

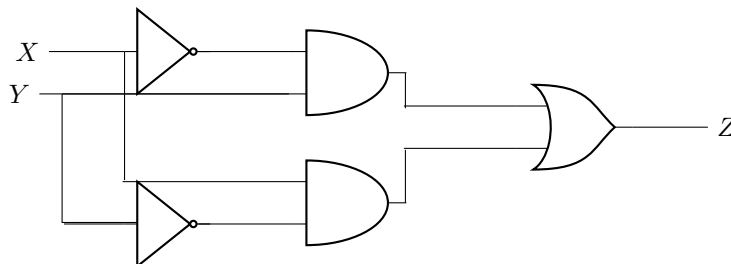
IDE ASSIGNMENT
PAVAN NAGASURYA CHEEMALAMARRY
pavannagasuryach18.555@gmail.com
IITH - FUTURE WIRELESS COMMUNICATIONS(FWC)

Contents

| | |
|----------------------------------|----------|
| 1 Question | 1 |
| 2 components | 1 |
| 3 Implementation | 2 |
| 3.1 Boolean Expression | 2 |
| 3.2 Truth Table | 2 |
| 4 Hardware | 2 |
| 5 Conclusion | 2 |

1 Question

In the circuit shown below , X and Y are digital inputs, and Z is a digital output. The equivalent circuit is a



1. NAND gate 2. NOR gate 3. XOR gate 4. XNOR gate

2 components

| Components | Value | Quantity |
|--------------|-------|----------|
| Arduino | Uno | 1 |
| BreadBoard | | 1 |
| Jumper Wires | | 4 |

Table 1: Components

3 Implementation

3.1 Boolean Expression

By solving above expression we get :

$$z = x'.y + x.y'$$

$$z = x'y + xy'$$

3.2 Truth Table

| A | B | OUT |
|---|---|-----|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

Table 2: Truth Table

4 Hardware

1. Make the connenctions between the arduino and bread board as shown in Table3.

| | | |
|--------------------|------|-----|
| Arduino | 5.0v | GND |
| Bread Board | +ve | -ve |

2. Connect one end of a jumper wire to the GND(ground) pin on the Arduino Uno board and other end to the breadboard's ground rail(-).
3. Connect one terminal of jumper wire (Input A) to the input pins on the Arduino(e.g., pin2) and other terminal to the positive rail(+) on the breadboard.
4. Connect one end of another jumper wire (Input B) to the input pin of Arduino(e.g., pin3) and other end to the positive rail(+) on the breadboard.
5. Enable the power supply to breadboard from arduino by connecting one end of jumper wire to the power pin of Arduino(5V) and other end to the positive rail(+) on the breadboard.

5 Conclusion

Hence , we have implemented the XOR gate by the code . given below :

| |
|---|
| https://github.com/pavannagasuryach/cbse-12th-optimization/tree/main/codes |
|---|