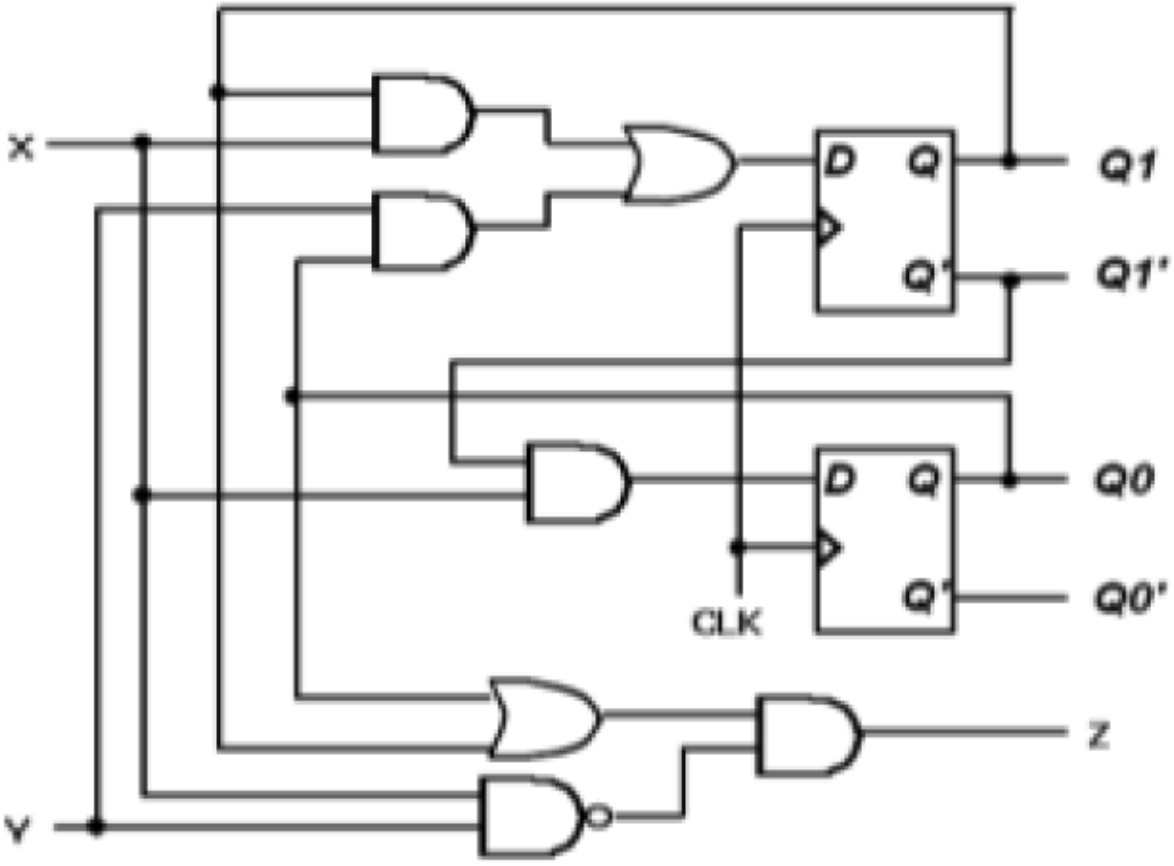
Assignment 6
COSC 2334
Fall 2021

Please analyze given state machine and do all steps

1. Determine the excitation equations for the flip-flop control inputs
2. Obtain transition equations by substituting the excitation equations into the flip-flop characteristics equations
3. Construct a transition table by the transition equations
4. Determine the output equations
5. Create a transition/output table by adding output values to the transition for each state (Moore) or state input combinations (Mealy)
6. Obtain a state/output table by naming the states and substitute state names for state-variable combinations in the transition/output table
7. Draw a state diagram corresponding to the state/output table



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1. Determine the excitation equations for the flip-flop control inputs
   D0 = (X & Q1')
   D1 = (Q1 & X) OR (Y & Q0)
2. Obtain transition equations by substituting the excitation equations into the flip-flop characteristics equations
   Q0* = D0 = (X & Q1')
   Q1* = D1 = (Q1 & X) OR (Y & Q0)
3. Construct a transition table by the transition equations

		XY		
Q0 Q1	00	01	10	11
00	00	00	10	10
01	00	01	01	01
10	00	01	10	11
11	00	01	01	01

4. Determine the output equations
   Z = ((X NAND Y) & (Q0 OR Q1))
5. Create a transition/output table by adding output values to the transition for each state (Moore) or state input combinations (Mealy)

		XY			
Q0 Q1	00	01	10	11	Z
00	00	00	10	10	1
01	00	01	01	01	0
10	00	01	10	11	1
11	00	01	01	01	1

6. Obtain a state/output table by naming the states and substitute state names for state-variable combinations in the transition/output table

Q0 Q1	00	01	10	11	Z
A	A	A	C	C	1
B	A	B	B	B	0
C	A	B	C	D	1
D	A	B	B	B	1

7. Draw a state diagram corresponding to the state/output table

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