#pragma config(Sensor, S1, Rsensor, sensorI2CCustom)

#pragma config(Sensor, S2, Lsensor, sensorI2CCustom)

#pragma config(Sensor, S3, RBsensor, sensorEV3\_Color)

#pragma config(Sensor, S4, LBsensor, sensorEV3\_Color)

#pragma config(Motor, motorA, up, tmotorEV3\_Medium, PIDControl, encoder)

#pragma config(Motor, motorB, Rmotor, tmotorEV3\_Large, PIDControl, encoder)

#pragma config(Motor, motorC, Lmotor, tmotorEV3\_Large, PIDControl, encoder)

#pragma config(Motor, motorD, ca, tmotorEV3\_Medium, PIDControl, encoder)

//\*!!Code automatically generated by 'ROBOTC' configuration wizard !!\*//

#include "C:\Users\user\Desktop\WRO 2017 Maeda\drivers\hitechnic-colour-v1.h"

#include "Sab.h"

void Setup(int m);

void Task\_Act(int x);

int BaseVar(int m);

void DeciderVar(int m);

void getTB(void);

int static BC[3]={11,11,11};//Base Color

int static DC[3]={10,5,2};//Decider Color

int static TC[4]={11,11,11,11};

int g[4]={2,4,6,8};

int c[3]={0,0,0};

int static s;

task main(){

int m,n=0,p;

for(m=0;m<4;m++){

if(colorsound(DC[0])==TC[m]){ c[2]=m; p+=1; }

if(colorsound(DC[1])==TC[m]){ c[1]=m; p+=10; }

if(colorsound(DC[2])==TC[m]){ c[0]=m; p+=100; }

}

for(m=0;m<4;m++){

if(colorsound(DC[0])==TC[m]) c[2]=m;

if(colorsound(DC[1])==TC[m]) c[1]=m;

if(colorsound(DC[2])==TC[m]) c[0]=m;

}

void ReadTB(void){

StopF(-15);

Arm(U,700,100,F);

sleep(1000);

Arm(C,0,-100,F);

sleep(500);

ST(17,20);

for(c=3;c>=0;c--){

sleep(300);

if(HTCSreadColor(S1)<11||s\_hitec(S1)>200) TC[c]=colorsound(HTCSreadColor(S1));

else TC[c]=colorsound(HTCSreadColor(S2));

if(c!=0) ST(10,20);

}

}

if(p==111||p==110||p==001){ a=1;b=2;t=0; );

if(p==011||p==100||p==101){ a=0;b=1;t=0; );

//TR(R,50);

int n=5;

// opentest();

Ready();

//Arm(U,H2,100,T);

while(1){

Task\_Act(n);

n++;

}

}

void Task\_Act(int x){

if(x!=0) playSoundFile("Activate");

if(x==0){

Mode=1;

ST(20,50);

Btrace();

TR(R,70);

ST(6.5,20);

TR(R/2,70);

Mode=0;

}

if(x==1){

playSoundFile("One");

Setup(0);

TL(R/2,70);

while(getColorReflected(S3)>30) Mv(30);

TL(R,-50);

playImmediateTone(220,30);

//RT(R,50);

}

if(x==2){

playSoundFile("Two");

Setup(1);

//ST(2,70);

//Arm(C,0,-100,F);

//sleep(500);

while(getColorReflected(S3)>30) Mv(-30);

ST(17,-70);

TL(R/2,-70);

ST(17,-70);

while(getColorReflected(S4)>30) Mv(-30);

ST(2,-30);

TR(R,-50);

//Arm(C,M,100,T);

//ST(6,30);

//Arm(C,0,-100,F);

}

if(x==3){

playSoundFile("Three");

Setup(2);

//ST(2,70);

displayTextLine(1,"DC:%d%d%d",DC[0],DC[1],DC[2]);

displayTextLine(2,"BC:%d%d%d",BC[0],BC[1],BC[2]);

//Arm(C,0,-100,F);

//sleep(500);

ST(23,-100);

StopB(-20);

ST(9.5,-30);

LT(R,70);

//Arm(C,M,100,T);

ST(6,30);

//Arm(C,0,-100,F);

FPOWER=20;

while(getColorReflected(S3)>30) trace();

ST(5,30);

playImmediateTone(400,30);

while(getColorReflected(S3)>30) trace();

TL(R,-30);

}

if(x==4){

Arm(C,L,100,T);

getTB();

ST(2,-30);

LT(R,30);

while(getColorReflected(S3)>30) Mv(30);

ST(3,30);

StopB(20);

ST(10,-30);

Arm(C,S,100,T);

RT(R,30);

getTB();

displayTextLine(5,"TC:%d\_%d\_%d\_%d",TC[0],TC[1],TC[2],TC[3]);

sleep(1000000000);

}

if(x==5){

int x;

for(x=0;x<=2;x++){

playImmediateTone(220,30);

if(BC[x]>=1&&BC[x]<=3) g[0]=0;

if(BC[x]==0) g[1]=0;

if(BC[x]==4) g[2]=0;

if(BC[x]==5||BC[x]==6) g[3]=0;

}

for(x=0;x<=3;x++){

if(g[x]!=0){

BF=g[x]-1;

s=BF;

if(g[x]>4){

g[x]=8-g[x];

LT(g[x]\*R/2,30);

}

else RT(g[x]\*R/2,30);

break;

}

}

}

}

void Setup(int m){

Btrace();

MRST();

Arm(U,0,-100,F);

Arm(C,L,100,F);

ST(2,50);

TR(R/2,50);

while(getColorReflected(S4)>20) Mv(30);

MRST();

ST(2,30);

Arm(C,0,-100,F);

sleep(500);

/\*if(HTCSreadColor(S2)==0||(HTCSreadColor(S2)>11&&s\_hitec(S2)<150))\*/if(getMotorEncoder(ca)>70) BaseVar(m);

else DeciderVar(m);

}

int BaseVar(int m){

//Arm(C,L,100,T);

//ST(7,30);

//Arm(C,0,-100,F);

//sleep(500);

Arm(U,50,100,T);

//if(getMotorEncoder(ca)<70) { ST(5.5,-30); DeciderVar(m); return(1); }

while(getColorReflected(S4)>20) Mv(-50);

TR(R+5,-50);

Arm(C,M,100,F);

ST(5,30);

//Arm(C,0,-100,F);

while(getColorReflected(S3)>20) Mv(50);

ST(2,20);

//sleep(300);

//DC[m]=HTCSreadColor(S2);

//if(DC[m]>=11&&s\_hitec(S2)<30) DC[m]=0;

//Arm(C,L,100,T);

Arm(U,0,-100,F);

sleep(200);

Arm(C,0,-100,F);

sleep(300);

Arm(U,50,100,T);

ST(12-m\*5.5,-30);

Arm(C,S,30,T);

Arm(C,M,100,T);

Arm(U,H2,100,F);

ST(4,-25);

Arm(C,0,-100,F);

sleep(300);

Arm(U,430,100,T);

ST(4,25);

Arm(U,270,-100,T);

Arm(C,M,50,T);

Arm(U,420,100,F);

ST(1.5,-30);

Arm(C,100,-100,T);

sleep(200);

if(HTCSreadColor(S2)<11) BC[m]=HTCSreadColor(S2);

else BC[m]=HTCSreadColor(S1);

Arm(C,0,-100,F);

RT(30,30);

sleep(500);

DC[m]=HTCSreadColor(S2);

displayTextLine(1,"DC:%d%d%d",DC[0],DC[1],DC[2]);

displayTextLine(2,"BC:%d%d%d",BC[0],BC[1],BC[2]);

RT(30,-30);

Arm(C,L,100,T);

Arm(U,0,-100,F);

sleep(500);

while(getColorReflected(S3)>20) Mv(30);

ST(8,30);

Arm(C,0,-100,F);

sleep(300);

return(1);

}

void DeciderVar(int m){

//DC[m]=HTCSreadColor(S2);

//if(DC[m]>=11&&s\_hitec(S2)<30) DC[m]=0;

//Arm(C,L,100,T);

//ST(2,30);

//Arm(U,0,-100,F);

//sleep(300);

//Arm(C,0,-100,F);

//sleep(300);

Arm(U,50,100,T);

while(getColorReflected(S4)>20) Mv(-50);

TR(R+5,-50);

ST(5,30);

while(getColorReflected(S3)>20) Mv(30);

MRST();

Arm(C,S,30,T);

Arm(C,L,100,F);

sleep(500);

Arm(U,H2,100,T);

ST(8,30);

Arm(C,0,-100,F);

sleep(500);

Arm(U,430,100,T);

if(m!=2)ST(7.5,-30);

else ST(5,-30);

Arm(U,270,-100,T);

Arm(C,M,50,T);

Arm(U,420,100,T);

ST(1.5,-30);

Arm(C,100,-100,T);

sleep(200);

if(HTCSreadColor(S2)<11) BC[m]=HTCSreadColor(S2);

else BC[m]=HTCSreadColor(S1);

Arm(C,0,-100,F);

RT(30,30);

sleep(500);

DC[m]=HTCSreadColor(S2);

displayTextLine(1,"DC:%d%d%d",DC[0],DC[1],DC[2]);

displayTextLine(2,"BC:%d%d%d",BC[0],BC[1],BC[2]);

RT(30,-30);

Arm(C,L,100,T);

Arm(U,0,-100,F);

sleep(500);

ST(8,30);

Arm(C,0,-100,F);

sleep(300);

}

void getTB(void){

int c,d=0,k,a=0;

int pk[3]={5,5,5};

StopF(-15);

Arm(U,700,100,F);

sleep(1000);

Arm(C,0,-100,F);

sleep(500);

ST(17,20);

for(c=3;c>=0;c--){

sleep(300);

if(HTCSreadColor(S1)<11||s\_hitec(S1)>200) TC[c]=colorsound(HTCSreadColor(S1));

else TC[c]=colorsound(HTCSreadColor(S2));

if(c!=0) ST(10,20);

}

int r=0,b=0;

for(k=0;k<3;k++){

for(c=0;c<4;c++){

if(colorsound(DC[k])==TC[c]){ if(pk[k]!=5) d=c; else pk[k]=c; }

}

}

displayTextLine(2,"pk:%d%d%d",pk[0],pk[1],pk[2]);

sleep(5000);

for(k=0;k<3;k++){

if(pk[k]!=5){

if(a!=0){

StopF(-15);

Arm(U,700,100,F);

sleep(1000);

Arm(C,0,-100,F);

sleep(500);

ST(47,20);

}

ST((pk[k]\*10)-2,-20);

if((TC[pk[k]]==1&&b==0)||(TC[pk[k]]==5&&r==0)){

Arm(U,300,-100,F);

sleep(500);

Arm(U,700,100,F);

sleep(700);

if(TC[d]==1) b=1;

else r=1;

}

Arm(C,L,100,T);

Arm(U,0,-100,F);

sleep(1000);

Arm(C,0,-100,F);

sleep(1000);

if(getMotorEncoder(ca)<50&&d!=0){

Arm(U,700,100,F);

sleep(700);

ST((d-pk[k])\*10-2,-20);

Arm(C,L,100,T);

Arm(U,0,-100,F);

sleep(1000);

Arm(C,0,-100,F);

sleep(1000);

pk[k]=d;

}

Arm(U,700,100,F);

sleep(700);

pk[k]=(3-pk[k])\*10;

ST(pk[k],-20);

a=(2-k)\*5.6;

ST(20+a,-20);

Arm(U,500,-100,T);

Arm(C,M,100,T);

pk[k]=0;

Arm(C,L,100,T);

ST(6+a,20);

Arm(U,H2,-100,T);

if(k==2) ST(3,20);

Arm(U,0,-100,F);

sleep(1000);

}

displayTextLine(2,"pk:%d%d%d",pk[0],pk[1],pk[2]);

}

Arm(C,0,-100,F);

sleep(500);

}

/\*

Arm(U,300,100,T);

while(0>HTCSreadColor(S1)||HTCSreadColor(S1)>11) trace();

MRST();

Arm(C,L,100,T);

Arm(U,300,100,T);

ST(7,-20);

Arm(C,0,-100,F);

sleep(700);

ST(15,20);

Arm(U,700,100,F);

sleep(1000);

ST(6,-20);

Arm(U,250,-100,T);

Arm(C,L,100,T);

Arm(U,600,100,T);

ST(11,20);

Arm(U,0,-100,F);

sleep(700);

Arm(C,M,-100,F);

sleep(500);

Arm(U,H5,100,T);

ST(11,-20);

Arm(C,L,100,T);

\*/