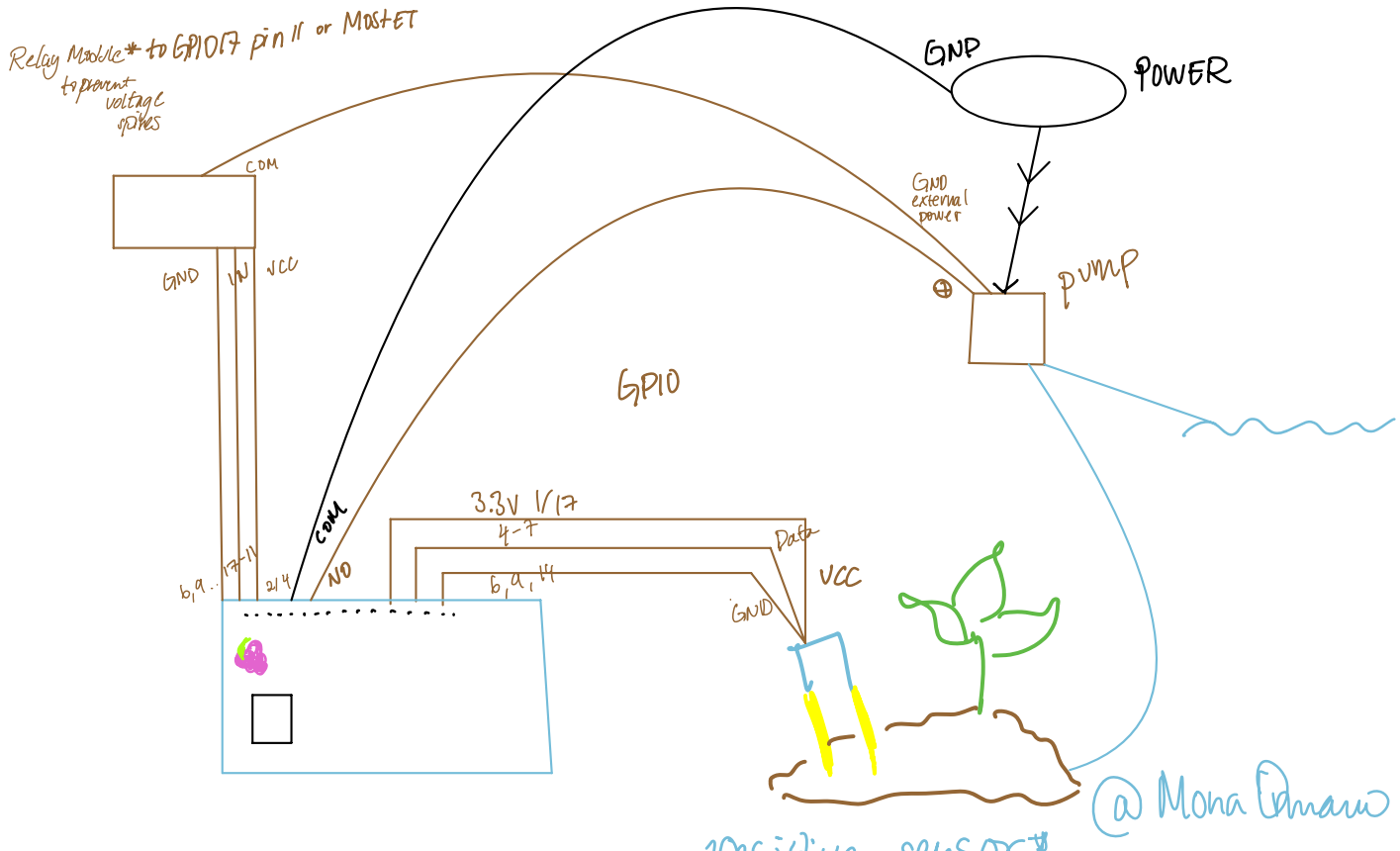
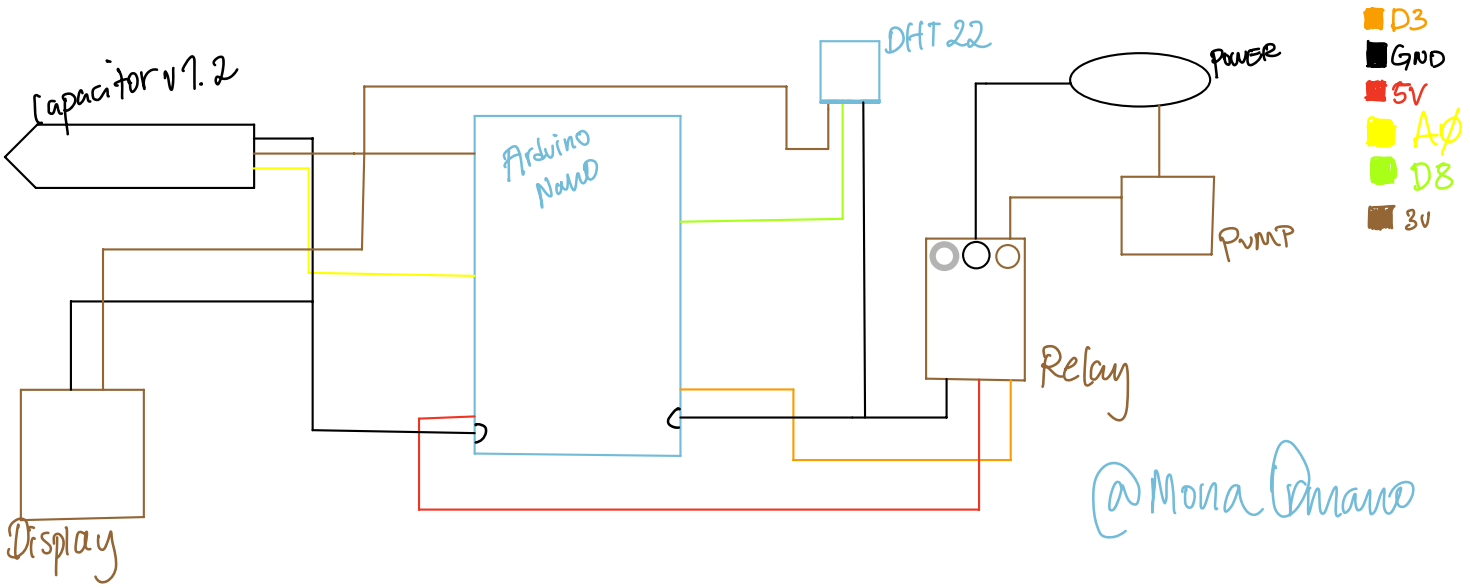
First prototype visualization

* digital version to prevent extra cost of ADC adaptation



Resistive sensor* to GPIO 4 (pin7) with eg 10k pull up resistor

Second prototype vis.



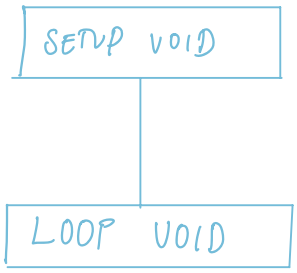
Second prototype of my smart water irrigation system. The prototype contains a digital soil moisture sensor that is read by my system. When moisture and temperature levels drops below my wished levels my automated waterpump will water the soil to pre determined moisture level to sustain continously good hydration levels. Unlike regular automated irrigation systems, mine continously controls plants hydrationlevels before watering, limiting the risk of over hydration, while also limiting waterwaste.
The smart functions also allow for its user to have a selfsustaining watering system non-dependent of the users physical proximity to the plants.

Planned future versions of the system is a user-controlled waterenabling controlled function through Arduino IOT cloud.
The user interface will also enable user control of wished humidity level and trigger point for waterpump activation!

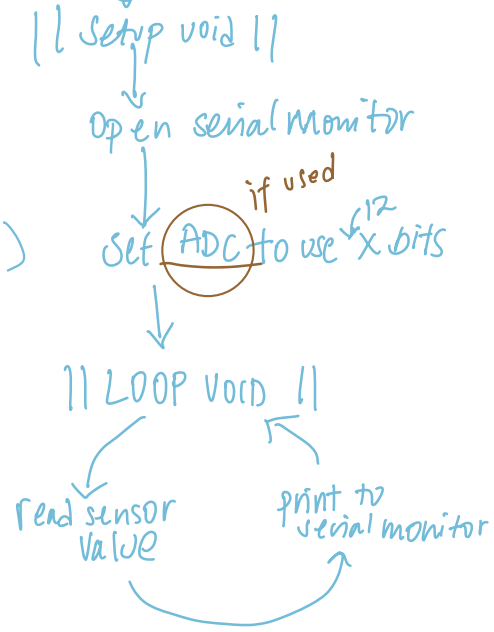
Material :
- Digital soil moisture sensor with setpoints - DHT 22
- Microcontrollers Raspberry Pi 4 (b) and Relay Module
  Arduino Nano
- Pump
- Jumpwires
- Battery
- Capacitor v.1.2
- LCD display for callibration

Calibration Flowchart diagram

- Set min and max val
- Analog input port
  #define SENSOR_IN 0 (ADC pin 0)



Algorithm



CODE

```
Serial.begin(9600);
analogReadResolution(12);
sensorVal = analogRead(SENSOR_IN);
Serial.println(sensorVal);
```

Others

Calibration value: R

Dry reading 20-0

Wet reading ~2500 ↑

- More sensitive
- more prone to corrosion in probes

Vs.

C

~2500 Dry

↓ ~1360 Wet

Read sensor Flödesdiagram