CPE Final Project: Swamp Cooler

Overview:

The swamp cooler is the final project of CPE301 which utilizes the techniques acquired over the semester such as register programming/general purpose input/output, analog to digital conversion, timer theory, and a plethora of other skills to both construct the circuitry of the swamp cooler, as well as the program it runs on. The results are presented below.

Several facets of the swamp cooler illustrate the abilities it has such as the operating temperature and the power requirements. To start, the operating temperature of the swamp cooler is 19-24 degrees Celsius which shows that the device is capable of producing cooling temperatures. Additionally, the power requirements of the system were a dedicated 5V supply for the stepper motor and the fan while the ATMega 2560 had its own 5V power supply that was generated from the PC. With each of these two supplies powering the system, we were able to achieve moderately cool air. Lastly, the air surrounding the swamp cooler would become more humid the longer the device ran, proving the humidifying effects that it possesses.

Pictures of Final System:

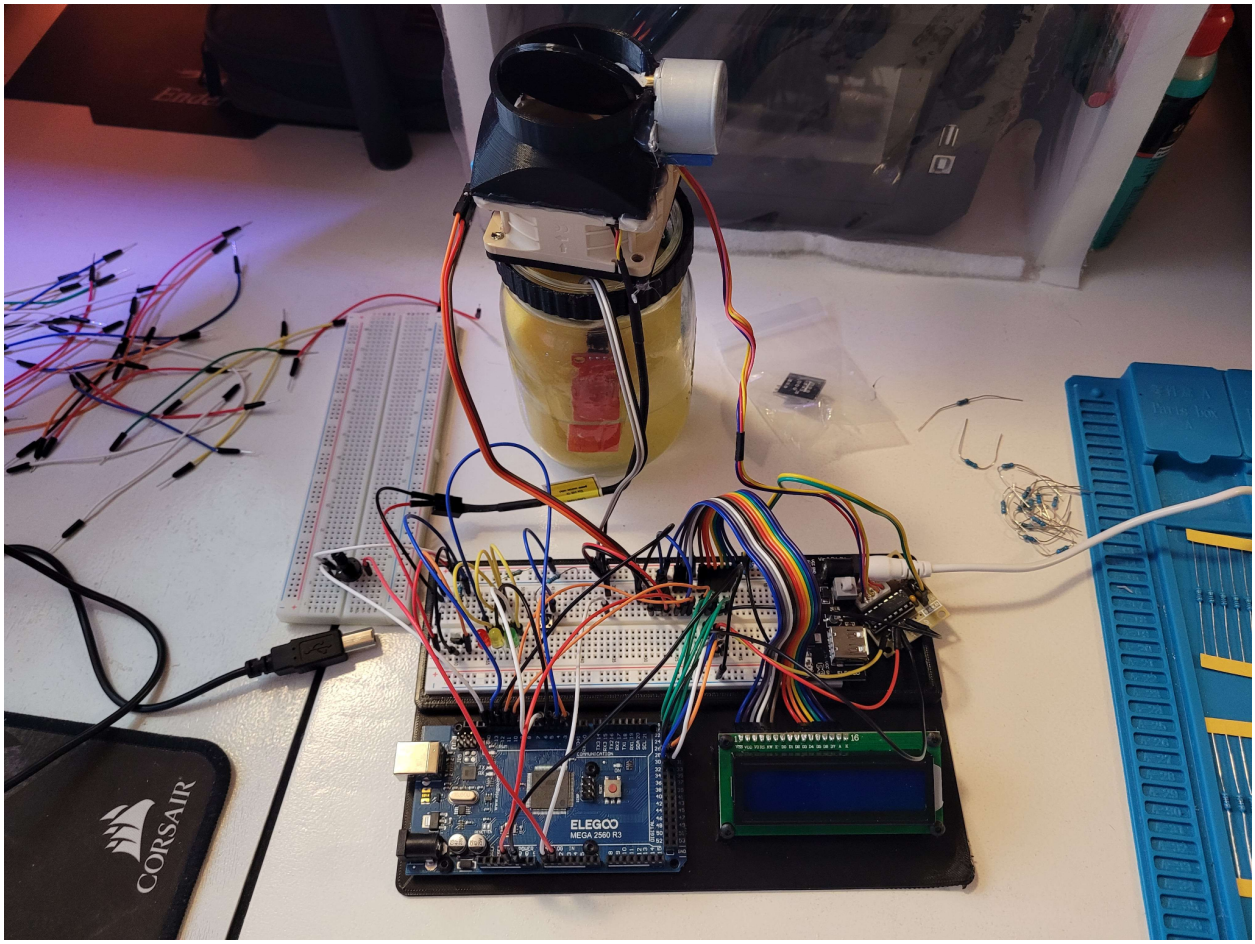

Figure 1: Picture of Final Device

Video of Final System:

https://youtu.be/SHQYXb16sWw

Schematic:

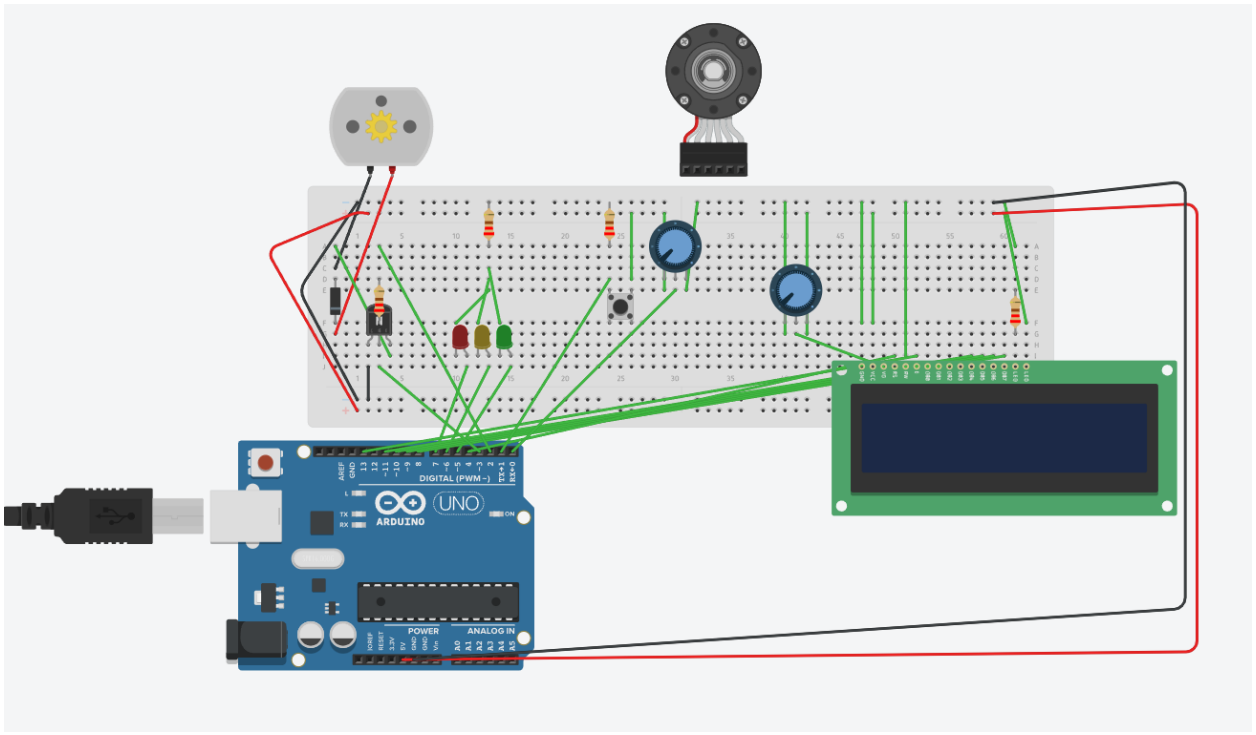

Figure 2: Swamp Cooler Schematic

GitHub Repository:

https://github.com/1105-Mendoza-Dylan/CPE301Final-DylanMendoza-CalebLindner-HunterRobinson