Project Narrative

Fire alarm:

Motivation

In today’s day and age, technology advancements are occurring at a rapid pace. There are new inventions being created every minute improving people’s lives and making the world a better and safer place. We looked at our world and saw that while technology is advancing and becoming a bigger part of our every day lives, one piece of technology that has not seen a major improvement in decades is the smoke detector. This device is a standard in everyone’s homes, offices, hotels and all other major buildings that we spend time in every single day but has been neglected as far as engineering advancement is concerned. We thought we could do better. When looking at the average use case of a smoke detector, it was discovered that while they are useful, these devices do not provide the user with an abundance of information. Many times someone would hear the alarm go off and just frantically run to what they believe to be the nearest and safest exit without much of a plan. This scenario has the potential for disaster when you consider that there could be multiple people inside the building who do not know their way around the building. We believe that a smoke alarm with improved functionality can help to eliminate this scenario and make everyone’s lives easier, and most importantly, safer.

Goals, Objectives, and Function

The goals for the smart smoke detector and fire alarm are to make an affordable, customizable, connected system of smoke alarms alert employees and residents of the safest and fastest exit to the building in the case of a fire emergency. We would like this system to not be that much more expensive than existing options in order to convince the market to adopt our system. In the event of an emergency, these smoke alarms would sound off in an order that would lead people to the closest and safest exit. Users would just have to follow the sound that is projected from these alarms until they reach the exit to the building. These smoke alarms would be dynamic in the sense that they adapt to where the fire is located. This means that if a smoke alarm that is in the middle of a hallway goes off, people on the left of that area would be directed to the exit that is closest on their side of the fire while people on the right of that area would be directed to the exit that is closest on the other side of the fire and nobody is directed though the dangerous area. This allows for residents to know where the fire is and what areas to avoid. For people that have hearing issues, these alarms will also have a visual display that will point people in direction they should go to exit the building. This also allows for better handling of confusing areas such as when two hallways meet.