



ESW

SMART FARMING PROJECT

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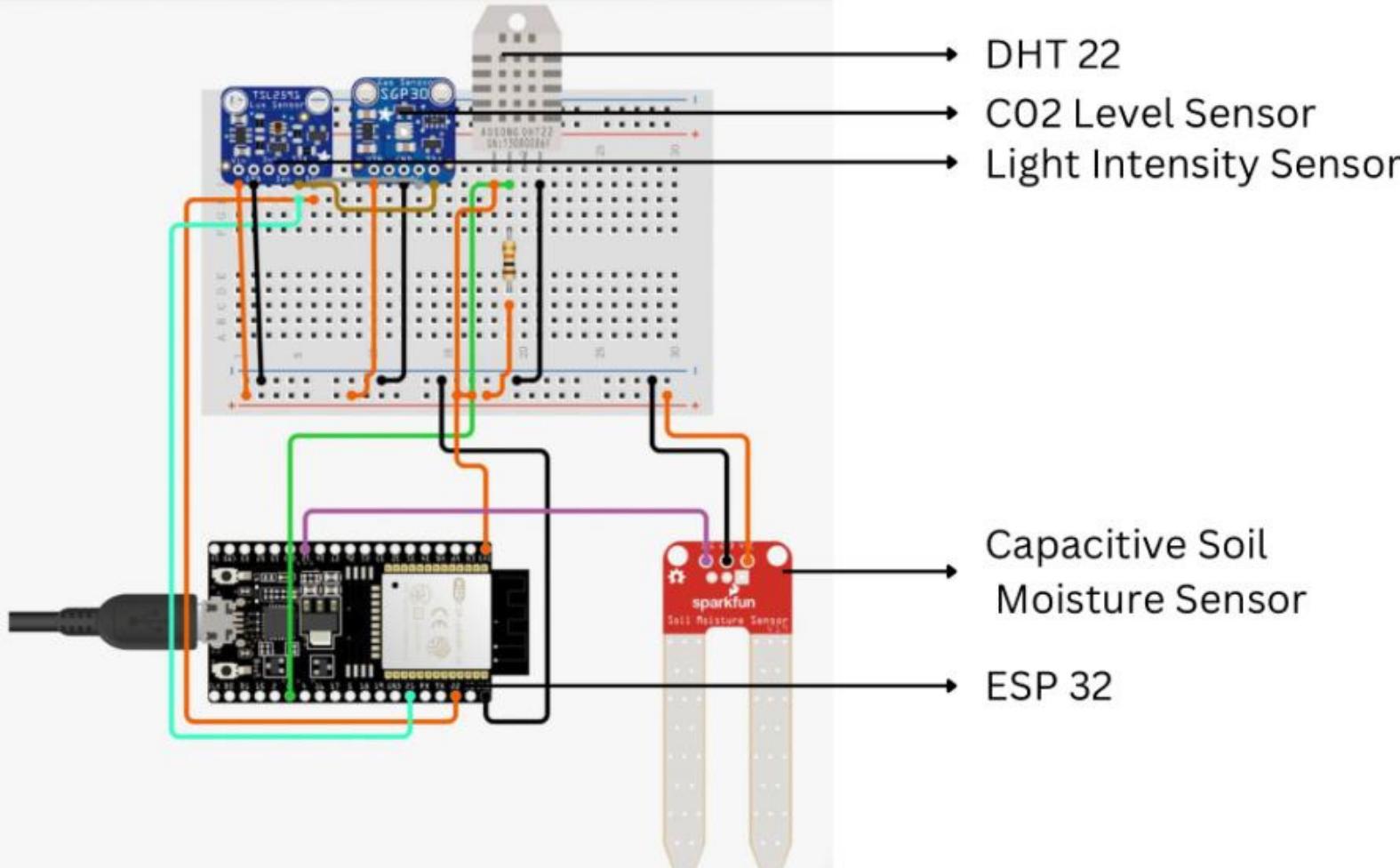
TESTING SENSORS

Sensors given:

1. DHT-22
2. Soil capacitive sensor

CIRCUIT DIAGRAM

Circuit Diagram



Overall circuit diagram of project- subject to change depending on availability of sensors



CODE FOR DHT-22

- Code for DHT-22 was written
- The testing of the sensors has been done /will be done this week

```
#include <DHT.h>

const int DHTPIN = 2;
const DHTTYPE DHTTYPE = DHT22;

DHT dht(DHTPIN, DHTTYPE);

void setup() {
  Serial.begin(115200);
  delay(10);

  // Initialize DHT sensor
  dht.begin();
}

void loop() {
  float temperature = dht.readTemperature();
  float humidity = dht.readHumidity();

  // Check if the readings are valid
  if (!isnan(temperature) && !isnan(humidity)) {
    Serial.print("Temperature: ");
    Serial.print(temperature);
    Serial.print(" °C\t");
    Serial.print("Humidity: ");
    Serial.print(humidity);
    Serial.println(" %");
  } else {
    Serial.println("Failed to read from DHT sensor!");
  }
}
```



SOIL CAPACITIVE SENSOR CODE

- Code for Soil capacitive sensor was written
- Some calibration done
- *Testing of sensor has been done/will be done next week?*

```
#define SOIL_MOISTURE_PIN 34

void setup() {
  Serial.begin(115200);
  pinMode(SOIL_MOISTURE_PIN, INPUT);

  // Set the analog pin as an input
  // Set the digital pin as an output
}

void loop() {
  int soilMoistureValue = analogRead(SOIL_MOI
  int moisturePercentage = map(soilMoistureVa
  Serial.print("Soil Moisture: ");
  Serial.print(moisturePercentage);
  Serial.println("%");

  delay(1000);
}
```



- The sensor was tested and worked properly, outputting values as shown

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Output Serial Monitor x

Message (Enter to send message to 'ESP32 Dev Module' on 'Com3')

Humidity	Temperature	~
67.70%	28.60°C	8
68.00%	28.60°C	8
68.10%	28.60°C	8
68.30%	28.60°C	8
68.00%	28.60°C	8
68.20%	28.60°C	8
68.50%	28.50°C	8
69.00%	28.50°C	8
68.60%	28.50°C	8
68.80%	28.40°C	8
68.60%	28.50°C	8
68.70%	28.40°C	8
69.10%	28.40°C	8
69.50%	28.30°C	8
69.30%	28.30°C	8

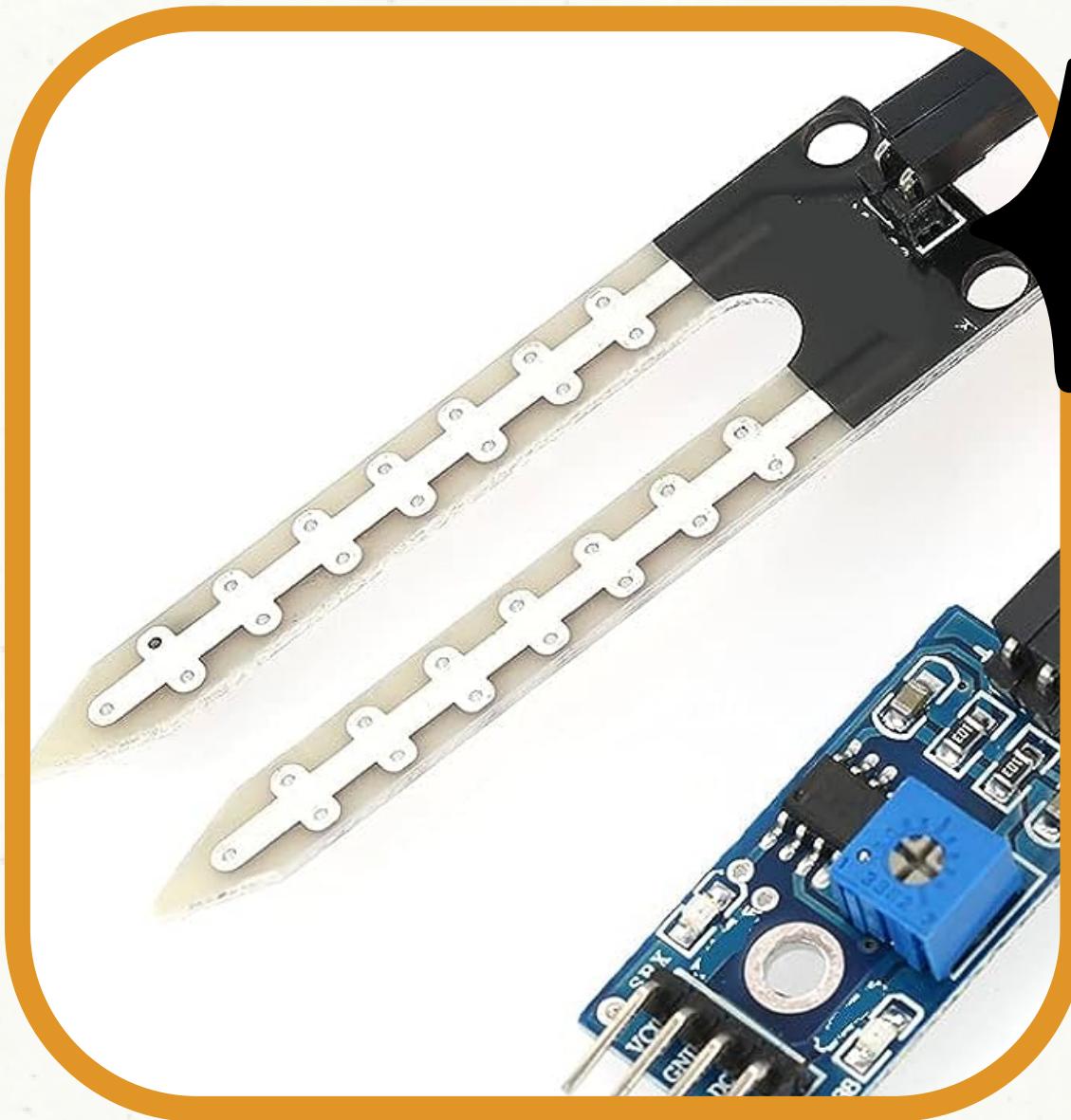
Search

RESULTS - DHT22



Circuit image

RESULTS-SOIL CAPACITIVE SENSOR



- Both sensors that were tested were working-giving variable values upon testing with water

```
Output Serial Monitor ×  
Message (Enter to send message to 'ESP32 Dev Module'  
  
Moisture value: 0.00  
Moisture value: 14.55  
Moisture value: 16.70  
Moisture value: 18.80  
Moisture value: 14.95  
Moisture value: 20.15  
Moisture value: 0.00  
Moisture value: 19.78  
Moisture value: 15.21
```



UI- WEBPAGE

- Template of webpage created
- For a base for the user interface- in future will incorporate graphs and the data

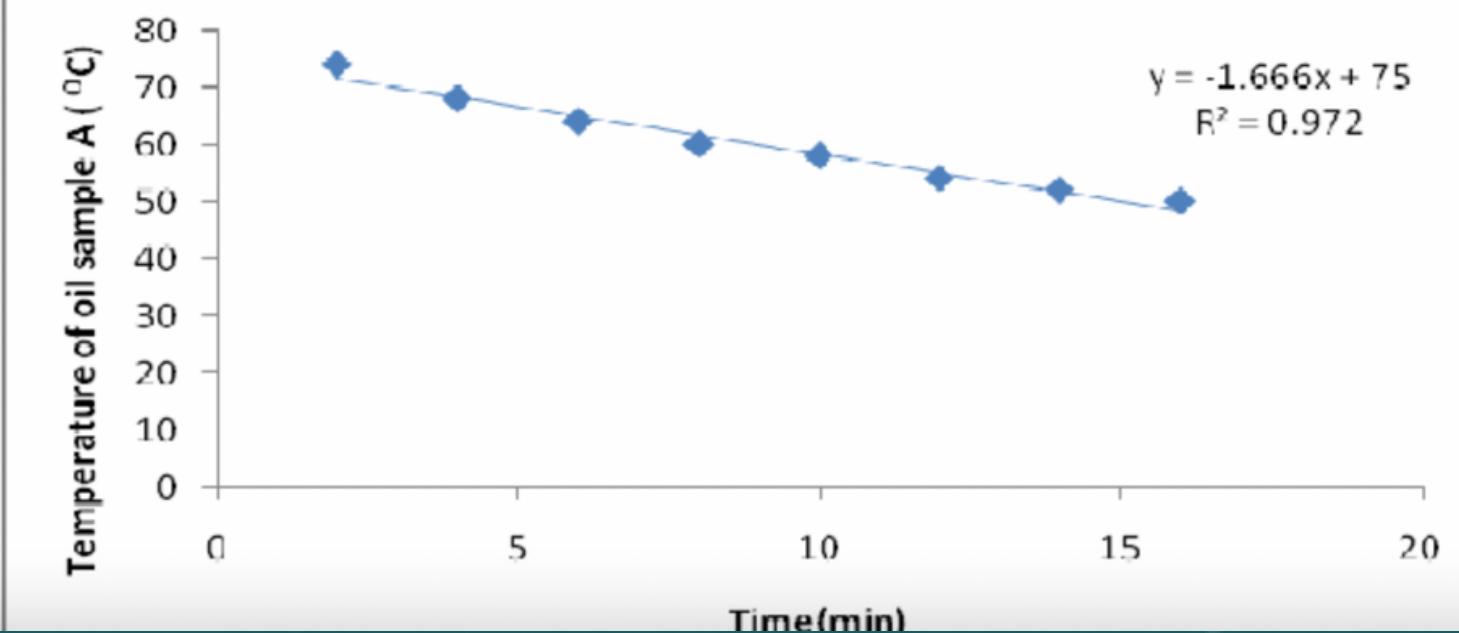
OVERVIEW- DASHBOARD

Home Sensors

LIVE READINGS

Temperature

A





THANK YOU!

