#include <TMRpcm.h>

#include <Servo.h>

#include <SD.h> // need to include the SD library

#define SD\_ChipSelectPin 53 //using digital pin 4 on arduino nano 328 // also need to include this library...

#include <LiquidCrystal.h>

LiquidCrystal lcd(22,24,26,28,30,32);//22,24,26,28,30,32

int t=14,l=21;

int ss=A6;

boolean state=false;

TMRpcm tmrpcm; // create an object for use in this sketch

int servoPin = 3,servopin2=4,servopin3=5;;

int cs,rs,a1,a2,a3,s,distance,duration;

int x;

int flag=0;

Servo Servo1;

Servo Servo2;

Servo Servo3;

void setup() {

Serial.begin(9600);

tmrpcm.speakerPin = 11; //11 on Mega, 9 on Uno, Nano, etc

if (!SD.begin(SD\_ChipSelectPin))

{

return; // don't do anything more if not

}

tmrpcm.volume(1);

pinMode(A3,INPUT);

pinMode(A4,INPUT);

pinMode(A5,INPUT);

pinMode(A1,INPUT);

pinMode(A2,INPUT);

pinMode(6,OUTPUT);

pinMode(7,OUTPUT);

pinMode(8,OUTPUT);

pinMode(9,OUTPUT);

pinMode(15,OUTPUT);

pinMode(12,INPUT); // Ultrasonic sensor

pinMode(10,OUTPUT);

Servo1.attach(servoPin);

Servo2.attach(servopin2);

Servo3.attach(servopin3);

pinMode(l,OUTPUT);

pinMode(t,OUTPUT);

pinMode(A0,OUTPUT);//wiper

//digitalWrite(t,HIGH);

analogWrite(A0,10);

pinMode(ss,INPUT);

lcd.begin(16,2);

lcd.setCursor(4,0);

lcd.print("ROBOTEL");

lcd.setCursor(0,1);

lcd.print("Have a Nice Time");

}

void front()

{

digitalWrite(6,HIGH);

digitalWrite(7,LOW);

digitalWrite(8,HIGH);

digitalWrite(9,LOW);

}

void right()

{

digitalWrite(6,LOW);

digitalWrite(7,LOW);

digitalWrite(8,HIGH);

digitalWrite(9,LOW);

}

void reset()

{

digitalWrite(6,LOW);

digitalWrite(7,LOW);

digitalWrite(8,LOW);

digitalWrite(9,LOW);

}

void loop() {

cs=digitalRead(A1);

rs=digitalRead(A2);

a1=digitalRead(A3);

a2=digitalRead(A4);

a3=digitalRead(A5);

digitalWrite(10,HIGH);

delay(10);

digitalWrite(10,LOW);

duration=pulseIn(12,HIGH);

distance=(duration/2)/29.1;

if(digitalRead(ss)==LOW)

{

delay(100);

state=!state;

digitalWrite(t,state);

digitalWrite(l,state);

}

if(Serial.available() > 0)

{

x=Serial.read();

flag=0;

}

if(x=='1')

{

if((cs==0) && (rs==1))

{

front();

if((a1==0)&&(a2==0)&&(a3==1))

{

reset();

tmrpcm.play("16.wav");

Servo1.write(90);

delay(1500);

Servo2.write(90);

delay(1500);

// Make servo go to 90 degrees

Servo1.write(135);

delay(1000);

// Make servo go to 180 degrees

Servo3.write(0);

delay(1000);

Servo2.write(60);

delay(1500);

Servo1.write(180);

delay(1000);

Servo2.write(90);

delay(1500);

Servo3.write(180);

delay(1500);

Servo1.write(90);

delay(1000);

Servo2.write(135);

delay(1000);

{

if((cs==0) && (rs==1))

{

front();

if((a1==1)&&(a2==0)&&(a3==1))

{

reset();

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

}

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

// tmrpcm.play("2.wav");

}

if(flag==0)

{

Serial.println("table 1");

flag=1;

}

}

else if(x=='2')

{

if((cs==0) && (rs==1))

{

front();

if((a1==0)&&(a2==1)&&(a3==0))

{

reset();

tmrpcm.play("16.wav");

Servo1.write(90);

delay(1500);

Servo2.write(90);

delay(1500);

// Make servo go to 90 degrees

Servo1.write(135);

delay(1000);

// Make servo go to 180 degrees

Servo3.write(0);

delay(1000);

Servo2.write(60);

delay(1500);

Servo1.write(180);

delay(1000);

Servo2.write(90);

delay(1500);

Servo3.write(180);

delay(1500);

Servo1.write(90);

delay(1000);

Servo2.write(135);

delay(1000);

{

if((cs==0) && (rs==1))

{

front();

if((a1==1)&&(a2==0)&&(a3==1))

{

reset();

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

}

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

if(flag==0)

{

Serial.println("table 2");

flag=1;

}

}

else if(x=='3')

{

if((cs==0) && (rs==1))

{

front();

if((a1==0)&&(a2==1)&&(a3==1))

{

reset();

tmrpcm.play("16.wav");

Servo1.write(90);

delay(1500);

Servo2.write(90);

delay(1500);

// Make servo go to 90 degrees

Servo1.write(135);

delay(1000);

// Make servo go to 180 degrees

Servo3.write(0);

delay(1000);

Servo2.write(60);

delay(1500);

Servo1.write(180);

delay(1000);

Servo2.write(90);

delay(1500);

Servo3.write(180);

delay(1500);

Servo1.write(90);

delay(1000);

Servo2.write(135);

delay(1000);

{

if((cs==0) && (rs==1))

{

front();

if((a1==1)&&(a2==0)&&(a3==1))

{

reset();

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

}

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

if(flag==0)

{

Serial.println("table 3");

flag=1;

}

}

else if(x=='4')

{

if((cs==0) && (rs==1))

{

front();

if((a1==1)&&(a2==0)&&(a3==0))

{

reset();

tmrpcm.play("16.wav");

Servo1.write(90);

delay(1500);

Servo2.write(90);

delay(1500);

// Make servo go to 90 degrees

Servo1.write(135);

delay(1000);

// Make servo go to 180 degrees

Servo3.write(0);

delay(1000);

Servo2.write(60);

delay(1500);

Servo1.write(180);

delay(1000);

Servo2.write(90);

delay(1500);

Servo3.write(180);

delay(1500);

Servo1.write(90);

delay(1000);

Servo2.write(135);

delay(1000);

{

if((cs==0) && (rs==1))

{

front();

if((a1==1)&&(a2==0)&&(a3==1))

{

reset();

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

}

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

if(flag==0)

{

Serial.println("table 4");

flag=1;

}

}

else if(x=='5')

{

if((cs==0) && (rs==1))

{

front();

if((a1==1)&&(a2==0)&&(a3==1))

{

reset();

tmrpcm.play("19.wav");

tmrpcm.play("17.wav");

Servo1.write(90);

delay(1000);

Servo2.write(90);

delay(1500);

// Make servo go to 90 degrees

Servo3.write(180);

delay(1000);

// Make servo go to 180 degrees

Servo1.write(45);

delay(1000);

Servo3.write(0);

delay(1000);

Servo2.write(60);

delay(1000);

Servo1.write(180);

delay(1500);

Servo2.write(90);

delay(1000);

Servo3.write(180);

delay(1000);

Servo1.write(90);

delay(1000);

Servo2.write(135);

delay(1000);

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

if(flag==0)

{

Serial.println("Kitchen");

flag=1;

}

}

else if(x=='6')

{

if((cs==0) && (rs==1))

{

front();

if((a1==0)&&(a2==0)&&(a3==1))

{

reset();

tmrpcm.play("18.wav");

Servo1.write(90);

delay(1000);

Servo2.write(90);

delay(1500);

// Make servo go to 90 degrees

Servo3.write(180);

delay(1000);

// Make servo go to 180 degrees

Servo1.write(45);

delay(1000);

Servo3.write(0);

delay(1000);

Servo2.write(60);

delay(1000);

Servo1.write(180);

delay(1500);

Servo2.write(90);

delay(1000);

Servo3.write(180);

delay(1000);

Servo1.write(90);

delay(1000);

Servo2.write(135);

delay(1000);

if((a1==0)&&(a2==0)&&(a3==1))

{

front();

}

if((cs==0) && (rs==1))

{

front();

if((a1==1)&&(a2==0)&&(a3==1))

{

reset();

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

// tmrpcm.play("2.wav");

}

if(flag==0)

{

Serial.println("table 6");

flag=1;

}

}

else if(x=='7')

{

if((cs==0) && (rs==1))

{

front();

if((a1==0)&&(a2==1)&&(a3==0))

{

reset();

tmrpcm.play("18.wav");

Servo1.write(90);

delay(1000);

Servo2.write(90);

delay(1500);

// Make servo go to 90 degrees

Servo3.write(180);

delay(1000);

// Make servo go to 180 degrees

Servo1.write(45);

delay(1000);

Servo3.write(0);

delay(1000);

Servo2.write(60);

delay(1000);

Servo1.write(180);

delay(1500);

Servo2.write(90);

delay(1000);

Servo3.write(180);

delay(1000);

Servo1.write(90);

delay(1000);

Servo2.write(135);

delay(1000);

if((a1==0)&&(a2==1)&&(a3==0))

{

front();

}

if((cs==0) && (rs==1))

{

front();

if((a1==1)&&(a2==0)&&(a3==1))

{

reset();

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

if(flag==0)

{

Serial.println("table 7");

flag=1;

}

}

else if(x=='8')

{

if((cs==0) && (rs==1))

{

front();

if((a1==0)&&(a2==1)&&(a3==1))

{

reset();

tmrpcm.play("18.wav");

Servo1.write(90);

delay(1000);

Servo2.write(90);

delay(1500);

// Make servo go to 90 degrees

Servo3.write(180);

delay(1000);

// Make servo go to 180 degrees

Servo1.write(45);

delay(1000);

Servo3.write(0);

delay(1000);

Servo2.write(60);

delay(1000);

Servo1.write(180);

delay(1500);

Servo2.write(90);

delay(1000);

Servo3.write(180);

delay(1000);

Servo1.write(90);

delay(1000);

Servo2.write(135);

delay(1000);

if((a1==0)&&(a2==1)&&(a3==1))

{

front();

}

if((cs==0) && (rs==1))

{

front();

if((a1==1)&&(a2==0)&&(a3==1))

{

reset();

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

if(flag==0)

{

Serial.println("table 8");

flag=1;

}

}

else if(x=='9')

{

if((cs==0) && (rs==1))

{

front();

if((a1==1)&&(a2==0)&&(a3==0))

{

reset();

tmrpcm.play("18.wav");

Servo1.write(90);

delay(1000);

Servo2.write(90);

delay(1500);

// Make servo go to 90 degrees

Servo3.write(180);

delay(1000);

// Make servo go to 180 degrees

Servo1.write(45);

delay(1000);

Servo3.write(0);

delay(1000);

Servo2.write(60);

delay(1000);

Servo1.write(180);

delay(1500);

Servo2.write(90);

delay(1000);

Servo3.write(180);

delay(1000);

Servo1.write(90);

delay(1000);

Servo2.write(135);

delay(1000);

if((a1==1)&&(a2==0)&&(a3==0))

{

front();

}

if((cs==0) && (rs==1))

{

front();

if((a1==1)&&(a2==0)&&(a3==1))

{

reset();

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

}

}

else if((cs==1) && (rs==0))

{

right();

}

else if(distance<15)

{

reset();

digitalWrite(15,HIGH);

//tmrpcm.play("2.wav");

}

if(flag==0)

{

Serial.println("table 9");

flag=1;

}

}

else

{

reset();

if(flag==0)

{

Serial.println("no operation");

flag=1;

}

}

}