IMPLEMENTATION OF BOOLEAN LOGIC IN ARDUINO

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Abstract

Q(12)2010 GATE:For the Output F to be 1,in the logic Circuit,input cobination should be ?

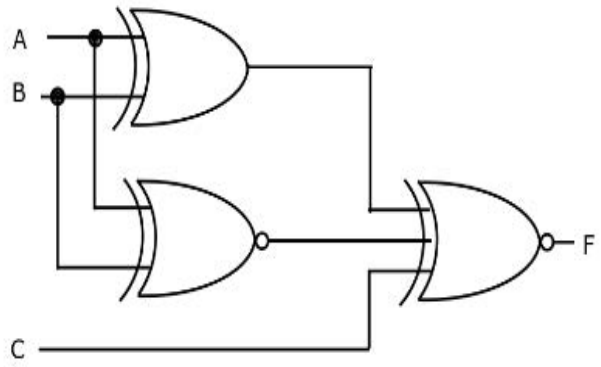

Fig. 1

1 Components

Components	Values	Quantity
Arduino		1
JumperWires	M-F	5
Breadboard		1
USB-C cable		1

2 Setup

1. Connect the Arduino to the laptop using the USBcable.
2. Open the Arduino IDE on your system.
3. Go to Tools > Board and select Arduino Uno or Nano based on your board.
4. Go to Tools > Port and select the correct COM port for your connected board.

2.1 Steps for implementation

1. Open Arduino IDE and create a new sketch (program).

2. Paste the Clanguage code into the sketch

3.Upload the code to the Arduino board using the Upload button in the IDE

4.Place Arduino on breadboard (optional).

5.Connect digital input pins (2, 3, 4) to switches or jumper wires.

Pull-down resistors (10kΩ to GND) recommended on inputs to prevent floating values.

Built-in LED on Pin 13 used to show output F

3.Implementation

Inputs	OR Output $A+B$	NOR Output $-(A+B)$	Final Input to NOR $X+Y+C$	Final Output $F=\sim(X+Y+C)$
0	0	1	0+1	0
0	0	1	1+0	0
0	1	0	1+1	0
0	1	1	1+0	0
0	1	0	1+1	0
1	1	1	1+0	0
1	0	1	1+2	0
1	1	0	1+2	0
1	1	1	1+2	0
1	1	1	2+2	0