

CPE 301 Semester Team Project Group 46

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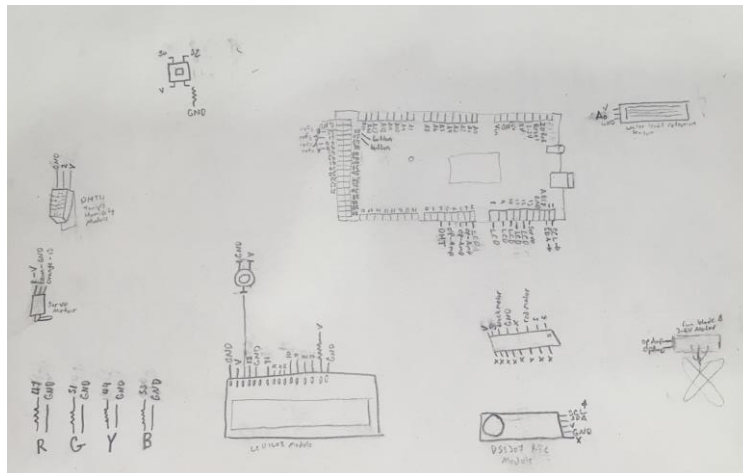
Nicholas Moulos

Overview:

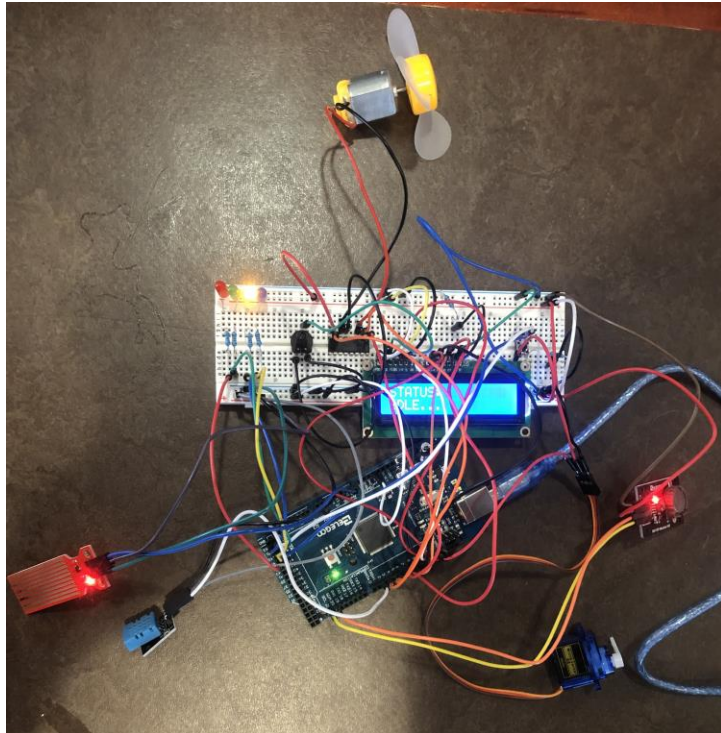
Using the Arduino kit, build a swamp cooler. The swamp cooler should work as the temperature and humidity fall under a certain circumstance in which the water sensor will detect the water level. If the circumstances are aligned and there is enough water detected by the water sensor the fan will activate. The clock will constantly check the temperature and humidity levels from the DHT11 and the water levels from the water sensor to see if the correct criteria are met. There should also be an LCD display that shows the read temperature and humidity levels, an error if there is not enough water and the state of the machine / circuit. A button will be applied to the circuit to switch the swamp cooler from an idle off position to a running on position. Lastly, the swamp cooler will have different colored LED lights representing the working position, an error position, an idle position, and a waiting for the right conditions position.

For our project we were not able to make the fan work, we discussed this issue with another group, and they said they had the same problem, so they had to add an additional power supply to the circuit. Unfortunately, we already dismantled the circuit, so we were unable to test if this was the cause for our circuit or not.

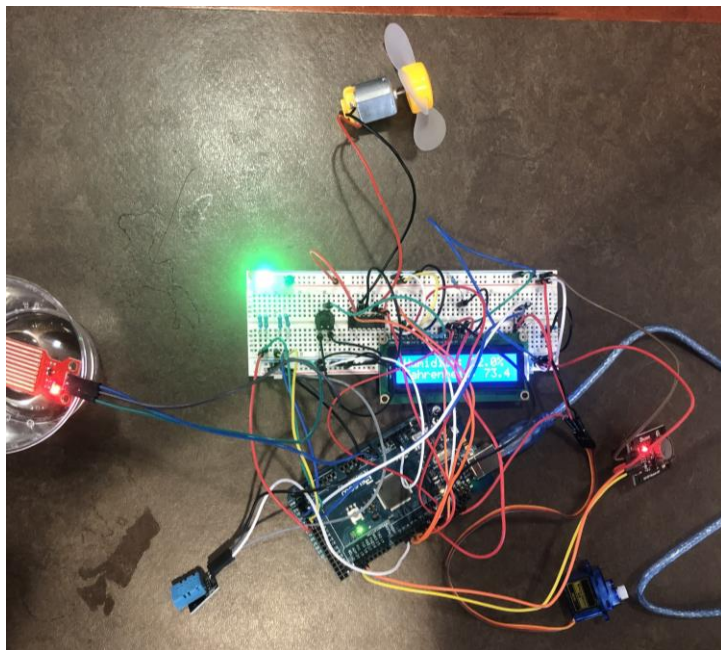
Photos:



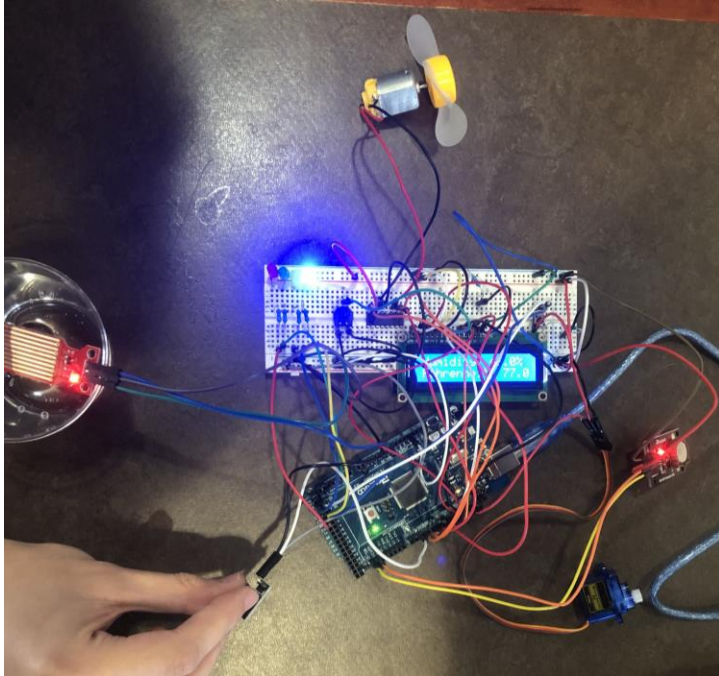
Schematic of the circuit



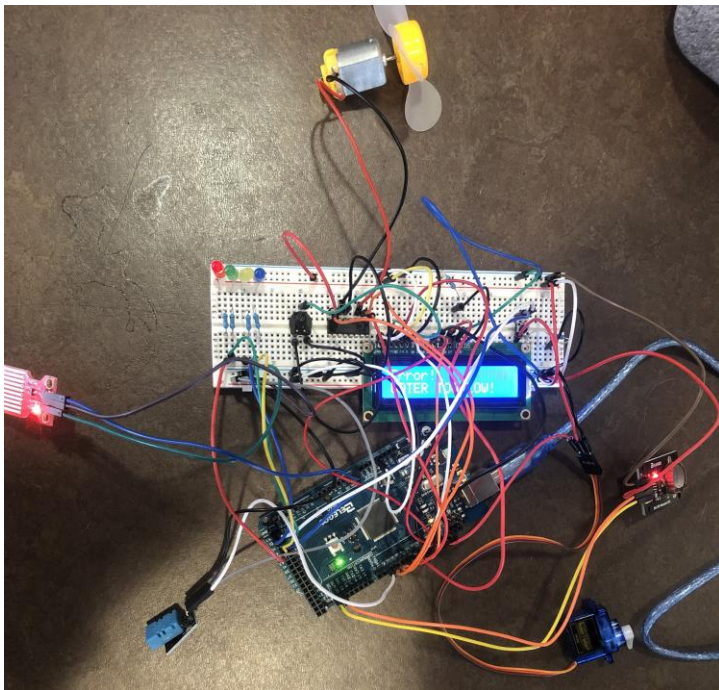
Circuit in Idle



Circuit with significant enough water but temperature and humidity conditions not met



Circuit with significant enough water and temperature and humidity conditions are met



Circuit where water sensor does not have sufficient water

Video:

https://youtu.be/2XlgAe_pgPg

Github Link:

<https://github.com/karl-gn/CPE-301>

Links Used:

<https://components101.com/sensors/dht11-temperature-sensor>

<https://www.arduino.cc/reference/en/libraries/liquidcrystal>

<https://docs.arduino.cc/learn/electronics/lcd-displays>

http://www.ee.ic.ac.uk/pcheung/teaching/DE1_EE/stores/sg90_datasheet.pdf

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

<https://www.ti.com/product/L293D#pps>