Student Name: Bilal Tekin
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Session:

CMPE 240 2020 Experiment 5 Preliminary Work

1. **State Register Inputs:**

   n0,n1

2. **State Register Outputs:**

   s0,s1

3. **Combinational Block Inputs:**

   x,s0,s1

4. **Combinational Block Output:**

   y0,y1,n0,n1

5. **Fill the following truth table:**

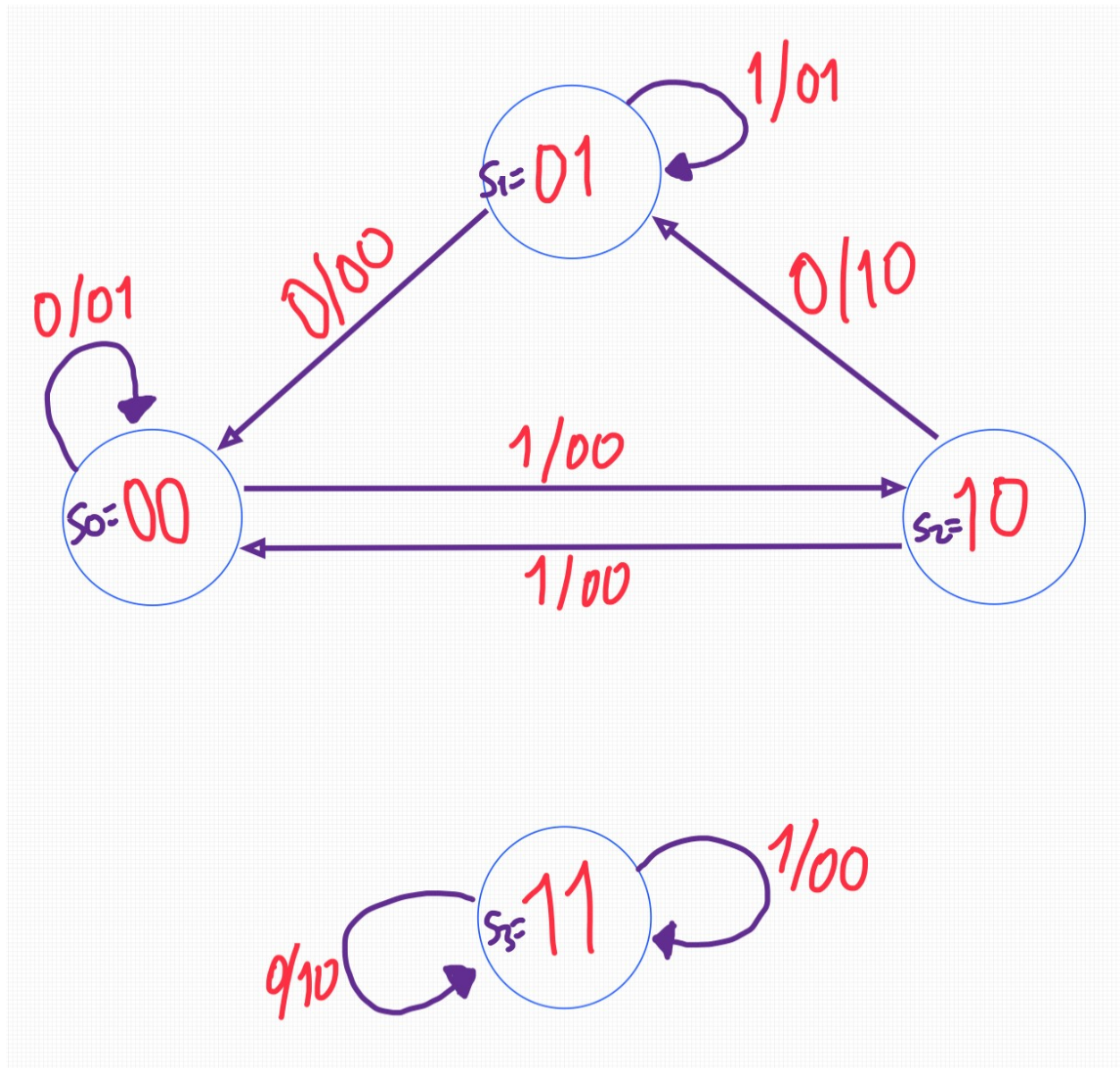| #	s1	s0	x	n1	n0	y1	y0
0	0	0	0	*0*	*0*	*0*	*1*
1	0	0	1	*1*	*0*	*0*	*0*
2	0	1	0	*0*	*0*	*0*	*0*
3	0	1	1	*0*	*1*	*0*	*1*
4	1	0	0	*0*	*1*	*1*	*0*
5	1	0	1	*0*	*0*	*0*	*0*
6	1	1	0	*1*	*1*	*1*	*0*
7	1	1	1	*1*	*1*	*0*	*0*

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

   Mealy Machine

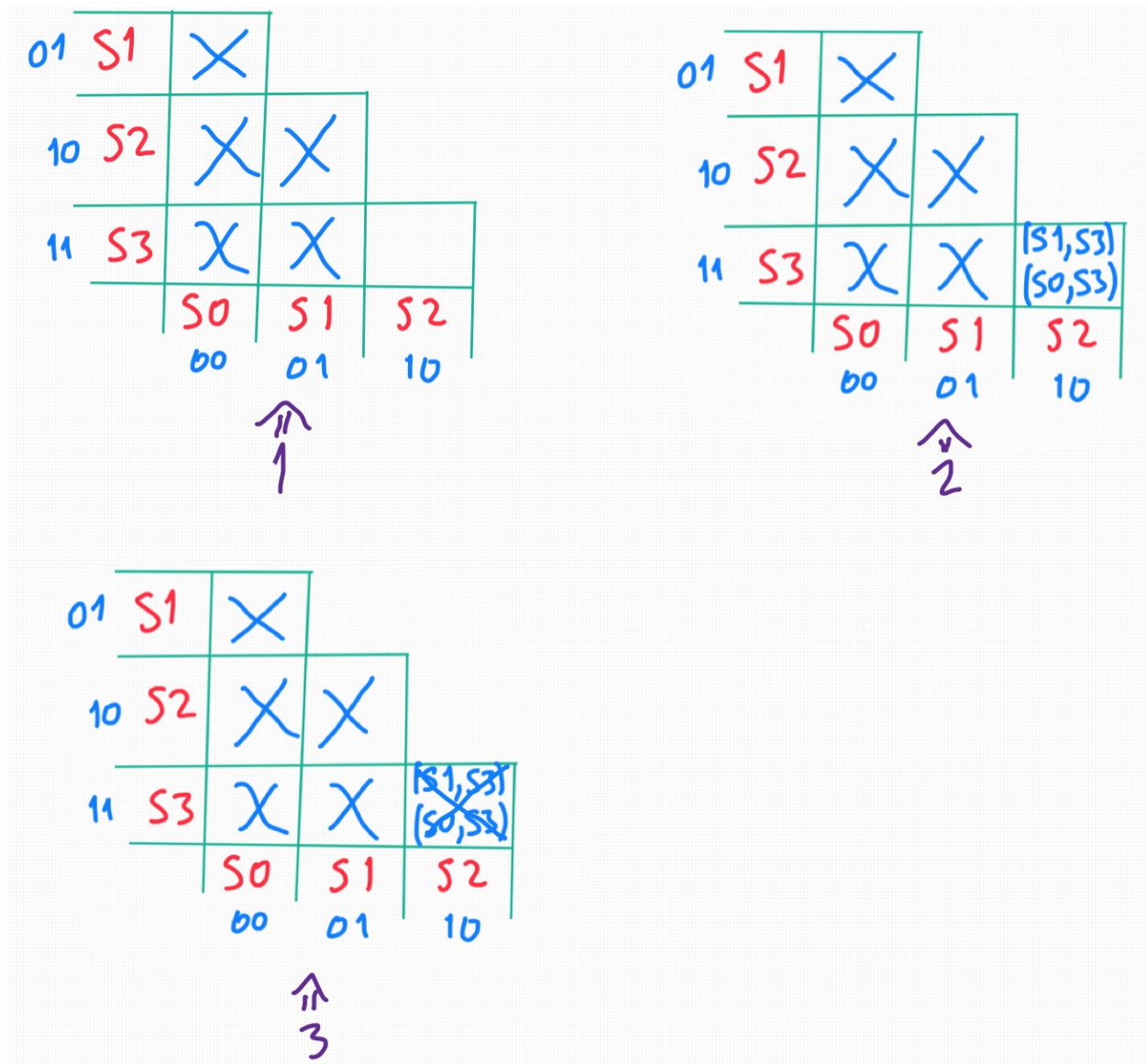7. **Draw the FSM:**

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

   1

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

01 S1	X		
10 S2	X	X	
11 S3	X	X	
	S0	S1	S2
	00	01	10

↑ 1

01 S1	X		
10 S2	X	X	
11 S3	X	X	(S1,S3) (S0,S3)
	S0	S1	S2
	00	01	10

↑ 2

01 S1	X		
10 S2	X	X	
11 S3	X	X	(S1,S3) (S0,S3)
	S0	S1	S2
	00	01	10

↑ 3

It is not minimized. FSM will be the same no change.