Hardware Project
Generating Random Number
AI1110:Probability And Random Variables
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Aim

In this assignment we have to create a circuit that will generate Random number using shift registers.

Components used

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		

TABLE 0
Components used

Procedure

1) We connected the 555 timer circuit.
2) Then we connected Clock output of 555 timer circuit to the clock signal of D-Flip flops
3) Now we make the circuit for shift registers using a 4 D-Flip flops (using two 7474 IC's)
4) Then we connected XOR gate (7486 IC).
5) then we connected the decoder (7447 IC) and connected its A,B,C,D with Q_0,Q_1,Q_2,Q_3.
6) Then we connected The seven segmented display and then connected it with the dceoder (7447 IC).
7) We connected all the independent parts with each other and then connected the power source

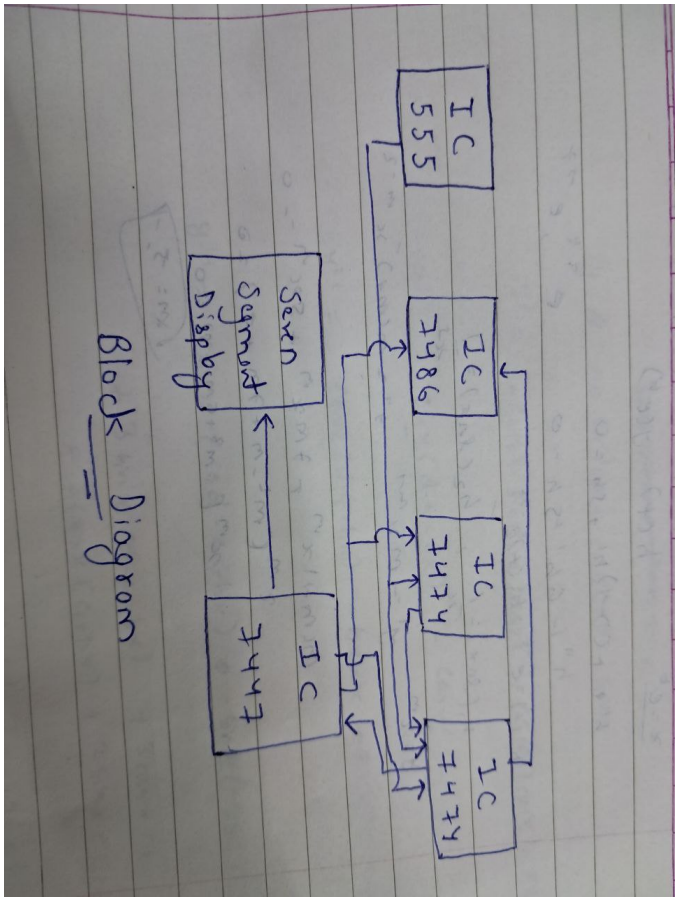

Fig. 7. Block Daigram

Block daigram

Output

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

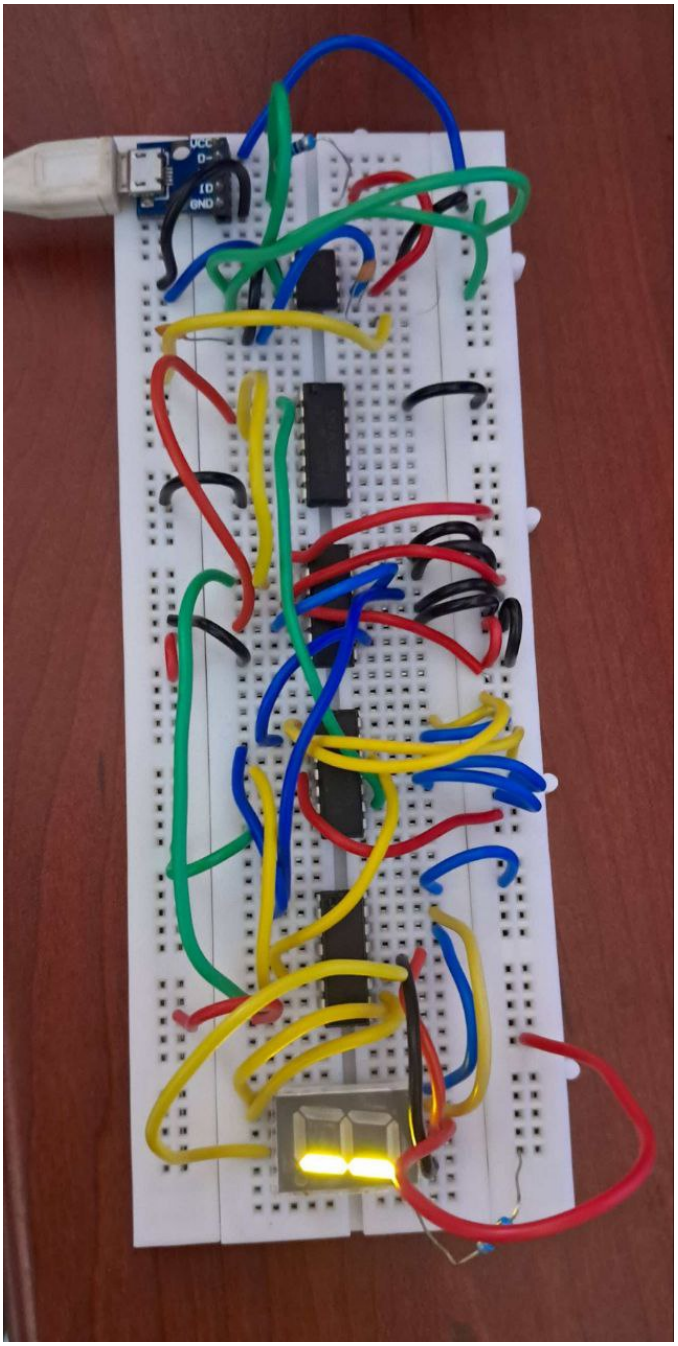

Fig. 7. output

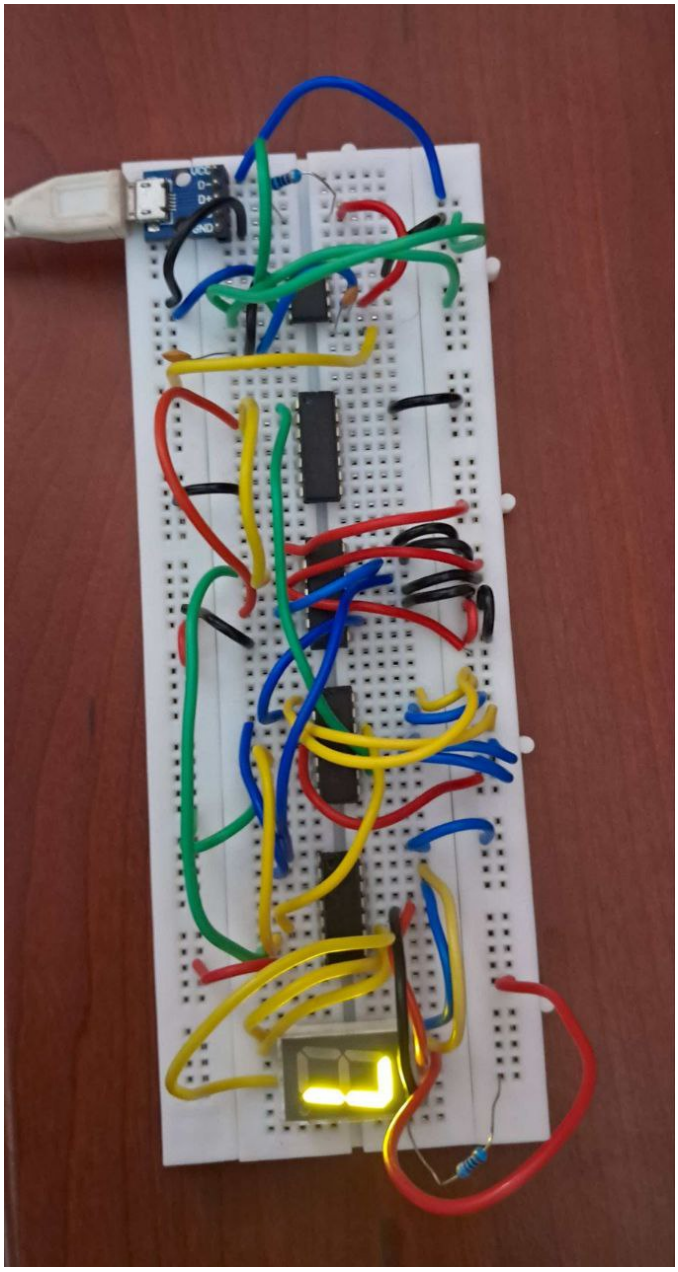

Fig. 7. output