



# AVR-GCC Assignment

Shaik Mohisena Tabassum  
Roll No: FWC22279  
shaikmohisena123@gmail.com

## 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 Embedded C 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/AVR-GCC/code.c>

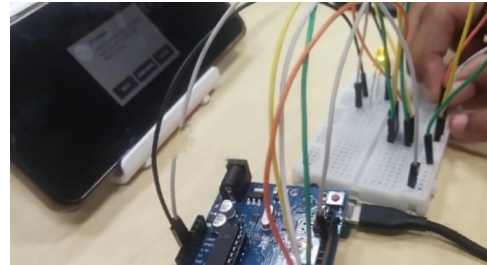


Fig. 1.

## 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 C language