#include <Wire.h>

#include <Adafruit\_GFX.h>

#include <Adafruit\_SSD1306.h>

#include <DHT.h>

#define SCREEN\_WIDTH 128 // OLED display width, in pixels

#define SCREEN\_HEIGHT 64 // OLED display height, in pixels

#define OLED\_RESET -1    // Reset pin # (or -1 if sharing Arduino reset pin)

#define SCREEN\_ADDRESS 0x3C // Address of OLED display (for most SSD1306 modules)

#define DHT\_PIN 22       // Pin connected to the DHT22 sensor

#define TRIGGER\_PIN 23   // Pin connected to the ultrasonic sensor's trigger pin

#define ECHO\_PIN 25      // Pin connected to the ultrasonic sensor's echo pin

Adafruit\_SSD1306 display(SCREEN\_WIDTH, SCREEN\_HEIGHT, &**Wire**, OLED\_RESET);

DHT dht(DHT\_PIN, DHT22); // Initialize DHT sensor

void setup() {

**Serial**.begin(9600);

  // Initialize OLED display

  if(!display.begin(SSD1306\_SWITCHCAPVCC, SCREEN\_ADDRESS)) {

**Serial**.println(F("SSD1306 allocation failed"));

    for(;;);

  }

  // Initialize DHT sensor

  dht.begin();

  // Clear the buffer

  display.clearDisplay();

  // Set text size and color

  display.setTextSize(1);

  display.setTextColor(WHITE);

}

void loop() {

  // Read temperature and humidity from DHT sensor

  float humidity = dht.readHumidity();

  float temperature = dht.readTemperature();

  // Print temperature and humidity to serial monitor

**Serial**.print("Humidity: ");

**Serial**.print(humidity);

**Serial**.print(" %\t");

**Serial**.print("Temperature: ");

**Serial**.print(temperature);

**Serial**.println(" \*C");

  // Read distance from ultrasonic sensor

  long duration, distance;

  pinMode(TRIGGER\_PIN, OUTPUT);

  digitalWrite(TRIGGER\_PIN, LOW);

  delayMicroseconds(2);

  digitalWrite(TRIGGER\_PIN, HIGH);

  delayMicroseconds(10);

  digitalWrite(TRIGGER\_PIN, LOW);

  pinMode(ECHO\_PIN, INPUT);

  duration = pulseIn(ECHO\_PIN, HIGH);

  distance = duration \* 0.034 / 2; // Calculate distance in cm

  // Print distance to serial monitor

**Serial**.print("Distance: ");

**Serial**.print(distance);

**Serial**.println(" cm");

  // Clear previous display content

  display.clearDisplay();

  // Display data on OLED

  display.setCursor(0, 0);

  display.print("Humidity: ");

  display.print(humidity);

  display.println(" %");

  display.print("Temperature: ");

  display.print(temperature);

  display.println(" \*C");

  display.print("Distance: ");

  display.print(distance);

  display.println(" cm");

  // Display the updated buffer

  display.display();

  // Delay before next reading

  delay(2000);

}