**Accident Alert System**

PROGRAM

#include<SoftwareSerial.h>

#include<TinyGPS++.h>

#include<LiquidCrystal.h>

SoftwareSerial Serial1(6,7); //make RX arduino line is pin 6, make TX arduino line is pin 7.

SoftwareSerial ss(10,11);

TinyGPSPlus gps;

LiquidCrystal lcd(12,13,5,4,3,2);

#define x A1

#define y A2

#define z A3

int xsample=0;

int ysample=0;

int zsample=0;

#define samples 10

#define minVal 300

#define MaxVal 500

int i=0,k=0;

//char \*test="$GPRMC";

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

{

while(1)

{

Serial.println(cmd);

Serial1.println(cmd);

delay(100);

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);

lcd.begin(16,2);

lcd.clear();

lcd.print("Accident Alert ");

lcd.setCursor(0,1);

lcd.print(" System ");

delay(2000);

lcd.clear();

lcd.print("Initializing");

lcd.setCursor(0,1);

lcd.print("Please Wait...");

delay(1000);

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

initModule("AT","OK",1000);

initModule("ATE1","OK",1000);

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

initModule("AT+CMGF=1","OK",1000);

initModule("AT+CNMI=2,2,0,0,0","OK",1000);

Serial.println("Initialized Successfully");

lcd.clear();

lcd.print("Initialized");

lcd.setCursor(0,1);

lcd.print("Successfully");

delay(2000);

lcd.clear();

lcd.print("Callibrating ");

lcd.setCursor(0,1);

lcd.print("Acceleromiter");

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);

lcd.clear();

lcd.print("Waiting For GPS");

lcd.setCursor(0,1);

lcd.print(" Signal ");

delay(2000);

ss.begin(9600);

delay(2000);

lcd.clear();

lcd.print("GPS is Ready");

delay(1000);

lcd.clear();

lcd.print("System Ready");

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)

{

while(ss.available()>0)

if(gps.encode(ss.read()))

displayInfo();

if(millis()>5000 && gps.charsProcessed()<10)

{

Serial.print(F("No GPS detected"));

lcd.print(F("No GPS detected"));

while(true);

}

}

}

void displayInfo()

{

if(gps.location.isValid())

{

lcd.setCursor(0,0);

lcd.print("LAT=");

lcd.print(gps.location.lat(),10);

lcd.setCursor(0,1);

lcd.println("LNG=");

lcd.println(gps.location.lng(),10);

delay(1000);

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

delay(1000);

Serial1.println("AT+CMGS=\"+918319394049\"\r");

delay(1000);

Serial1.println(" i m in danger");

delay(1000);

Serial1.print("LAT=");

Serial1.println(gps.location.lat(),10);

Serial1.print("LNG=");

Serial1.println(gps.location.lng(),10);

delay(200);

Serial1.println((char)26);

delay(2000);

lcd.clear();

lcd.print("Sending SMS ");

delay(2000);

lcd.clear();

lcd.print("System Ready")

}

}

Circuit Block Diagram

