ECE 558 Revised Final Project Proposal

Distance Alert System

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Project Description

For this project, we want to design a distance alert system. We decide to use a distance sensor(HC-SR04), a LCD display and a Raspberry Pi Camera and a RGB LED. Our specification is our app will receive the signal generated by distance sensor and generate a dialog to make users take a picture. The captured picture will send to app by firebase. Also, the color of RGB will change when the object is approaching the distance sensor. The exact distance value will show on both LCD display and app. The main function of app is: 1.Prompt users to turn on the camera and take a picture. 2. Show the distance value and surrounding temperature. 3. Display the captured picture. Although the app design is simple, we think the hardware part is enough to explore for this project.

Design Approach

This project consists of development of mobile App and android things. We think the best way to split this project is one of us focus on development of mobile App and the camera part. And the other one focus on LCD display and the distance sensor part. The reason why we split the project this way is that we can do our development and test without using the other's part. After we finish our part, we can merge them together to achieve our project. Also, I think it is good to demonstrate successfully because each of us get the full picture of each part so that we can talk about everything clearly for each part. I think the way to make sure the demonstrate success is follow the plan what we made and do it step by step, after everything is done we will write a test plan to do the fully test to make sure everything works. Also, during the demo presentation, we will talk about the brief explanation of our project so that people can get the big picture about what we do and what we want to solve, then we will show them the detail about our project. I think if we follow this, we will make our project demonstrate success. However, if we run out of time, we will just discard some parts to make sure we have the time to finish the main part for our project. In our project, the main part are the camera and the distance sensor, if we run out of time, we will just discard the LCD display part.

Milestone

11-17 - 11-19: Do some research and preparations about this design.

11-20 - 11-25: One person designs and develops the app and camera part. And the other one designs and develops the distance sensor part and LCD display part.

11-26 - 11-28: Meet together to share the progress and handle some problems together.

11-29 - 11-30: Test and Debug.

12-1 - 12-5: Clean up the code, write the documents and prepare for presentation. Also prepare for final exams.