ASSIGNMENT

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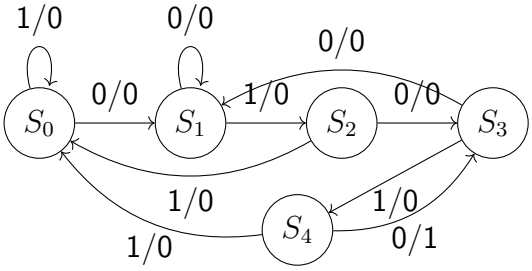
IITH - Future Wireless Communications (FWC)

Contents

1 Question

Q.39. The state diagram of a sequence detector is shown below. State S0 is the initial state of the sequence detector. If the output is 1, then

1) The sequence 01010 is detected
2) The sequence 01011 is detected
3) The sequence 01110 is detected
4) The sequence 01001is detected



2 Components

Component	Values	Quantity
Arduino	UNO	1
JumperWires	M-M	10
Breadboard		1
LED		2
Resistor	220ohms	1

Figure.a

3 State Transition Table

Truth table Boolean Function "F"

TABLE I: State Transition Table

Current State	Input (x)	Next State	Output (z)
S0	0	S0	0
S0	1	S1	0
S1	0	S0	0
S1	1	S2	0
S2	0	S0	0
S2	1	S3	1
S3	0	S0	0
S3	1	S3	1

4 Implementation

Arduino PIN	INPUT	OUTPUT
2	X	
3	Y	
4		Z

Connections

a) Procedure

1. Connect the circuit as per the above table.
2. Connect the output pin to LED
3. Connect inputs to Vcc for logic 1, ground for logic 0
4. Execute the circuit using the below code.

https://github.com/GUNA5801/FWC/blob/main/ide/codes/src/main.cpp

5. Change the values of X,Y,Z in the code and verify the Truth Table