int x,LS,CS,RS,PB=0,S,FF,WF,MC,distance1,duration1;

int flag=0;

void setup()

{

Serial.begin(9600);

pinMode(A1,OUTPUT);//buzzer

pinMode(10,OUTPUT);//ultra sensor

pinMode(11,INPUT);//ultra sensor

pinMode(2,INPUT);

pinMode(8,INPUT);//line following

pinMode(7,INPUT);

pinMode(3,OUTPUT); //motor

pinMode(5,OUTPUT);

pinMode(6,OUTPUT);

pinMode(9,OUTPUT);

pinMode(4,INPUT);//PB push button

pinMode(12,INPUT);//FF fresh food

pinMode(13,INPUT);//WF waste food

pinMode(A0,INPUT);//MC mobile checker

}

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()

{

LS=digitalRead(2);

RS=digitalRead(8);

CS=digitalRead(7);

S=digitalRead(4);

FF=digitalRead(12);

WF=digitalRead(13);

MC=digitalRead(A0);

digitalWrite(10,HIGH);

delay(10);

digitalWrite(10,LOW);

duration1=pulseIn(11,HIGH);

distance1=(duration1/2)/29.1;

if(S==0)//switch closed or button pressed

{

PB=1;

}

if(Serial.available() > 0)

{

x=Serial.read();

flag=0;

}

if((x=='1')&&(MC==1)&&(FF==0)&&(PB==0)&&(WF==0))

{

if((LS==0)&&(CS==0)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==0))

{

right();

}

else if((LS==0)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==0)&&(CS==1)&&(RS==0))

{

reset();

// plus voice recorder operation saying "WELCOME to ROBOTEL ,please take out the mobile phone to place orders"

}

else if((LS==1)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==0)&&(CS==0)&&(RS==1))

{

left();

}

else if(distance1<20)

{

reset();

digitalWrite(A1,HIGH);

//voice module "please leave me a way"

}

if(flag==0)

{

Serial.println("The bot is attending table 1");

flag=1;

}

}

else if((x=='2')&&(MC==1)&&(FF==0)&&(PB==0)&&(WF==0))

{

if((LS==0)&&(CS==0)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==0))

{

right();

}

else if((LS==0)&&(CS==1)&&(RS==1))

{

reset();

// plus voice recorder operation saying "WELCOME to ROBOTEL,,please take out the mobile phone to place orders"

}

else if((LS==0)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==0)&&(CS==0)&&(RS==1))

{

left();

}

else if(distance1<20)

{

reset();

digitalWrite(A1,HIGH);

//voice module "please leave me a way"

}

if(flag==0)

{

Serial.println("The bot is attending table 2");

flag=1;

}

}

else if((x=='3')&&(MC==1)&&(FF==0)&&(PB==0)&&(WF==0))

{

if((LS==0)&&(CS==0)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==0))

{

right();

}

else if((LS==0)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==0)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==0))

{

reset();

// plus voice recorder operation saying "WELCOME to ROBOTEL,,please take out the mobile phone to place orders"

}

else if((LS==0)&&(CS==0)&&(RS==1))

{

left();

}

else if(distance1<20)

{

reset();

digitalWrite(A1,HIGH);

//voice module "please leave me a way"

}

if(flag==0)

{

Serial.println("The bot is attending table 3");

flag=1;

}

}

else if((x=='4')&&(MC==1)&&(FF==0)&&(PB==0)&&(WF==0))

{

if((LS==0)&&(CS==0)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==0))

{

right();

}

else if((LS==0)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==0)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==1))

{

reset();

// plus voice recorder operation saying "WELCOME to ROBOTEL,,please take out the mobile phone to place orders"

}

else if((LS==1)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==0)&&(CS==0)&&(RS==1))

{

left();

}

else if(distance1<20)

{

reset();

digitalWrite(A1,HIGH);

//voice module "please leave me a way"

}

if(flag==0)

{

Serial.println("The bot is attending table 4");

flag=1;

}

}

else if(((x=='1')&&(FF==0)&&(PB==0))&&((WF==0)||(WF==1))&&((MC==0)||(MC==1)))

{

//voice operation saying"please make your order soon,people in first table needs me"

}

else if(((x=='2')&&(FF==0)&&(PB==0))&&((WF==0)||(WF==1))&&((MC==0)||(MC==1)))

{

//voice operation saying"please make your order soon,people in second table needs me"

}

else if(((x=='3')&&(FF==0)&&(PB==0))&&((WF==0)||(WF==1))&&((MC==0)||(MC==1)))

{

//voice operation saying"please make your order soon,people in third needs me"

}

else if(((x=='4')&&(FF==0)&&(PB==0))&&((WF==0)||(WF==1))&&((MC==0)||(MC==1)))

{

//voice operation saying"please make your order soon,people in fourth table needs me"

}

else if(((x=='5')&&(FF==0)&&(PB==0))&&((WF==0)||(WF==1))&&((MC==0)||(MC==1)))

{

//plus voice recorder operation saying"please make your order soon,people in control room needs me"

if(flag==0)

{

Serial.println("The bot is attending a table, and someone else is also in need of Robot");

flag=1;

}

}

else if((x=='5')&&(MC==1)&&(FF==0)&&(PB==0)&&(WF==0))

{

if((LS==0)&&(CS==0)&&(RS==0))

{

reset();

//plus voice recorder saying"i have attended a table,please check for the services required for them"

}

else if((LS==1)&&(CS==0)&&(RS==1))

{

ffront();

}

else if((MC==0)&&(FF==0)&&(PB==0)&&(WF==0))

{

//voice "please check tharoughly for the orders"

}

else if((MC==0)&&(FF==1)&&(PB==0)&&(WF==0))

{

//voice"please select the respected table to whome the food is to be deliverd and please replace the mobile"

}

else if((LS==1)&&(CS==0)&&(RS==0))

{

right();

}

else if((LS==0)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==0)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==0)&&(CS==0)&&(RS==1))

{

left();

}

else if(distance1<20)

{

reset();

digitalWrite(A1,HIGH);

//voice module "please leave me a way"

}

if(flag==0)

{

Serial.println("The bot is gonna reach Kitchen/control room");

flag=1;

}

}

else if(((PB==1)&&(MC==0)&&(FF==0))&&((WF==0)||(WF==1)))

{

//plus voice recorder operation saying"Please replace the Mobile phone"

if(flag==0)

{

Serial.println("someone is trying to takeover the mobile phone");

flag=1;

}

}

else if((PB==0)&&(MC==1)&&(FF==0)&&(WF==0))

{

//please press the push button to place order

}

else if((PB==0)&&(MC==0)&&(FF==0)&&(WF==0))

{

//please select your table number and select the items that you have to taste

}

else if((PB==1)&&(MC==1)&&(FF==0)&&(WF==0))

{

// plus voice recorder operation saying "you have successfully placed an order,and your order will be deliverd soon"

PB=0;

if((LS==0)&&(CS==0)&&(RS==0))

{

reset();

// plus voice recorder operation saying "someone have placed an order,please take the order"

}

else if((LS==1)&&(CS==0)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==0))

{

right();

}

else if((LS==0)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==0)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==0)&&(CS==0)&&(RS==1))

{

left();

}

else if(distance1<20)

{

reset();

digitalWrite(A1,HIGH);

//voice module "please leave me a way"

}

if(flag==0)

{

Serial.println("Someone has placed an order");

flag=1;

}

}

else if((x=='6')&&(FF==1)&&(MC==1)&&(WF==0)&&(PB==0))

{

if((LS==0)&&(CS==0)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==0))

{

right();

}

else if((LS==0)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==0)&&(CS==1)&&(RS==0))

{

reset();

// plus voice recorder operation saying "Your food is ready,enjoy your food"

//stepper motor operation +180 degree

// plus servo operation to serve food 90 degree

//plus servo operation 0 degree

//stepper motor operation -180 degree

}

else if((LS==1)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==0)&&(CS==0)&&(RS==1))

{

left();

}

else if(distance1<20)

{

reset();

digitalWrite(A1,HIGH);

//voice module "please leave me a way"

}

if(flag==0)

{

Serial.println("The bot is attending table 1 to serve the food");

flag=1;

}

}

else if((x=='7')&&(FF==1)&&(MC==1)&&(WF==0)&&(PB==0))

{

if((LS==0)&&(CS==0)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==0))

{

right();

}

else if((LS==0)&&(CS==1)&&(RS==1))

{

reset();

// plus voice recorder operation saying "Your food is ready,enjoy your food"

//stepper motor operation +180 degree

// plus servo operation to serve food 90 degree

//plus servo operation 0 degree

//stepper motor operation -180 degree

}

else if((LS==0)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==0)&&(CS==0)&&(RS==1))

{

left();

}

else if(distance1<20)

{

reset();

digitalWrite(A1,HIGH);

//voice module "please leave me a way"

}

if(flag==0)

{

Serial.println("The bot is attending table 2 to serve the food");

flag=1;

}

}

else if((x=='8')&&(FF==1)&&(MC==1)&&(WF==0)&&(PB==0))

{

if((LS==0)&&(CS==0)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==0))

{

right();

}

else if((LS==0)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==0)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==0))

{

reset();

// plus voice recorder operation saying "Your food is ready,enjoy your food"

//stepper motor operation +180 degree

// plus servo operation to serve food 90 degree

//plus servo operation 0 degree

//stepper motor operation -180 degree

}

else if((LS==0)&&(CS==0)&&(RS==1))

{

left();

}

else if(distance1<20)

{

reset();

digitalWrite(A1,HIGH);

//voice module "please leave me a way"

}

if(flag==0)

{

Serial.println("The bot is attending table 3 to serve the food");

flag=1;

}

}

else if((x=='9')&&(FF==1)&&(MC==1)&&(WF==0)&&(PB==0))

{

if((LS==0)&&(CS==0)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==0))

{

right();

}

else if((LS==0)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==0)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==1))

{

reset();

// plus voice recorder operation saying "Your food is ready,enjoy your food"

//stepper motor operation +180 degree

// plus servo operation to serve food 90 degree

//plus servo operation 0 degree

//stepper motor operation -180 degree

}

else if((LS==1)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==0)&&(CS==0)&&(RS==1))

{

left();

}

else if(distance1<20)

{

reset();

digitalWrite(A1,HIGH);

//voice module "please leave me a way"

}

if(flag==0)

{

Serial.println("The bot is attending table 4 to serve the food");

flag=1;

}

}

else if(((WF==1)&&(MC==0)&&(FF==0))&&((PB==0)||(PB==1)))

{

//plus voice recorder operation saying"please replace the mobile phone"

if(flag==0)

{

Serial.println("someone is trying to take over the mobile phone");

flag=1;

}

}

else if((WF==1)&&(MC==1)&&(FF==0)&&(PB==0))

{

//voice operation saying"please press the push button"

}

else if((WF==1)&&(MC==1)&&(PB==1)&&(FF==0))

{

//voice"thank you for cleaning the table by yourself and thank you for visiting robotel"

if((LS==0)&&(CS==0)&&(RS==0))

{

reset();

// plus voice recorder operation saying "someone is ready to Depart,please make the bill ready"

//plus servo operation 90 degree

//plus servo operation 0 degree

PB=0;

}

else if((LS==1)&&(CS==0)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==0))

{

right();

}

else if((LS==0)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==0)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==0)&&(CS==0)&&(RS==1))

{

left();

}

else if(distance1<20)

{

reset();

digitalWrite(A1,HIGH);

//voice module "please leave me a way"

}

if(flag==0)

{

Serial.println("Someone has placed the waste food on the Bot and they are ready to depart");

flag=1;

}

}

else //anywhere to rest position

{

if((LS==0)&&(CS==0)&&(RS==0))

{

reset();

//voice "I am ready to work"

}

else if((LS==1)&&(CS==0)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==0)&&(RS==0))

{

right();

}

else if((LS==0)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==0)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==1))

{

ffront();

}

else if((LS==1)&&(CS==1)&&(RS==0))

{

ffront();

}

else if((LS==0)&&(CS==0)&&(RS==1))

{

left();

}

else if(distance1<20)

{

reset();

digitalWrite(A1,HIGH);

//voice module "please leave me a way"

}

if(flag==0)

{

Serial.println("no operation");

flag=1;

}

}

}