

3e7.18 JKSM.2 Excitation and output equations:

$$J_0 = K_0 = EN$$

$$J_1 = K_1 = Q_0 \cdot EN$$

$$MAX = EN \cdot Q_1 \cdot Q_0$$

Note that the characteristic equation for a J-K flip-flop is  $Q^* = J \cdot Q' + K' \cdot Q$ . Thus, we obtain the following transition equations:

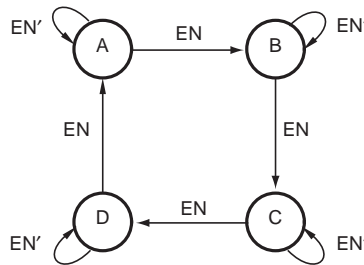
$$Q_0^* = EN' \cdot Q_0 + EN \cdot Q_0'$$

$$Q_1^* = EN' \cdot Q_1 + EN \cdot Q_0 \cdot Q_1' + EN \cdot Q_0' \cdot Q_1$$

Transition/output table; state/output table:

Q1 Q2		EN		S		
		0	1			
00	01,0	00,0	01,0	A	A,0	B,0
01	10,0	01,0	10,0	B	B,0	C,0
10	11,0	10,0	11,0	C	C,0	D,0
11	00,1	11,0	00,1	D	D,0	A,1
		Q1* Q2*, MAX		S*, MAX		

State diagram:



Timing diagram:

