#include "DualVNH5019MotorShield.h" // Include Motor Shield Library

char input; //Input from User

int velo=150;

int lastOp = 0;

DualVNH5019MotorShield md;

void performLastOp()

{

if ( lastOp == 1 )

turnleftaround(velo);

else if ( lastOp == 2 )

turnrightaround(velo);

else if ( lastOp == 3 )

moveforward(velo);

else if ( lastOp == 4 )

moveback(velo);

else if ( lastOp == 5 )

turnright(velo);

else if ( lastOp == 6 )

turnleft(velo);

}

void stopIfFault() //If There is a fault stop all motors

{

if (md.getM1Fault())

{

Serial.println("M1 fault");

while(1);

}

if (md.getM2Fault())

{

Serial.println("M2 fault");

while(1);

}

}

void moveforward( int vel) //Moveforward Function

{

md.setM1Speed(-vel);

md.setM2Speed(vel);

stopIfFault();

}

void moveback(int vel) //Moveback Function

{

md.setM1Speed(vel);

md.setM2Speed(-vel);

stopIfFault();

}

void turnrightaround( int vel) //Turn right around Function

{

md.setM1Speed(vel);

md.setM2Speed(vel);

stopIfFault();

}

void turnleftaround( int vel) //Turn left around Function

{

md.setM1Speed(-vel);

md.setM2Speed(-vel);

stopIfFault();

}

void turnright( int vel) //Turn right Function

{

md.setM1Speed(-vel/4);

md.setM2Speed(vel);

stopIfFault();

}

void turnleft( int vel) //Turn left Function

{

md.setM1Speed(-vel);

md.setM2Speed(vel/4);

stopIfFault();

}

void stoop() // Stop Function

{

md.setM1Speed(0);

md.setM2Speed(0);

stopIfFault();

}

void setup()

{

Serial.begin(9600); //Serial.begin(9600);

md.init();

}

void loop()

{

if (Serial.available())

{

input = Serial.read();

switch(input){

case 'q':// turn left around auto

turnleftaround(velo);

lastOp = 1;

break;

case 'e': // turn right around for auto

turnrightaround(velo);

lastOp = 2;

break;

case 'w': // forward

moveforward(velo);

lastOp = 3;

break;

case 's':// backward

moveback(velo);

lastOp = 4;

break;

case 'd':// right

turnright(velo);

lastOp = 5;

break;

case 'a':// left

turnleft(velo);

lastOp = 6;

break;

case 'x':// stop

stoop();

lastOp = 7;

break;

case 'r':// increase speed

velo=velo+25;

performLastOp();

break;

case 'f':// decrease speed

velo=velo-25;

performLastOp();

break;

case 'o': // forward

moveforward(75);

break;

case 'z':// turn left around auto

turnleftaround(100);

break;

case 'c': // turn right around for auto

turnrightaround(100);

break;

}

}

}