

XOR logic through AVR-Assembly

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1 ABSTRACT

Abstract—This manual shows how to implement XOR logic through AVR-Assembly.

In the circuit X and Y are digital inputs, Z is digital output. The equivalent circuit is the logic implementation of XOR Gate.

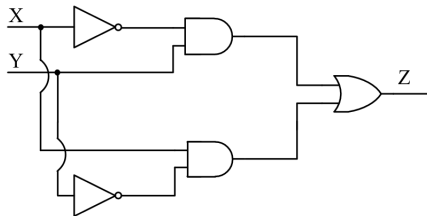


Fig. 1: $Z = X!Y + !XY$

2 COMPONENTS

Component	Value	Quantity
Resistor	220 Ohm	1
Arduino	UNO	1
Seven Segment Display		1
Decoder	7447	1
Jumper Wires	M-M	20
Breadboard		1

TABLE I

1. The figure given below is the pin diagram of Seven Segment Display.

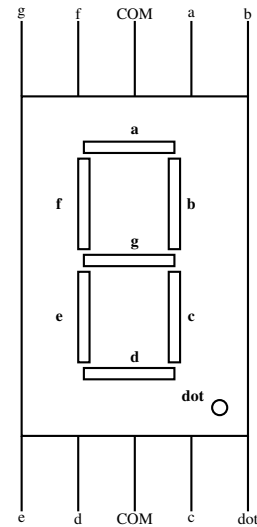


Fig. 2

2. The table given below is the connections between 7447 BCD Decoder and Seven Segment Display

7447	\bar{a}	\bar{b}	\bar{c}	\bar{d}	\bar{e}	\bar{f}	\bar{g}
Display	a	b	c	d	e	f	g

TABLE II

3. The diagram below shows the pin diagram of 7447 BCD Decoder. The output pins of 7447 are connected to Seven Segment Display using Table 2.

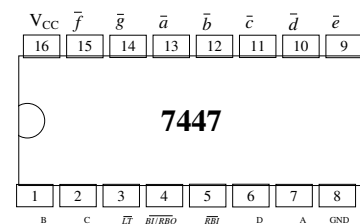


Fig. 3

4.The inputs of 7447 BCD Decoder is connected to Arduino using below Table 3.

7447	D	C	B	A
Arduino	5	4	3	2

TABLE III

3 PROCEDURE

1. connect the circuit using 7447 BCD-Seven segment display decoder and Arduino
2. connect the seven segment pins to 7447 using Table 2.
3. connect the 7447 BCD Decoder to Arduino using table 3.
4. Verify the XOR operation in assembly using the following code and making pin connections according to fig 1,Table 2 and 3.

Observe the circuit and verify the program by executing the link provided below.

<https://github.com/sindhu023/FWC/>