#include "TimerOne.h"

#include <SoftwareSerial.h>

SoftwareSerial Uart\_Send(10,11);

const int Hbeat = 12;

const int Buzzer =13;

const int analogInPin = A0;

String BodyStatus="";

float sensorValue=0;

int hb\_cnt=0;

float tempf;

int temp;

char tcnt,dummy\_Timer;

void setup()

{

  pinMode(Hbeat, INPUT);

  pinMode(Buzzer, OUTPUT);

  digitalWrite(Buzzer,LOW);

  Uart\_Send.begin(9600);

  Serial.begin(9600);

  Timer1.initialize(1000000\*5);      //for every 5 seconds we get interrupt

  Timer1.attachInterrupt(Timer0\_ISR);  // attaches callback() as a timer overflow interrupt

  Serial.write("Module Check\r\n");

Wire.begin();

accel.init();

delay(2000);

//HB-C:

}

void loop()

{

 Check\_Teperature();

 Check\_Heart\_Beat();

}

void Check\_Heart\_Beat()

{

while(digitalRead(Hbeat)==0);

while(digitalRead(Hbeat)==1);

hb\_cnt++;

Serial.print("Heart Beat:");

Serial.println(hb\_cnt);

delay(500);

}

void Check\_Teperature()

{

sensorValue = analogRead(analogInPin);

sensorValue=(sensorValue\*500)/1023;

tempf=(sensorValue\*1.8)+32;

temp=tempf;

Serial.print("Temperature:");

Serial.println(temp);

if(temp>100)

{

digitalWrite(Buzzer,HIGH);

delay(1000);

digitalWrite(Buzzer,LOW);

}

}

void Timer0\_ISR()

{

  tcnt++;

  //tcnt=12 => min

  //tcnt=6  => 30 Sec

  //tcnt=3  => 15 Sec

  if(tcnt==3){

   Timer1.stop();

   tcnt=0;

   hb\_cnt=hb\_cnt\*4;

   Uart\_Send.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

   Uart\_Send.print("\r\nHeartBeat / Min:");

   Uart\_Send.write(((hb\_cnt)/100)+48);

   Uart\_Send.write(((hb\_cnt)%100/10)+48);

   Uart\_Send.write(((hb\_cnt)%100%10)+48);

   Uart\_Send.println();

   temp=tempf;

   Uart\_Send.print("\r\nBody Temperature:");

   Uart\_Send.write(((temp)/100)+48);

   Uart\_Send.write(((temp)%100/10)+48);

   Uart\_Send.write(((temp)%100%10)+48);

   Uart\_Send.println();

   Uart\_Send.print("\r\nBody Status:");

   Uart\_Send.print(BodyStatus);

   Uart\_Send.println();

   Uart\_Send.println();

   Uart\_Send.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

   //Uart\_Send.print(hb\_cnt);

   //Uart\_Send.print(tempf);

   Serial.println("Timer Interrupt Okay..!");

   Serial.println("++++++++++++++++++++++++++++++++++++");

   Serial.print("Heart Beat /Min:");

   Serial.println(hb\_cnt);

   Serial.print("Temperature:");

   Serial.println(tempf);

    Uart\_Send.print("\*");

   Serial.write(((hb\_cnt)/100)+48);

   Serial.write(((hb\_cnt)%100/10)+48);

   Serial.write(((hb\_cnt)%100%10)+48);

   if(temp>100)

{

Send\_SMS("Node mcu victim is suspected to be in danger",high heart rate detected)

}

   temp=tempf;

   Serial.write(((temp)/100)+48);

   Serial.write(((temp)%100/10)+48);

   Serial.write(((temp)%100%10)+48);

   if(temp>100)

{

Send\_SMS("Node mcu victim suspected in danger",high temperature detected)

}

   hb\_cnt=0;

   Serial.println("++++++++++++++++++++++++++++++++++++");

   Timer1.resume();

//dummy\_Timer=0;

  }

}

void GPS\_Init()

{

Check\_GSM("AT+CGNSPWR=1");

Check\_GSM("AT+CGNSSEQ=\"RMC\"");

Check\_GSM("AT&W");

delay(100);

}

void GPS\_Get\_LtLn()

{

while(true)

{

GSM\_RData="";

gsm.println("AT+CGNSINF");

delay(50);

while (gsm.available()>0)

{

delay(1);

GSM\_RData += (char) gsm.read();

}

if(GSM\_RData.substring(2,10)=="+CGNSINF")

{

Serial.println(GSM\_RData);

//Serial.println("Getting Lat-Lon Values..");

//Serial.println(GSM\_RData.substring(2,10));

//Serial.println(GSM\_RData.substring(12,15));

if(GSM\_RData.substring(12,15)=="1,1")

{

Get\_GPS\_Perameters();

Send\_SMS("8919042303",coordinates);

break;

}

if(GSM\_RData.substring(12,15)=="1,0")

//else

{

Send\_SMS("8919042303",":GPS Not Fixed");

break;

}

}

}

}

void Get\_GPS\_Perameters(void)

{

while(GSM\_RData[idx2]!=0x2c){idx2++;}//first coma

idx2++;

while(GSM\_RData[idx2]!=0x2c){idx2++;}//second coma

idx2++;

while(GSM\_RData[idx2]!=0x2c){idx2++;}//third coma

idx2++;

while(GSM\_RData[idx2]!=0x2c){

  coordinates +=GSM\_RData[idx2];

  idx2++;

void Send\_SMS(String title,String Phno,String Mssgbdy)

{

int cnt=0;

boolean msg\_snt;

Serial.write("Sending Message\r\n");//---------------->

lcd.setCursor(0, 2);

lcd.print("Sending Msg");

msg\_snt=false;

gsm.write("AT+CMGS=\"+91");

gsm.print(Phno);

gsm.write("\"\r\n");

delay(40);

while(gsm.available())

{

if(gsm.find(">"))

{

lcd.setCursor(11, 2);

lcd.print("-");

Serial.write("got > symbol\r\n");//-------------------->

gsm.print(" At loc  <http://maps.google.co.in/maps?q=>");

delay(50);

gsm.print(Mssgbdy);

coordinates="";

delay(50);

gsm.write(0x1A);

cnt=0;

while(cnt<=500)

{

while (gsm.available()>0)

{

if(gsm.find("OK"))

 msg\_snt=true;

 break;

}

if(msg\_snt){

Serial.println("Message Sent Successfully");//---------->

break;}

cnt++;

//Serial.println(cnt);//---------------------------------->

delay(10);

}

if(!msg\_snt)

Serial.println("Unable to Send Message");//------------->

coordinates="";

}

}

}