ECE 1000 Final Report: Automatic Plant Watering System

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The project we chose to complete was the automatic plant watering system. We decided to do this project because we found it really interesting on how the moisture sensor and the water pump would both work together within the code. This system continuously senses the moisture in the dirt and when it drops to a certain point, the water pump turns on making sure the plant stays hydrated.

I. Introduction

This project our team decided to build the automatic plant watering system. For this project we used our different skills we learned in this class to build the code and circuit board for this project. We chose this project because we thought it would be very interesting and it is important because It is a very simple way of keeping your plants hydrated. So after we decided on building the plant watering system we sat down and planned on how we were going to approach it.

II. Background

First, we begin discussing the parts we would need and how each part would function in the system so that we could begin to theorize how our circuit would look. We both looked at examples of each part functioning independently and together to understand how to wire the circuit. The most helpful sources were various internet forums and the Raspberry Pi official website. Also when writing out code we used youtube, Raspberry Pi website, and AI to help us formulate the best code for this project. As well as using JC's GitHub page as an example throughout this whole project.

III. Project Description and Formulation

When putting together the circuit for our project we had to connect the different wires in order for all of our components to work together in order for this automatic plant watering system to be successful. The way the code works is first the moisture sensor reads the moisture level, then tells the relay to turn on if the soil is dry, then the relay tells the water pump to turn on, once the moisture sensor reads a certain number it tells the relay to turn the pump off, which ends the sequence and then it repeats itself.

IV. Discussion and Results

Overall our project worked pretty well. If we had more time to improve our project we would figure out a way to lower the risk of the circuit board from getting wet from the water used in the project. We really enjoyed seeing how the code worked and It was pretty cool to see all of the components working together. Throughout this project Noah wrote most of the code and set up the circuit. Vincent documented how our trial runs worked and set up the testing of the automatic plant watering system.

V. Conclusion

The importance of this project was to help us learn how to develop code and implement it so it would work in some type of system as well as finding an easier way to water plants. We gained the skills of working as a team, developing code, building a circuit board, and then putting it all together for the final system. The result was a successful automatic plant watering system.

References

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