# Hardware Asssignment Report
# Random Number Generation using Shift Registers

CS22BTECH11046

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## COMPONENTS.

| Components | Value | Quantity |
|---|---|---|
| Breadboard | | 1 |
| Seven Segment Display | Common Anode | 1 |
| Decoder | 7447 | 1 |
| Flip Flop | 7474 | 2 |
| X-OR GATE | 7486 | 1 |
| 555 IC | | 1 |
| Resistor | 1KΩ | 1 |
| Resistor | 1MΩ | 1 |
| Capacitor | 100nF | 1 |
| Capacitor | 10nF | 1 |
| Jumper Wires | | 3 |

TABLE 0

## DESCRIPTION.

1) Giving power supply to Breadboard through connecting USB to micro USB board and give VCC(+5V) power supply and ground the respective rails in breadboard.

2) Generated clock using 555 timer by using two capacitors (10nF,100nF) , one resistor 1MΩ and jumper wires.It will the convert regular pulse into Square pulse.

3) Made a circuit using one Decoder(7447) used to covert binary input into specific output pattern, one X-OR gate(7486) and two D-Flip flops(7474) used to store a single bit of information.

4) Connected the Clock output of 555 timer circuit to Clock signal of D-Flip flops.

5) And make connections between the seven segment display and decoder. A seven segment display is a electronic display that can show numerical digits (0-9) and some additional characters.
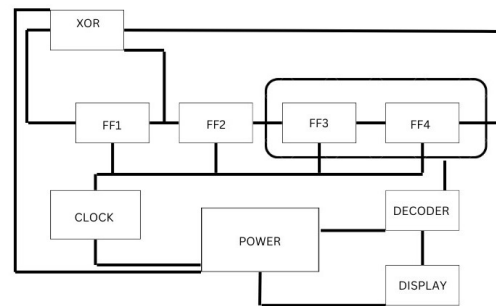
## BLOCK DIAGRAM.



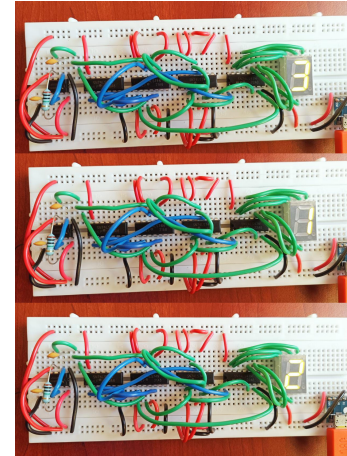Fig. 5: Block Diagram

## Observation.



Fig. 5: OBSERVATIONS

Random Variables are observed in a A seven segment display, it is showing random numbers between (0-9) and some additional characters