State				Next State							
Q_D	Q_C	Q_B	Q_A	Q_D	Q_C	Q_B	Q_A	T_D	T_C	T_B	T_A
0	0	0	0	0	0	0	1	0	0	0	1
0	0	0	1	0	0	1	0	0	0	1	1
0	0	1	0	0	0	1	1	0	0	0	1
0	0	1	1	0	1	0	0	0	0	0	1
0	1	0	0	0	1	0	1	0	1	1	1
0	1	0	1	0	1	1	0	0	0	0	1
0	1	1	0	0	1	1	1	0	0	1	1
0	1	1	1	1	0	0	0	0	0	0	1
1	0	0	0	1	0	0	1	1	1	1	1
1	0	0	1	1	0	1	0	0	0	0	1
1	0	1	0	0	0	0	0	0	0	1	1
1	0	1	1	x	x	x	x	1	0	1	0

Problem 5.17, p 2

$Q_D Q_C$ \ $Q_B Q_A$	00	01	11	10
00	0	0	0	0
01	0	0	1	0
11	x	x	x	x
10	0	0	x	1

$Q_D Q_C$ \ $Q_B Q_A$	00	01	11	10
00	0	1	1	0
01	0	1	1	0
11	x	x	x	x
10	0	1	x	1

$Q_D Q_C$ \ $Q_B Q_A$	00	01	11	10
00	0	0	1	0
01	0	0	1	0
11	x	x	x	x
10	0	0	x	0

$Q_D Q_C$ \ $Q_B Q_A$	00	01	11	10
00	1	1	1	1
01	1	1	1	1
11	x	x	x	x
10	1	1	x	0

Problem 5.17, p 3