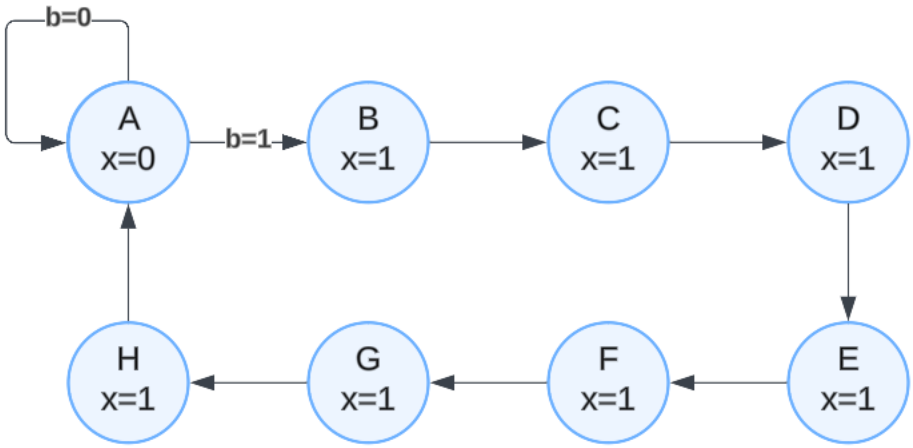
I used the software Tina to model a finite state machine (FSM) that outputs the series 1111111. The FSM synchronous clocking has state transitions on the rising clock edge. The input is a high-low switch (b) and the output is X.



After creating the finate state diagram, I created the table to formulate the equations from.

Current State	Input (b)	Next State	Output (x)
000	0	000	0
000	1	001	0
001	0	010	1
001	1	010	1
010	0	011	1
010	1	011	1
011	0	100	1
011	1	100	1
100	0	101	1
100	1	101	1
101	0	110	1
101	1	110	1
110	0	111	1
110	1	111	1
111	0	000	1
111	1	000	1

After deriving the equations for the finite state machine, the digital circuit was modeled in Tina.