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Electrical and Computer Engineering 304

Junior Design Project

Preliminary Design Review 2

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# List of Parts

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# Section 1: Problem Statement

Limiting exposure and spread of the COVID-19 virus is vital for protecting our communities and by following safety protocols issued by public health agencies, we can reduce the number of fatalities and time spent under COVID restrictions. One of these safety protocols issued by public health agencies is that individuals should maintain six feet apart from one another. This can be challenging for those that work at front desks or are in contact with many people at the office throughout the day. To ensure the safety of everyone, the *Covid-19 Distance Sensor (CDS)* detects the distance of those approaching the front desk and alerts them if they break compliance by displaying the distance of the individual and flashing a red light if they are within 6 feet. If compliance is not broken, then the device will display a green light, signifying that it is safe to either approach or being a conversation with the person at the front desk. Additionally for the user, the CDS will track the number of individuals that approach the desk according to a ti-e period and the minimum distance of the most recent visitors.

# Section 2: Design Requirements

1. Automatically detect patrons that are up to 10 feet away
2. Shall track the distance of the approaching individual and display it for the visitor and the user
3. Will alert both the approaching individual that they are in violation with an LED
4. The system will utilize a display for the approaching party to show their distance from the desk
5. The system will employ another display for the desk attendant that details the distance of the current patron
6. The desk attendant display will also show the minimum two distances of the patrons
7. The build must be powered by a 9V Battery

# Section 3: Block Diagram

Graphical user interface

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