ECE 1000 Final Report: Automatic Plant Watering

Andriy Plakasov

Department of Electrical Engineering

ECE

Cookeville, United States of America

aplakasov42@tntech.edu

I. INTRODUCTION

I chose Automatic Plant Watering due to the time I was given. I also worked on this project on my own, so I decided to make something useful that would be interesting to work on because of the many details that I could learn from for the future. For example, I learned how to program my motor to pump water properly and the detector to detect if the ground was dry enough. I also learned more about connecting circuits in the proper places to make my project run.

II. BACKGROUND

This is a University class project, so I received much help from the TAs and the doctor. Dr. Bhattacharya provided me with the material for this project. (JC) Williams, a TA, provided me with information on how to set this project up correctly, as well as the instructions and most of the coding. Johnson, Christopher, also a TA, helped me find the needed information and code my project.

III. PROJECT DESCRIPTION AND FORMULATION

In this project, I connected my motor to the relay module, which was connected to my power supply, and the Raspberry Pi Pico, which was also connected to the soil moisture sensor. After that, you would need to place the moisture sensor in the plant and connect the tube to the motor inside the cup full of water. And it would be finished. I also provided some of the images of my project on GitHub.

IV. DISCUSSION AND RESULTS

I am happy with how my project turned out, especially since I decided to work independently for a better experience. If I were to improve it, I would probably use a better motor for more efficient use and tie my wires up more appropriately so they wouldn't be in the way, making it a little more ordinary.

V. CONCLUSION

This project was done so that I could gain better experience in my major and create an automatic plant watering machine that would work on its own. As mentioned, I learned how to program my motor to pump water properly and the detector to detect if the ground was dry enough. I also learned more about connecting circuits in the proper places to make my project run. The result turned out significant; the main issue I mentioned was the weak motor. Overall, it was great.

REFERENCES

Chidiac, Collin, and Instructables. “Automatic Raspberry Pico W Watering System.” *Instructables*, 15 May 2023, www.instructables.com/Automatic-Raspberry-Pico-W-Watering-System/. Accessed 06 Dec. 2024.

Williams, JC. “ECE-1000-Spring-2024-Final-Project-Insert-Project-Name.” *GitHub*, Apr. 2024, github.com/JCWilliams1003/ECE-1000-Spring-2024-Final-Project-Insert-Project-Name. Accessed Dec. 2024.