// DHT Temperature & Humidity Sensor

// Unified Sensor Library Example

// Written by Tony DiCola for Adafruit Industries

// Released under an MIT license.

// Depends on the following Arduino libraries:

// - Adafruit Unified Sensor Library: https://github.com/adafruit/Adafruit\_Sensor

// - DHT Sensor Library: https://github.com/adafruit/DHT-sensor-library

#include <SoftwareSerial.h>

SoftwareSerial mySerial(9, 10);

#include <Adafruit\_Sensor.h>

#include <DHT.h>

#include <DHT\_U.h>

void sendmsg();

void sendmsg1();

#define DHTPIN 2 // Pin which is connected to the DHT sensor.

// Uncomment the type of sensor in use:

//#define DHTTYPE DHT11 // DHT 11

#define DHTTYPE DHT22 // DHT 22 (AM2302)

//#define DHTTYPE DHT21 // DHT 21 (AM2301)

// See guide for details on sensor wiring and usage:

// https://learn.adafruit.com/dht/overview

DHT\_Unified dht(DHTPIN, DHTTYPE);

uint32\_t delayMS;

void setup() {

mySerial.begin(9600); // Setting the baud rate of GSM Module

Serial.begin(9600);

delay(1000);

// Initialize device.

dht.begin();

Serial.println("DHTxx Unified Sensor Example");

// Print temperature sensor details.

sensor\_t sensor;

dht.temperature().getSensor(&sensor);

Serial.println("------------------------------------");

Serial.println("Temperature");

Serial.print ("Sensor: "); Serial.println(sensor.name);

Serial.print ("Driver Ver: "); Serial.println(sensor.version);

Serial.print ("Unique ID: "); Serial.println(sensor.sensor\_id);

Serial.print ("Max Value: "); Serial.print(sensor.max\_value); Serial.println(" \*C");

Serial.print ("Min Value: "); Serial.print(sensor.min\_value); Serial.println(" \*C");

Serial.print ("Resolution: "); Serial.print(sensor.resolution); Serial.println(" \*C");

Serial.println("------------------------------------");

// Print humidity sensor details.

dht.humidity().getSensor(&sensor);

Serial.println("------------------------------------");

Serial.println("Humidity");

Serial.print ("Sensor: "); Serial.println(sensor.name);

Serial.print ("Driver Ver: "); Serial.println(sensor.version);

Serial.print ("Unique ID: "); Serial.println(sensor.sensor\_id);

Serial.print ("Max Value: "); Serial.print(sensor.max\_value); Serial.println("%");

Serial.print ("Min Value: "); Serial.print(sensor.min\_value); Serial.println("%");

Serial.print ("Resolution: "); Serial.print(sensor.resolution); Serial.println("%");

Serial.println("------------------------------------");

// Set delay between sensor readings based on sensor details.

delayMS = sensor.min\_delay / 1000;

}

void loop() {

// read the input on analog pin 0:

int sensorValue = analogRead(A0); // print out the value you read:

Serial.print("Soil Moisture=");

Serial.println(sensorValue);

// Delay between measurements.

delay(delayMS);

// Get temperature event and print its value.

sensors\_event\_t event;

dht.temperature().getEvent(&event);

if (isnan(event.temperature)) {

Serial.println("Error reading temperature!");

}

else {

Serial.print("Temperature: ");

Serial.print(event.temperature);

Serial.println(" \*C");

}

// Get humidity event and print its value.

dht.humidity().getEvent(&event);

if (isnan(event.relative\_humidity)) {

Serial.println("Error reading humidity!");

}

else {

Serial.print("Humidity: ");

Serial.print(event.relative\_humidity);

Serial.println("%");

}

if (Serial.available()>0)

{

switch(Serial.read())

{

case 's':

if(sensorValue<800)

sendmsg();

break;

case 'r':

if(event.temperature>800.00)

sendmsg1();

break;

}

}

}

void sendmsg()

{

mySerial.println("AT+CMGF=1"); //Sets the GSM Module in Text Mode

delay(1000); // Delay of 1000 milli seconds or 1 second

mySerial.println("AT+CMGS=\"+918179167908\"\r"); // Replace x with mobile number

delay(1000);

mySerial.println("Moisture levels are low,switch the pump on");// The SMS text you want to send

delay(1000);

mySerial.println((char)26);// ASCII code of CTRL+Z

delay(1000);

}

void sendmsg1()

{

mySerial.println("AT+CMGF=1"); //Sets the GSM Module in Text Mode

delay(1000); // Delay of 1000 milli seconds or 1 second

mySerial.println("AT+CMGS=\"+918179167908\"\r"); // Replace x with mobile number

delay(1000);

mySerial.println("Temp and humidity values are clashing"); // The SMS text you want to send

delay(1000);

mySerial.println((char)26);// ASCII code of CTRL+Z

delay(1000);

}