EET 122 **5/20/20**

Quiz 2

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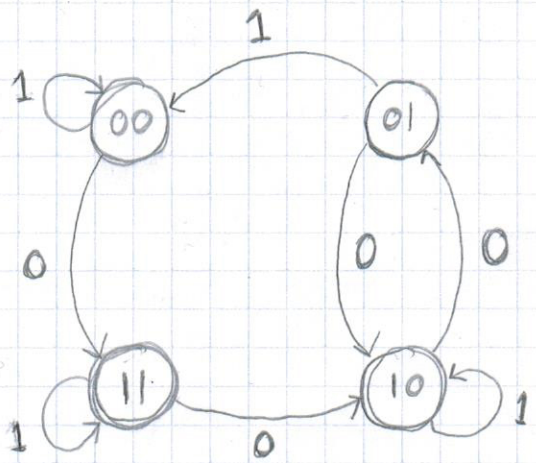
Notes:

- **A Moore machine has outputs which depend only on the state.**
- **A Mealy machine has outputs which depend on the state and the inputs.**

1. (4 pts) From the given next-state table, draw the state diagram.

Input	Current State		Next State	
X	Q_1	Q_0	Q_1	Q_0
0	0	0	1	1
1	0	0	0	0
0	0	1	1	0
1	0	1	0	0
0	1	0	0	1
1	1	0	1	0
0	1	1	1	0
1	1	1	1	1



MOORE MACHINE

2. (1 pts) Is the system from the next-state table in problem 1 a Moore machine or a Mealy machine? Explain your answer.

ITS A **MOORE MACHINE** → SYNCRONOUS!

SHOWS ONLY THE STATE AND THE INPUT
INPUT DETERMINES THE STATE
DOES NOT OFFER "DON'T CARE" OUTPUTS
ONLY HAS AN OUTPUT AS ONE OF ITS STATES
TYPICALLY INVOLVES MORE CIRCUITRY
4 FF'S TO REPRESENT 4 STATES

EET 122 5/20/20

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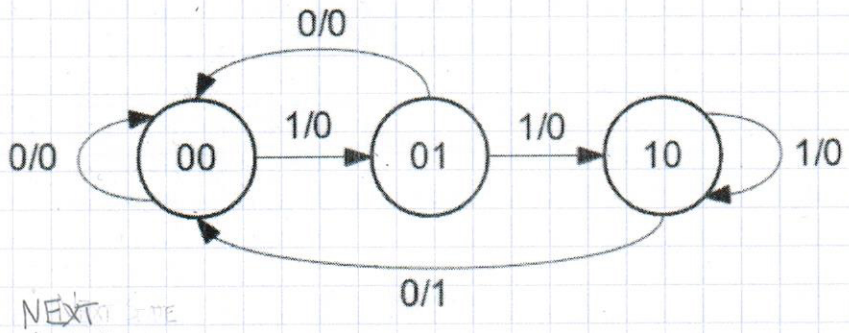
3. (4 pts) For the given state diagram, draw a next-state table.



	CURRENT			NEXT		
	Q_1	Q_0	IN	Q_1	Q_0	OUT
0	0	0	0	0	0	0
	0	0	1	0	1	0
1	0	1	0	0	0	0
	0	1	1	1	0	0
2	1	0	0	0	0	1 → SUCCESS!
	1	0	1	X	X	X
3	1	1	0	X	X	X
	1	1	1	X	X	X

4. (1 pt) Is the system from the state diagram in problem 3 a Moore machine or a Mealy machine? Explain your answer.

MEELY BECAUSE IT SHOWS THE OUTPUT

THERE ARE 4 STATES BUT WE ONLY NEED 3 FOR MEELY