Probability Hardware Assignment

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Reneration of Random number using shift registers

COMPONENTS

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) Connect 555 timer circuit according to the figure 1

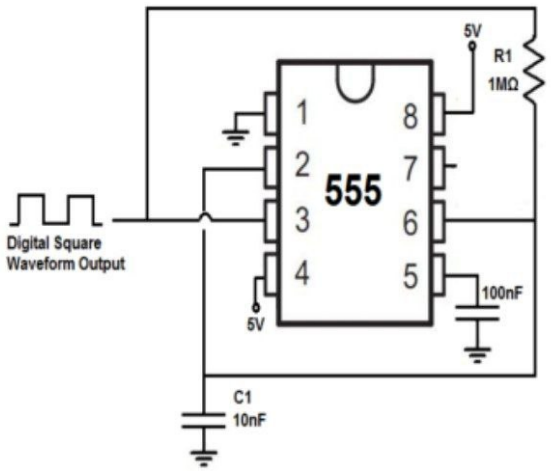

Fig. 1.

2) Connect Clock output of 555 timer circuit to the clock signal of D-Flip flops
3) Now make the circuit for shift registers using a 4 D-Flip flops

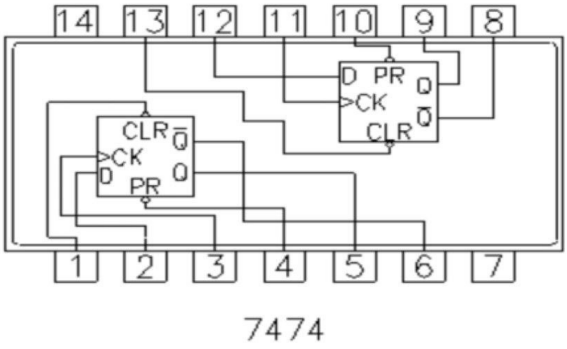

Fig. 3. 7474 IC

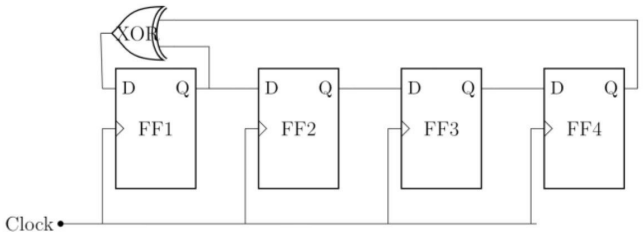

Fig. 4. XOR gate

4) Then we connected XOR gate (7486 IC) according to the figure 4
5) Then connect the decoder as per the figure 5
6) Then connect seven segmented display and then connect it with the decoder according to the table 6 and the figure 6
7) Connect all the independent parts with each other and then connected the power source

OUTPUT

Output was changing digits on the seven segment display as shown in figure 7

Fig. 5. Decoder gate(7447 IC)

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. even segmented display with decoder

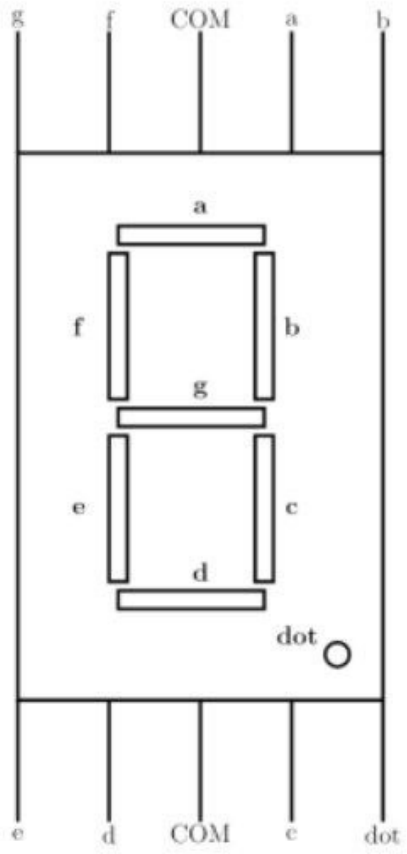

Fig. 6. Seven segmented display

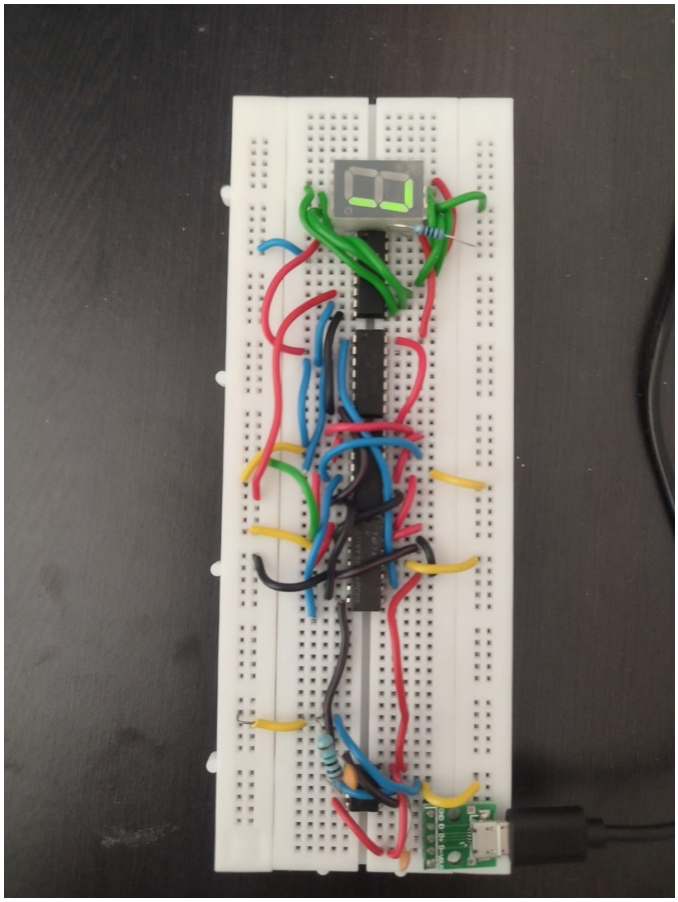

Fig. 7. output