**SOURCE CODE**

#include<SoftwareSerial.h>

SoftwareSerial Serial1(2,3); //make RX arduino line is pin 2, make TX arduino line is pin 3.

SoftwareSerial gps(10,11);

#define x A1

#define y A2

#define z A3

int xsample=0;

int ysample=0;

int zsample=0;

#define samples 10

#define minVal -50

#define MaxVal 50

int i=0,k=0;

int gps\_status=0;

float latitude=0;

float logitude=0;

String Speed="";

String gpsString="";

char \*test="$GPRMC";

void initModule(String cmd, char \*res, int t)

{

while(1)

{

Serial.println(cmd);

Serial1.println(cmd);

delay(1000);

while(Serial1.available()>0)

{

if(Serial1.find(res))

{

Serial.println(res);

delay(t);

return;

}

else

{

Serial.println("Error");

}

}

delay(t);

}

}

void setup()

{

Serial1.begin(9600);

Serial.begin(9600);

delay(2000);

Serial.println("Initializing....");

initModule("AT","OK",5000);

initModule("ATE1","OK",2000);

initModule("AT+CPIN?","READY",1000);

initModule("AT+CMGF=1","OK",2000);

initModule("AT+CNMI=2,2,0,0,0","OK",5000);

Serial.println("Initialized Successfully");

delay(2000);

for(int i=0;i<samples;i++)

{

xsample+=analogRead(x);

ysample+=analogRead(y);

zsample+=analogRead(z);

}

xsample/=samples;

ysample/=samples;

zsample/=samples;

Serial.println(xsample);

Serial.println(ysample);

Serial.println(zsample);

delay(1000);

gps.begin(9600);

get\_gps();

show\_coordinate();

delay(2000);

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

}

void loop()

{

int value1=analogRead(x);

int value2=analogRead(y);

int value3=analogRead(z);

int xValue=xsample-value1;

int yValue=ysample-value2;

int zValue=zsample-value3;

Serial.print("x=");

Serial.println(xValue);

Serial.print("y=");

Serial.println(yValue);

Serial.print("z=");

Serial.println(zValue);

if(xValue < minVal || xValue > MaxVal || yValue < minVal || yValue > MaxVal || zValue < minVal || zValue > MaxVal)

{

get\_gps();

show\_coordinate();

// lcd.clear();

// lcd.print("Sending SMS");

Serial.println("Sending SMS");

Send();

Serial.println("SMS Sent");

delay(2000);

// lcd.clear();

// lcd.print("System Ready");

}

}

void gpsEvent()

{

gpsString="";

while(1)

{

while (gps.available()>0) //Serial incoming data from GPS

{

char inChar = (char)gps.read();

gpsString+= inChar; //store incoming data from GPS to temparary string str[]

i++;

// Serial.print(inChar);

if (i < 7)

{

if(gpsString[i-1] != test[i-1]) //check for right string

{

i=0;

gpsString="";

}

}

if(inChar=='\r')

{

if(i>60)

{

gps\_status=1;

break;

}

else

{

i=0;

}

}

}

if(gps\_status)

break;

}

}

void get\_gps()

{

gps\_status=0;

int x=0;

while(gps\_status==0)

{

gpsEvent();

int str\_lenth=i;

coordinate2dec();

i=0;x=0;

str\_lenth=0;

}

}

void show\_coordinate()

{

Serial.print("Latitude:");

Serial.println(latitude,6);

Serial.print("Longitude:");

Serial.println(logitude,6);

Serial.print("Speed(in knots)= ");

Serial.println(Speed);

delay(2000);

}

void coordinate2dec()

{

String lat\_degree="";

for(i=21;i<=22;i++)

lat\_degree+=gpsString[i];

String lat\_minut="";

for(i=23;i<=29;i++)

lat\_minut+=gpsString[i];

String log\_degree="";

for(i=32;i<=34;i++)

log\_degree+=gpsString[i];

String log\_minut="";

for(i=35;i<=41;i++)

log\_minut+=gpsString[i];

Speed="";

for(i=45;i<48;i++) //extract longitude from string

Speed+=gpsString[i];

float minut=lat\_minut.toFloat();

minut=minut/60;

float degree=lat\_degree.toFloat();

latitude=degree+minut - 21.32;

minut= log\_minut.toFloat();

minut=minut/60;

degree=log\_degree.toFloat();

logitude=degree+minut;

}

void Send()

{

Serial1.println("AT");

delay(5000);

serialPrint();

Serial1.println("AT+CMGF=1");

delay(5000);

serialPrint();

Serial1.print("AT+CMGS=");

Serial1.print('"');

Serial1.print("7559155378");//rough firstly

Serial1.println('"');

delay(5000);

serialPrint();

Serial1.print("ALERT!\nVehicle:MH48S0814 met an accident.\n");

Serial1.print("Latitude:");

Serial1.println(latitude, 6);

delay(5000);

serialPrint();

Serial1.print("\nLongitude:");

Serial1.println(logitude, 6);

delay(5000);

serialPrint();

Serial1.print("\n Speed : ");

Serial1.print(Speed);

Serial1.println("Knots");

delay(5000);

serialPrint();

Serial1.print("\nhttps://[www.google.com/maps/place/](http://www.google.com/maps/place/)");

Serial1.print(latitude, 6);

Serial1.print(","); //18.490866,73.843418

Serial1.print(logitude, 6);

Serial1.write(26);

delay(2000);

serialPrint();

}

void serialPrint()

{

while(Serial1.available()>0)

{

Serial.print(Serial1.read());

}

}