

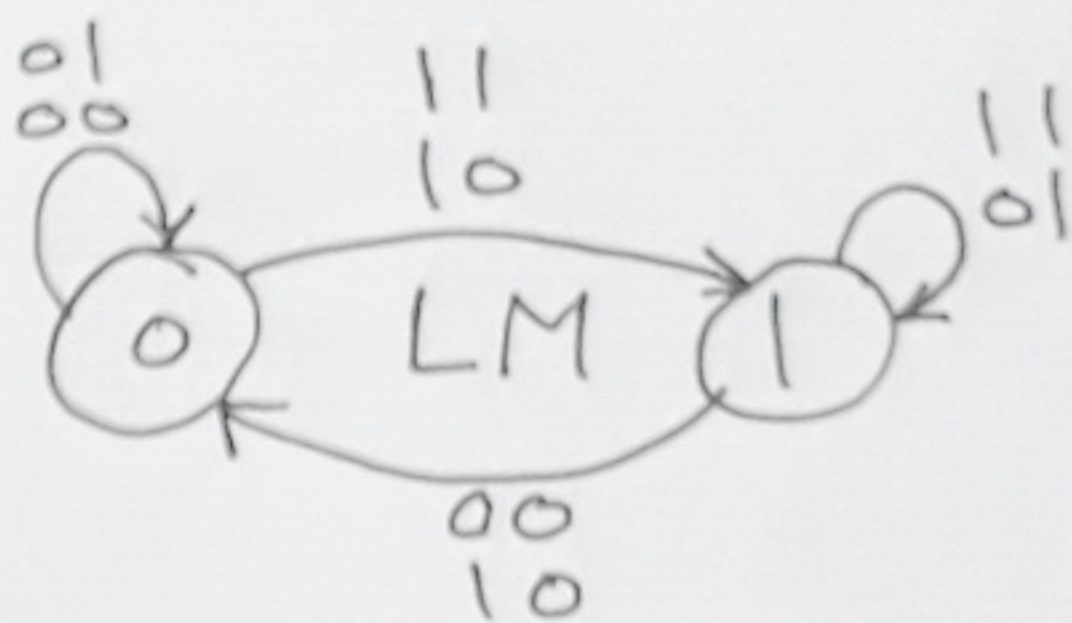
Q: Suppose you have a special type Flip-Flop with the following truth table. Find its State Table and State Diagram and its char. eqn.

~~Q~~

L	M	Q(t+1)
0	0	Reset
0	1	No change
1	0	Toggle
1	1	Set

Solⁿ

L	M	Q(t)	Q(t+1)
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1



LM	00	01	11	10
Q(t)				
0			1	1
1		1	1	

$$Q(t+1) = L\bar{Q}(t) + M Q(t)$$

Q: We have a new type of Flip Flop,
with inputs A and B.

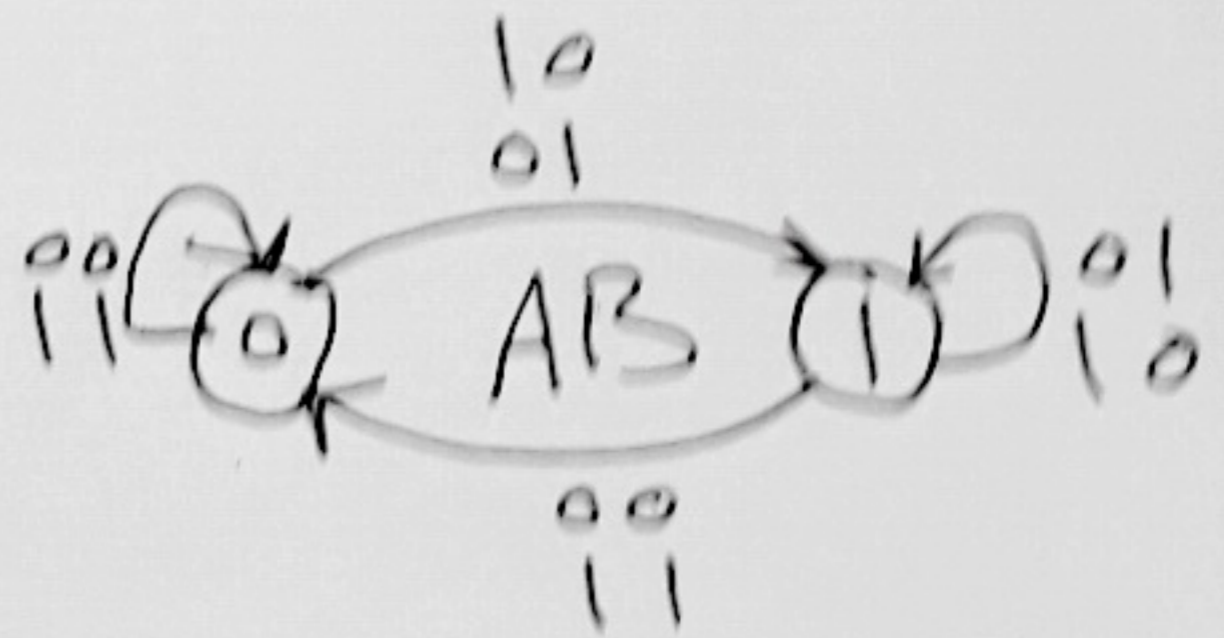
IF $A=0$, then $Q(t+1) = B$

IF $A=1$, then $Q(t+1) = \bar{B}$

- a) Show a state table and State Diagram for this F.F.
b) Write an equation for $Q(t+1)$ in terms of A, B, and $Q(t)$.

Solⁿ

i/p		P.S	N.S
A	B	$Q(t)$	$Q(t+1)$
0	0	0	0
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	0



AB	00	01	11	10
$Q(t)$				
0		1		1
1		1		1

$$Q(t+1) = \bar{A}B + A\bar{B}$$

$$Q(t+1) = A \oplus B$$