EEL 3705 Logic Laboratory
Spring 2019 Term Project

School Security System

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Objective

- A system is designed that is there to regulate the school system and provides automated assistance to both the school and other external services with regards to security and weather.

Project Goals

- Creating a functioning code, and Designing a functional system using Verilog and FPGA boards to stimulate a real-world solution

Methodology

- Sources were used to collect information on what the system would contain (security services and school officials) and was then designed with automatic inputs to move to whatever required stages any situation would need.
- Contacted Experts in the associated field of school safety

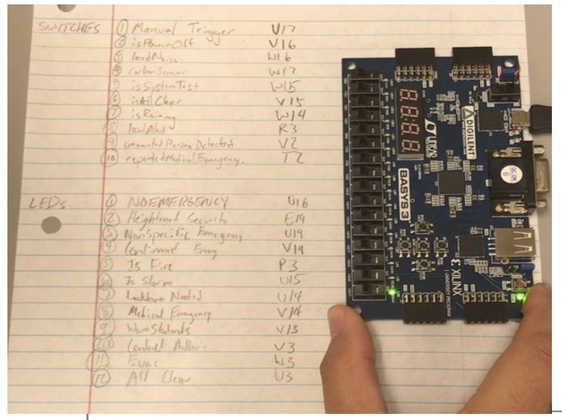
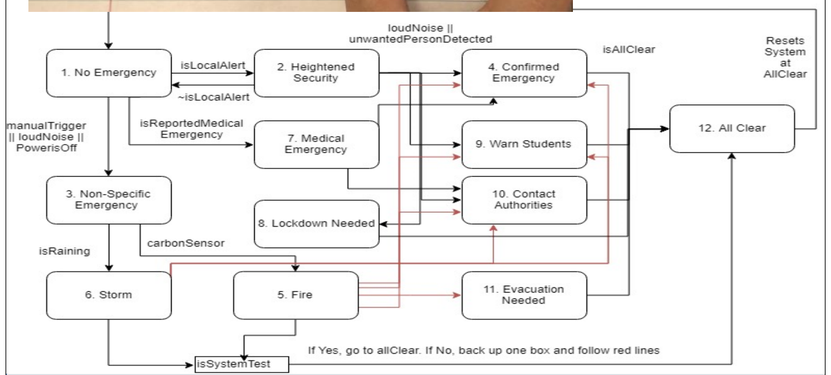
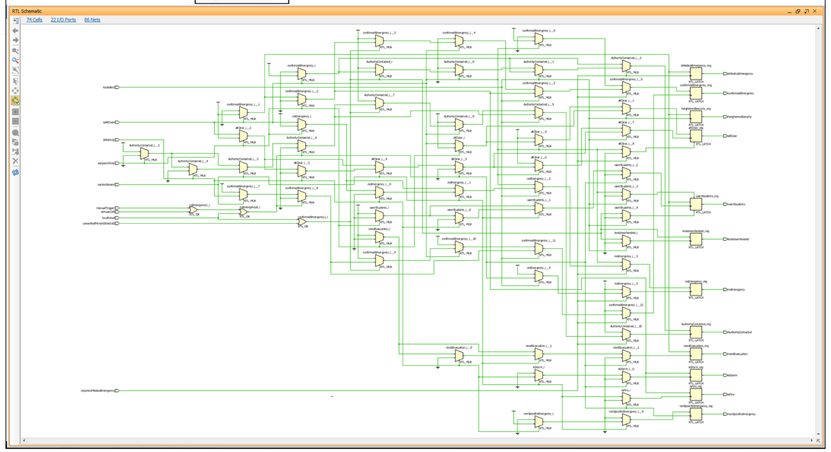
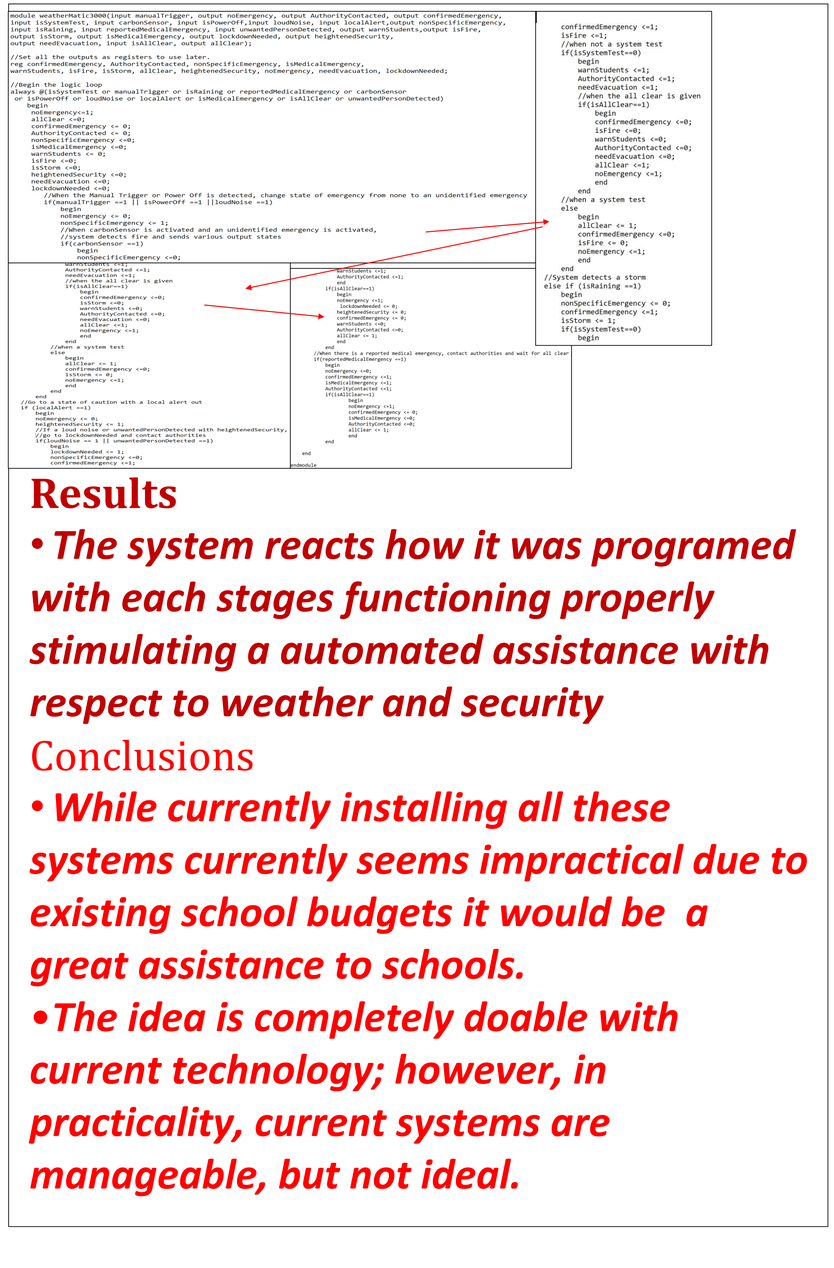


Figure 1 (middle-top): Picture of Board with labelled switches and LEDs
Figure 2 (middle): State Diagram
Figure 3 (middle-bottom): Schematic Diagram [generated by Vivado]
Figure 4 (Right): Screenshots of Verilog Code including module declaration, the always loop, and all of our state logic. [Split into four screenshots connected with red arrows]







Results

- ***The system reacts how it was programed with each stages functioning properly stimulating a automated assistance with respect to weather and security***

Conclusions

- ***While currently installing all these systems currently seems impractical due to existing school budgets it would be a great assistance to schools.***
- ***The idea is completely doable with current technology; however, in practicality, current systems are manageable, but not ideal.***