

Example 1 - Transition/Output Table

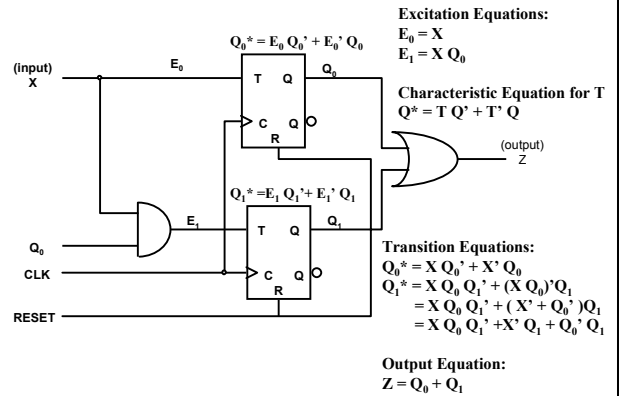
NAME	x	Q ₁	Q ₀	Q ₁ *	Q ₀ *	z
A	0	0	0	0	0	0
B	0	0	1	0	1	1
C	0	1	0	1	0	1
D	0	1	1	1	1	1
A	1	0	0	0	1	0
B	1	0	1	1	0	1
C	1	1	0	1	1	1
D	1	1	1	0	0	1

Transition Equations:
 $Q_0^* = X Q_0' + X' Q_0$
 $Q_1^* = X Q_0 Q_1' + X' Q_1 + Q_0' Q_1$

Output Equation:
 $Z = Q_0 + Q_1$

(Note: Moore Machine)

Example 1 - State Machine with T flip-flops



Example 1 - State/Output Table

- Substitute state names for state codes

S	X		Z
	0	1	
A	A	B	0
B	B	C	1
C	C	D	1
D	D	A	1

S*

Example 1 - Transition/Output Table

(Note: Moore Machine)

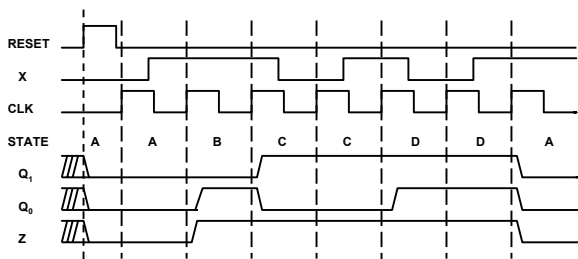
state name	states		input X		output Z
	Q ₁	Q ₀	0	1	
A=	0	0	00	01	0
B=	0	1	01	10	1
C=	1	0	10	11	1
D=	1	1	11	00	1

Q₁*Q₀*

Transition Equations:
 $Q_0^* = X Q_0' + X' Q_0$
 $Q_1^* = X Q_0 Q_1' + X' Q_1 + Q_0' Q_1$

Output Equation:
 $Z = Q_0 + Q_1$

Example 1 - Timing diagram



Example 1 - State Diagram

- Graphical form of state/output table

