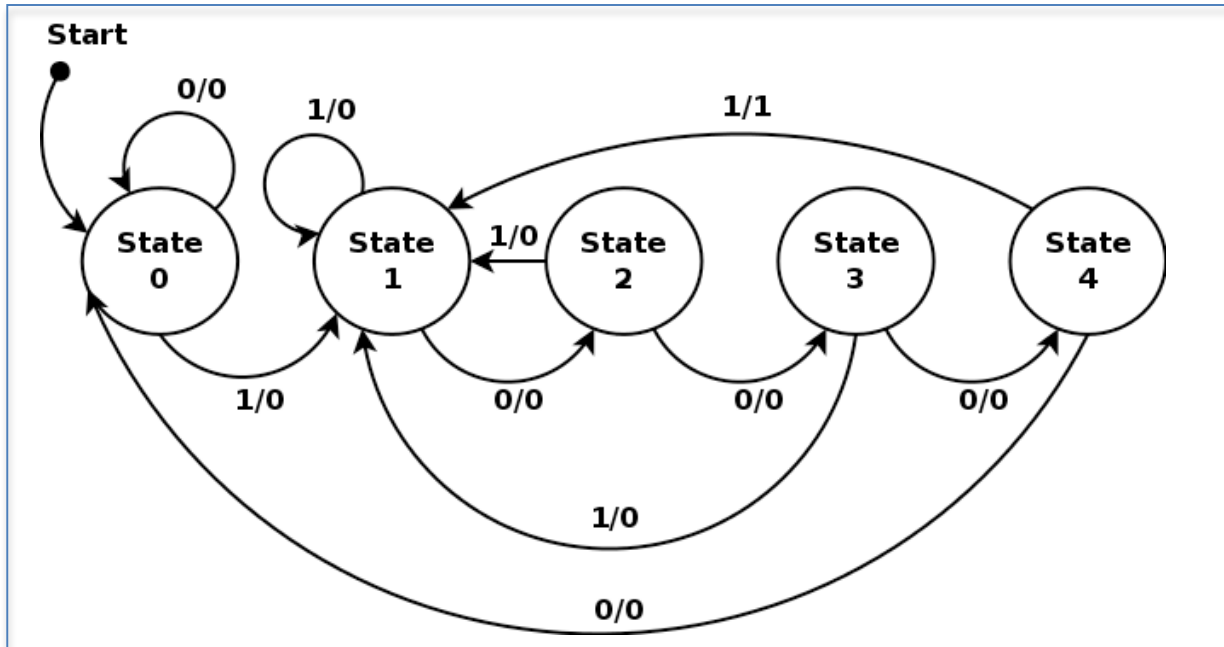


CS270 Homework Assignment 3 (H3)

Due Sunday, October 11 at 10pm, no late submissions.
Homework and programming assignments are to be done individually.

Instructions: Design a Logisim circuit that implements the state machine shown below:



Here are a few clarifications that may help you, and questions you should be able to answer:

- What is the sequence of bits that is detected by this state machine?
- State should be stored in D-latches, how many do you need?
- The truth table is combinational logic similar to what you have already done.
- You must use a D-latch the output, since it's on a transition.
- Optimization is allowed and encouraged, the fewer gates the better!
- Why are there only 10 rows in the truth table instead of $2^4 = 16$?

<i>Current State</i>	<i>Input</i>	<i>Output</i>	<i>Next State</i>
000	0	0	000
000	1	0	001
001	0		
001	1		
010	0		
010	1		
011	0		
011	1		
100	0		
100	1		

Create a Logisim circuit called H3.circ and turn it in to the Canvas drop box. You will be asked about your circuit at your recitation during the week of October 12.