7447 BCD-Seven Segment Display decoder

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I. ABSTRACT

The document shows how to use the 7447 BCD-Seven Segment Display decoder to learn boolean logic.

II. COMPONENTS

The required components list is given in Table: I. The pin diagram of the seven segment display is shown in Fig.1. The pin diagram of IC 7447 is shown in Fig.2

Components	Value	Quantity
Seven Segment Display		1
IC	7447	1
Arduino	UNO	1
Jumper Wires		10
Breadboard		1

TABLE I

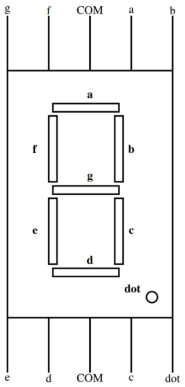

Fig. 1.

III. PROCEDURE

1) Make the connections between 7447 and Seven segment display as per the Table: II.
2) Make the connections between Arduino and 7447 as per the Table: III.

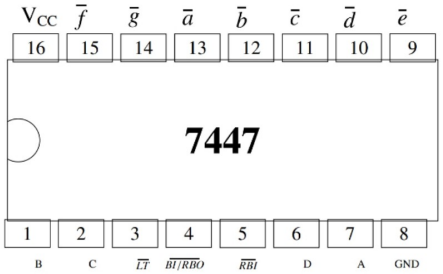

Fig. 2.

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

TABLE II

3) The truth table for the increment decoder is shown in Table IV.
4) Run the code. And observe the output in the display as in Fig.3.

7447	D	C	B	A
Arduino	5	4	3	2

TABLE III

Z	Y	X	W	D	C	B	A
0	0	0	0	0	0	0	1
0	0	0	1	0	0	1	0
0	0	1	0	0	0	1	1
0	0	1	1	0	1	0	0
0	1	0	0	0	1	0	1
0	1	0	1	0	1	1	0
0	1	1	0	0	1	1	1
0	1	1	1	1	0	0	0
1	0	0	0	1	0	0	1
1	0	0	1	0	0	0	0

TABLE IV

IV. RESULTS

Download the code given in the link below and execute them to see the output as shown in Fig.3 by observing in seven segment display.
https://github.com/Tabassum4930/FWC-1/blob/main/Ide/7447/code.cpp

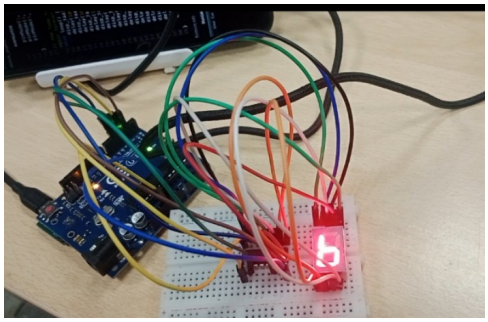

Fig. 3.

V. CONCLUSION

Therefore, it is an essential component in the experimentation of digital circuits.