# Description:

A program to control the relays on the Iomatic IoT Development kit using DMTF.

# 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);

int current\_status;

int DTMF\_Code;

char c;

void setup()

{

//Set pin number 10 as digital out where relay 1 is connected

pinMode(10,OUTPUT);

//Set pin number 9 as digital out where relay 2 is connected

pinMode(9,OUTPUT);

//Set pin number 8 as digital out where relay 3 is connected

pinMode(8,OUTPUT);

//SIM808 wakeup connected on pin 13 in IomaTic board

pinMode(13,OUTPUT);

//Initialize the SIM808 Module

digitalWrite(13, HIGH);

delay(1000);

//Sending wake up signal to SIM808 Module

digitalWrite(13, LOW);

delay(1000);

//Keeping SIM808 in active/wakeup state

digitalWrite(13, HIGH);

delay(5000);

//Initialize the LCD in 16x2 mode

lcd.begin(16, 2);

delay(1000);

//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("GSM DTMF Test....");

//Initialize a serial communication with baud rate 9600

Serial.begin(9600);

delay(1000);

//Automatically answer call after 1 ring

Serial.println("AT");

delay(300);

//Automatically answer call after 1 ring

Serial.println("ATS0=1");

delay(300);

//Activate DMTF decoding

Serial.println("AT+DDET=1,1000,0,0");

delay(300);

}

void loop()

{

//Phone activity status: 0= ready, 2= unknown, 3= ringing, 4= in call

Serial.println("AT+CPAS");

delay(100);

//Decode reply

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

{

// gives ascii code for status number

char c = Serial.read();

// return integer value of ascii code

current\_status = c - 48;

if (current\_status == 0)

{

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

lcd.setCursor(0,1);

//Print the message as metioned cursor location

lcd.print("Waiting For Call...");

}

if (current\_status == 3)

{

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

lcd.setCursor(0,1);

//Print the message as metioned cursor location

lcd.print("Ringing............");

delay(3000);

}

if (current\_status == 4)

{

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

lcd.setCursor(0,1);

//Print the message as metioned cursor location

lcd.print("Call Received.......");

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

{

DTMF\_Code= Serial.parseInt();

switch (DTMF\_Code)

{

case 1:

digitalWrite(4, HIGH);

lcd.setCursor(0,1);

lcd.print("DTMF:1 R1:ON ");

break;

case 2:

digitalWrite(4, LOW);

lcd.setCursor(0,1);

lcd.print("DTMF:2 R1:OFF ");

break;

case 3:

digitalWrite(5, HIGH);

lcd.setCursor(0,1);

lcd.print("DTMF:3 R2:ON ");

break;

case 4:

digitalWrite(5, LOW);

lcd.setCursor(0,1);

lcd.print("DTMF:4 R2:OFF ");

break;

case 5:

digitalWrite(6, HIGH);

lcd.setCursor(0,1);

lcd.print("DTMF:5 R3:ON ");

break;

case 6:

digitalWrite(6, LOW);

lcd.setCursor(0,1);

lcd.print("DTMF:6 R1:OFF ");

break;

}

}

delay(100);

}

}

delay(500);

}

# Libraries:

No additional libraries required.

# Functions:

Switch(DTMF\_Code):

This function reads the received DTMF code and selects a case according to it. It is responsible for switching on and off the relays. In this program the user has 6 cases corresponding to 1 to 6 numbers on the touchpad of the phone.