

CPE 301
Fall 2022
Final Project
Foster Schmidt

Overall Design

For my design I based my whole idea around enumerating specific states I was in based upon certain parameters such as temperature, or water level. The buttons are implemented using interrupts for all three states. I felt that this made the most sense because they are truly acting as interrupts on the system. The rest was just working through problems as they arose.

Constraints

The constraints on the system are such:

Power: USB to computer + 9v battery module

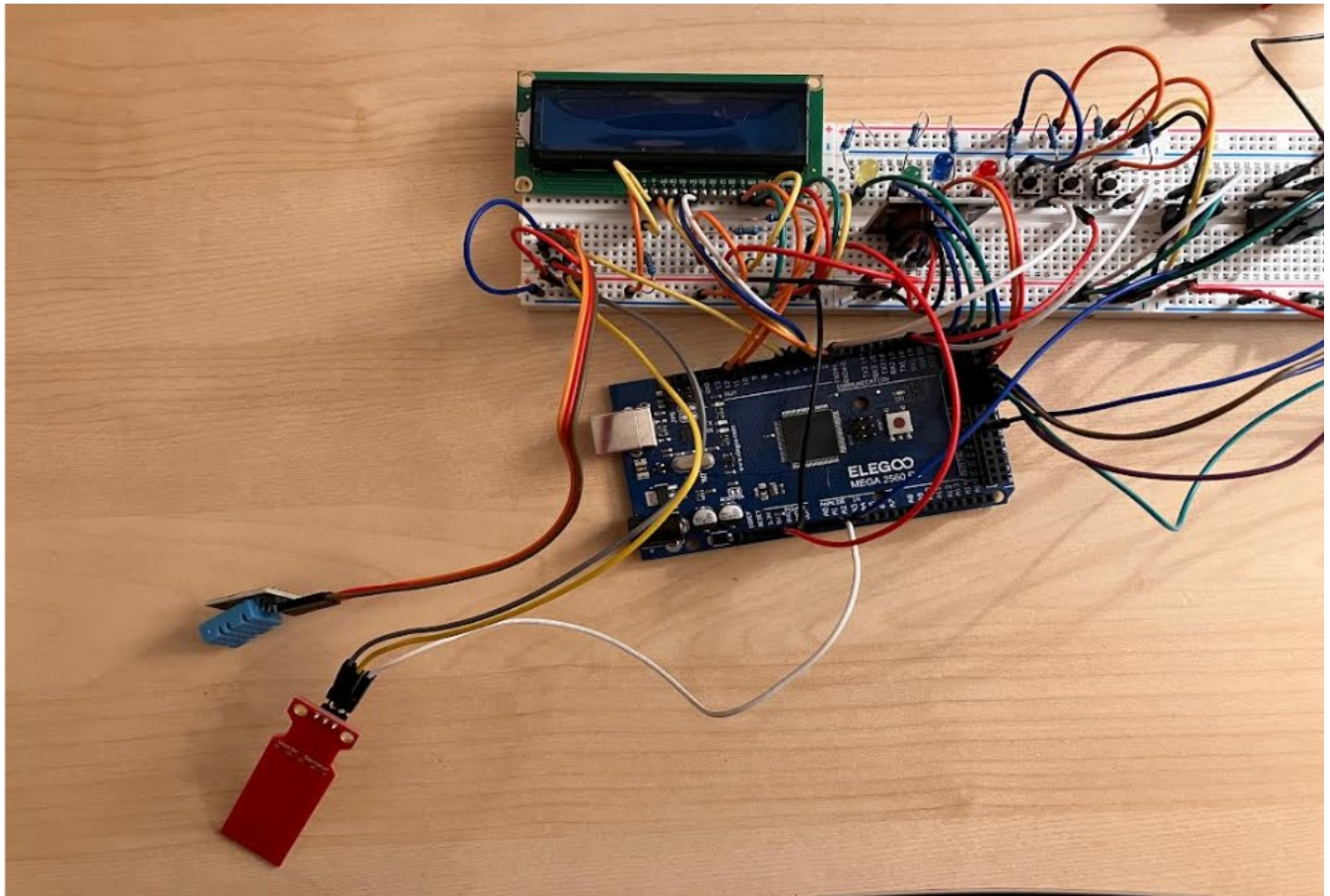
Temperature: Current temperature constraint is 74 degrees fahrenheit

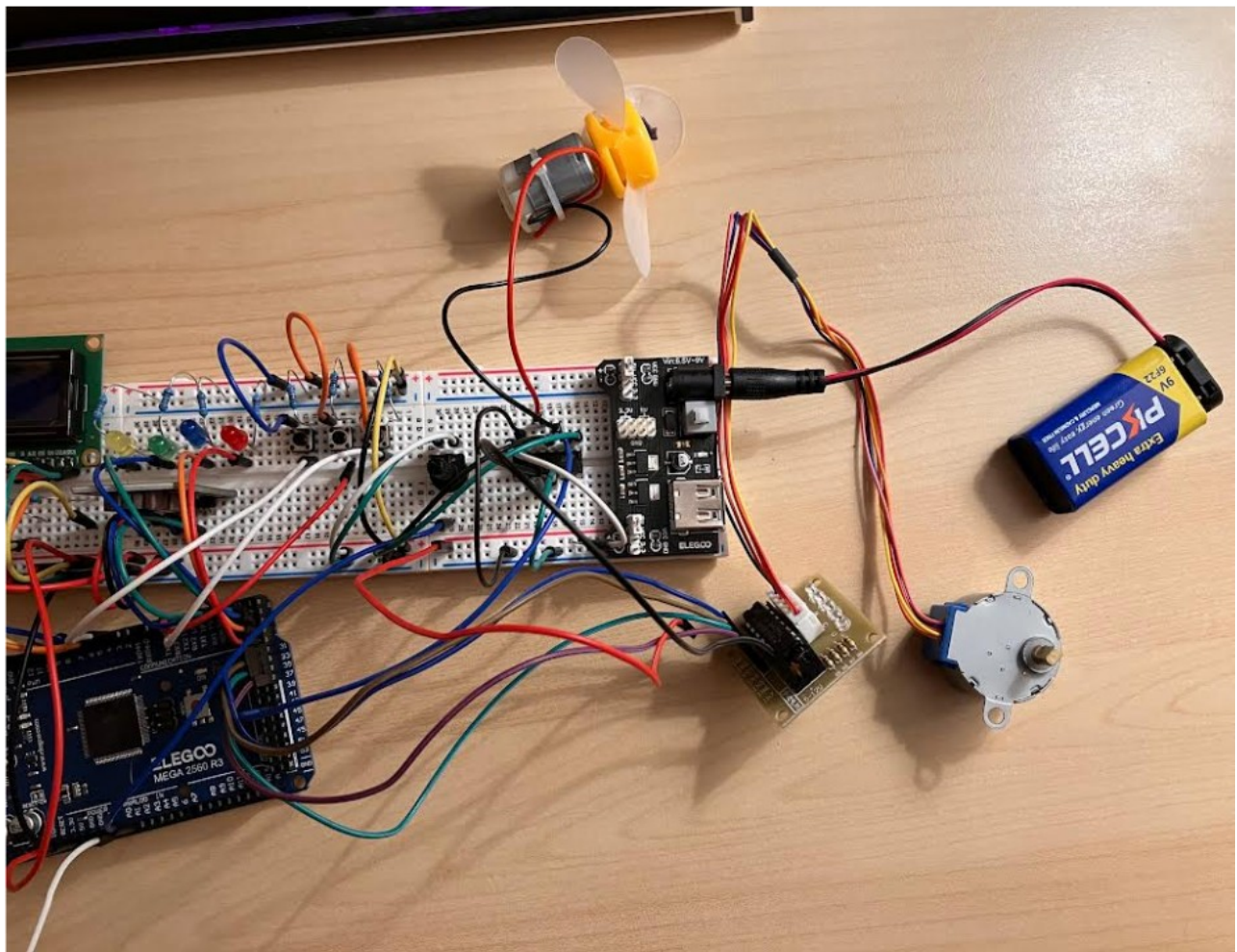
Water Level: Current water level is 100 as read by the water level indicator

Pictures & Video

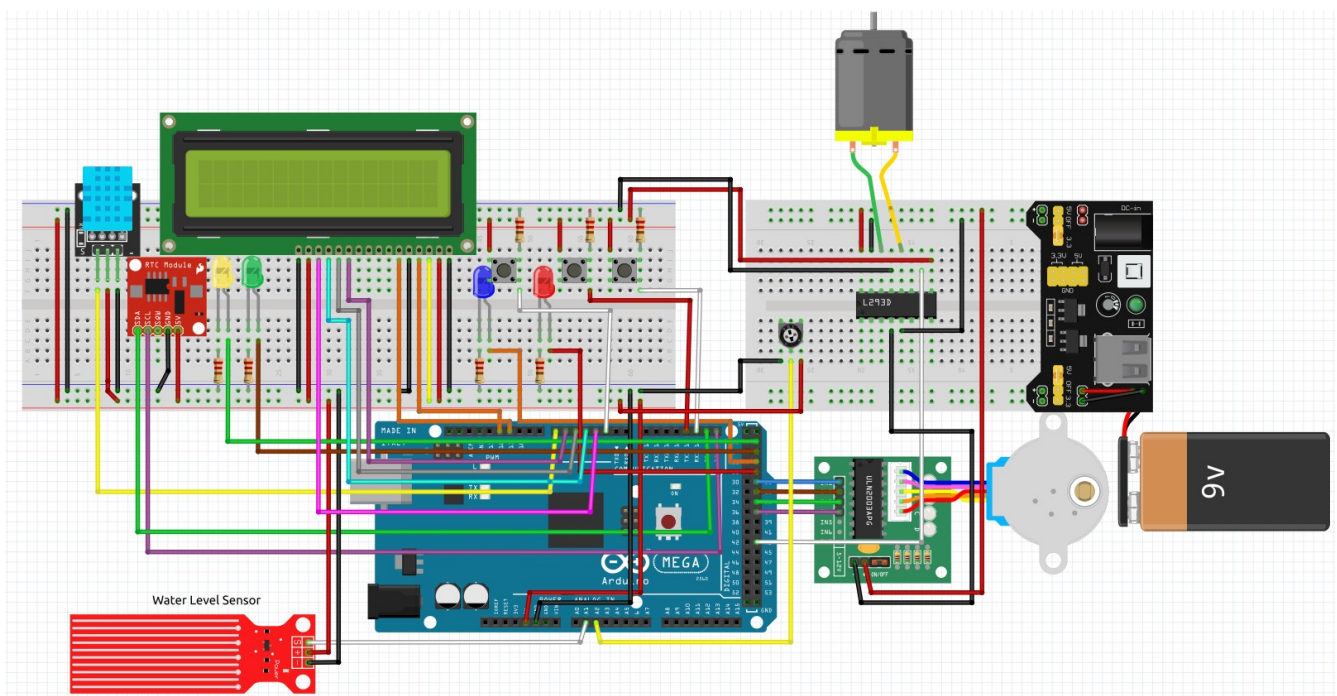
video link: <https://www.youtube.com/watch?v=61Wz4mpnxvM>

Photos:





Schematic:



Links to Relevant Equipment:

AT Mega 2560: https://ww1.microchip.com/downloads/en/devicedoc/atmel-2549-8-bit-avr-microcontroller-atmega640-1280-1281-2560-2561_datasheet.pdf

Temperature Humidity Sensor: <https://www.adafruit.com/product/386>

Stepper Motor: <https://lastminuteengineers.com/28byj48-stepper-motor-arduino-tutorial/>

LCD Screen: <https://lastminuteengineers.com/arduino-1602-character-lcd-tutorial/>

Real Time Clock: <https://lastminuteengineers.com/ds1307-rtc-arduino-tutorial/>

Water Sensor: <https://arduinogetstarted.com/tutorials/arduino-water-sensor>

L239D: <https://www.ti.com/product/L293D>

Motor: <https://learn.adafruit.com/adafruit-arduino-lesson-13-dc-motors>

Power Module: <https://components101.com/modules/5v-mb102-breadboard-power-supply-module>

Github Repo:

https://github.com/st1ckyclue/CPE301_FinalProject.git