#include <SoftwareSerial.h>

SoftwareSerial esp(2,3);

int connectionId;

// initialize the library by associating any needed LCD interface pin

// with the arduino pin number it is connected to

const int rs = 9, en = 8, d4 = 7, d5 = 6, d6 = 5, d7 = 4;

LiquidCrystal lcd(rs, en, d4, d5, d6, d7);

long microsecondsToCentimeters(long microseconds) {

// The speed of sound is 340 m/s or 29 microseconds per centimeter.

// The ping travels out and back, so to find the distance of the object we

// take half of the distance travelled.

return microseconds / 29 / 2;

}

void espsend(String d)

{

String cipSend = " AT+CIPSEND=";

cipSend += connectionId;

cipSend += ",";

cipSend +=d.length();

cipSend +="\r\n";

sendData(cipSend,1000,DEBUG);

sendData(d,1000,DEBUG);

}

String sendData(String command, const int timeout, boolean debug)

{

String response = "";

esp.print(command);

long int time = millis();

while( (time+timeout) > millis())

{

while(esp.available())

{

char c = esp.read();

response+=c;

}

}

if(debug)

{

// Serial.print(response);

}

return response;

}

int parking(){

if((digitalRead(IR1)==LOW)&&(digitalRead(IR2)==HIGH)&&(digitalRead(IR3)==HIGH)){

Serial.println("2 3");

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("AVAILABLE SLOTS");

lcd.setCursor(0, 1);

lcd.print("2 3");

delay(200);

return 23;

}

else if((digitalRead(IR1)==HIGH)&&(digitalRead(IR2)==LOW)&&(digitalRead(IR3)==HIGH)){

Serial.println("1 3");

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("AVAILABLE SLOTS");

lcd.setCursor(0, 1);

lcd.print("1 3");

delay(200);

return 13;

}

else if((digitalRead(IR1)==HIGH)&&(digitalRead(IR2)==HIGH)&&(digitalRead(IR3)==LOW)){

Serial.println("1 2");

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("AVAILABLE SLOTS");

lcd.setCursor(0, 1);

lcd.print("1 2");

delay(200);

return 12;

}

else if((digitalRead(IR1)==LOW)&&(digitalRead(IR2)==LOW)&&(digitalRead(IR3)==HIGH)){

Serial.println("3");

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("AVAILABLE SLOTS");

lcd.setCursor(0, 1);

lcd.print("3");

delay(200);

return 3;

}

else if((digitalRead(IR1)==HIGH)&&(digitalRead(IR2)==LOW)&&(digitalRead(IR3)==LOW)){

Serial.println("1");

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("AVAILABLE SLOTS");

lcd.setCursor(0, 1);

lcd.print("1");

delay(200);

return 1;

}

else if((digitalRead(IR1)==LOW)&&(digitalRead(IR2)==HIGH)&&(digitalRead(IR3)==LOW)){

Serial.println("2");

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("AVAILABLE SLOTS");

lcd.setCursor(0, 1);

lcd.print("2");

delay(200);

return 2;

}

else if((digitalRead(IR1)==LOW)&&(digitalRead(IR2)==LOW)&&(digitalRead(IR3)==LOW)){

Serial.println("EMPTY");

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("AVAILABLE SLOTS");

lcd.setCursor(0, 1);

lcd.print("PARKING FULL");

delay(200);

return 0;

}

else{

Serial.println("nothing");

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("AVAILABLE SLOTS");

lcd.setCursor(0, 1);

lcd.print("1 2 3");

delay(200);

return 123;

}

}

// int chk = DHT.read11(DHT11\_PIN);

int webserver(int value){

if(esp.available()){

if(esp.find("+IPD,")){

delay(300);

connectionId = esp.read()-48;

if(esp.find("pin=")){

// Serial.println("recieving data from web browser");

int pinNumber = (esp.read()-48)\*10;

pinNumber += (esp.read()-48);

digitalWrite(pinNumber, !digitalRead(pinNumber));

}

///////////////////////////////////////////////////////////////////////////////

//Sending data to browser

else{

String webpag = "<body style=background-color:powderblue>";

espsend(webpag);

String webpage = "<h1 style= color:red>Parking Availability IOT</h1>";

espsend(webpage);

String webpage1 = "<hr>";

espsend(webpage1);

}

if(true)

{

String two = String(value);//get\_sens1()

String loc1="<h4> KIET CAR PARKING</h4>";

String loc2="<h4> Parking Slots Available</h4>";

espsend(loc1);

espsend(loc2);

espsend(two);

}

else

{

String c="sensor is not conneted";

espsend(c);

}

String closeCommand = "AT+CIPCLOSE=";

closeCommand+=connectionId;

closeCommand+="\r\n";

sendData(closeCommand,3000,DEBUG);

}

}

}

void setup() {

// put your setup code here, to run once:

pinMode(IR1,INPUT);

pinMode(IR2,INPUT);

pinMode(IR3,INPUT);

Serial.begin(9600);

esp.begin(115200);

sendData("AT+RST\r\n",2000,DEBUG); // reset

sendData("AT+CWMODE=2\r\n",1000,DEBUG); // access point

sendData("AT+CIFSR\r\n",1000,DEBUG); // ip address

sendData("AT+CIPMUX=1\r\n",1000,DEBUG); // multiple connections enabling

sendData("AT+CIPSERVER=1,80\r\n",1000,DEBUG); // server port 80

lcd.begin(16, 2);

// Print a message to the LCD.

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("SMART PARKING");

lcd.setCursor(0, 3);

lcd.print("SYSTEM");

}

void loop(){

trig = parking();

webserver(trig);

}