CPE 301 – Final Project
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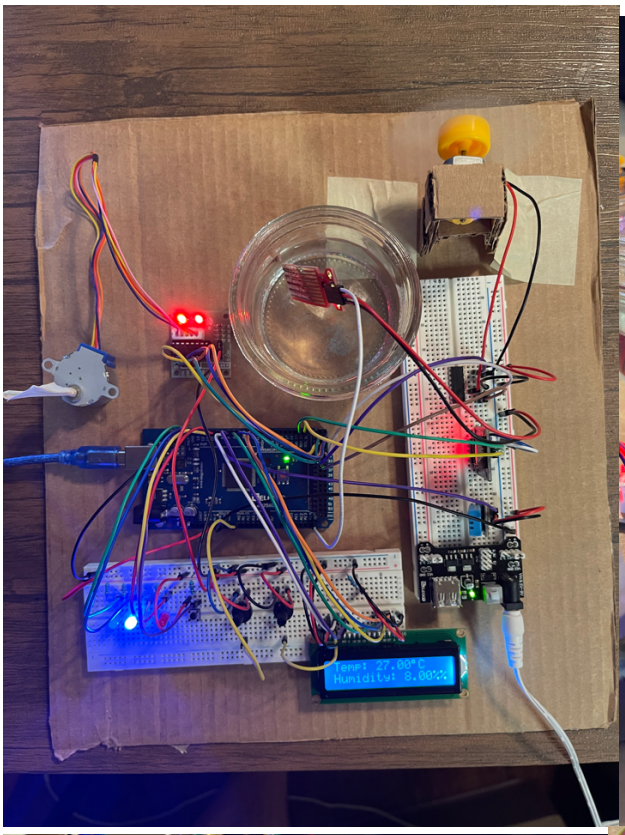
Overview

- For this project, I used an Arduino Mega 2560 microcontroller, an LCD Display, a power supply module, a real time clock module (DS1307), a stepper motor and driver module, a temperature and humidity sensor (DHT11), a DC motor and fan and an L293D ic, a water level sensor, a button, two potentiometers, four LEDs (red, yellow, blue, and green), five 220 Ohm resisters, a 10k Ohm resistor, two breadboards, and countless wires… For the code, I used the Arduino, LiquidCrystal (for the LCD display), DHT (for the temp/humidity sensor), Stepper (for the stepper motor/driver), and uRTCLib (for the real time clock module) libraries to help facilitate proper functionality of a few components. I set up each component one-by-one with code to make debugging easier – I started with the LCD display with its potentiometer, then moved onto the temp/humidity sensor, and then the DC motor and fan with its IC and power supply module, and then I added the stepper motor and its potentiometer (which was the hardest to get working), then set up the water level sensor, then the button, and lastly the LEDs. Once I got everything mostly working (using Serial methods and pin modes), I readjusted some of the components to better fit on the board. I also create a little tower for the fan to stay off the ground with cardboard, tape, and glue. After things looked good and worked as I wanted, I then went back and replaced all analog functions with ADC, replaced all pin modes with bit wise operations using functions that I created, and replaced all Serial methods with UART. This project was very intense, but I learned a lot. It even made me interested in tinkering with more Arduino tools for fun!

GitHub

- https://github.com/Dodge-Dillon/CPE301-FinalProject

Pictures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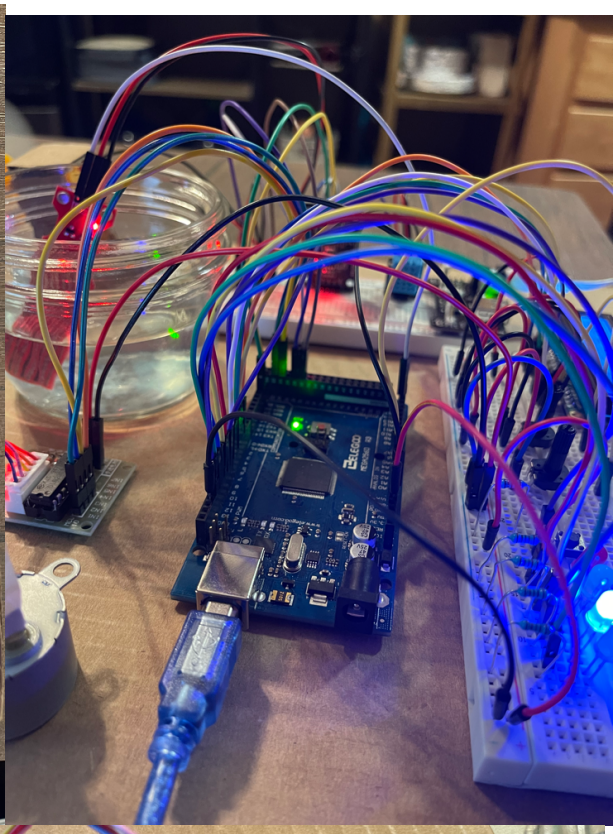
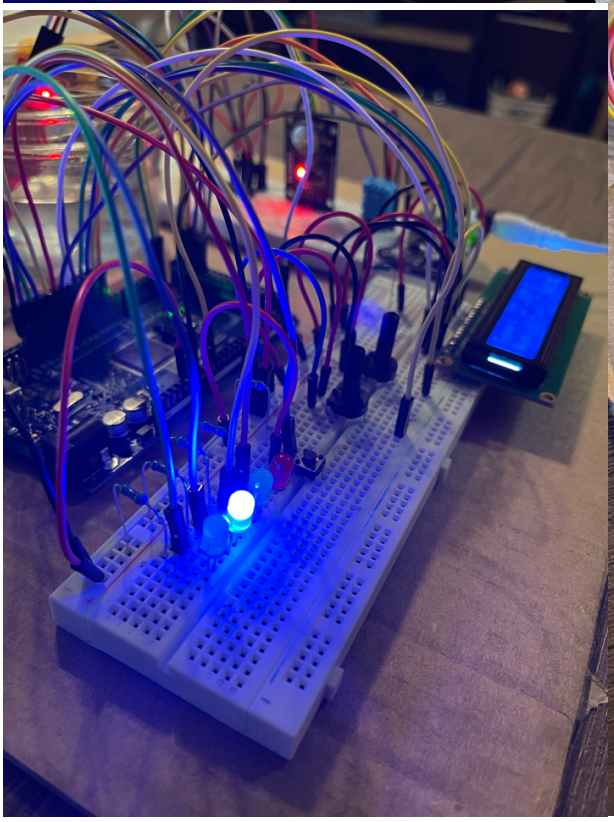
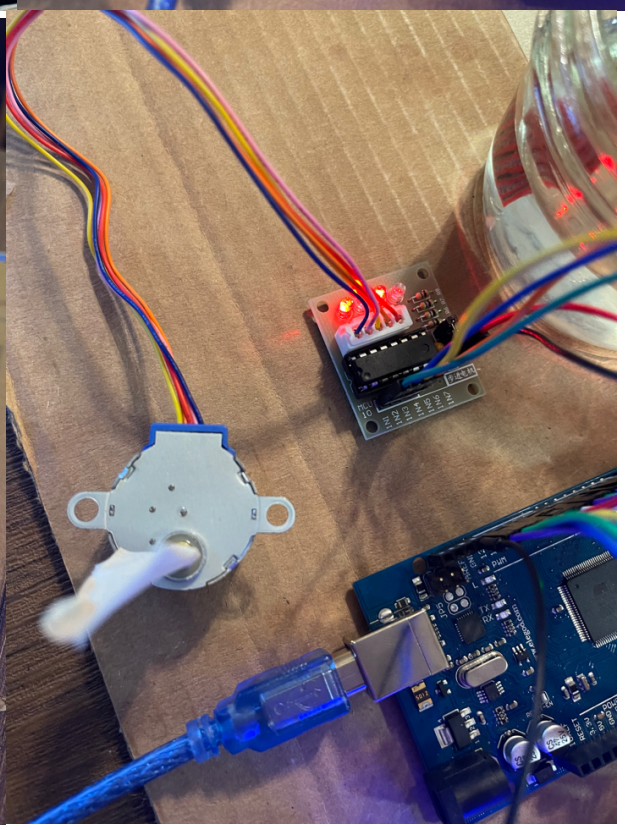
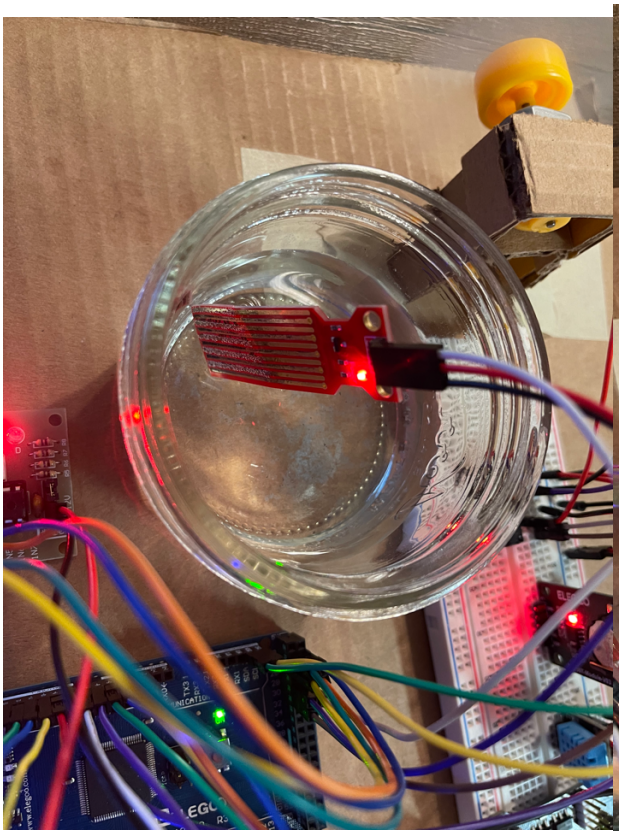
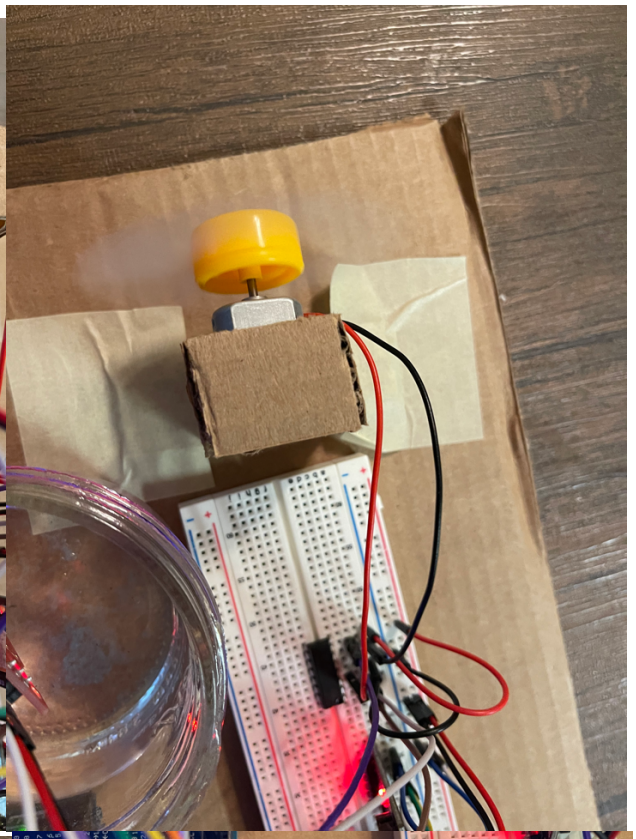
Humidity: 8.00%

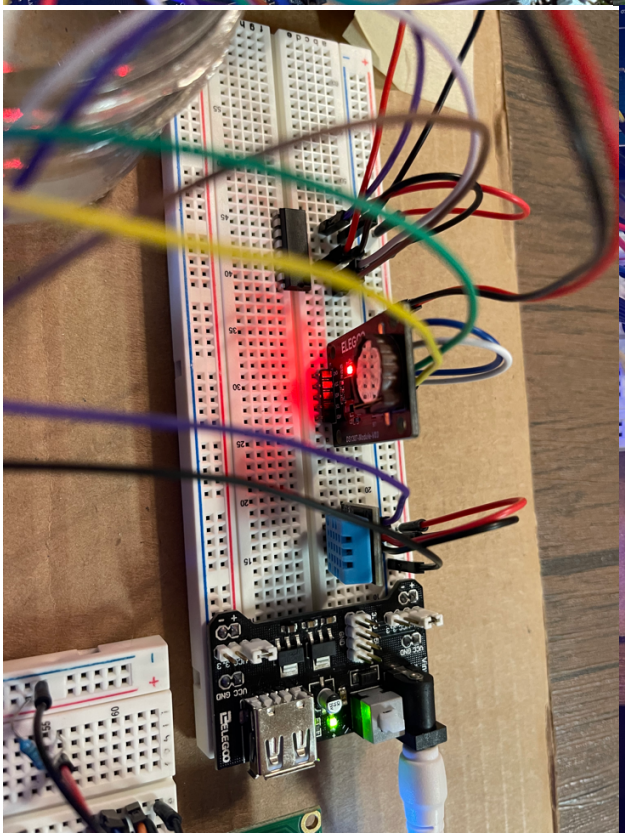













Temp: 27.00°C
Humidity: 8.00%