Staircase Switch through 7447 using avr-gcc

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Contents

1 Abstract

This manual shows the implementation of the Staircase switch using XNOR GATE and 7447.

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

3 Hardware

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

TABLE I

Connect 7 segment display to 7447 shown in table II

4 Procedure

1. Connect the circuit as per Table 2
2.Connect A pin of 7447 to D2.
3. Connect B,C and D pins of 7447 to GND.
4. Vary the D8 and D9 and observe the output accordingly in the seven segment display.

Input	0	1
Arduino	8	9

TABLE II

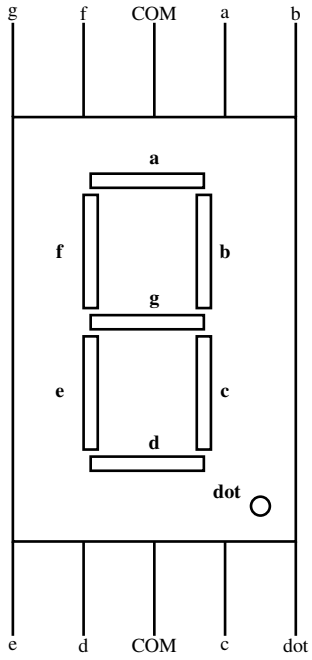

Fig. 1: 7 segment display

5 Code

Observe the circuit by executing the link provided below.

https://github.com/Meghana9121/FWC/blob/main/avr-gcc

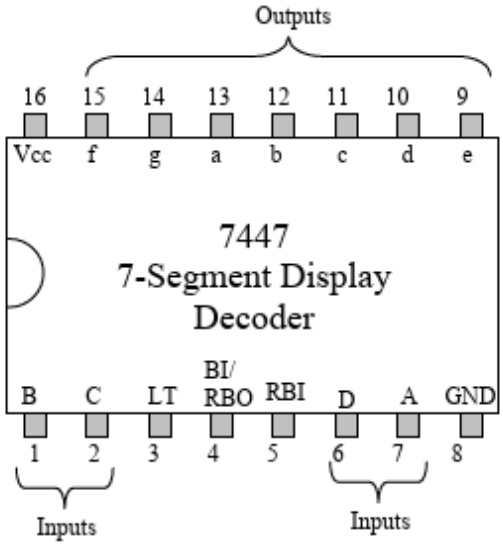

Fig. 2: 7447

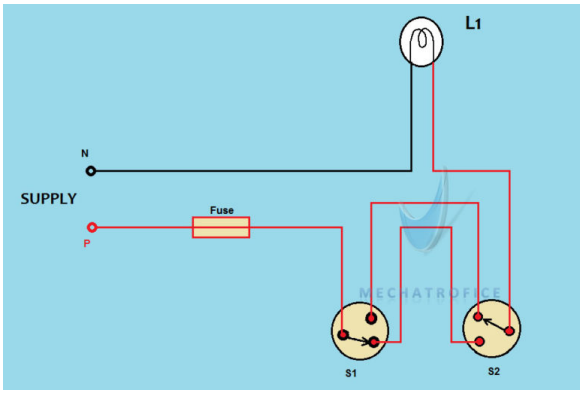

Fig. 3: Switches OFF-ON

	W	X	Z
0	0	0	1
1	0	1	0
2	1	0	0
3	1	1	1

TABLE III: Truth table

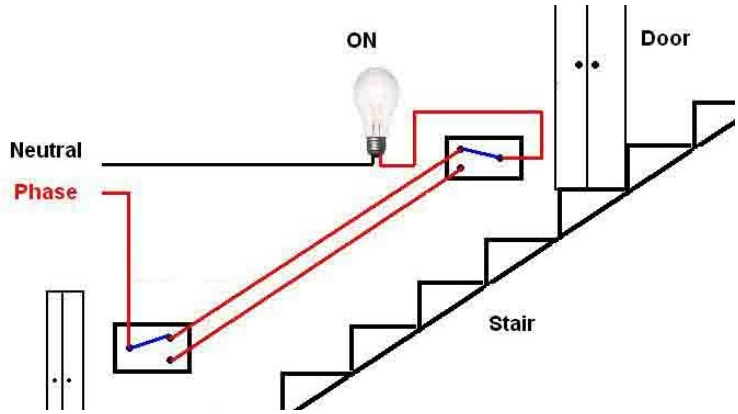

Fig. 4: Staircase Switch when both are on