# Description:

A program to find the GEO Location of the Iomatic IoT Development kit using GPS.

# Source Code:

// include the library code:

#include <LiquidCrystal.h>

// initialize the library with the numbers of the interface pins

LiquidCrystal lcd(11, 12, 14, 15, 16, 17);

char Input[200];

char Longitude[100];

char Latitude[100];

String serialResponse = "";

String arr[22];

int cnt=0;

void setup()

{

//SIM800 wakeup connected on pin 13 in IomaTic board

pinMode(13,OUTPUT);

//Initialize the SIM800 Module

digitalWrite(13, HIGH);

delay(1000);

//Sending wake up signal to SIM800 Module

digitalWrite(13, LOW);

delay(1000);

//Keeping SIM800 in active/wakeup state

digitalWrite(13, HIGH);

delay(3000);

//Initialize the LCD in 16x2 mode

lcd.begin(16, 2);

delay(100);

//Set cursor at first character/coloumn of first line/row

lcd.setCursor(0,0);

//Print the message as metioned cursor location

lcd.print(" IomaTic ");

//Set cursor at first character/coloumn of first line/row

lcd.setCursor(0,1);

//Print the message as metioned cursor location

lcd.print("GPS Location..");

//Initialize a serial communication with baud rate 9600

Serial.begin(9600);

delay(500);

Serial.print("AT+CGNSPWR=1\r\n");

delay(2000);

// Serial.print("AT+CGNSTST=1\r\n");

// delay(2000);

Serial.print("AT+CGNSSEQ=\"RMC\"\r\n");

delay(2000);

}

void loop()

{

GetLocation();

delay(1000);

}

void GetLocation()

{

// OPERATOR

Serial.print("AT+CGNSINF\r\n");

// find operator name between two double quotes

if (Serial.find("+CGNSINF: "))

{

serialResponse = Serial.readStringUntil('\r\n');

cnt=0;

char buf[sizeof(Input)];

serialResponse.toCharArray(buf, sizeof(buf));

char \*p = buf;

char \*str;

// delimiter is the semicolon

while ((str = strtok\_r(p, ",", &p)) != NULL)

{

Serial.println(str);

arr[cnt]=str;

cnt++;

}

lcd.clear();

//Set cursor at first character/coloumn of first line/row

lcd.setCursor(0,0);

lcd.print("Lon:");

//Print the message as metioned cursor location

lcd.print(arr[3]);

//Set cursor at first character/coloumn of first line/row

lcd.setCursor(0,1);

lcd.print("Lat:");

//Print the message as metioned cursor location

lcd.print(arr[4]);

}

}

# Libraries:

No additional libraries required.

# Functions:

*GetLocation():*

It is a user defined function which gets returns Geo location from the GPS module on the development kit and displays it on the LCD. It is called in loop so the location is updated after every delay.