#include <Wire.h>

#include <LiquidCrystal\_I2C.h>

LiquidCrystal\_I2C lcd(0x27,16,2); // set the LCD address to 0x27 for a 16 chars and 2 line display

#include <Stepper.h>

#include "VirtuinoBluetooth.h"

#include <SoftwareSerial.h>

SoftwareSerial bluetoothSerial = SoftwareSerial(2,3);

VirtuinoBluetooth virtuino(bluetoothSerial);

const int stepsPerRevolution = 200; // change this to fit the number of steps per revolution

// for your motor

// initialize the stepper library on pins 8 through 11:

Stepper myStepper(stepsPerRevolution, 9, 11, 10, 12);

void setup()

{

virtuino.DEBUG=true;

bluetoothSerial.begin(9600);

pinMode(8, OUTPUT);

digitalWrite(8, HIGH);

pinMode(7, OUTPUT);

pinMode(6, OUTPUT);

pinMode(8, OUTPUT);

myStepper.setSpeed(100);

pinMode(4,OUTPUT);

lcd.init();

lcd.init();

lcd.backlight();

lcd.setCursor(0,0);

lcd.print("Fire Fighting System");

virtuino.vDelay(3000);

lcd.clear();

}

void loop()

{

virtuino.run();

lcd.setCursor(0,0);

lcd.print("Detecting Fire ");

int sensorValue = analogRead(A1);

int sensorValue1 = analogRead(A0);

int sensorValue2 = analogRead(A2);

int sensorValue3 = analogRead(A3);

if(sensorValue1 < 500) //1111111

{

virtuino.vMemoryWrite(1,HIGH);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vDelay(100);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vDelay(100);

lcd.setCursor(0,0);

lcd.print("Fire Detected ");

digitalWrite(7, HIGH); // turn the LED on (HIGH is the voltage level)

virtuino.vDelay(100); // wait for a second

digitalWrite(7, LOW); // turn the LED off by making the voltage LOW

virtuino.vMemoryWrite(3,HIGH);

Serial.println("clockwise");

myStepper.step(-stepsPerRevolution\*20);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vMemoryWrite(2,HIGH);

virtuino.vDelay(2000);

// wait for a second

digitalWrite(8, LOW); // turn the LED off by making the voltage LOW

virtuino.vDelay(800);

digitalWrite(8, HIGH); // turn the LED on (HIGH is the voltage level)

virtuino.vDelay(1000);

virtuino.vMemoryWrite(2,LOW);

// step one revolution in the other direction:

Serial.println("counterclockwise");

myStepper.step(stepsPerRevolution\*20);

virtuino.vDelay(500);

digitalWrite(6, HIGH); // turn the LED on (HIGH is the voltage level)

virtuino.vDelay(100); // wait for a second

digitalWrite(6, LOW);

virtuino.vMemoryWrite(3,LOW);

digitalWrite(8, HIGH); // turn the LED on (HIGH is the voltage level)

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vDelay(1000);

virtuino.vMemoryWrite(1,LOW);

}

if(sensorValue < 500) //2222222

{

virtuino.vMemoryWrite(1,HIGH);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vDelay(100);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vDelay(100);

lcd.setCursor(0,0);

lcd.print("Fire Detected ");

Serial.println("clockwise");

virtuino.vMemoryWrite(3,HIGH);

myStepper.step(-stepsPerRevolution\*20);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vMemoryWrite(2,HIGH);

virtuino.vDelay(2000);

digitalWrite(8, LOW); //pump on

virtuino.vDelay(1000);

digitalWrite(8, HIGH); //pump off

virtuino.vDelay(1000);

virtuino.vMemoryWrite(2,LOW);

// step one revolution in the other direction:

Serial.println("counterclockwise");

myStepper.step(stepsPerRevolution\*20);

virtuino.vDelay(500);

virtuino.vMemoryWrite(3,LOW);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vDelay(1000);

virtuino.vMemoryWrite(2,LOW);

}

if(sensorValue2 < 500) //3333333

{

virtuino.vMemoryWrite(1,HIGH);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vDelay(100);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vDelay(100);

lcd.setCursor(0,0);

lcd.print("Fire Detected ");

delay(1000);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vMemoryWrite(2,HIGH);

virtuino.vDelay(2000);

digitalWrite(8, LOW); //pump on

virtuino.vDelay(1000);

digitalWrite(8, HIGH); //pump off

virtuino.vDelay(1000);

virtuino.vMemoryWrite(2,LOW);

// step one revolution in the other direction:

delay(1000);

virtuino.vDelay(500);

virtuino.vMemoryWrite(3,LOW);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vDelay(1000);

virtuino.vMemoryWrite(2,LOW);

}

if(sensorValue3 < 500) //44444444

{

virtuino.vMemoryWrite(1,HIGH);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vDelay(100);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vDelay(100);

lcd.setCursor(0,0);

lcd.print("Fire Detected ");

digitalWrite(7, HIGH); // turn the LED on (HIGH is the voltage level)

virtuino.vDelay(100); // wait for a second

digitalWrite(7, LOW); // turn the LED off by making the voltage LOW

virtuino.vMemoryWrite(3,HIGH);

delay(1000);

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vMemoryWrite(2,HIGH);

virtuino.vDelay(2000);

// wait for a second

digitalWrite(8, LOW); // turn the LED off by making the voltage LOW

virtuino.vDelay(800);

digitalWrite(8, HIGH); // turn the LED on (HIGH is the voltage level)

virtuino.vDelay(1000);

virtuino.vMemoryWrite(2,LOW);

// step one revolution in the other direction:

delay(1000);

digitalWrite(6, HIGH); // turn the LED on (HIGH is the voltage level)

virtuino.vDelay(100); // wait for a second

digitalWrite(6, LOW);

virtuino.vMemoryWrite(3,LOW);

digitalWrite(8, HIGH); // turn the LED on (HIGH is the voltage level)

digitalWrite(4,HIGH);

virtuino.vDelay(100);

digitalWrite(4,LOW);

virtuino.vDelay(1000);

virtuino.vMemoryWrite(1,LOW);

}

digitalWrite(8, HIGH); //pump off

}