ISIM Final Project

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1 Objectives

Overall, our goal in this project was to create a plant wellness system that used custom sensing units to detect issues with a plant's environment and prompt necessary actions from plant owners.

2 Diagrams

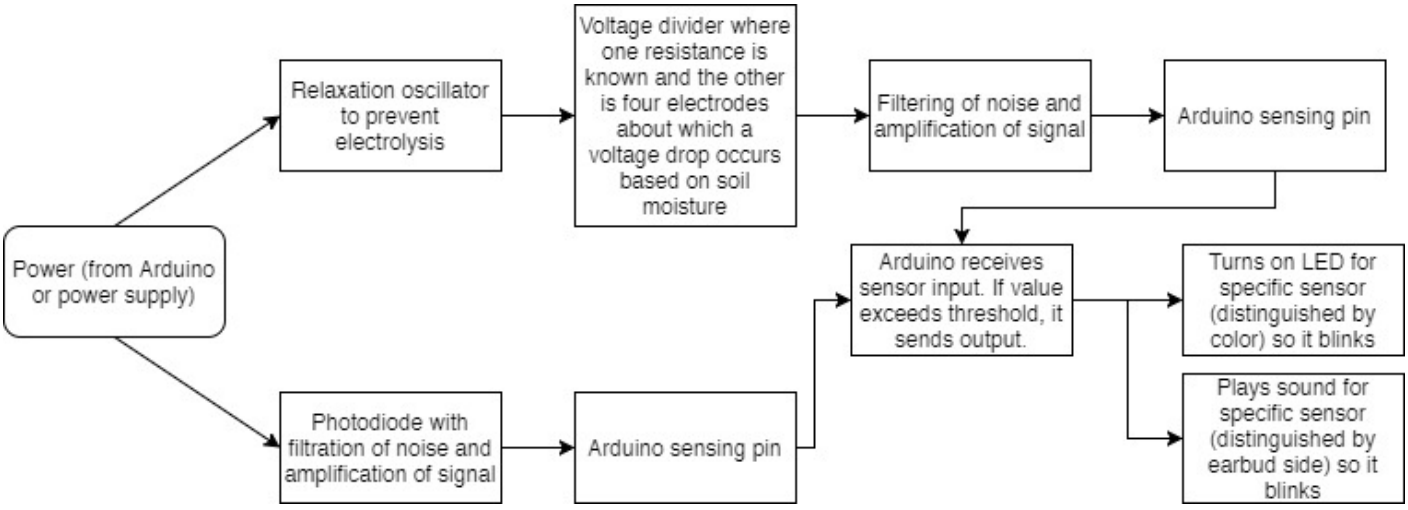

Figure 1: Functional block diagram of our system.

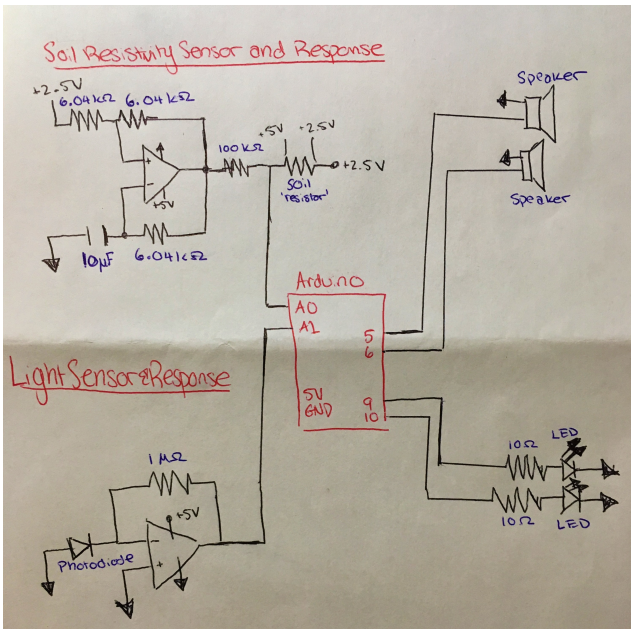

Figure 2: Schematic diagram of our system.

3 Results

To reach our goals, we made a soil moisture sensor and also used a photodiode. Using an arduino, we calibrated our threshold values for our sensors such that the light would shine and a sound would play if the plant was too dry or if there was insufficient light (we used several baseline soil samples to determine the thresholds). To allow the user to easily tell which parameter was problematic, we used a different color LED and a different earbud speaker for each variable. We then run the program that checks each sensor for values and reacts if the sensor values are too high or too low in a loop with a small delay so that it is constantly checking whether or not the plant health is optimal so that users know when to stop watering and if their plant needs attention again.

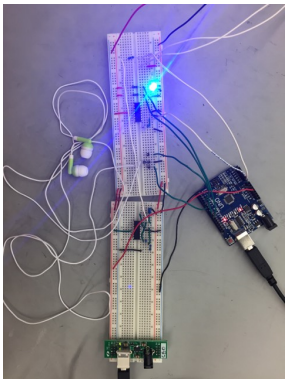

Figure 3: A picture of our setup. In addition to the circuit pictured, we used a lot of soil of different moisture values for calibration and tried different light levels to mark when the plant was and was not properly illuminated..