AI1110 Hardware Project

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Int this project we have made a random number generator using Decoder, Clock, 7-seg Display

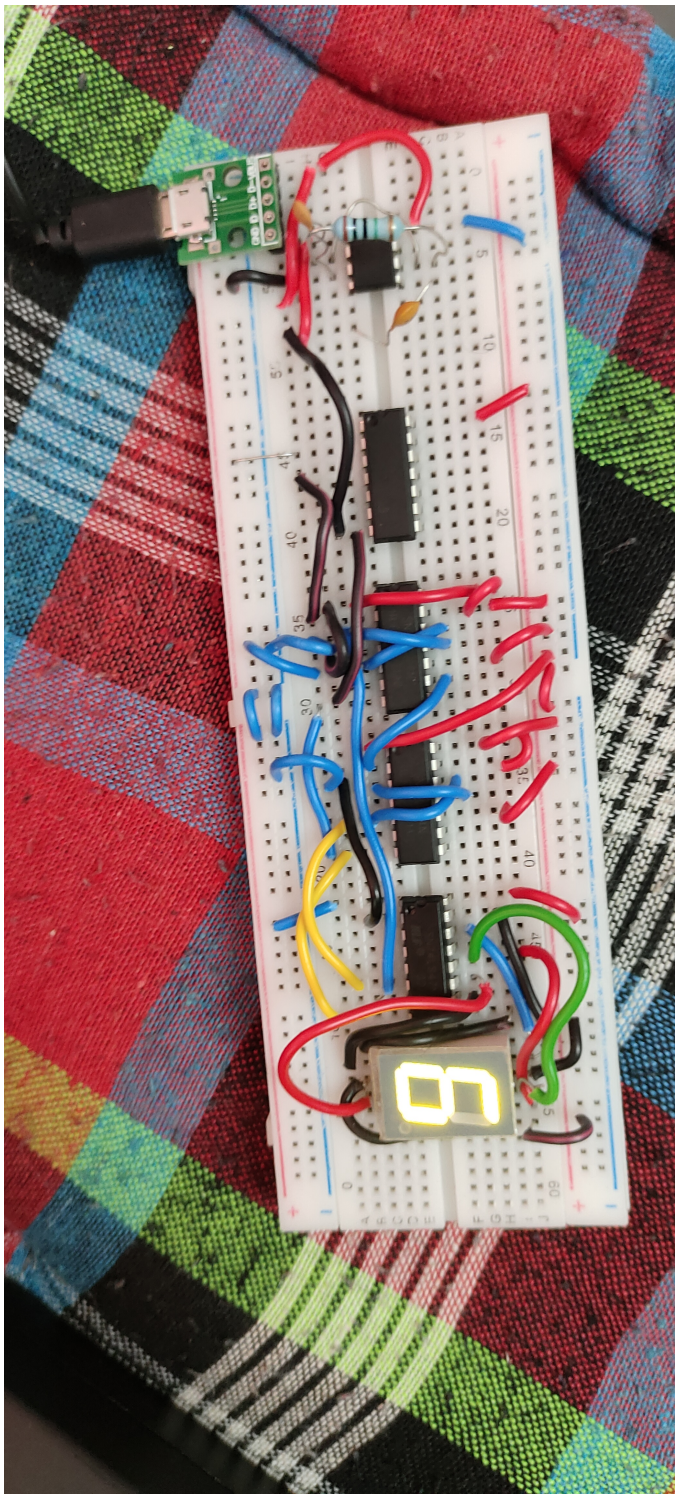
Output

Output was changing digits on the seven segment display the output is shown in figure

Component	Value	Quantity
Breadboard		1
Seven Segment Diplay	Common Anode	1
Decoder	7447	1
Flip Flop	7474	2
X-OR Gate	7486	1
555 IC		1
Resistor	1 KΩ	1
Capacitor	100 nF	1
Capacitor	10 nF	1
Jumper Wires		

Procedure

1) Make connection to the 555 circuit according to diagram(Figure 1).
2) Connect the clock output of 555 timer circuit to clock signal of D-Flip Flop.
3) Create a circuit for shift registers using D-Flip Flops
4) Make connection to the XOR gate or 7486 IC according to the figure 4.
5) Connect the decoder 7447 IC as shown in the figure 5.
6) Connect 7-seg display to the decoder 7447 IC according to figure 6.
7) Make the remaining connections and connect them to a power source.



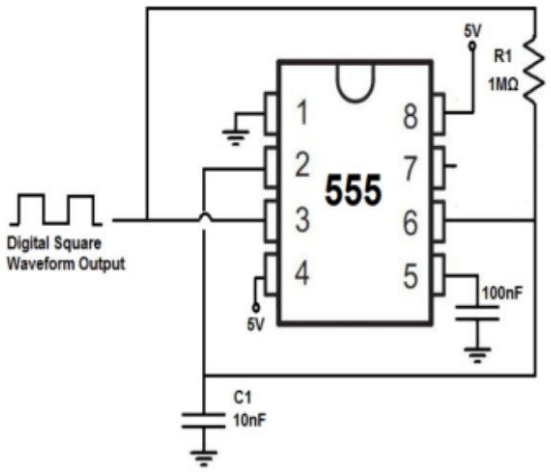


Fig. 1. Connection in 555 timer circuit

Fig. 5. Connection in Decoder gate

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

Fig. 6. Connection of seven segmented display with decoder

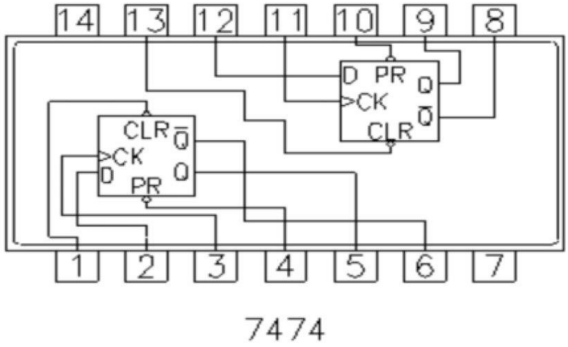


Fig. 3. Connection in 7474 IC

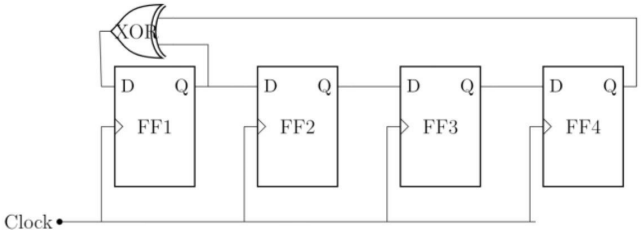


Fig. 4. Connection in XOR gate

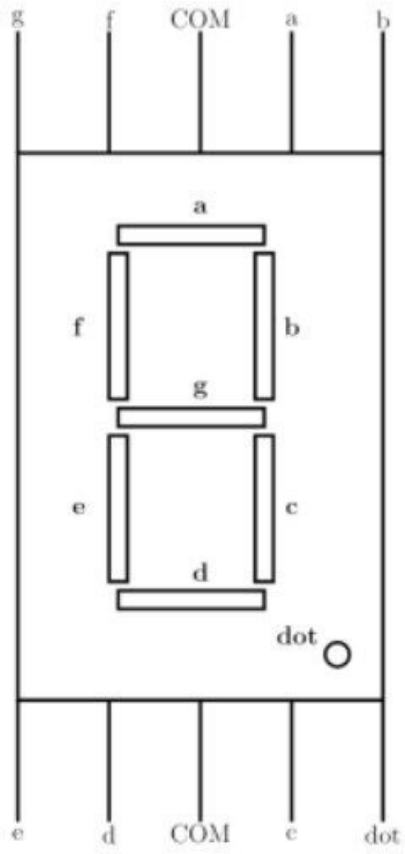


Fig. 6. Seven segmented display