

7447 BCD - Seven segment Display Decoder Assignment

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I. ABSTRACT

This paper shows how to use the 7447 BCD-Seven segment Display Decoder to learn Boolean logic using Arduino Uno.

II. COMPONENTS

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

Components	Value	Quantity
IC	7447	1
Seven segment display		1
Arduino	UNO	1
Jumper Wires		10
Breadboard		1

TABLE I
COMPONENTS LIST



Fig. 1. IC 7447

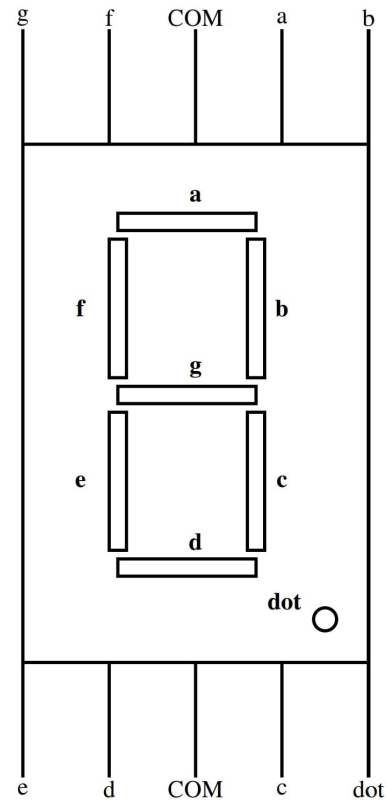


Fig. 2. Seven Segment Display

III. PROCEDURE

- 1) Make the connections of 7447 IC and the seven-segment display as shown in Fig. 3.
- 2) Make the connections of 7447 IC and Arduino Uno as shown in Fig. 4.
- 3) Truth table for incrementing from 0 to 9 in the seven-segment display is shown in Table II.

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

Fig. 3. Circuit Setup 1

7447	D	C	B	A
Arduino	5	4	3	2

Fig. 4. Circuit Setup 2

- 4) Execute the Arduino code without any errors.
- 5) Upload the code into the hardware setup using Arduino IDE.

IV. RESULTS

- 1) Download the code from the link below and execute it to see the output as shown in Fig. 5.
- 2) <https://github.com/Pranaykuma/FWC-1/blob/main/7447/main.cpp>

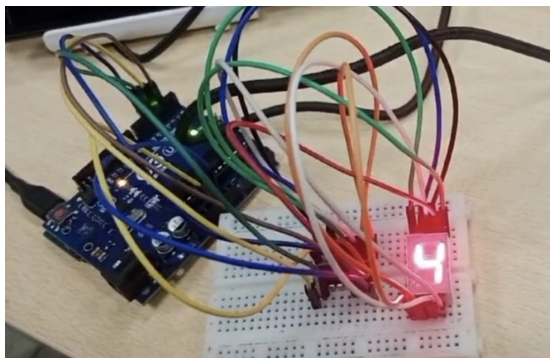


Fig. 5. Output Example

V. CONCLUSION

Hence, the implementation of the 7447 IC and Seven-segment display using Arduino UNO is complete.

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

TABLE II
TRUTH TABLE FOR SEVEN-SEGMENT DISPLAY