#include<SoftwareSerial.h>

char x;

String voice;

int flag=0,duration1,distance1,duration2,distance2,IR1,IR2;

void setup() {

Serial.begin(9600);

pinMode(12,OUTPUT);

pinMode(13,INPUT);

pinMode(11,INPUT);

pinMode(10,OUTPUT);

pinMode(3,OUTPUT);

pinMode(5,OUTPUT);

pinMode(6,OUTPUT);

pinMode(9,OUTPUT);

pinMode(2,INPUT);

pinMode(8,INPUT);

}

void ffront()

{

analogWrite(3,255);

digitalWrite(5,LOW);

analogWrite(6,255);

digitalWrite(9,LOW);

}

void sfront()

{

analogWrite(3,160);

digitalWrite(5,LOW);

analogWrite(6,160);

digitalWrite(9,LOW);

}

void back()

{

digitalWrite(3,LOW);

analogWrite(5,255);

digitalWrite(6,LOW);

analogWrite(9,255);

}

void left()

{

digitalWrite(3,HIGH);

digitalWrite(5,HIGH);

analogWrite(6,255);

digitalWrite(9,LOW);

}

void right()

{

analogWrite(3,255);

digitalWrite(5,LOW);

digitalWrite(6,HIGH);

digitalWrite(9,HIGH);

}

void reset()

{

digitalWrite(3,HIGH);

digitalWrite(5,HIGH);

digitalWrite(6,HIGH);

digitalWrite(9,HIGH);

}

void loop() {

if(Serial.available() > 0)

{

x=Serial.read();

flag=0;

}

if(x=='a')

{

digitalWrite(10,HIGH);

delay(10);

digitalWrite(10,LOW);

duration1=pulseIn(11,HIGH);

distance1=(duration1/2)/29.1;

digitalWrite(12,HIGH);

delay(10);

digitalWrite(12,LOW);

duration2=pulseIn(13,HIGH);

distance2=(duration2/2)/29.1;

IR1=digitalRead(2);

IR2=digitalRead(8);

if(distance1>40 && distance2>15 )

{

if(distance1>40)

{

ffront();

}

if(IR1==HIGH)

{

right();

if(IR2==HIGH)

{

left();

}

}

else if(IR2==HIGH)

{

left();

if(IR1==HIGH)

{

right();

}

}

}

else if(distance1>30 && distance2>15 )

{

if(distance1>30)

{

sfront();

}

if(IR1==HIGH)

{

right();

if(IR2==HIGH)

{

left();

}

}

else if(IR2==HIGH)

{

left();

if(IR1==HIGH)

{

right();

}

}

}

else if(distance1>25 && distance2<15)

{

if(distance1>25)

{

ffront();

}

if(IR1==HIGH)

{

right();

if(IR2==HIGH)

{

left();

}

}

else if(IR2==HIGH)

{

left();

if(IR1==HIGH)

{

right();

}

}

}

else if(distance1<25 && distance2>15)

{

if(distance1<25)

{

right();

}

if(IR1==HIGH)

{

right();

if(IR2==HIGH)

{

back();

delay(3000);

right();

delay(3000);

}

}

else if(IR2==HIGH)

{

left();

if(IR1==HIGH)

{

back();

delay(3000);

right();

delay(3000);

}

}

else if(distance1<25)

{

right();

}

else

{

reset();

}

}

else if(distance1<25 && distance2<15)

{

if(distance1<25)

{

right();

}

if(IR1==HIGH)

{

right();

if(IR2==HIGH)

{

reset();

}

}

else if(IR2==HIGH)

{

left();

if(IR1==HIGH)

{

reset();

}

}

else if(distance1<25)

{

right();

}

else

{

reset();

}

}

else if(distance1<20 && distance2>15)

{

if(distance1<20)

{

back();

delay(3000);

right();

delay(3000);

}

else if(distance2>15)

{

back();

delay(3000);

right();

delay(3000);

}

}

else if(distance1<20 && distance2<15)

{

if(distance1<20)

{

reset();

}

else if(distance2<15)

{

reset();

}

}

else

{

right();

}

if(flag==0)

{

Serial.println("automatic mode turned on,be cool");

flag=1;

}

}

else if(x=='v')

{

if(flag==0)

{

Serial.println("voice mode turned on,please turn on the BT Voice app and speak on");

flag=1;

}

}

else if(x=='f')

{

sfront();

if(flag==0)

{

Serial.println("going slowly");

flag=1;

}

}

else if(x=='m')

{

ffront();

if(flag==0)

{

Serial.println("going fast");

flag=1;

}

}

else if(x=='b')

{

back();

if(flag==0)

{

Serial.println("going back");

flag=1;

}

}

else if(x=='l')

{

left();

if(flag==0)

{

Serial.println("turning left");

flag=1;

}

}

else if(x=='r')

{

right();

if(flag==0)

{

Serial.println("turning right");

flag=1;

}

}

else if(x=='s')

{

reset();

if(flag==0)

{

Serial.println("vehicle stopped");

flag=1;

}

}

else

{

if(flag==0)

{

Serial.println("please select the correct mode");

flag=1;

}

}

}