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## ASSIGNMENT-1

### 0.1 Design of Xnor Gate using nor gates

### 0.2 Contents

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<i>Abstract- This manual shows how to design Xnor gate using nor gates</i>	

### 0.3 Components

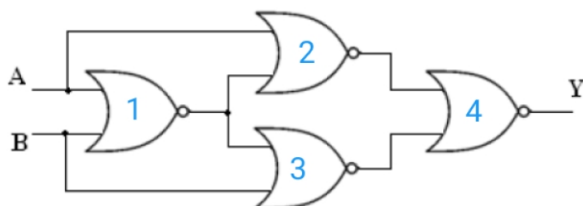
Component	Value	Quantity
Resistor	220 Ohm	1
Arduino	UNO	1
LED		1
Jumper Wires	M-M	20
Breadboard		1

Table 3.0

### 0.4 Xnor Truth Table

A	B	G(A,B)
0	0	1
0	1	0
1	0	0
1	1	1

### 0.5 Circuit Diagram



### 0.6 Boolean Logic

$$\begin{aligned}
 1 &= (A+B)' \\
 2 &= (A+x1)' \\
 3 &= (B+x1)' \\
 4 &= (x2+x3)'
 \end{aligned}$$

### 0.7 Hardware

Arduino	D13	GND
Led	+VE	-VE

Table 7.0

### 0.8 Hardware Connection

Give the connections as per Table 3. For taking the inputs connect 5V of arduino to +ve line of bread board to consider it as logic 'HIGH'. Connect GND pin of arduino to -ve line of bread board to consider it as logic 'LOW'.

For example if the inputs A,B are connected 1,0 respectively the output should be 0 i.e., the LED connected to the 2nd pin should turn off.

In the another case if we connect the inputs A,B to 1,1 respectively the output should be 1 i.e., the LED connected to 2nd pin should glow

### 0.9 Software

1. Connect the arduino to the USB port of computer
2. Download the following code

[https://github.com/kedareswari200/fwc-module1/blob/main/assi1\\_avr/main.c](https://github.com/kedareswari200/fwc-module1/blob/main/assi1_avr/main.c)

3. Upload the code into the arduino board.
4. The output '1' is represented as the state: 'LED ON' and '0' is represented as the state 'LED OFF'