AI1110 Hardware Project Report

Pooja Mane
(CS22BTECH11035)

I. 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		

TABLE I
Components used

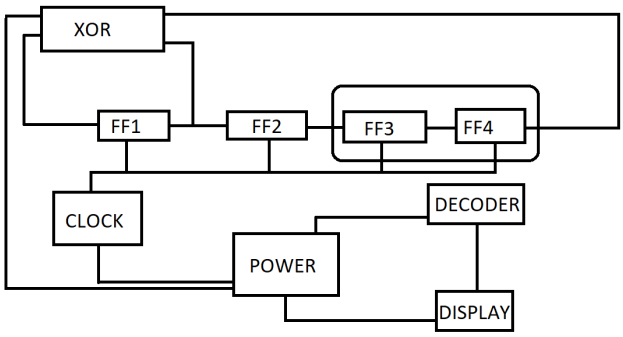

Fig. 1. Block diagram

II. Procedure

1) First a micro USB is used to generate a VCC and GNG bus.
2) A square wave signal is generated by forming a circuit using a 555 timer IC, a 10 Ω resistor, 100nF and 10nF capacitors to introduce a time delay for the random numbers to be generated.
3) The clock output of the 555 timer circuit is connected to the clock signal of D fip-flops.
4) A circuit for shift registers is created using 4 D flip-flops (two 7474 ICs) and an XOR gate (7486 IC). Each output of the D fip-flop is connected to a decoder IC (7447 IC).
5) The connections are made for the seven segment display to display the random numbers.

We obtained different digits which was continuously flickering on the seven segment display the output is shown in figure

III.

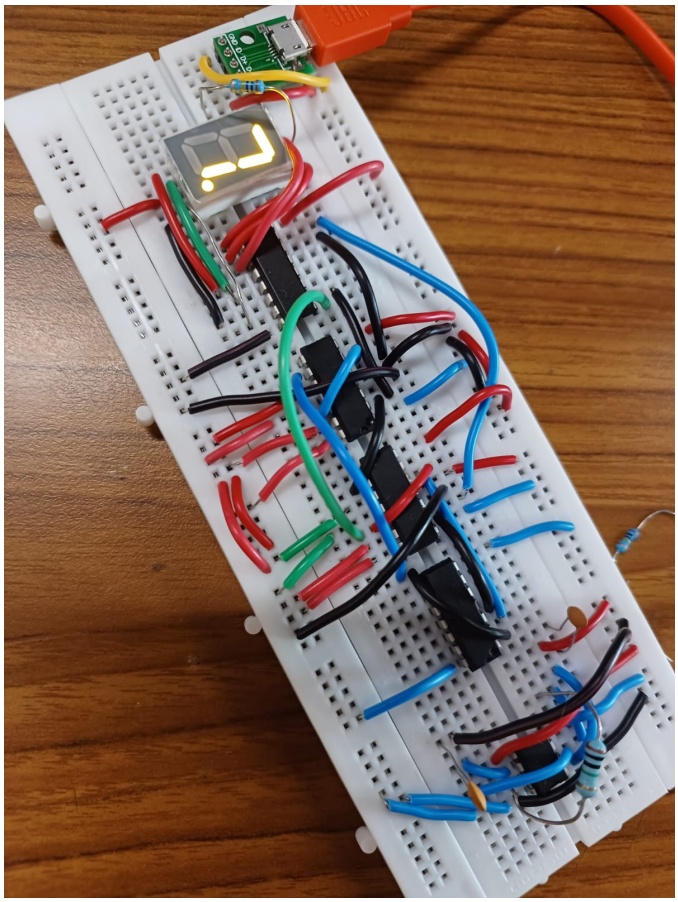

Fig. 2. Caption