भारतीय प्रौद्योगिकी संस्थान हैदराबाद
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Assembly Assignment

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I. ABSTRACT

In the circuit as shown in Fig.1, the present value of Z is 1. Neglecting the delay in the combinatorial circuit, the values of S and Z, respectively, after the application of the clock will be

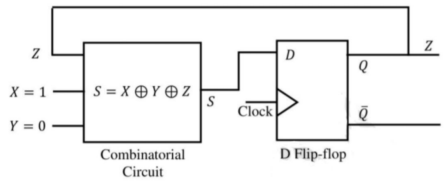

Fig. 1.

II. COMPONENTS

The required components list is given in Table: I. Flip-flop IC 7474 diagram is shown in Fig.2.

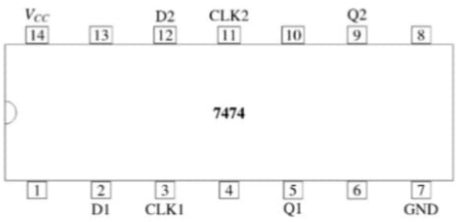

Fig. 2.

III. PROCEDURE

Make the connections between Arduino and 7474 as per the Table: II.

Components	Value	Quantity
IC	7474	1
LEDs		1
Arduino	UNO	1
Jumper Wires		10
Breadboard		1

TABLE I

Arduino Pin	**7474**
D5	2
D6	3
D4	5
5 V	14
gnd	7

TABLE II

IV. RESULTS

Download the code given in the link below and execute them to see the output as shown in Fig.2 by placing the LED at the output pin of 7474 IC https://github.com/Pranaykuma/FWC-1/blob/main/Assembly/main.cpp

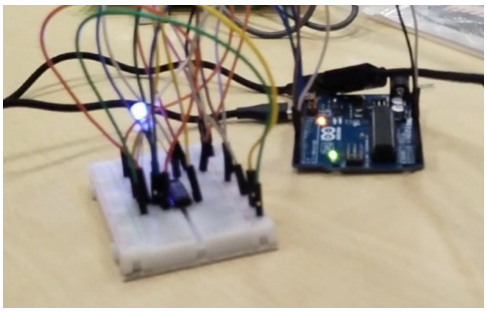

Fig. 3.

V. CONCLUSION

The D-Flip Flop is a good application in order to use it for registers. Here, the sequential circuit is combined with the

combinational circuit of XOR gates to get the output. Therefore, we can design several circuits and can be implemented using Arduino and Platformio.