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Session: 2

CMPE 240 2020 Experiment 5 Preliminary Work

1. **State Register Inputs:** n0 = xs0 + x's1
   n1 = xs0's1' + s0s1
2. **State Register Outputs:** s0
   s1
3. **Combinational Block Inputs:** x
4. **Combinational Block Output:** y0 = x's0's1' + xs0s1'
   y1 = x's1
5. **Fill the following truth table:**

#	s1	s0	x	n1	n0	y1	y0
0	0	0	0	0	0	0	1
1	0	0	1	1	0	0	0
2	0	1	0	0	0	0	0
3	0	1	1	0	1	0	1
4	1	0	0	0	1	1	0
5	1	0	1	0	0	0	0
6	1	1	0	1	1	1	0
7	1	1	1	1	1	0	0

6. **Is this a Moore or Mealy Machine? (No explanation, only short answer)**

   It is a Mealy machine.

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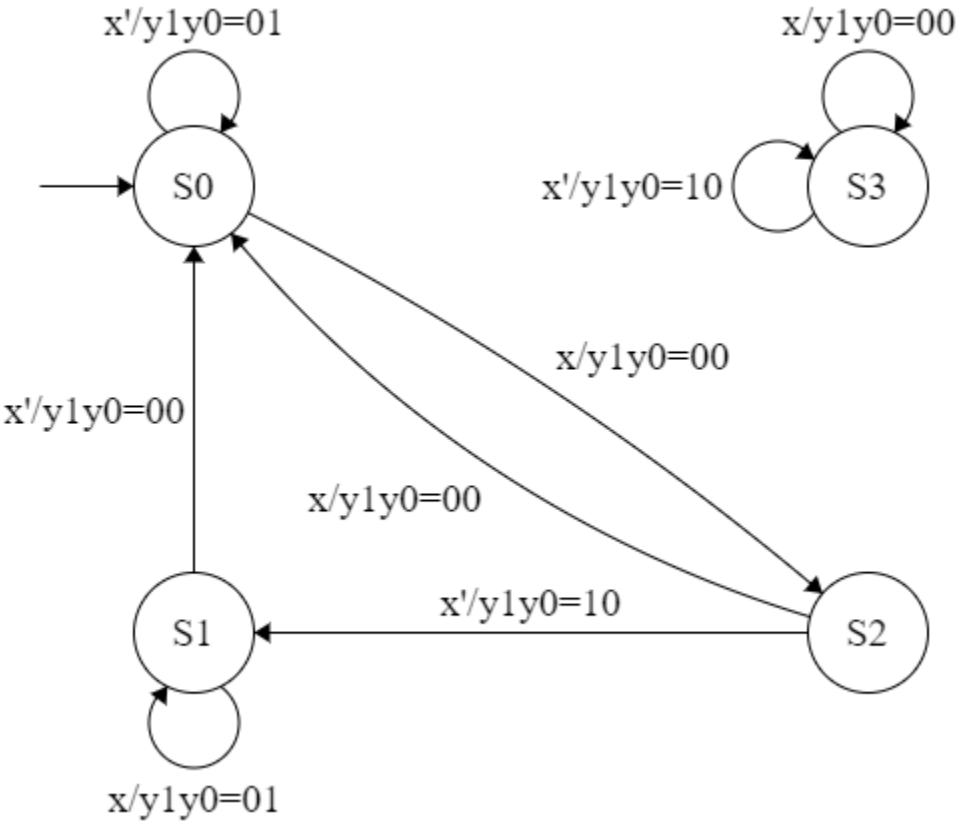
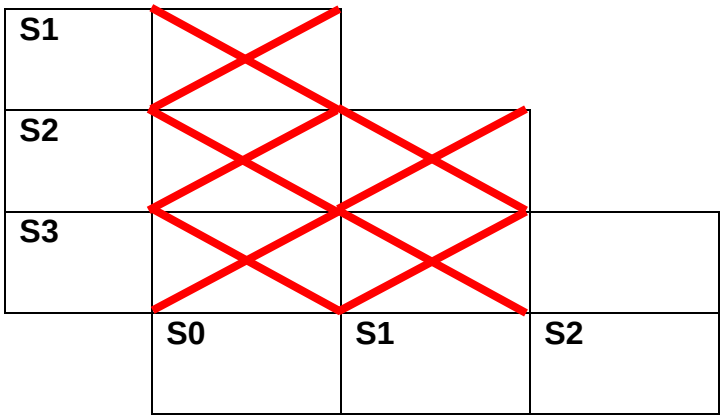
7. **Draw the FSM:**



8. **How many unreachable states does the finite state machine contain?**

   It contains 1 unreachable state: S3.

9. **Minimize the state machine. Show your steps. Is it minimized or not?**



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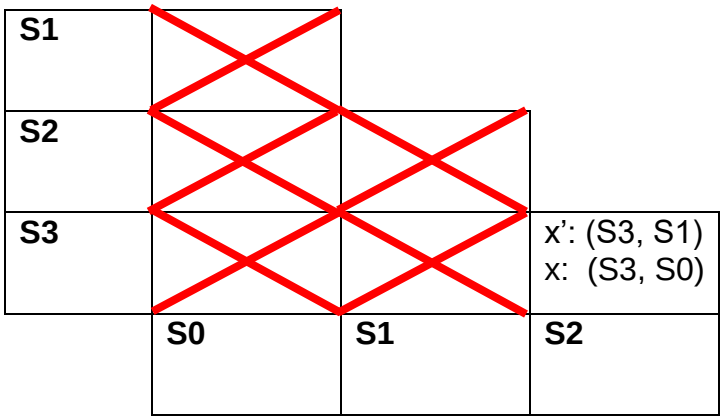

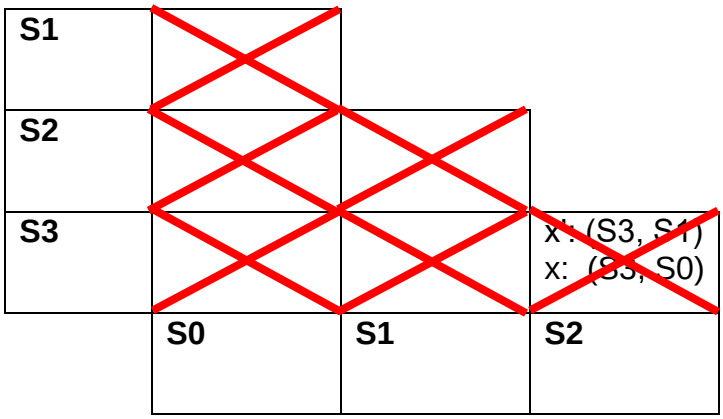

The FSM cannot be minimized any further. It is already minimal.