

## EEE102 LAB 7-FINITE STATE MACHINE

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Section: 001

### Introduction

The purpose of this lab was to design an FSM on the breadboard and for that we are wanted to read datasheets of gates and make research about how to connect LEDs and buttons.

### Implementation

We are wanted to create an FSM. So, I decided to use:

- NAND gate
- D flip flop with clear
- A button
- A LED

Hence firstly I draw their state transition diagrams and truth tables. As a result, I understood what I was doing. It was just reversing the my button signal. So I made the buffer in a long way.

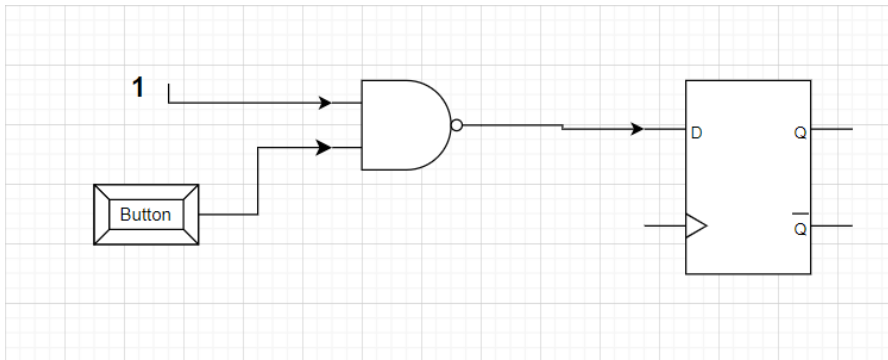


Figure 1: My Finite State Machine

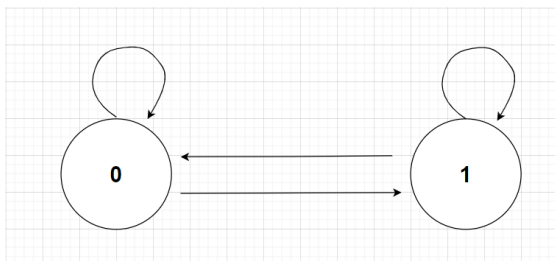


Figure 2: State transition diagram

BUTTON	OUTPUT
0	1
1	0

Figure 3: Truth table

Then I implemented on a breadboard and see input and output changes. When I press the button LED was off, otherwise LED was on.

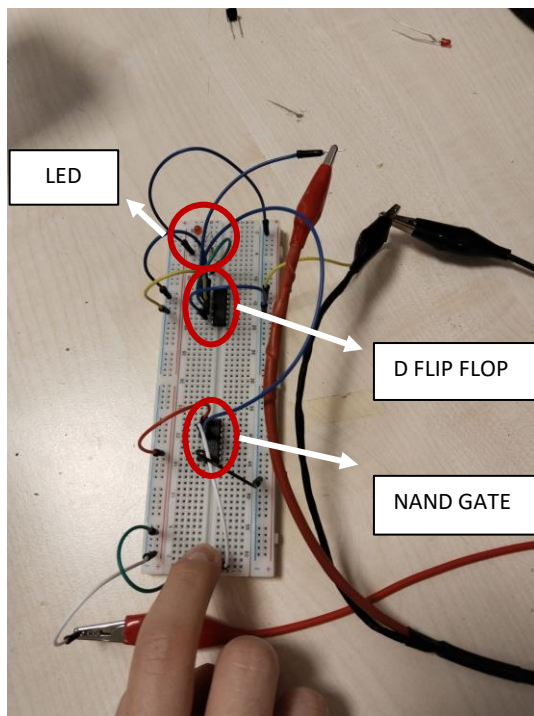


Figure 4: While pressing button, LED is off.

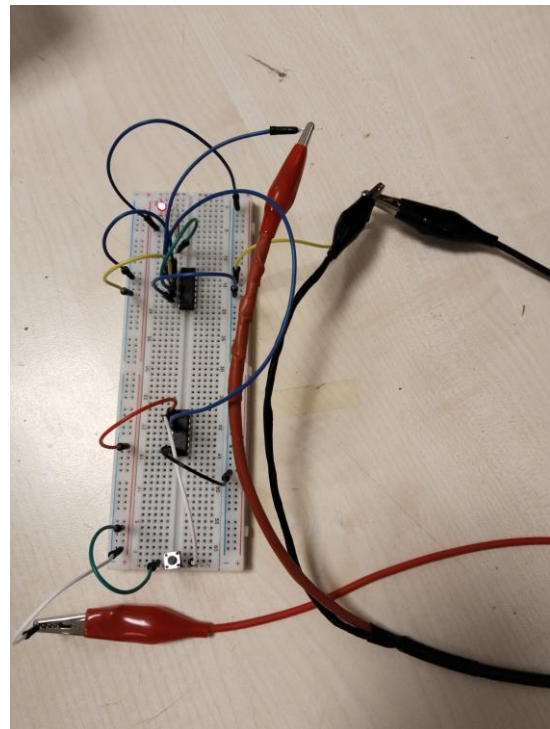


Figure 5: While not pressing the button, LED is on

### Conclusion

In conclusion, we designed a Finite State Machine, and we implemented it on breadboard. The circuit was designed step by step. After designing my circuit, I draw its truth table and state transition diagram. They helped a lot for understanding. Then I implement circuit with help of datasheets and LED and buttons jpg. As a result of this lab, I understood FSM design and logic. Also, I improved for using breadboard. So, it was a successful experiment for me.