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//Progress 22/05/23

baru 2 sensor, PIR dan DHT11

//Progress 28/05/23

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#include <Adafruit\_Sensor.h>

#include <DHT.h>

#include <DHT\_U.h>

int pirState = 0;               //Mendeteksi orang

int temperatureState = 0;       //Mendeteksi suhu

int rainState = 0;              //Mendeteksi hujan

int lightState = 0;             //Mendeteksi cahaya

int irKiriState = 0;            //Mendeteksi obstacle 1 (kiri)

int irKananState = 0;           //Mendeteksi obstacle 2 (kanan)

#define DHTPIN 2        // Digital pin connected to the DHT sensor

#define DHTTYPE DHT11   //DHT11 sensor +-5% accuracy

//Make an object for DHT library

DHT\_Unified dht(DHTPIN, DHTTYPE);

uint32\_t delayMS;

#define pirSensor  7              //HIGH and LOW value of PIR sensor

#define ldrSensor A0

#define relayInput  12             //Relay to control the umbrella

#define ledTemperatureHigh 4

#define ledTemperatureLow 5

#define ledPirHigh 8

#define ledPirLow 9

#define ledLdrHigh 10

#define ledLdrLow 11

//Variable

int ldrValue = 0;

void setup() {

  //Initiate the serial monitor

  Serial.begin(9600);

  //PIR SENSOR

  pinMode(pirSensor, INPUT);

  //RELAY ACTUATOR

  pinMode(relayInput, OUTPUT);

  //LDR SENSOR

  pinMode(ldrSensor, INPUT);

  //LED INdicator

  pinMode(ledTemperatureHigh, OUTPUT);

  pinMode(ledTemperatureLow, OUTPUT);

  pinMode(ledPirHigh, OUTPUT);

  pinMode(ledPirLow, OUTPUT);

  pinMode(ledLdrHigh, OUTPUT);

  pinMode(ledLdrLow, OUTPUT);

  //Inititate dht sensor

  dht.begin();

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

  // Print temperature sensor details.

  sensor\_t sensor;

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

  delayMS = sensor.min\_delay / 1000;

}

void loop() {

  // Reading the presence of human infrared

  int pirValue = digitalRead(pirSensor);

  //---------------------->PIR Sensor Motion Detector<---------------

  if (pirValue == 1){                 //objek terdeteksi

    pirState = 1;   //ada pergerakan

    digitalWrite(ledPirHigh, HIGH);

    digitalWrite(ledPirLow, LOW);

    Serial.println("PIR HIGH");

  }

  else{

    pirState = 0;   //tidak ada pergerakan

    digitalWrite(ledPirHigh, LOW);

    digitalWrite(ledPirLow, HIGH);

    Serial.println("PIR LOW");

  }

  // 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(F("Error reading temperature!"));

  }

  else {

    Serial.print(F("Temperature: "));

    Serial.print(event.temperature);

    Serial.println(F("°C"));

  }

  //----------------------------->DHT11 Temperature and Humudity<-------------------------

  if (event.temperature >= 30){     //Jika suhu lebih dari 30 Celcius (panas)

    temperatureState = 1;

    digitalWrite(ledTemperatureHigh, HIGH);

    digitalWrite(ledTemperatureLow, LOW);

    Serial.println("Suhu >= 30 Celcius");

  }

  else{

    temperatureState = 0;

    digitalWrite(ledTemperatureHigh, LOW);

    digitalWrite(ledTemperatureLow, HIGH);

    Serial.println("Suhu < 30 Celcius");

  }

  //------------------------------->LDR Sensor<---------------------------------------

  ldrValue = analogRead(ldrSensor);

  Serial.print("LDR Value= ");

  Serial.println(ldrValue);

  if(ldrValue >= 700){

    lightState = 1;

    digitalWrite(ledLdrHigh, HIGH);

    digitalWrite(ledLdrLow, LOW);

    Serial.println("Cahaya Terang");

  }

  else{

    lightState = 0;

    digitalWrite(ledLdrHigh, LOW);

    digitalWrite(ledLdrLow, HIGH);

    Serial.println("Cahaya Gelap");

  }

}