

Social Distance Detector
ECE153B Final Project Proposal
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Overview

I am proposing a Social Distance Detector for my project. This project is a device for workers that tells the customer if they are too close. For the implementation, an HC-SR04 Ultrasonic sensor will be used to measure for the distance of an approaching person and the location of the worker. When the distance between the worker and the approaching person becomes 6 feet or less, the LCD display will show the message, "Please step back." When the person steps back, the LCD will stop showing the message.

Peripherals

HC-SR04 Ultrasonic sensor
LCD Display

Serial Interface Protocol

I2C
SPI

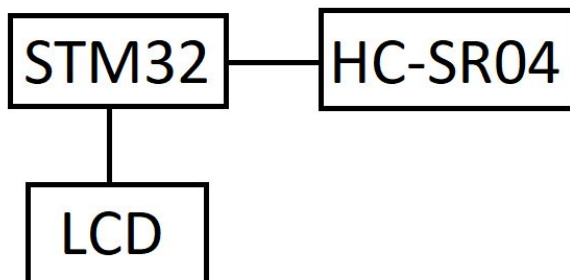
Software Structure

The I2C will be constantly reading distance measurements from the HC-SR04 Ultrasonic sensor. While the distance being read is greater than 6, nothing will happen. When the readings show that the distance is less than 6 feet, an interrupt will be used to communicate with the LCD display to display the message. After the person steps away and the distance is greater than 6 feet again, another interrupt will be used to communicate with the LCD display to stop showing the message.

Responsibility List/Goals

- Implement data readings from HC-SR04 Ultrasonic sensor with I2C
- Implement LCD display using SPI

Block Diagram



Website:

<https://sites.google.com/view/ece153bprojectbryann/home>