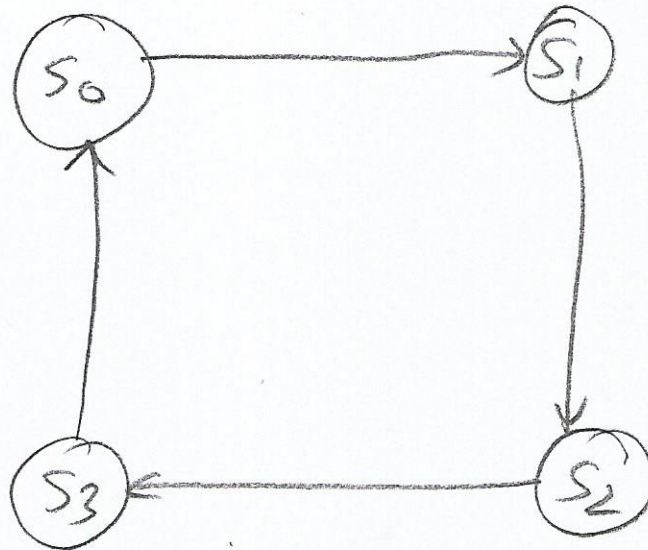


④



State diagram  
for

$a=1$   $b=0$

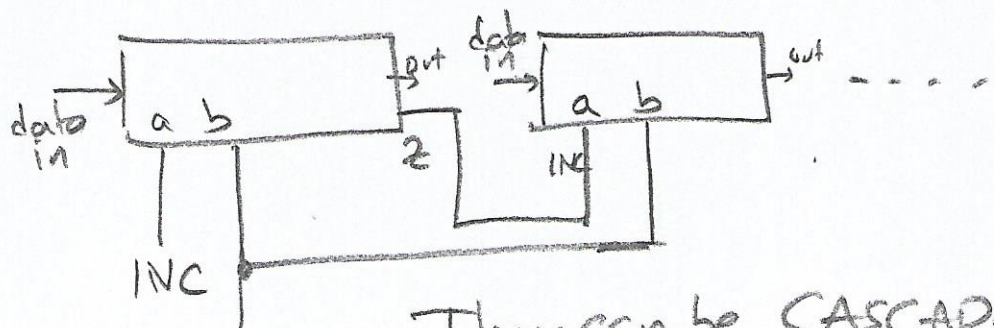
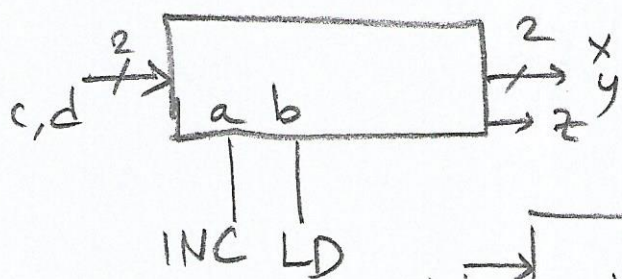
It's a 2-bit  
COUNTER

always true

This circuit is

b	a	Function
0	0	Holds value
0	1	Incrementer (or counter)
1	X	Loads external data

This is a register (since it holds data)  
with increment and parallel load capability



They can be CASCADDED!