CPE 301 - Final Project

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Design and Constraints:

Powered by the Arduino ATMega 2560, this Arduino acts as a Swamp Cooler, reacting to temperature and humidity. This system is a state based system, allowing for the user to switch on/off and reset the swamp cooler system. Additionally, the sensors in the kit are very sensitive to temperature and humidity and they operate best in a room temperature environment.

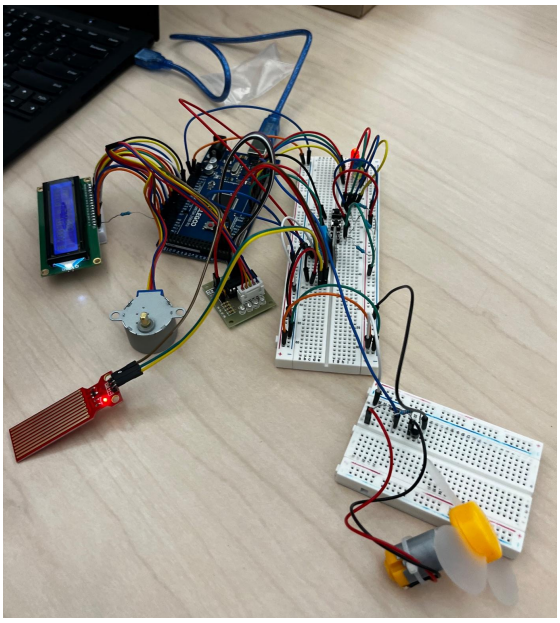
This swamp cooler system is also powered via USB, providing 5V at ~900 mA (USB 3 Spec) providing for 4.5W to the Arduino. This is enough power given to run all components of the Adruino - including more power hungry elements such as the LCD and two motors.

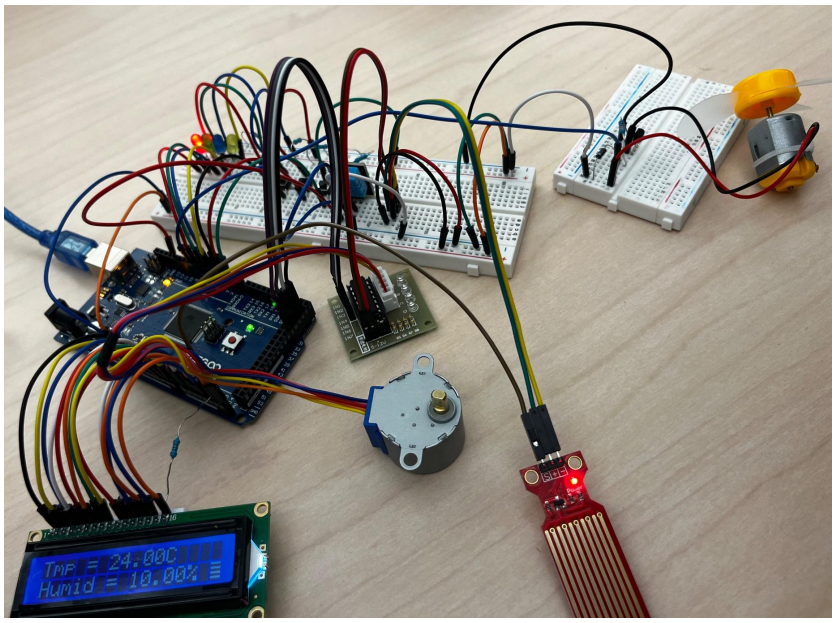
You can find all relevant information, including a video and github repository below.

Video Link:

https://youtu.be/NPrUFrjqvLI

Pictures:





The pictures above show two angles of the swamp cooler circuit. The pictures show the circuit active with information about the current environment on the LCD.

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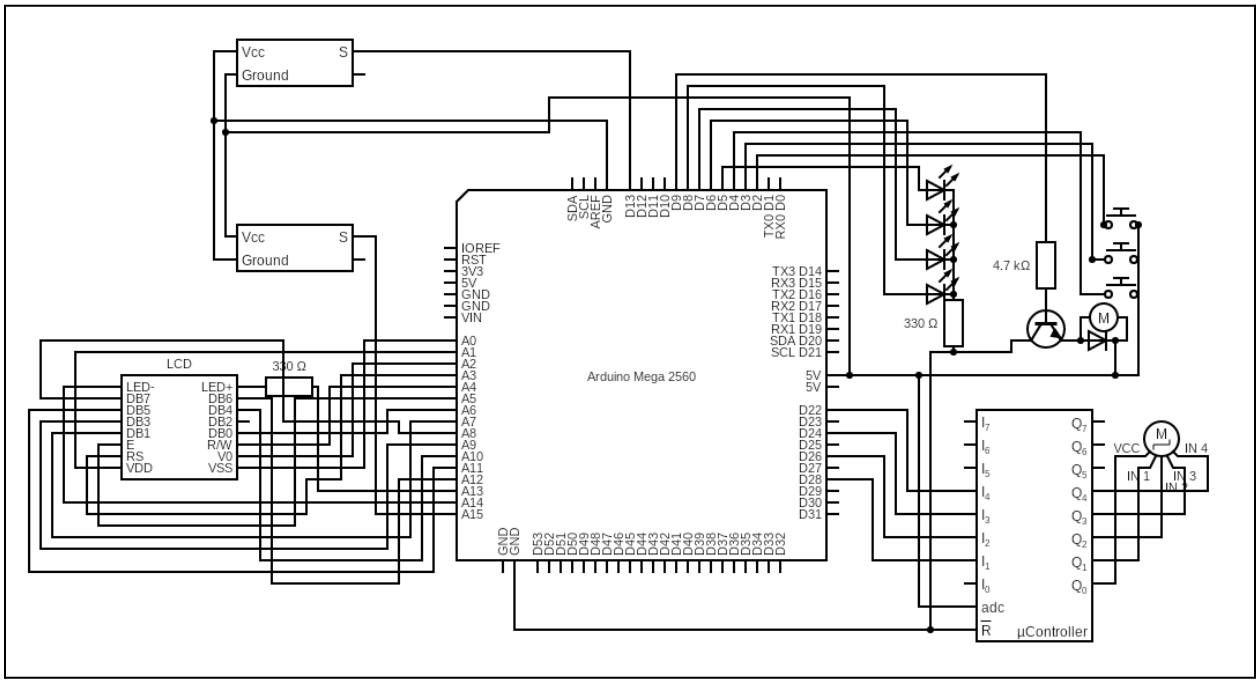
Schematic:



Relevant Links:

ATMega 2560 Pin Mapping - https://docs.arduino.cc/hacking/hardware/PinMapping2560
Atmel ATMega V-2560 Datasheet - https://ww1.microchip.com/downloads/en/devicedoc/atmel-2549-8-bit-avr-microcontroller-atmega640-1280-1281-2560-2561_datasheet.pdf

Github Repository:

https://github.com/malhotra-vedant/cpe-301-vm_jk_sh