//LED BLINKING

int ledPin = 13; // Define the LED pin

void setup() {

pinMode(ledPin, OUTPUT); // Set the LED pin as an output

}

void loop() {

digitalWrite(ledPin, HIGH); // Turn the LED on

delay(1000); // Wait for a second

digitalWrite(ledPin, LOW); // Turn the LED off

delay(1000); // Wait for a second

}

//IR sensor

int sensorPin = 2; // Define the IR sensor input pin

int outputPin = 13; // Define the output pin

void setup() {

pinMode(outputPin, OUTPUT); // Set the output pin as an output

pinMode(sensorPin, INPUT); // Set the sensor pin as an input

Serial.begin(9600);

}

void loop() {

int sensorValue = digitalRead(sensorPin); // Read the sensor value

Serial.print("SensorPin Value: ");

Serial.println(sensorValue); // Print the sensor value

delay(1000);

if (sensorValue == LOW) {

digitalWrite(outputPin, HIGH); // If sensor is triggered, turn on the output

} else {

digitalWrite(outputPin, LOW); // Otherwise, turn off the output

}

}

//TOUCH SENSOR

#define tsPin 7 // Touch sensor pin

int ledPin = 3; // LED pin

void setup() {

Serial.begin(9600); // Set serial baud rate

pinMode(ledPin, OUTPUT); // Set LED pin as output

pinMode(tsPin, INPUT); // Set touch sensor pin as input

}

void loop() {

int tsValue = digitalRead(tsPin); // Read touch sensor value

delay(100);

if (tsValue == HIGH) {

digitalWrite(ledPin, HIGH); // Turn LED on

Serial.println("TOUCHED");

} else {

digitalWrite(ledPin, LOW); // Turn LED off

Serial.println("not touched");

}

}

//ULTRASONIC

int pingPin = 6;

int echoPin = 5;

void setup() {

Serial.begin(9600); // Starting Serial Terminal

pinMode(pingPin, OUTPUT); // Set the ping pin as output

}

void loop() {

long duration, inches, cm;

digitalWrite(pingPin, LOW);

delayMicroseconds(2);

digitalWrite(pingPin, HIGH);

delayMicroseconds(10);

digitalWrite(pingPin, LOW);

pinMode(echoPin, INPUT);

duration = pulseIn(echoPin, HIGH); // Measure the duration of the echo pulse

inches = microsecondsToInches(duration);

cm = microsecondsToCentimeters(duration);

Serial.print(inches);

Serial.print("in, ");

Serial.print(cm);

Serial.print("cm");

Serial.println();

delay(100);

}

long microsecondsToInches(long microseconds) {

return microseconds / 74 / 2;

}

long microsecondsToCentimeters(long microseconds) {

return microseconds / 29 / 2;

}

// VIBRATION SENSOR

int vib\_pin = 5;

int led\_pin = 13;

void setup() {

pinMode(vib\_pin, INPUT);

pinMode(led\_pin, OUTPUT);

}

void loop() {

int val;

val = digitalRead(vib\_pin);

if (val == HIGH) {

digitalWrite(led\_pin, HIGH);

delay(1000);

digitalWrite(led\_pin, LOW);

delay(1000);

} else {

digitalWrite(led\_pin, LOW);

}

}

// PIR SENSOR

int pirPin = 2;

void setup() {

Serial.begin(9600); // Initialize serial communication

pinMode(pirPin, INPUT); // Set the PIR pin as an input

}

void loop() {

int pirState = digitalRead(pirPin); // Read PIR sensor state

if (pirState == HIGH) {

Serial.println("Motion detected!");

} else {

Serial.println("No motion detected.");

}

delay(500);

}

//SOIL MOISTURE

int soilMoisturePin = A0; // Change 'const' to 'int'

void setup() {

// Initialize serial communication for debugging

Serial.begin(9600);

}

void loop() {

// Read the analog value from the soil moisture sensor

int soilMoistureValue = analogRead(soilMoisturePin);

// Map the analog value to a percentage value (0-100%)

// Adjust these values based on your sensor and soil conditions

int soilMoisturePercent = map(soilMoistureValue, 0, 1023, 0, 100);

// Print the soil moisture percentage to the serial monitor

Serial.print("Soil Moisture: ");

Serial.print(soilMoisturePercent);

Serial.println("%");

// Add a delay to prevent spamming the serial monitor

delay(1000); // Adjust delay as needed

}

// WATER LEVEL

#define POWER\_PIN 7

#define SIGNAL\_PIN A5

int value = 0;

void setup() {

Serial.begin(9600);

pinMode(POWER\_PIN, OUTPUT);

digitalWrite(POWER\_PIN, LOW);

}

void loop() {

digitalWrite(POWER\_PIN, HIGH);

delay(10);

value = analogRead(SIGNAL\_PIN);

Serial.print("Water Level: ");

Serial.println(value);

digitalWrite(POWER\_PIN, LOW);

delay(1000); // Add a delay to prevent too frequent readings

}

//LM23 TEMPERATURE SENSOR

float temp;

int sensor = A0; // Define the sensor pin as A0

void setup() {

Serial.begin(9600); // Start the serial monitor

}

void loop() {

temp = analogRead(sensor); // Read the analog input from the sensor

temp = (temp \* 5.0 / 1024.0) \* 100.0; // Convert the analog reading to Celsius

// Print temperature information on the serial monitor

Serial.print("The temperature is: ");

Serial.print(temp);

Serial.println(" deg. Celsius");

// Wait 1 second

delay(1000);

}

// SMOKE

#define MQ2pin A0 // Define the pin for the MQ2 sensor

float sensorValue; // Variable to store sensor value

void setup() {

Serial.begin(9600); // Set the serial port to 9600

Serial.println("Gas sensor warming up!");

delay(20000); // Allow the MQ-2 to warm up

}

void loop() {

sensorValue = analogRead(MQ2pin); // Read analog input from pin A0

Serial.print("Sensor Value: ");

Serial.print(sensorValue);

if (sensorValue > 200) {

Serial.print(" | Smoke detected!");

}

Serial.println("");

delay(2000); // Wait 2 seconds for the next reading

}

// SOUND SENSOR

#define MQ2pin A0 // Define the pin for the MQ2 sensor

float sensorValue; // Variable to store sensor value

void setup() {

Serial.begin(9600); // Set the serial port to 9600

Serial.println("Gas sensor warming up!");

delay(20000); // Allow the MQ-2 to warm up

}

void loop() {

sensorValue = analogRead(MQ2pin); // Read analog input from pin A0

Serial.print("Sensor Value: ");

Serial.print(sensorValue);

if (sensorValue > 200) {

Serial.print(" | Smoke detected!");

}

Serial.println("");

delay(2000); // Wait 2 seconds for the next reading

}

#define MQ2pin A0 // Define the pin for the MQ2 sensor

float sensorValue; // Variable to store sensor value

void setup() {

Serial.begin(9600); // Set the serial port to 9600

Serial.println("Gas sensor warming up!");

delay(20000); // Allow the MQ-2 to warm up

}

void loop() {

sensorValue = analogRead(MQ2pin); // Read analog input from pin A0

Serial.print("Sensor Value: ");

Serial.print(sensorValue);

if (sensorValue > 200) {

Serial.print(" | Smoke detected!");

}

Serial.println("");

delay(2000); // Wait 2 seconds for the next reading

}