

Date

→ Password
→ encrypt & decrypt
→ alarms.
→ using JK flipflop
→ (imp for exams)
→ with the sequence

10101
110011
11101
10011

SEQUENCE DETECTOR (with D flipflop)

step 1:-

(a) without overlapping
(b) with overlapping

(b) X = 1001001001001

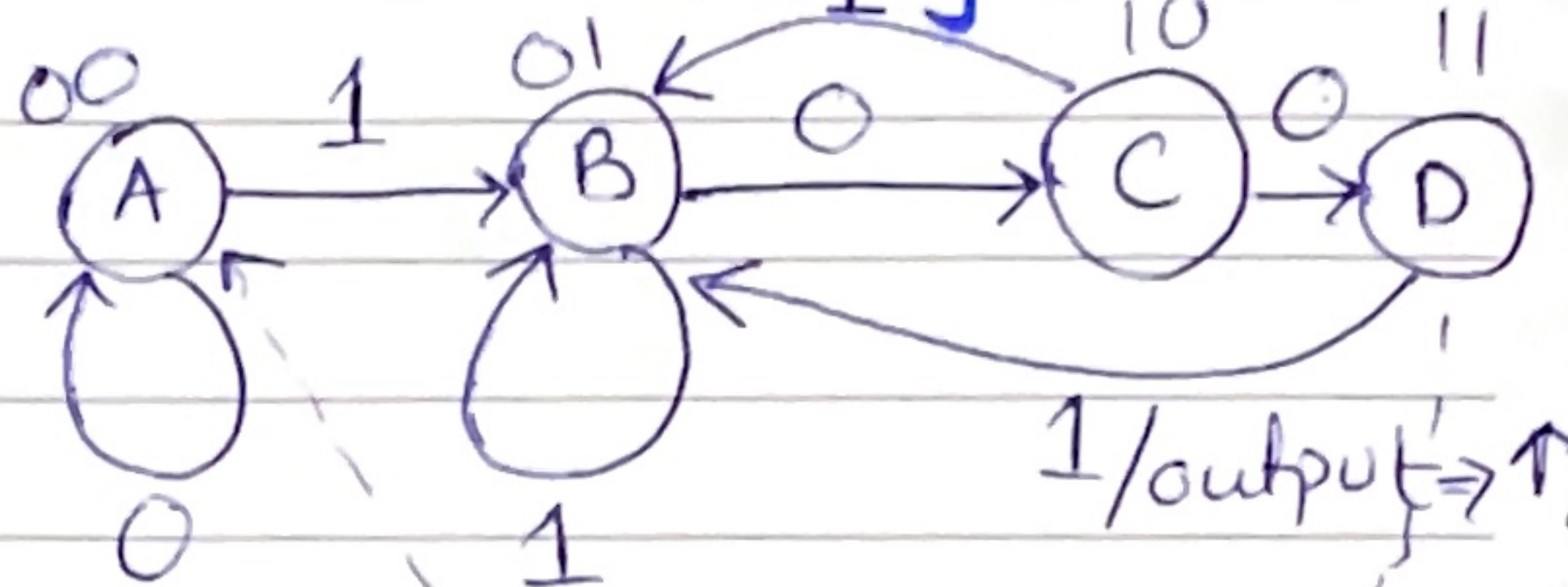
Now when the sequence is detected.

Y = 0001001001001

(The 1 in Y comes when the sequence 1001 is detected in a stream of input bits)

State Machine Model.

(with overlapping.)



shows that the machine model reset after D holds 0 again.

step 2

Now for (a)

X = 1001001001001

now the overlapping is allowed.
hence only 2 times the sequence is detected.

∴ Y = 00010000001000

Inputs input X	Outputs represents states. A, B, C, D.		output final	
	Q ₁	Q ₀	Q ₁	Q ₀
0	0	0	0	0
0	0	1	1	0
0	1	0	1	1
0	1	1	0	0
1	0	0	0	1
1	0	1	0	1
1	1	0	0	1
1	1	1	0	1

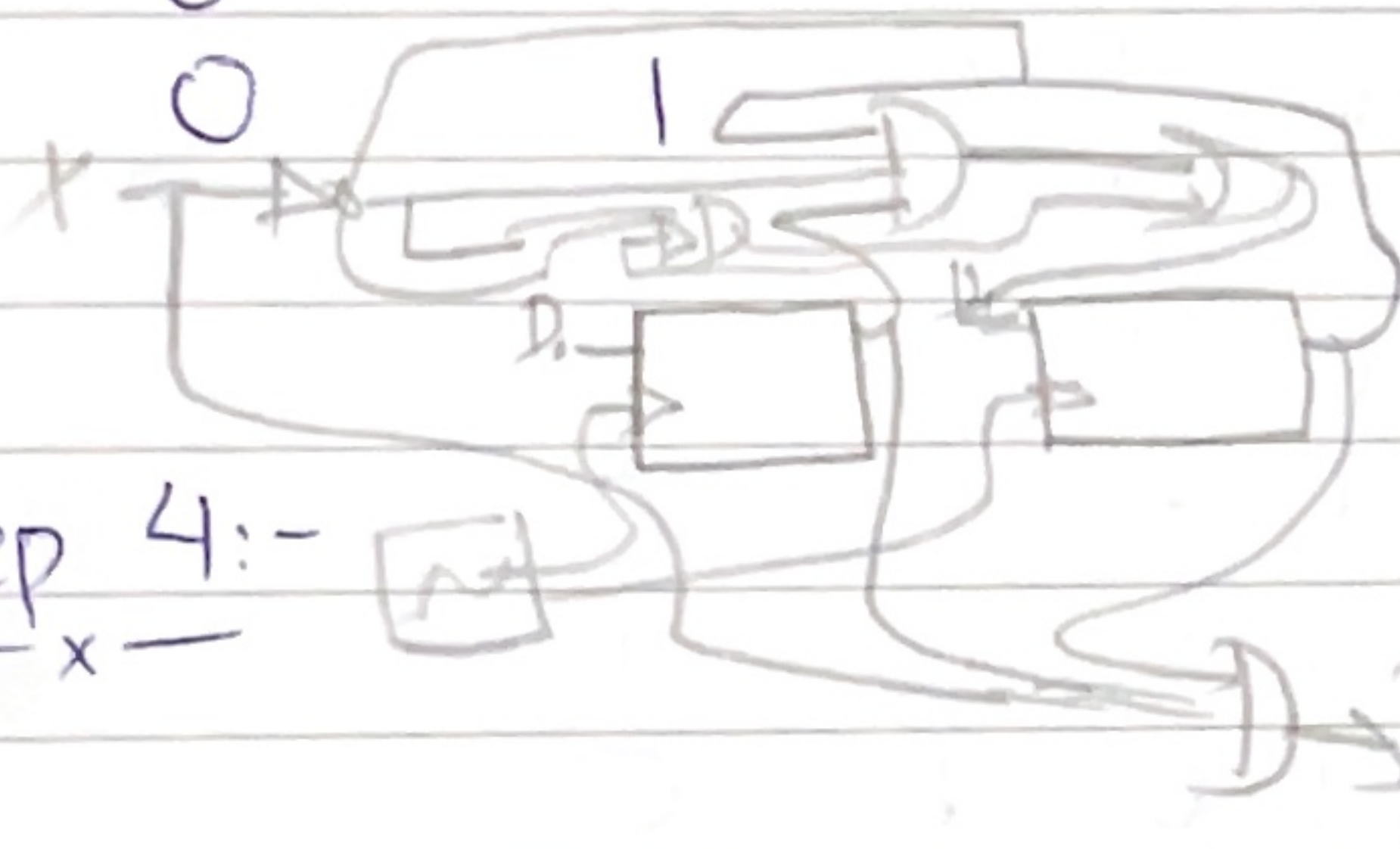
* Draw Output Diagram .

Date

without overlapping.
State Machine Model.

Step 3

D_1	D_0
0	0
1	0
1	1
0	0
0	1
0	1
0	1



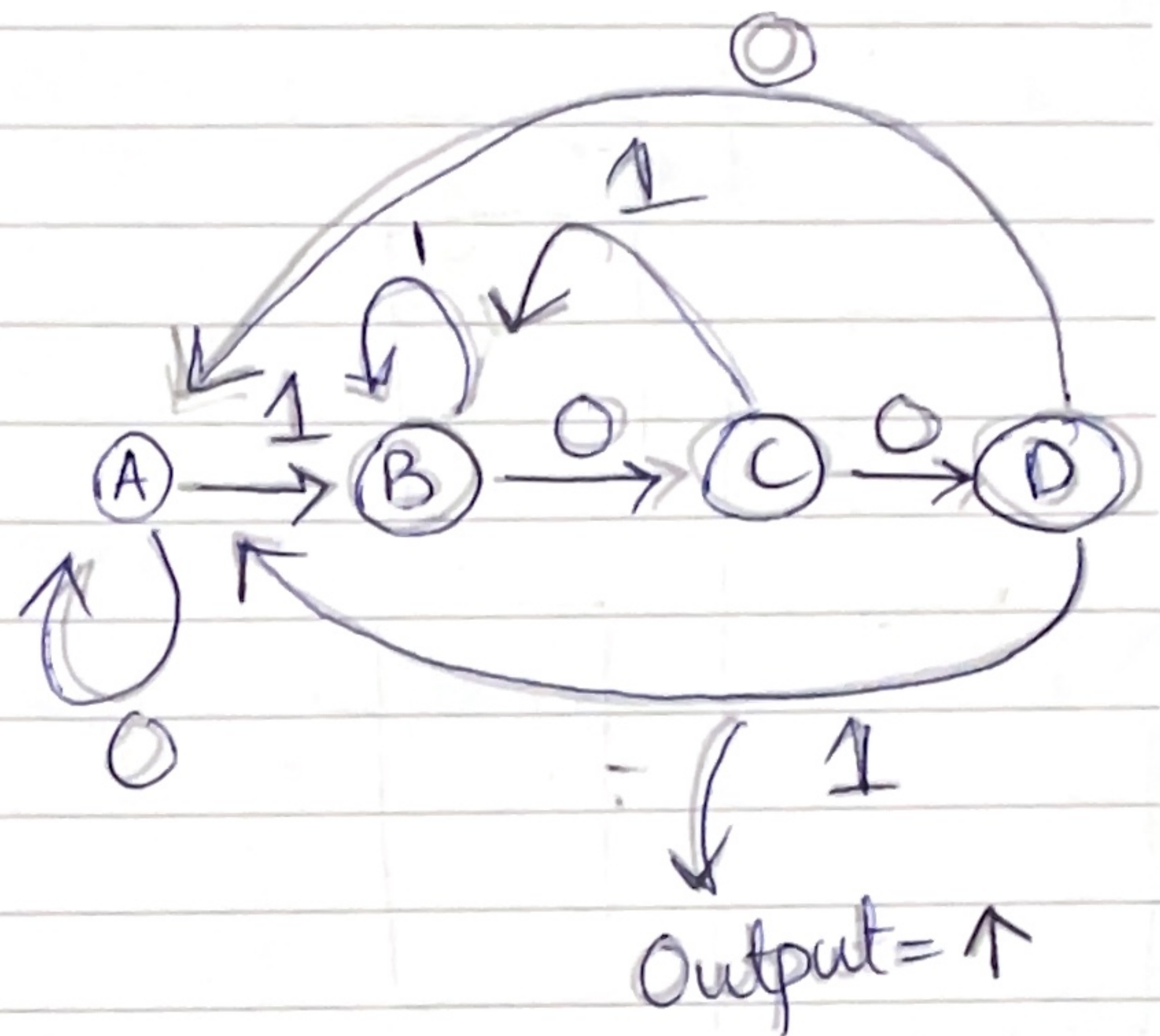
Step 4:-

$X \phi_1$	ϕ_0	
	0	1
00	0	1
01	1	0
10	0	0
11	0	0

$$D = \bar{X}\phi_1\phi_0 + \bar{X}\phi_1\bar{\phi}_0$$

$X \phi_1$	ϕ_0	
	0	1
00	0	0
01	1	0
10	1	1
11	1	1

$$D_0 = \phi_1\phi_0 + X$$



Draw step no. 2, 3 & 4 for this state machine model.

— X —

$X \phi_1$	ϕ_0	
	0	1
00	0	0
01	0	0
11	0	1
10	0	0

$$Y = X\phi_1\phi_0$$