// GPS

#define GPSSerial Serial1

// Accelerometer

#include <Wire.h>

#include "SparkFun\_MMA8452Q.h"

MMA8452Q accel;

// flex sensor

// declare variables

int sensorpin = A14; // sensor pin

float flex; // sensor readings

// Altimeter

#include <Adafruit\_MPL3115A2.h>

Adafruit\_MPL3115A2 baro;

int vib\_slow; //hard to trigger

int vib\_med;

int vib\_fast; //easy to trigger

void setup() {

// put your setup code here, to run once:

// GPS

Serial.begin(115200);

while (!Serial) delay(10);

GPSSerial.begin(115200);

// initialize serial communication

Serial.begin(9600);

// Accelerometer

Serial.begin(115200);

Serial.println("MMA8452Q Basic Reading Code!");

Wire.begin();

if (accel.begin() == false) {

Serial.println("Not Connected. Please check connections and read the hookup guide.");

while (1);

}

// Altimeter

Serial.begin(115200);

while(!Serial);

Serial.println("Adafruit\_MPL3115A2 test!");

if (!baro.begin()) {

Serial.println("Could not find sensor. Check wiring.");

while(1);

}

// use to set sea level pressure for current location this is needed for accurate altitude measurement STD SLP = 1013.26 hPa

baro.setSeaPressure(1013.26);

pinMode(25, INPUT);

pinMode(26,INPUT);

pinMode(27, INPUT);

}

void loop() {

// put your main code here, to run repeatedly:

// GPS

if (Serial.available()) {

char c = Serial.read();

GPSSerial.write(c);

}

if (GPSSerial.available()) {

char c = GPSSerial.read();

Serial.write(c);

}

// flex sensor

flex = analogRead(sensorpin);

// print sensor value

Serial.println(flex);

// accelerometer

if (accel.available()) { // Wait for new data from accelerometer

// Acceleration of x, y, and z directions in g units

Serial.print(accel.getCalculatedX() , 3);

Serial.print("\t");

Serial.print(accel.getCalculatedY(), 3);

Serial.print("\t");

Serial.print(accel.getCalculatedZ(), 3);

Serial.println();

vib\_fast= digitalRead(25);

vib\_med= digitalRead(26);

vib\_slow= digitalRead(27);

}

// altimeter

float pressure = baro.getPressure();

float altitude = baro.getAltitude();

float temperature = baro.getTemperature();

Serial.print("pressure = "); Serial.print(pressure); Serial.println(" hPa");

Serial.print("altitude = "); Serial.print(altitude); Serial.println(" m");

Serial.print("temperature = "); Serial.print(temperature); Serial.println(" C");

Serial.print(vib\_fast);

Serial.print(vib\_med);

Serial.print(vib\_slow);

//Serial.print(vib\_high);

Serial.print("\n");

//delay(100);

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

}