#include <Keypad.h>

#include <Arduino.h>

String c ="";

int m1=13;

int m2=33;

int m3= 19;

int m4= 23;

String a1 = "0B00284786E2";

String a2 = "0B002859ADD7";

String a3 = "0B0028640740";

String a4 = "0B00284786E2";

int ab=0;

#define ROW\_NUM 4 // four rows

#define COLUMN\_NUM 3 // three columns

#define in1 12 //Motor1 L293 Pin in1

#define in2 14 //Motor1 L293 Pin in1

#define in3 26 //Motor2 L293 Pin in1

#define in4 27 //Motor2 L293 Pin in1

#include <LiquidCrystal\_I2C.h>

// set the LCD number of columns and rows

int lcdColumns = 16;

int lcdRows = 2;

// set LCD address, number of columns and rows

// if you don't know your display address, run an I2C scanner sketch

LiquidCrystal\_I2C lcd(0x27, lcdColumns, lcdRows);

#define R\_S 32//ir sensor Right

#define L\_S 35 //ir sensor Left

char keys[ROW\_NUM][COLUMN\_NUM] = {

{'1', '2', '3'},

{'1', '2', '3'},

{'7', '8', '9'},

{'\*', '0', '#'}

};

byte pin\_rows[ROW\_NUM] = {18, 5, 17, 4}; // GPIO18, GPIO5, GPIO17, GPIO16 connect to the row pins

byte pin\_column[COLUMN\_NUM] = {0, 2,15}; // GPIO4, GPIO0, GPIO2 connect to the column pins

Keypad keypad = Keypad( makeKeymap(keys), pin\_rows, pin\_column, ROW\_NUM, COLUMN\_NUM );

void setup() {

pinMode(m1,OUTPUT);

pinMode(m2,OUTPUT);

pinMode(m3,OUTPUT);

pinMode(m4,OUTPUT);

lcd.init();

// turn on LCD backlight

lcd.backlight();

Serial.begin(9600);

Serial2.begin(9600);

pinMode(R\_S, INPUT);

pinMode(L\_S, INPUT);

pinMode(in1, OUTPUT);

pinMode(in2, OUTPUT);

pinMode(in3, OUTPUT);

pinMode(in4, OUTPUT);

Stop();

delay(1000);

lcd.setCursor(0, 0);

// print message

lcd.print("ROBOT WAITER");

delay(1000);

// clears the display to print new message

lcd.clear();

}

void loop() {

lcd.setCursor(0, 0);

lcd.print("Enter Table");

lcd.setCursor(0, 1);

lcd.print("No");

delay(1000);

char key = keypad.getKey();

if (key)

{

Serial.println(key);

ab=1;

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("Going to Table");

lcd.setCursor(0, 1);

lcd.print(key);

delay(1000);

lcd.clear();

if(key == '1')

{

c=a1;

}

if(key == '2')

{

c=a2;

}

}

while(ab==1)

{

if((digitalRead(R\_S) == 0)&&(digitalRead(L\_S) == 0)){forward();} //if Right Sensor and Left Sensor are at White color then it will call forword function

if((digitalRead(R\_S) == 1)&&(digitalRead(L\_S) == 0)){turnRight();} //if Right Sensor is Black and Left Sensor is White then it will call turn Right function

if((digitalRead(R\_S) == 0)&&(digitalRead(L\_S) == 1)){turnLeft();} //if Right Sensor is White and Left Sensor is Black then it will call turn Left function

if((digitalRead(R\_S) == 1)&&(digitalRead(L\_S) == 1)){Stop();} //if Right Sensor and Left Sensor are at Black color then it will call Stop function

Serial.println("IN LOOP");

delay(1000);

if (Serial.available() > 0) {

String data = "";

while (Serial.available() > 0) {

data += char(Serial.read());

delay(10);

}

if (data.length() > 0) {

Serial.println(data);

delay(500);

if (c.equals(data))

{

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("TABLE Reached");

lcd.setCursor(0, 1);

lcd.print(key);

delay(1000);

lcd.clear();

Serial.println("TABLE");

Stop();

delay(5000);

arm();

}

if (a3.equals(data))

{

Stop();

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("KITCHEN Reached");

lcd.setCursor(0, 1);

lcd.print(key);

delay(1000);

lcd.clear();

ab=0;

}

}

}

}

}

void forward(){ //forword

digitalWrite(in1, HIGH); //Right Motor forword Pin

digitalWrite(in2, LOW); //Right Motor backword Pin

digitalWrite(in3, LOW); //Left Motor backword Pin

digitalWrite(in4, HIGH); //Left Motor forword Pin

}

void turnRight(){ //turnRight

digitalWrite(in1, LOW); //Right Motor forword Pin

digitalWrite(in2, HIGH); //Right Motor backword Pin

digitalWrite(in3, LOW); //Left Motor backword Pin

digitalWrite(in4, HIGH); //Left Motor forword Pin

}

void turnLeft(){ //turnLeft

digitalWrite(in1, HIGH); //Right Motor forword Pin

digitalWrite(in2, LOW); //Right Motor backword Pin

digitalWrite(in3, HIGH); //Left Motor backword Pin

digitalWrite(in4, LOW); //Left Motor forword Pin

}

void Stop(){ //stop

digitalWrite(in1, LOW); //Right Motor forword Pin

digitalWrite(in2, LOW); //Right Motor backword Pin

digitalWrite(in3, LOW); //Left Motor backword Pin

digitalWrite(in4, LOW); //Left Motor forword Pin

}

void arm() {

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("SERVING FOOD ");

lcd.setCursor(0, 1);

lcd.print("ARM ON");

delay(1000);

// put your main code here, to run repeatedly:

digitalWrite(m1,HIGH);

digitalWrite(m2,LOW);

delay(1000);

digitalWrite(m1,LOW);

digitalWrite(m2,LOW);

delay(1000);

digitalWrite(m3,HIGH);

digitalWrite(m4,LOW);

delay(1500);

digitalWrite(m3,LOW);

digitalWrite(m4,HIGH);

delay(2000);

digitalWrite(m3,LOW);

digitalWrite(m4,LOW);

delay(1000);

digitalWrite(m1,LOW);

digitalWrite(m2,HIGH);

delay(1000);

digitalWrite(m1,LOW);

digitalWrite(m2,LOW);

delay(1000);

lcd.clear();

}