#include <SoftwareSerial.h>

#include <TinyGPS++.h>

// Initialize GPS and GSM communication

SoftwareSerial gpsSerial(4, 3); // RX, TX for GPS

SoftwareSerial gsmSerial(9, 10); // RX, TX for GSM

TinyGPSPlus gps;

String phoneNumber = "+1234567890"; // Replace with your phone number

void setup() {

Serial.begin(9600);

gpsSerial.begin(9600);

gsmSerial.begin(9600);

// Serial monitor

// GPS module

// GSM module

Serial.println("Vehicle Tracking System Ready...");

gsmSerial.println("AT"); // Check if the GSM module is working

delay(1000);

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

delay(1000);

}

void loop() {

// Read GPS data

while (gpsSerial.available() > 0) {

gps.encode(gpsSerial.read());

}

// If an SMS is received, process it

if (gsmSerial.available()) {

String message = "";

while (gsmSerial.available()) {

message += (char)gsmSerial.read();

}

message.trim(); // Clean up the message

// If message contains the keyword "LOCATION", send the GPS coordinates

if (message == "LOCATION") {

if (gps.location.isUpdated()) {

double latitude = gps.location.lat();

double longitude = gps.location.lng();

String mapLink = "https://maps.google.com/?q=" + String(latitude, 6) + ","

+ String(longitude, 6);

sendMapLink(mapLink);

} else {

gsmSerial.println("AT+CMGS=\"" + phoneNumber + "\"");

delay(1000);

gsmSerial.println("GPS not available.");

delay(500);

gsmSerial.write(26); // Send Ctrl+Z to end the message

}

}

}

}

void sendMapLink(String mapLink) {

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

gsmSerial.print(phoneNumber); // Recipient phone number

gsmSerial.println("\"");

delay(1000);

gsmSerial.println("Your Location: " + mapLink); // Message body with Google

Maps link

delay(500);

gsmSerial.write(26); // Send Ctrl+Z to send the SMS

delay(1000);

Serial.println("SMS Sent: " + mapLink); // Debug message on Serial Monitor

}