#include <Servo.h>

#include <SoftwareSerial.h>

const int mq5Pin = A0; // Analog pin for MQ-5 sensor (propane and methane)

const int motionSensorPin = 2; // Digital pin for motion sensor

const int waterPumpPin = 3; // Digital pin for water pump

const int servoPin = 9; // Digital pin for servo motor

Servo servoMotor;

SoftwareSerial sim800l(10, 11); // SoftwareSerial RX, TX

const char\* phoneNumber = "+1201792512"; // Phone number to send SMS to

void setup() {

pinMode(motionSensorPin, INPUT);

pinMode(waterPumpPin, OUTPUT);

servoMotor.attach(servoPin);

servoMotor.write(0); // Initial position for servo motor

Serial.begin(9600);

sim800l.begin(9600);

delay(1000); // Give SIM800L some time to initialize

sendSMS("System initialized."); // Send initialization message

}

void loop() {

int gasValue = analogRead(mq5Pin);

Serial.print("Gas Value: ");

Serial.println(gasValue);

// Adjust this threshold value based on your calibration

if (gasValue > 500) {

// High gas level detected, activate water pump

digitalWrite(waterPumpPin, HIGH);

Serial.println("High gas level detected! Water pump activated.");

sendSMS("High gas level detected! Water pump activated.");

} else {

digitalWrite(waterPumpPin, LOW);

Serial.println("Gas level is normal. Water pump deactivated.");

}

int motionValue = digitalRead(motionSensorPin);

Serial.print("Motion Sensor Value: ");

Serial.println(motionValue);

if (motionValue == HIGH) {

// Motion detected, move servo motor

servoMotor.write(90);

delay(500);

servoMotor.write(0); // Return to initial position

Serial.println("Motion detected! Servo motor moved.");

sendSMS("Motion detected! Servo motor moved.");

}

delay(1000);

}

void sendSMS(const char\* message) {

sim800l.println("AT+CMGF=1"); // Set SMS mode to text

delay(500);

sim800l.print("AT+CMGS=\"");

sim800l.print(phoneNumber);

sim800l.println("\"");

delay(1000);

sim800l.println(message);

delay(500);

sim800l.println((char)26); // End message

delay(500);

}