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/* CONTROLLO
 * Final Year Project, June 2016
 * Bachelor of Science in Computer Science
 * IBA, Karachi
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 */

// you will need arduino 1.0.1 or higher to run this sketch
//Pin3 is reserved for IRSEND

#include <SoftwareSerial.h> // import the serial library
#include <IRremote.h> // import the IR library

SoftwareSerial Genotronex(10, 11); // RX, TX
int relayPin1= 4; // Relay 1 switch on/off
int relayPin2= 5; // Relay 2 switch on/off
int relayPin3= 6; // Relay 3 switch on/off
int relayPin4= 7; // Relay 4 switch on/off

//int IRledPin= 8; // IR LED Pin
int BluetoothData; // the data given from Computer

int relay1Status=0;
int relay2Status=0;
int relay3Status=0;
int relay4Status=0;

IRsend irsend;

void setup() {
  // put your setup code here, to run once:
  Genotronex.begin(9600);
  // Serial.begin(9600);
  Genotronex.println("Bluetooth On...");

  pinMode(relayPin1,OUTPUT);
  pinMode(relayPin2,OUTPUT);
  pinMode(relayPin3,OUTPUT);
  pinMode(relayPin4,OUTPUT);
  pinMode(13, OUTPUT);
  // pinMode(IRledPin, OUTPUT);

  //All Appliances Off
  digitalWrite(relayPin1,1);
  digitalWrite(relayPin2,1);
  digitalWrite(relayPin3,1);
  digitalWrite(relayPin4,1);

}

void loop() {
  // put your main code here, to run repeatedly:
  if (Genotronex.available())
  {
    BluetoothData=Genotronex.read();
    switch(BluetoothData){
      case 'a':
        if(relay1Status == 0)

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    {
        digitalWrite(relayPin1,0);    //Close connection = circuit complete = Appliance ON
        relay1Status=1;
    }
    else
    {
        digitalWrite(relayPin1,1);    //Open connection = circuit break = Appliance OFF
        relay1Status=0;
    }
    break;

case 'b':
    if(relay2Status == 0)
    {
        digitalWrite(relayPin2,0);    //Close connection = circuit complete = Appliance ON
        relay2Status=1;
    }
    else
    {
        digitalWrite(relayPin2,1);    //Open connection = circuit break = Appliance OFF
        relay2Status=0;
    }
    break;

case 'c':
    if(relay3Status == 0)
    {
        digitalWrite(relayPin3,0);    //Close connection = circuit complete = Appliance ON
        relay3Status=1;
    }
    else
    {
        digitalWrite(relayPin3,1);    //Open connection = circuit break = Appliance OFF
        relay3Status=0;
    }
    break;

case 'd':
    if(relay4Status == 0)
    {
        digitalWrite(relayPin4,0);    //Close connection = circuit complete = Appliance ON
        relay4Status=1;
    }
    else
    {
        digitalWrite(relayPin4,1);    //Open connection = circuit break = Appliance OFF
        relay4Status=0;
    }
    break;

case 'e':
    for(int i=0; i<1; i++){
        irsend.sendNEC(0x40BD28D7, 32); // Power ON/OFF
    }
    break;

case 'f':
    for(int i=0; i<1; i++){
        irsend.sendNEC(0x40BD48B7, 32); // Channel UP
    }

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    }
    break;

    case '6':
        for(int i=0; i<1; i++){
            irsend.sendNEC(0x40BDC837, 32); // Channel DOWN
        }
        break;

    case 'g':
        for(int i=0; i<25; i++){
            irsend.sendNEC(0x40BD08F7, 32); // Volume UP
        }
        break;

    case '7':
        for(int i=0; i<25; i++){
            irsend.sendNEC(0x40BD8877, 32); // Volume DOWN
        }
        break;

    case 'h':
        for(int i=0; i<2; i++){
            digitalWrite(13, HIGH); // turn the BUZZER on (HIGH is the voltage level)
            delay(250); // wait for a second
            digitalWrite(13, LOW); // turn the BUZZER off by making the voltage LOW
            delay(250);
        }
        delay(250);
        for(int i=0; i<2; i++){
            digitalWrite(13, HIGH); // turn the BUZZER on (HIGH is the voltage level)
            delay(250); // wait for a second
            digitalWrite(13, LOW); // turn the BUZZER off by making the voltage LOW
            delay(250);
        }
        delay(250);
        for(int i=0; i<2; i++){
            digitalWrite(13, HIGH); // turn the BUZZER on (HIGH is the voltage level)
            delay(250); // wait for a second
            digitalWrite(13, LOW); // turn the BUZZER off by making the voltage LOW
            delay(250);
        }
        break;
    }
}
}
delay(100); // prepare for next dat

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