Anson Wapstra Scott

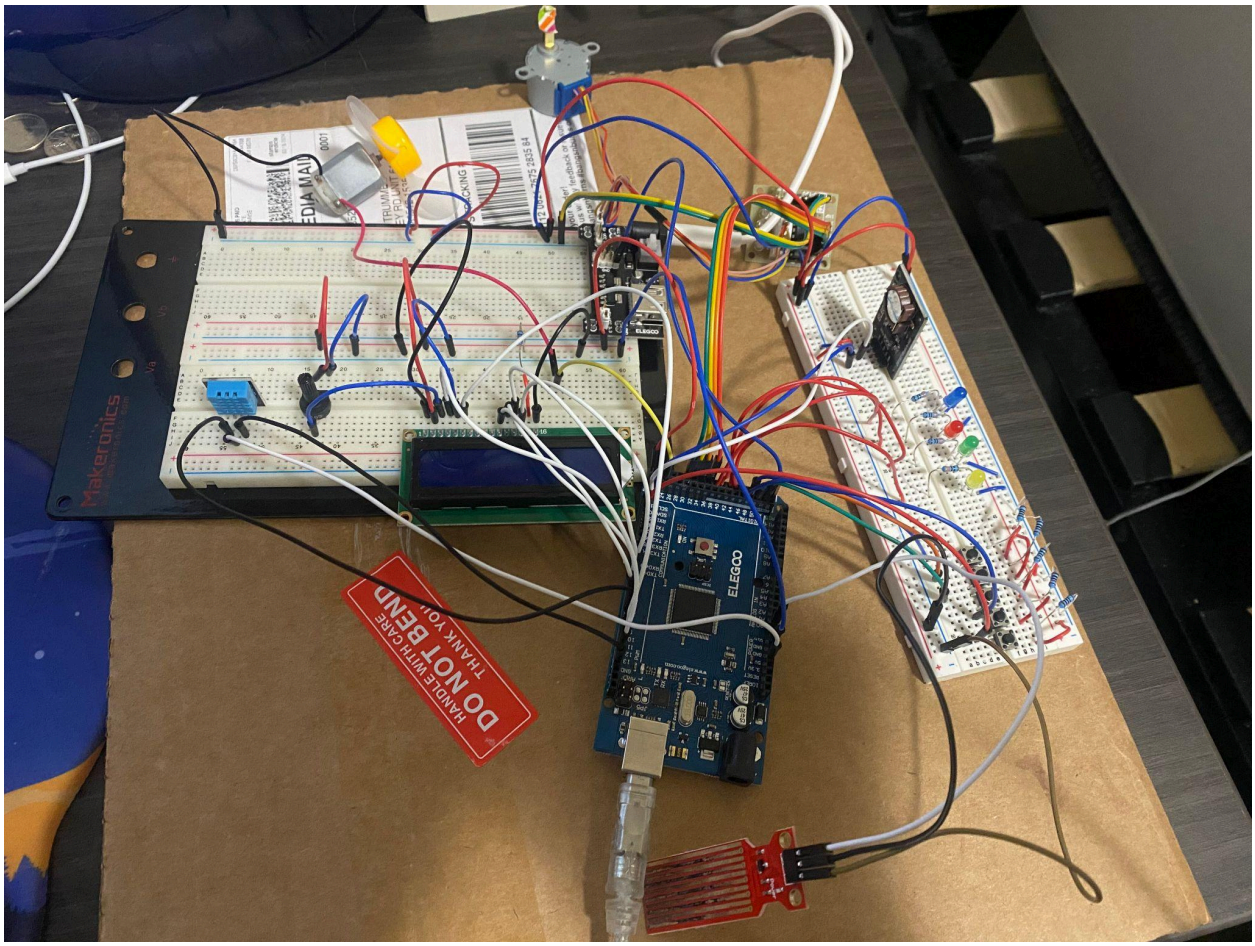
CPE301 Final Project

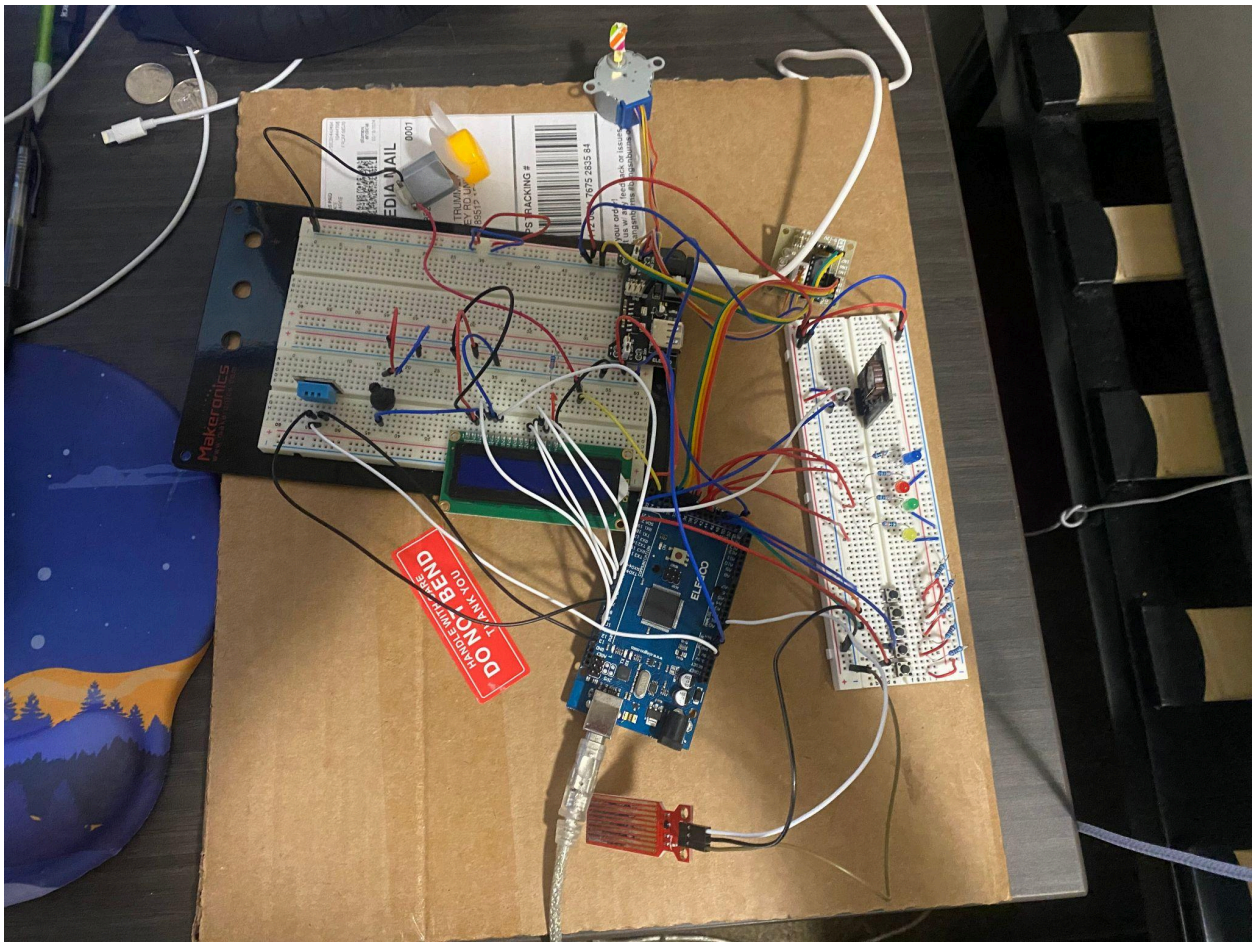
GITHUB LINK (EVERYTHING WILL BE IN THE GITHUB):https://github.com/AnsonUNR/CPE301-Final.git

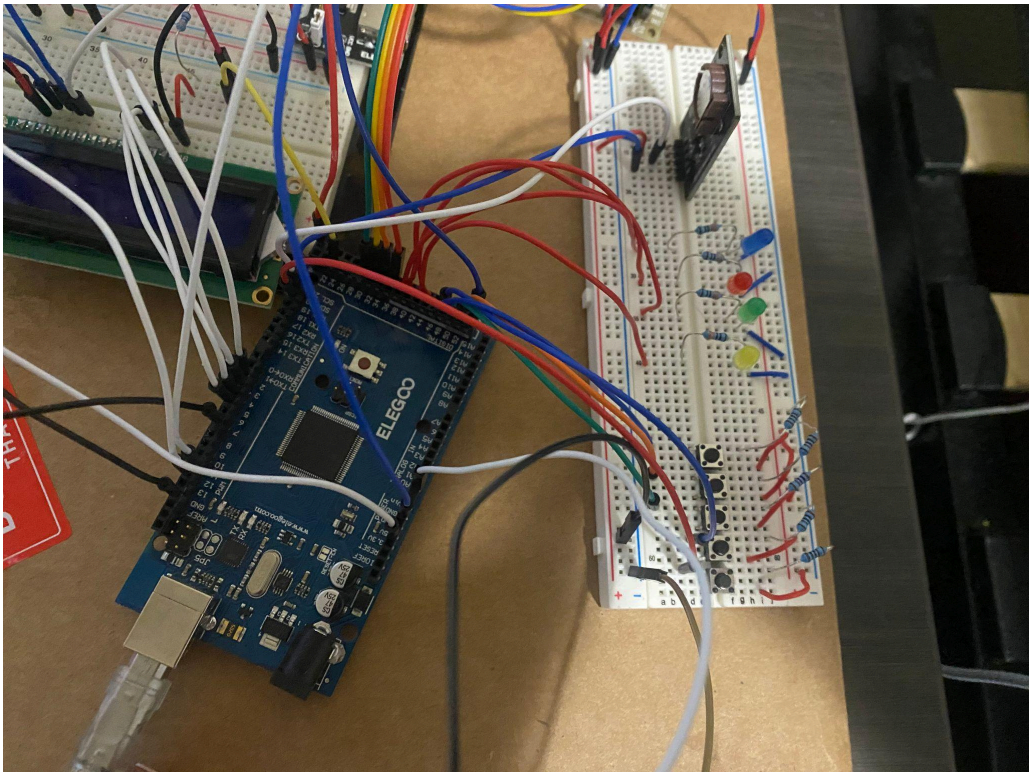
Video Demonstration:

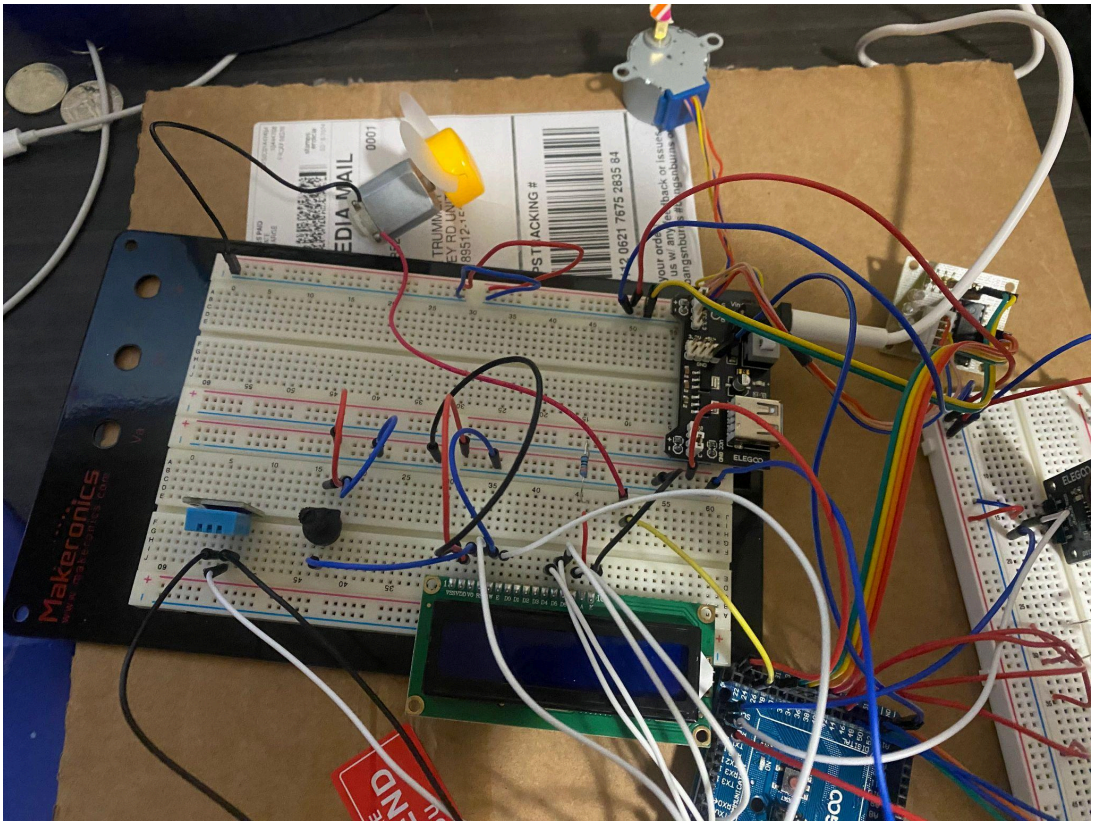
https://drive.google.com/file/d/1EWE8D24aWSO3sJHL8NYMS7yIGvTtc3a8/view?usp=sharing

First, here are some images of my final design.



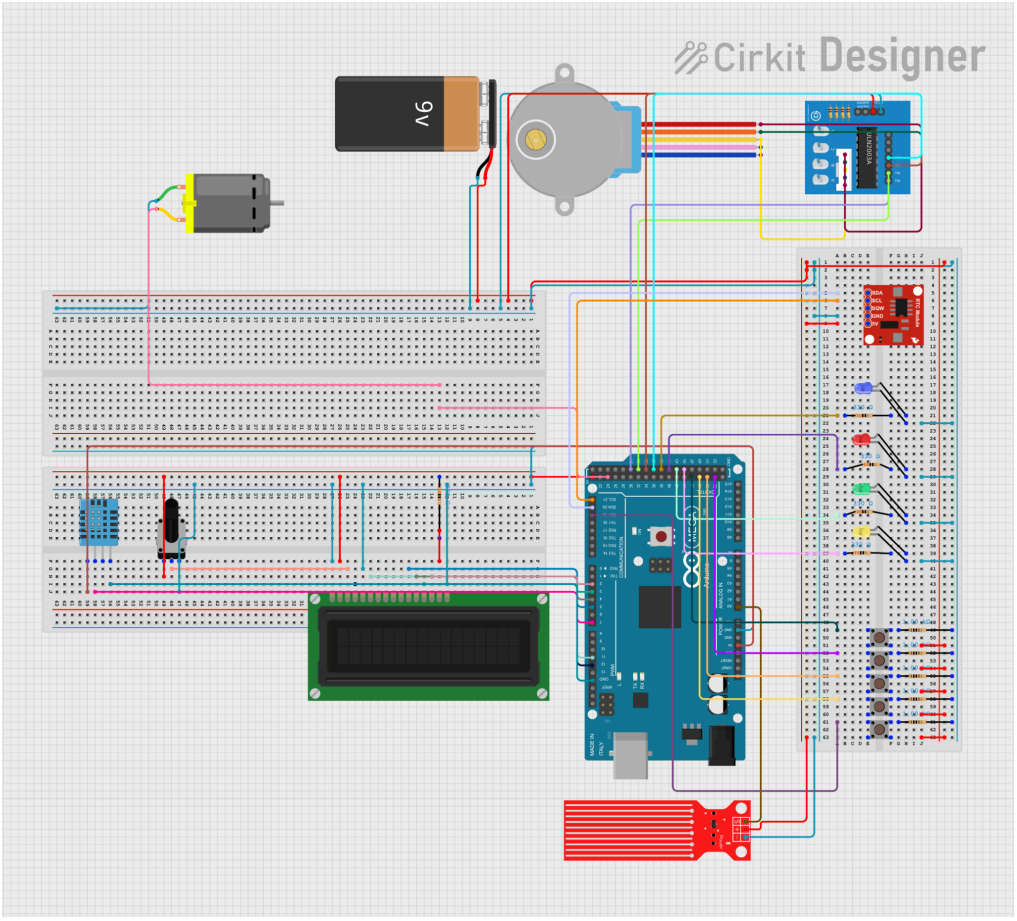

Makeronics
ELEGOO
DO NOT BEND


ELEGOO



And here is an image of the schematic I made:

Explanation of the Design:



A separate power supply (battery in the schematic), powers the right breadboard, and grounds the DC motor. The DHT sensor, potentiometer (which controls the LCD), and the LCD are hooked up to the arduino through the left breadboard. The right breadboard houses the 5 pushbuttons, from bottom to top: on, reset, left, right, off. It also houses the four LED lights that represent which state the system is in. There is also a RTC hooked up for time monitoring. All of these are connected to the arduino. The Stepper motor is connected to a control module, which is connected to the arduino.

Here is a reference to the Mega 2560 the Arduino board I used:

https://docs.arduino.cc/resources/datasheets/A000067-datasheet.pdf

Here is a reference to the parts, this is a pdf for the starter kit we used in class. Explanations of how they all work are in the pdf.

https://m.media-amazon.com/images/I/D1oC-c3G5TS.pdf

DC Motor: Page 191

DHT11 Temp and Humidity Sensor: Page 91

LCD1602 Module + Potentiometer: Page 152

Stepper Motor + ULN2003 Driver Module: Page 206

DS1307 RTC: Page 136

LEDs: Page 43

Push Buttons: Page 59

Constraints on the system:

The fan will turn on when the temperature goes above 24 degrees celsius. This can be changed if the code is edited.

The project used a 9 volt power supply. Occasionally, the LCD screen did bug out during testing, so it's possible there was in issue with the power to the LCD, but since the bottom half of my LCD screen was also not working super well, I think my component was just busted, especially, because it worked just fine during my video demonstration.

Other than that, there are no constraints.