#include <Servo.h>

#define vac 11

Servo myservoX; // create servo object to control a servo

Servo myservoY; // create servo object to control a servo

int incomingByte = 0;

int rc = 0;

int ndx = 0;

int priv\_x\_ang = 40;

int priv\_y\_ang = 70;

void setup()

{

// put your setup code here, to run once:

Serial.begin(9600);

Serial.println("Hello Namrata");

pinMode(vac, OUTPUT);

myservoX.attach(10); // attaches the servo on pin 9 to the servo object

myservoY.attach(9); // attaches the servo on pin 10 to the servo object

myservoX.write(priv\_x\_ang);

myservoY.write(priv\_y\_ang);

digitalWrite(vac, HIGH);

}

void angleIncX(byte cur\_ang, byte priv\_angl)

{

int i;

for (i=priv\_angl;i<cur\_ang +1;i++)

{

myservoX.write(i);

delay(100);

}

}

void angleDncX(byte cur\_ang, byte priv\_angl)

{

int i;

for (i=priv\_angl;i>cur\_ang-1;i--)

{

myservoX.write(i);

delay(100);

}

}

void angleIncY(byte cur\_ang, byte priv\_angl)

{

int i;

for (i=priv\_angl;i<cur\_ang+1;i++)

{

myservoY.write(i);

delay(100);

}

}

void angleDncY(byte cur\_ang, byte priv\_angl)

{

int i;

for (i=priv\_angl;i>cur\_ang-1;i--)

{

myservoY.write(i);

delay(100);

}

}

void checkSerial(){

unsigned int rc[10];

byte x\_angle;

byte y\_angle;

byte i, gar\_class;

if (Serial.available() > 0)

{

incomingByte = Serial.read();

Serial.write(incomingByte);

if (incomingByte == 'x')

{

if(Serial.available() > 0)

{

for(i=0;i<10;i++)

{

rc[i] = Serial.read()- 48;

Serial.write(rc[i]+48);

}

}

x\_angle = rc[0]\*100+rc[1]\*10+rc[2];

//Serial.write(rc[0]\*100);

//Serial.write(rc[1]\*10);

//Serial.write(rc[2]);

Serial.print('\n');

Serial.print("x\_angle = ");

Serial.write(x\_angle);

y\_angle = rc[4]\*100+rc[5]\*10+rc[6];

//Serial.write(rc[6]\*100);

//Serial.write(rc[6]\*10);

//Serial.write(rc[7]);

Serial.print('\n');

Serial.print("y\_angle = ");

Serial.write(y\_angle);

gar\_class = rc[8];

Serial.print('\n');

Serial.print("garbage class = ");

Serial.println(gar\_class);

}//Set angle of X motor

if(x\_angle==priv\_x\_ang)

{

myservoX.write(x\_angle);

}

else if(x\_angle>priv\_x\_ang)

{

angleIncX(x\_angle, priv\_x\_ang);

}

else if(x\_angle<priv\_x\_ang)

{

angleDncX(x\_angle, priv\_x\_ang);

}

//Set angle of Y motor

if(y\_angle==priv\_y\_ang)

{

myservoY.write(x\_angle);

}

else if(y\_angle>priv\_y\_ang)

{

angleIncY(y\_angle, priv\_y\_ang);

}

else if(y\_angle<priv\_y\_ang)

{

angleDncY(y\_angle, priv\_y\_ang);

}

priv\_x\_ang = x\_angle;

priv\_y\_ang = y\_angle;

digitalWrite(vac, LOW);

delay(5000);

Serial.print("gar\_class = ");

Serial.write(gar\_class + 48);

Serial.print('\n');

switch(gar\_class)

{

case 1:

x\_angle = 40;

y\_angle = 80;

Serial.println("i am in case 1 cardboard");

break;

case 2:

x\_angle = 40;

y\_angle = 115;

Serial.println("i am in case 2 glass");

break;

case 3:

x\_angle = 85;

y\_angle = 115;

Serial.println("i am in case 3 metal");

break;

case 4:

x\_angle = 110;

y\_angle = 115;

Serial.println("i am in case 4 paper");

break;

case 5:

x\_angle = 120;

y\_angle = 80;

Serial.println("i am in case 5 plastic");

break;

default:

Serial.println("default");

break;

}

if(x\_angle==priv\_x\_ang)

{

myservoX.write(x\_angle);

}

else if(x\_angle>priv\_x\_ang)

{

angleIncX(x\_angle, priv\_x\_ang);

}

else if(x\_angle<priv\_x\_ang)

{

angleDncX(x\_angle, priv\_x\_ang);

}

//Set angle of Y motor

if(y\_angle==priv\_y\_ang)

{

myservoY.write(x\_angle);

}

else if(y\_angle>priv\_y\_ang)

{

angleIncY(y\_angle, priv\_y\_ang);

}

else if(y\_angle<priv\_y\_ang)

{

angleDncY(y\_angle, priv\_y\_ang);

}

priv\_x\_ang = x\_angle;

priv\_y\_ang = y\_angle;

delay(2000);

digitalWrite(vac, HIGH);

delay(5000);

}

}

void loop()

{

checkSerial();

delay(100);

}