भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

7447 BCD - Seven segment Display Decoder Assignment

Sivva Pranaykumar
Roll No: FWC22293
sivvapranay.s@gmail.com

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

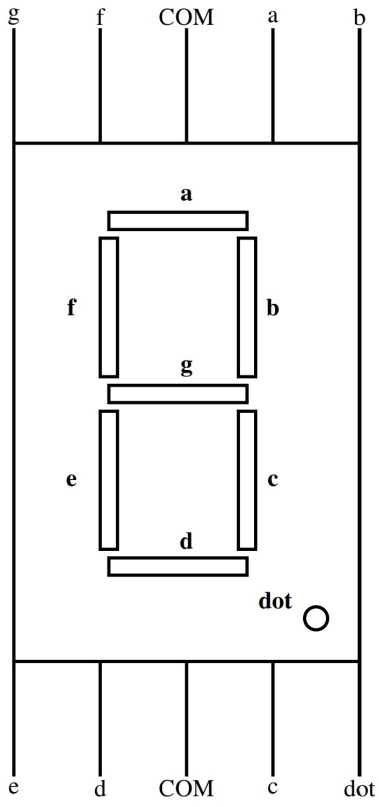

Fig. 2. Seven Segment Display

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.

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

3) Truth table for incrementing from 0 to 9 in the seven-segment display is shown in Table II.

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

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

V. CONCLUSION

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

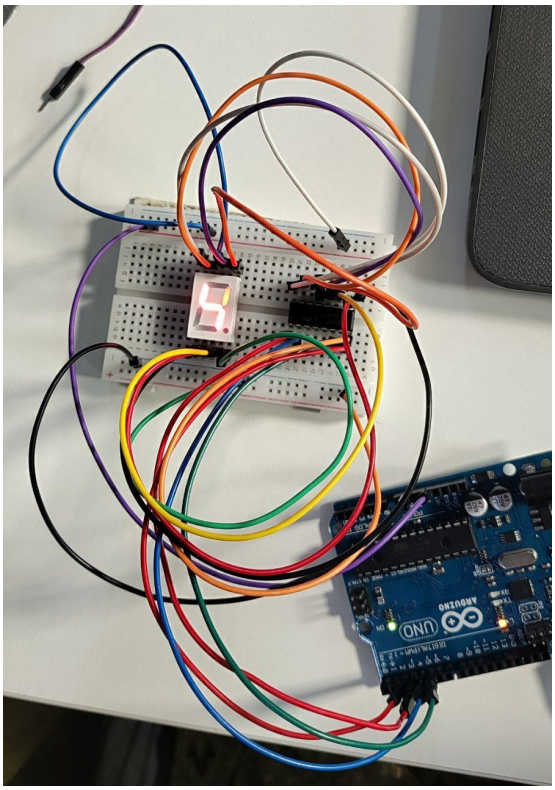

Fig. 5. Output Example