

Experiment 8: To sum up...

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Scarface, Brian De Palma (1983)

1 Introduction

In this experiment, you will combine various aspects from previous experiments.

2 (30 pts) Part 1

In this part, you are expected to generate a sequence using "Blum-Blum-Shub" approach. Please follow the given "Blum-Blum-Shub" algorithm and implement it as an interrupt subroutine. Use P2.5 as button to interrupt the microcomputer and show the numbers of the sequence on the 7-segment display. You can use 5 as your initial seed.

```
1 p = 11 , q = 13 , s = any seed other than 1 and 0
  M = p*q;
3 r = power (s,2) mod M;
  s = r;
```

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3 (30 pts) Part 2

Add a timer interrupt so that the LCD shows the next value in every second using the random number generator.

4 (40 pts) Part 3

Define three push buttons for

- Freeze/unfreeze the displayed number.
- Sum the displayed number to a register.
- Show the accumulated value inside the register and stop.