

Assembly Assignment

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I. ABSTRACT

A 4 – bit priority encoder has inputs D_3, D_2, D_1 and D_0 in descending order of priority. The two-bit output AB is generated as 00,01,10 and 11 corresponding to inputs D_3, D_2, D_1 and D_0 , respectively. The Boolean expression of the output bit B isto be implemented.

II. COMPONENTS

The required components list is given in Table: I.

Components	Value	Quantity
LEDs		1
Arduino	UNO	1
Jumper Wires		10
Breadboard		1

TABLE I

III. PROCEDURE

- 1) The truth table of the 4 – bit priority encoder is shown in Table: II.

D_3	D_2	D_1	D_0	A	B
1	X	X	X	0	0
0	1	X	X	0	1
0	0	1	X	1	0
0	0	0	1	1	1

TABLE II

- 2) Make the connections between Arduino and LED as per the Table: III.

Arduino Pin	LED
D7	+ terminal
gnd	- terminal

TABLE III

- 3) Take the inputs for 4 – bit encoder using the Arduino digital pins 2, 3, 4 and 5 as D_0, D_1, D_2 and D_3 respectively.

- 4) Run the assembly code and observe the LED glow for the required inputs.

IV. RESULTS

Download the code given in the link below and execute them to see the output as shown in Fig.1 by observing the LED.

<https://github.com/Tabassum4930/FWC-1/blob/main/Assembly/code.asm>

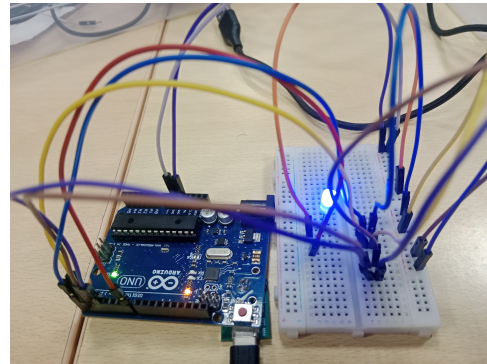


Fig. 1.

V. CONCLUSION

Encoders play a critical role in a wide range of applications, offering precise and reliable data about position, speed, and direction. Therefore, we can design several circuits and can be implemented with Arduino using Assembly language