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SMS receiver

This sketch, for the Arduino GSM shield, waits for a SMS message

and displays it through the Serial port.

Circuit:

\* GSM shield attached to and Arduino

\* SIM card that can receive SMS messages

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This example is in the public domain.

http://arduino.cc/en/Tutorial/GSMExamplesReceiveSMS

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// include the GSM library

#include <GSM.h>

// PIN Number for the SIM

#define PINNUMBER ""

// initialize the library instances

GSM gsmAccess;

GSM\_SMS sms;

// Array to hold the number a SMS is retreived from

char senderNumber[20];

char message[35]={0};

float latt1=0;

float lont1=0;

float latt2=0;

float lont2=0;

float latu=0;

float lonu=0;

//char message1[30];

char lat[17];

char lon[17];

char num[12];

int t1=0;

int t2=0;

int t3=0;

void setup()

{

int t1=0;

int t2=0;

int t3=0;

// initialize serial communications and wait for port to open:

Serial.begin(9600);

Serial.println("SMS Messages Receiver");

// connection state

boolean notConnected = true;

// Start GSM connection

while(notConnected)

{

if(gsmAccess.begin(PINNUMBER)==GSM\_READY)

notConnected = false;

else

{

Serial.println("Not connected");

delay(1000);

}

}

Serial.println("GSM initialized");

Serial.println("Waiting for messages");

}

void loop()

{

char c;

int a=0;

int b=0;

int d=0;

if (sms.available())

{

// Serial.println("Message received from:");

// Get remote number

sms.remoteNumber(senderNumber, 20);

Serial.println(senderNumber);

while(c=sms.read())

{

message[a]=c;

a++;

//Serial.print(c);

}

delay(1000);

Serial.println(message);

for(int z=0;z<8;z++)

{

lat[z]=message[z];

}

delay(1000);

//Serial.print();

// Serial.println(lat);

float lat1=atof(lat);

Serial.println(lat1,5);

//Serial.println(message);

for(int z=18;z<26;z++)

{

lon[b]=message[z];

b++;

}

//Serial.print();

// Serial.println(lon);

float lon1=atof(lon);

Serial.println(lon1,5);

delay(1000);

int m=0;

int n=0;

int p=0;

//detection of cab status

//char latt1[20],lont1[20];

char cab1[14]="+923034093347";

char cab2[14]="+923314355583";

char cnfrm[]=" Your CAB has been directed to your present location";

char busy1[]= " Sorry, No vacant CABS are available.";

int incr=0;

// Serial.println(senderNumber);

for (int l=0;l<13;l++)

{

if (senderNumber[l]==cab1[l])

{

incr++;}

}

// Serial.println(incr);

if(incr==13)

{

m=1;

t1=1;

latt1=lat1;

lont1=lon1;

Serial.println("Cab1");

incr=0;

}

else if (m!=1){

incr=0;

for(int l=0;l<13;l++){

if (senderNumber[l]==cab2[l])

{

incr++;

}

}

// Serial.println("in cab2 else");

}

//Serial.println(incr);

if (incr==13)

{

t2=1;

n=1;

latt2=lat1;

lont2=lon1;

Serial.println("Cab2");

}

if(m==0 && n==0)

{

t3=1;

p=1;

latu=lat1;

lonu=lon1;

Serial.println("User");

}

// Serial.println(message);

if(t1==1 && t2==0 && t3==1)

{

t1=0;

t3=0;

sms.beginSMS(cab1);

sms.print(message);

sms.endSMS();

Serial.println("message sent");

sms.beginSMS(senderNumber);

sms.print(cnfrm);

sms.endSMS();

Serial.println("confirmatory message sent");

}

if(t1==0 && t2==1 && t3==1)

{

t2=0;

t3=0;

sms.beginSMS(cab2);

sms.print(message);

sms.endSMS();

Serial.println("message sent");

sms.beginSMS(senderNumber);

sms.print(cnfrm);

sms.endSMS();

Serial.println("confirmatory message sent");

}

if(t1==0 && t2==0 && t3==1)

{

t3=0;

sms.beginSMS(senderNumber);

sms.print(busy1);

sms.endSMS();

Serial.println("busy message sent");

}

if(t1==1 && t2==1 && t3==1)

{

t3=0;

Serial.println(latt1,5);

Serial.println(lont1,5);

Serial.println(latt2,5);

Serial.println(lont2,5);

Serial.println(latu,5);

Serial.println(lonu,5);

float d1=haver(latt1, lont1, latu, lonu);

float d2=haver(latt2, lont2, latu, lonu);

Serial.println(d1);

Serial.println(d2);

if(d1<d2)

{

t1=0;

sms.beginSMS(cab1);

sms.print(message);

sms.endSMS();

Serial.println("coordinates of transferred to CAB");

sms.beginSMS(senderNumber);

sms.print(cnfrm);

sms.endSMS();

Serial.println("confirmatory message sent to user");

Serial.println("cab1 sent");

latt1=0;

lont1=0;

latu=0;

lonu=0;

}

else

{

t2=0;

sms.beginSMS(cab2);

sms.print(message);

sms.endSMS();

Serial.println("coordinates of transferred to CAB");

sms.beginSMS(senderNumber);

sms.print(cnfrm);

sms.endSMS();

Serial.println("confirmatory message sent to user");

Serial.println("cab2 sent");

latt2=0;

lont2=0;

latu=0;

lonu=0;

}

}

sms.flush();

Serial.println("MESSAGE DELETED");

}

delay(1000);

}

float haver(float flat1, float flon1, float x2lat, float x2lon)

{

float diflat=0, diflon=0, dist\_calc=0, dist\_calc2=0;

diflat=radians(x2lat-flat1); //notice it must be done in radians

flat1=radians(flat1);

x2lat=radians(x2lat);

diflon=radians((x2lon)-(flon1));

dist\_calc = (sin(diflat/2.0)\*sin(diflat/2.0));

dist\_calc2= cos(flat1);

dist\_calc2\*=cos(x2lat);

dist\_calc2\*=sin(diflon/2.0);

dist\_calc2\*=sin(diflon/2.0);

dist\_calc +=dist\_calc2;

dist\_calc=(2\*atan2(sqrt(dist\_calc),sqrt(1.0-dist\_calc)));

dist\_calc\*=6371000.0; //Converting to meters

return dist\_calc;

}