ESW Project: Smart Farming

-Team 10-

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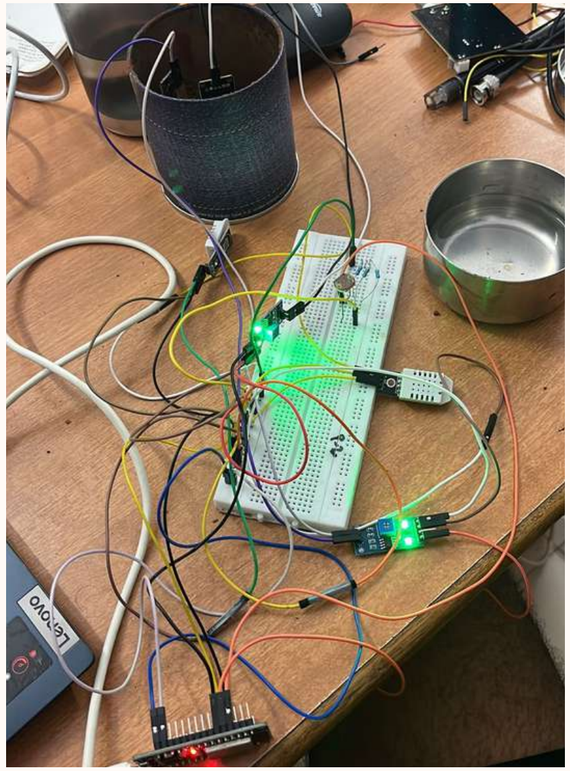
Namrata Baliga, Sanchit Jalan

Work done so far



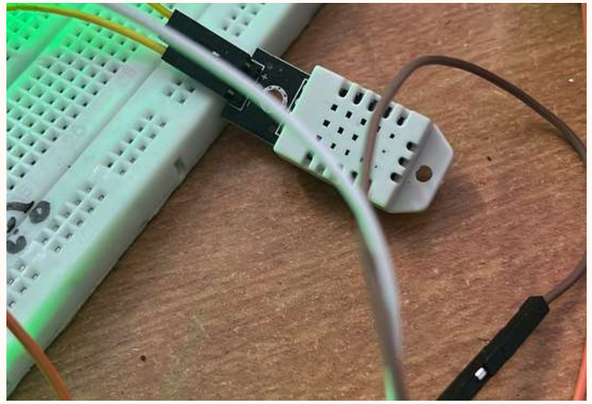
COMPLETE SETUP OF SENSORS

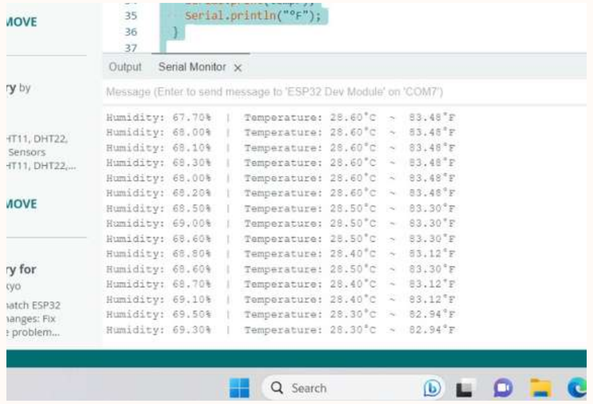
UI SETUP

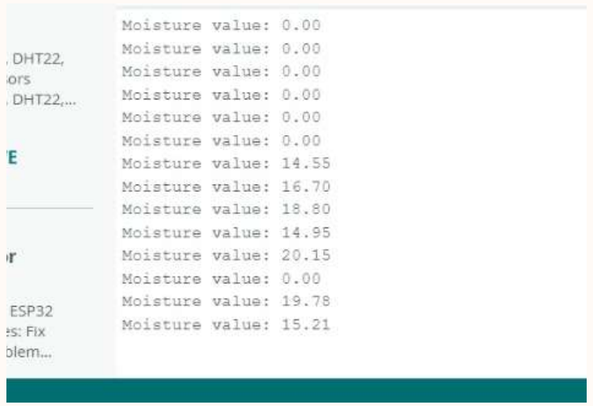
Sensors

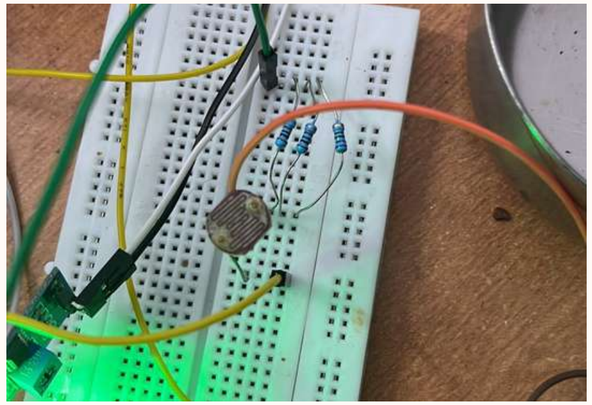
COMPLETE SETUP

- Sensor tested and working
- Data successfully being sent to thingspeak
- Values and data displayed on the website









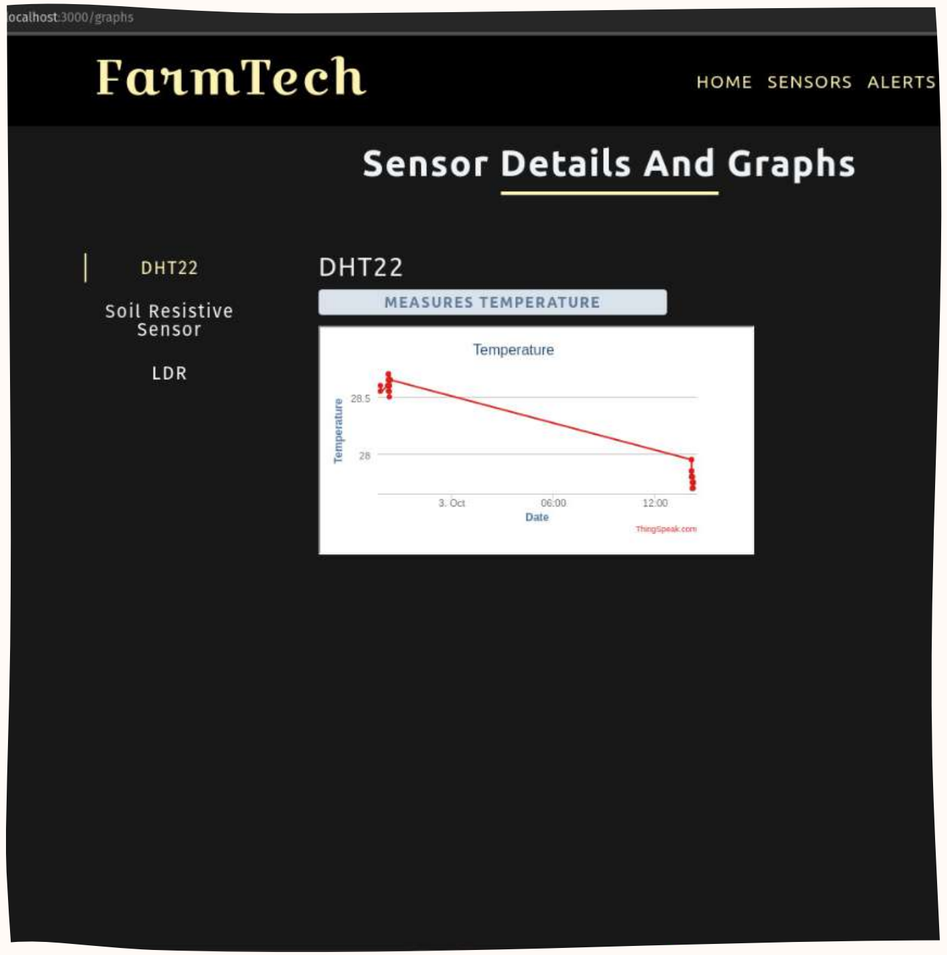
UI via Website

WEBSITE SETUP

Sensors done till that point were incorporated.
Those were the following:

- DHT-22
- Resistive soil moisture
- LDR

Other pages such as home page and alarm page also done



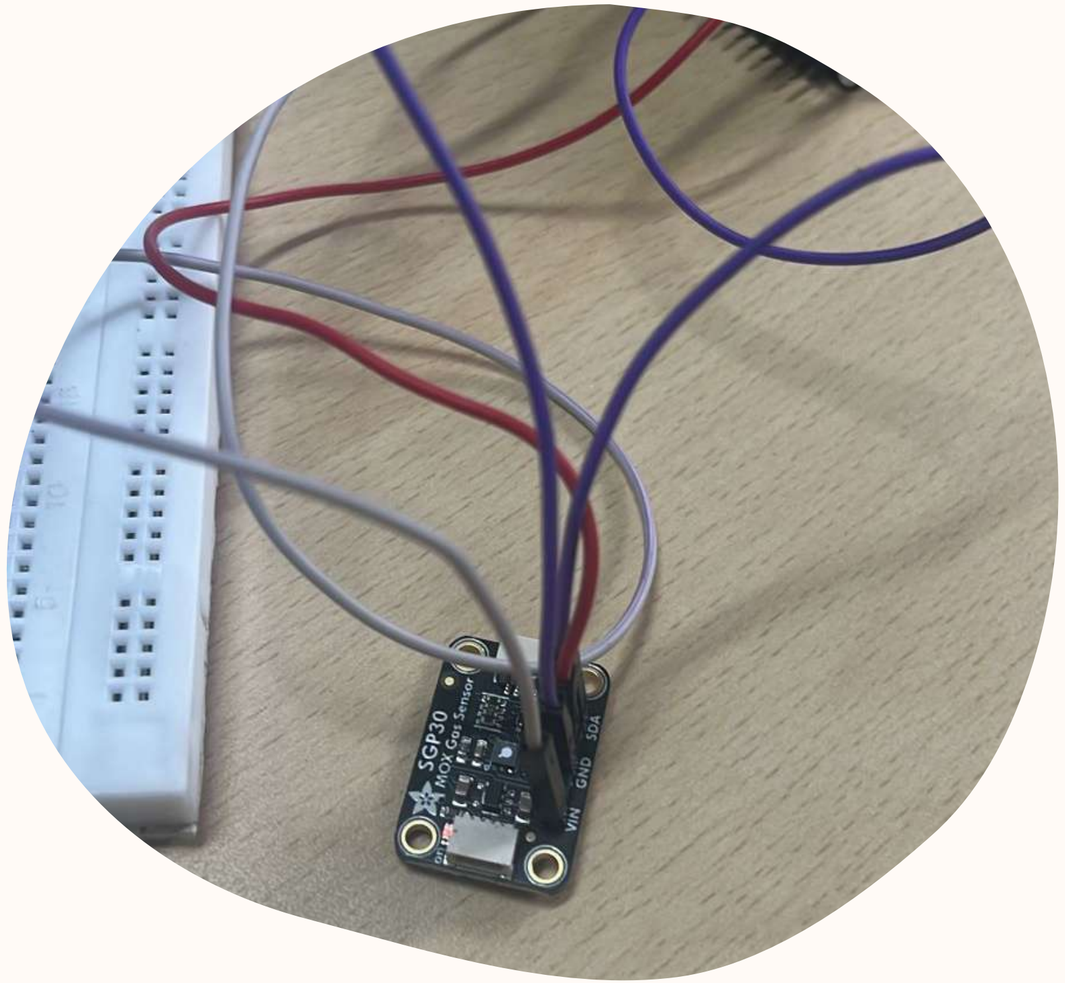
SGP 30

SENSOR INFO

- Used for measuring CO2 and VOCs
- Through detecting changes in conductivity for metal oxide sensing element
- Measurement in ppm or ppt

LAST TIME

testing of sgp 30



SGP 30

PROGRESS MADE

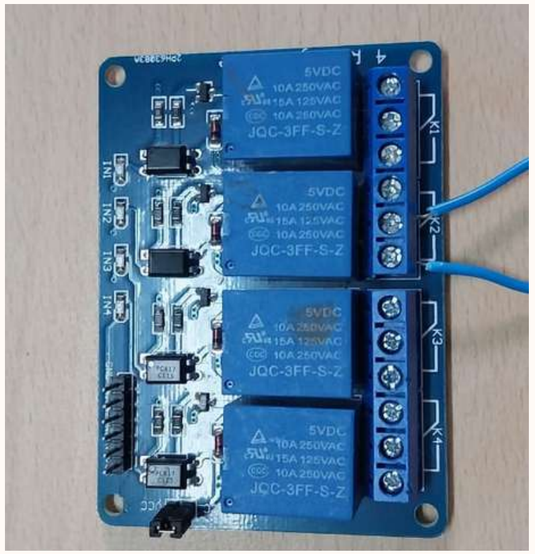
- Complete calibration of code by setting of base values
- Values displayed for:
  - eC02 in ppm
  - TVOC in ppt

Actuation via Solenoid Valve

SETUP OF SOLENOID VALVE

Consists of 2 parts:

- Solenoid Valve consisting of
  - power terminals
  - water inlet and outlet
  - Power required: 12V
- Relay module

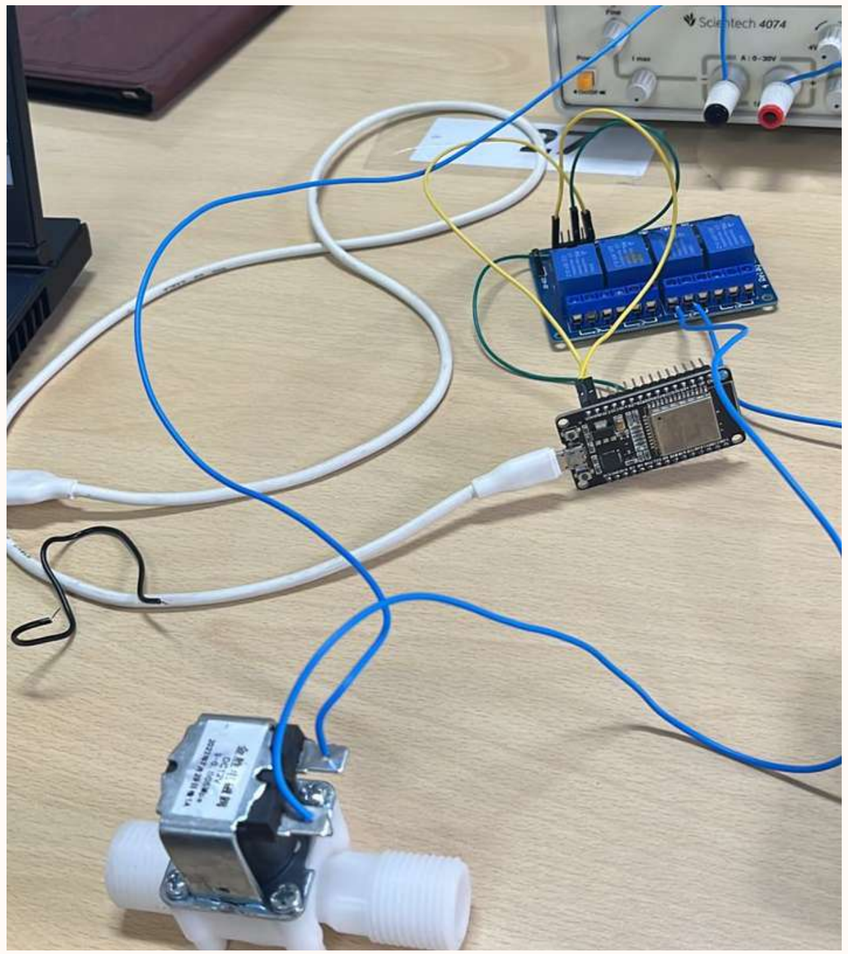


PURPOSE IN PROJECT

Works such that when soil moisture value decreases beyond a certain set point, the solenoid valve can open to allow water to flow

Setup and Code

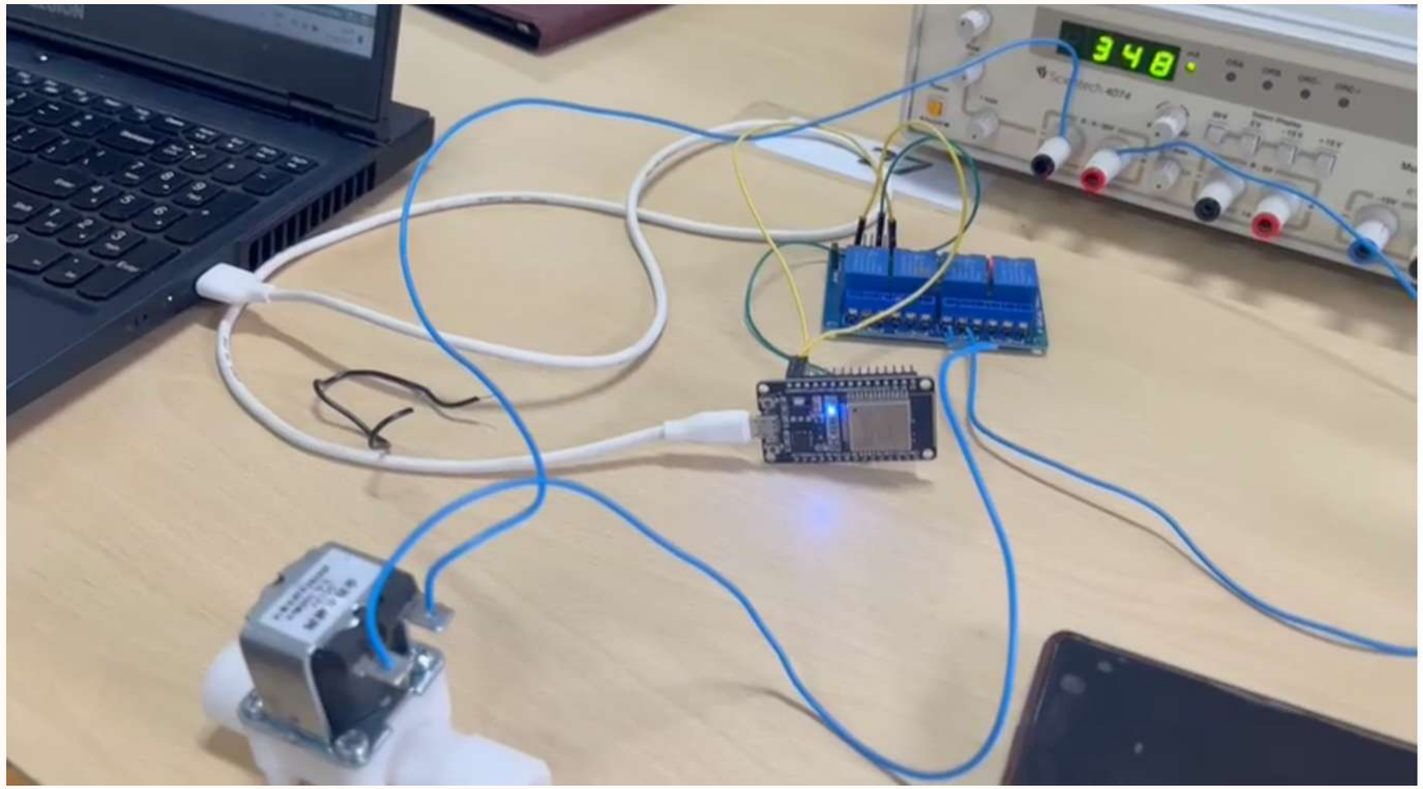
```
 */

#define RELAY_PIN 18 // ESP32 pin GPIO18, which connects to the wa

// the setup function runs once when you press reset or power the
void setup() {
  // initialize digital pin A5 as an output.
  Serial.begin(9600);
  pinMode(RELAY_PIN, OUTPUT);
}

// the loop function runs over and over again forever
void loop() {
  digitalWrite(RELAY_PIN, HIGH);// open valve 15 seconds
  Serial.println("High Sent");
  delay(10000);
  digitalWrite(RELAY_PIN, LOW);  // close valve 15 seconds
  Serial.println(" LOW Sent");
  delay(10000);
}

```



Valve open

WHEN...

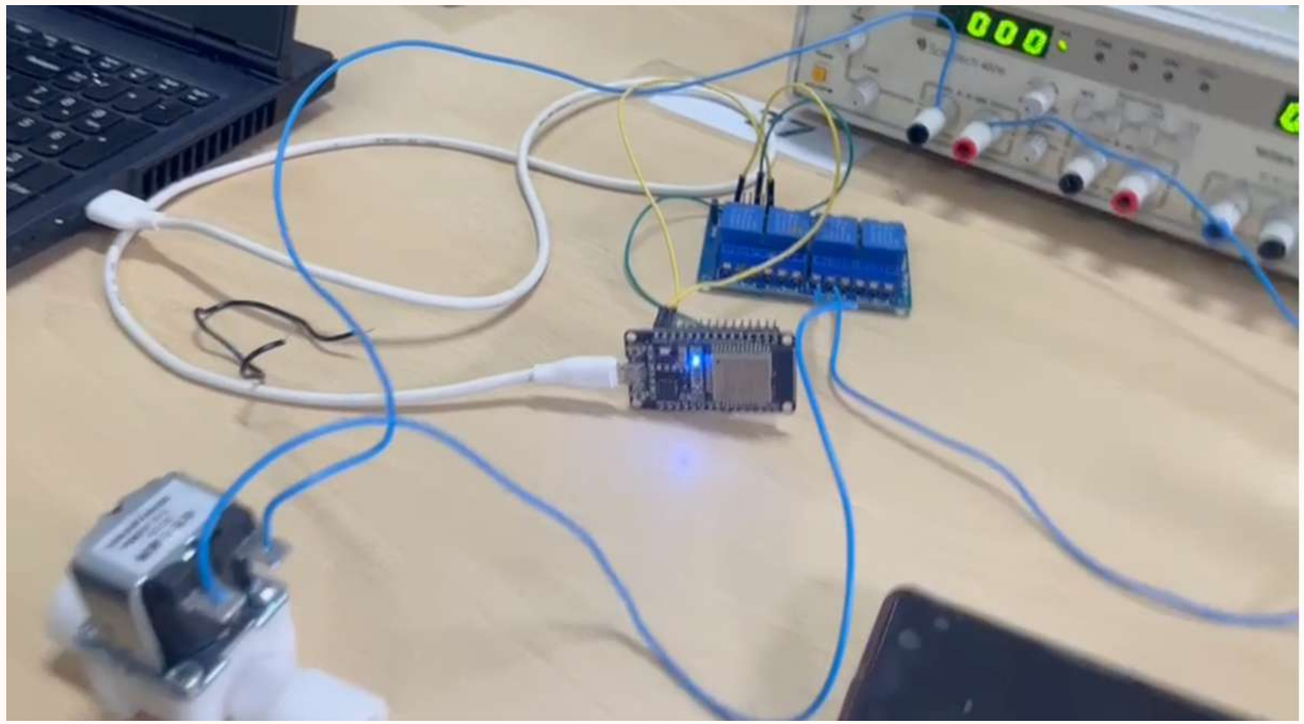
- Relay on
- Current value on power supply as shown in image
- liquid will flow through



Valve closed

WHEN...

- Relay off
- No current (value of power supply as zero) as shown in image
- liquid will flow through



Contributions

CHIRAG DHAMIJA

- SGP 30 calibration and code
- Solenoid Valve connections

SANCHIT JALAN

- SGP 30 calibration and code
- Solenoid Valve connections

NAMRATA BALIGA

- SGP 30 hardware connections
- Solenoid Valve code

ADITYA MISHRA

- SGP 30 hardware connections
- Solenoid Valve code

Upcoming

- Integration of all sensors
- pH sensor (if working)
- Upload data to OM2M