Advanced Fire Escape System (A.F.E.S.)

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PROBLEM STATEMENT

Having to evacuate many people in a short amount of time needs a lot of coordination and planning. The problem is when people do not know how to get out and then panic arises. This creates chaos and confusion that leads people to be stuck within the building. The building architecture does take into consideration the fire evacuation routes, but if the people in the buildings do not know, then it does not matter. This fire detection system will find the best-case scenario evacuation route. Additionally, it will deliver real-time data to the first responder. This is done by integrating two aspects of fire safety evacuations. The two key factors that our design will address are evacuation and detection.

BACKGROUND

Fire safety and prevention has been an important topic for a long time. Living in California means you have been affected by fire in a certain way either by an actual fire or smoke. The problem that we are focusing on is buildings that are caught on fire. The challenges that arise from this disasters is that there are many factors that must be taken into consideration.

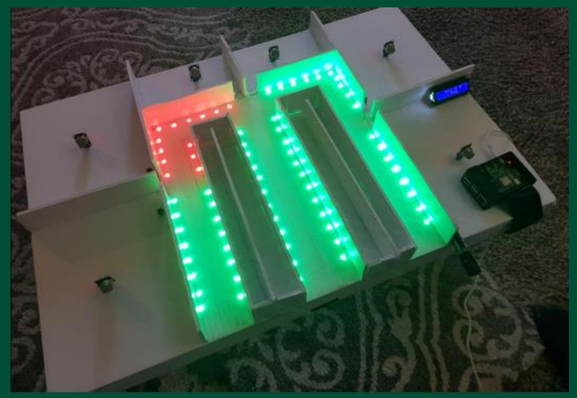

Figure 1: Project Overview

SUMMARY OF WORK

To make the work organized and efficient, we broke down the workload into 6 tasks. Each task has different subtasks and a work package. The 6 tasks consists of the layouts, sirens, sensors, LEDs, LCD display, and system code. We assign each work package to a team member. Some of the packages were too hard to work on individually so we assigned them to two team members. There were many group discussions as the project went on to ensure functionality between all components. Each component works along side each other to detect, alert and display people to safety that can be used in a multi-story buildings.

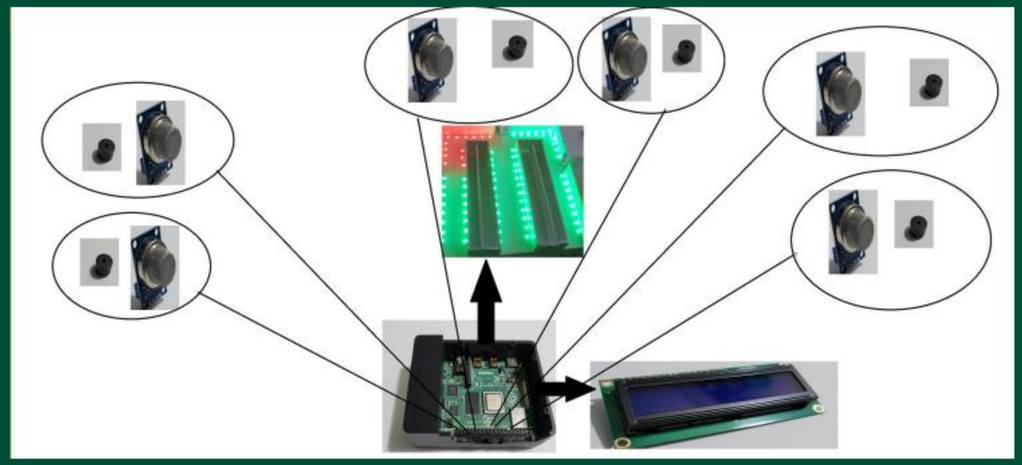

Figure 2: Floor Schematic Layout

IMPACT ON COMMUNITY

The intended, long-term impact of this work includes:

- **Safe peoples' lives**
- **Eliminate the death of victims from a building caught on fire.**
- **First responders will know the source of the fire within seconds**
- **Give people a sense of security**
- **Will be used by the building management as safety precaution**
- **Immediate detection of a failed sensor**