



# IMPLEMENTATION OF BOOLEAN LOGIC IN ARDUINO

K.VINOD KUMAR REDDY  
kuppannagar.fwc1@iitb.ac.in.

COMETFWC025

IITB Future Wireless Communication(FWC)

ASSIGNMENT

July 04, 2025

## Abstract

Q(39)2010 GATE: The Boolean Realised by the logic Circuit is

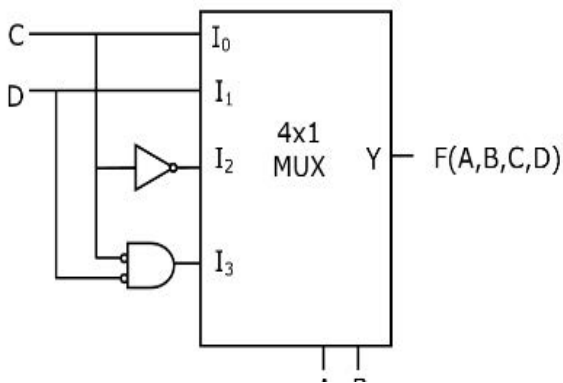


Fig. 1

## 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 USB cable.
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 C language 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  $\bar{F}$

## 3. Implementation

$$I_0 = C$$

$$I_1 = D$$

$$I_2 = C'$$

$$I_3 = C \cdot D$$

$$F(A, B, C, D) = C \cdot A' \cdot B' + D \cdot A' \cdot B + C' \cdot A \cdot B' + C \cdot D \cdot A \cdot B$$