|  |  |  |  |
| --- | --- | --- | --- |
| 只出現1次 | 使用者自訂 | 每拖曳1次出現1次 | 使用n個**實體**感測器出現n次 |

變數：value\_clk、value\_dio、value\_num、dropdown\_leading\_zero

#include <TM1637Display.h>

要連續2個單引號

TM1637Display tm\_display23(2, 3);

''TM1637Display tm\_display' ●value\_clk ●value\_dio●'('●value\_clk●', ' ● value\_dio●'); '

void setup() {

tm\_display23.setBrightness(7);

''tm\_display'● value\_clk● value\_dio●'.setBrightness(7); \n '

tm\_display23.clear();

''tm\_display' ●value\_clk ●value\_dio●'.clear(); \n '

}

void loop() {

tm\_display value\_clk value\_dio.showNumberDec(num,false);

''tm\_display' ●value\_clk ●value\_dio●'.showNumberDec('●value\_num●', ' ●dropdown\_leading\_zero●'); \n '

4位數字顯示模組 顯示數字(CLK=2,DIO=3,數值,是否補0=false)

tm\_display23.clear();

''tm\_display' ●value\_clk ●value\_dio●'.clear();\n '

4位數字顯示模組 清除數字(CLK=2,DIO=3)

}

有冒號的4位數顯示器

變數：value\_clk、value\_dio、value\_num1、value\_num2

#include <TM1637Display.h>

TM1637Display tm\_display23(2, 3);

''TM1637Display tm\_display' ●value\_clk ●value\_dio●'('●value\_clk●', ' ● value\_dio●'); '

void setup() {

tm\_display23.setBrightness(7);

''tm\_display'● value\_clk● value\_dio●'.setBrightness(7); \n '

tm\_display23.clear();

''tm\_display' ●value\_clk ●value\_dio●'.clear(); \n '

}

void loop() {

tm\_displajoystick\_yValue\_clk value\_dio.showNumberDecEx(value\_num1, 0x40, true, 2, 0);

''tm\_display'●value\_clk● value\_dio●'.showNumberDecEx('●value\_num1●', 0x40, true, 2, 0); \n'

tm\_displajoystick\_yValue\_clk value\_dio.showNumberDecEx(value\_num2, 0, true, 2, 2);

''tm\_display'●value\_clk ●value\_dio●'.showNumberDecEx('●value\_num2●', 0, true, 2, 2); \n '

4位數字顯示模組 顯示數字含冒號(CLK=2,DIO=3,數值1,數值2)

}

ST7920 LCD螢幕

變數：value\_row、value\_col、value\_str

#include "LCD12864RSPI.h"

#define AR\_SIZE( a ) sizeof( a ) / sizeof( a[0] )

void setup() {

LCDA.Initialise();

delay(100);

}

void loop() {

LCDA.DisplayString(0, 3, str1, AR\_SIZE(str1));

'' LCDA.DisplayString('● value\_row● ', ' ●value\_col● ', ' ●value\_str●', AR\_SIZE('● value\_str●'));\n'

4x16 LCD螢幕 顯示文字(列數=0,格數=0,文字陣列)

LCDA.DrawFullScreen(img1);

4x16 LCD螢幕 顯示圖片(列數=0,格數=0,圖片陣列)

LCDA.CLEAR();

'' LCDA.CLEAR();\n'

4x16 LCD螢幕 清除畫面

}

步進馬達

變數：value\_in1、value\_in2、value\_in3、value\_in4、value\_c、、

#include <Stepper.h>

int steps=2048;

Stepper myStepper891011(steps, 8, 10, 9, 11);

''Stepper myStepper' ●value\_in1● value\_in2● value\_in3 ●value\_in4●' (steps, ' ●value\_in1● ', ' ●value\_in3 ●', '● value\_in2 ●', ' ●value\_in4● '); '

void setup() {

myStepper891011.setSpeed (12);

''myStepper'● value\_in1● value\_in2● value\_in3● value\_in4 ●'.setSpeed (12);\n '

}

void loop() {

go(value\_c, myStepper891011);

''go('●value\_c●', myStepper'● value\_in1● value\_in2● value\_in3● value\_in4 ●'); \n '

步進馬達 開始轉動(IN1=8,IN2=9,IN3=10,IN4=11,圈數)

}

void go(float c,Stepper stepper) {

int num = ((abs(c)) \* 8) - 1;

for (int i = 0; i <= num; i++) {

if (c >= 0) {

stepper.step(256);

} else {

stepper.step(-256);

}

}

delay(1000);

}

Joystick搖桿

變數：dropdown\_xpin、dropdown\_ypin、value\_swpin、dropdown\_direct

int joystick\_xVal = analogRead(A0);// vY腳位

|  |
| --- |
| ''int joystick\_xVal = analogRead(' ●dropdown\_ypin ●');// vY腳位\n' |

int joystick\_yVal = analogRead(A5);// vX腳位

|  |
| --- |
| ''int joystick\_yVal = analogRead(' ●dropdown\_xpin ●');// vX腳位\n ' |

int joystick\_swVal = digitalRead(12);

|  |
| --- |
| ''int joystick\_swVal = digitalRead('● value\_swpin● '); \n ' |

// xVal = analogRead(A0);// vY腳位

|  |
| --- |
| ''//xVal = analogRead(' ●dropdown\_ypin ●');// vY腳位\n' |

//yVal = analogRead(A5);// vX腳位

|  |
| --- |
| ''//yVal = analogRead(' ●dropdown\_xpin ●');// vX腳位\n ' |

//swVal = digitalRead(12);

|  |
| --- |
| ''//swVal = digitalRead('● value\_swpin● '); \n ' |

Joystick搖桿 初始化(vX腳位=A5, vY腳位=A0, SW腳位=12)

void setup() {

pinMode(12, INPUT\_PULLUP);

''pinMode('●value\_swpin●', INPUT\_PULLUP);\n '

}

void loop() {

joystick\_direct()

|  |
| --- |
| ''joystick\_direct() ' |

joystick\_direct(analogRead(A0), analogRead(A5))

|  |
| --- |
| ''joystick\_direct(analogRead('●dropdown\_ypin●'), analogRead('●dropdown\_xpin●')) ' |

先不做

is\_click\_sw(joystick\_swVal)

|  |
| --- |
| ''is\_click\_sw(joystick\_swVal) ' |

is\_click\_sw()

|  |
| --- |
| ''is\_click\_sw()' |

Joystick搖桿 已按下按鈕

is\_this\_direct(joystick\_xVal,joystick\_yVal,"Up")

|  |
| --- |
| ''is\_this\_direct(joystick\_xVal,joystick\_yVal, '●dropdown\_direct●') ' |

is\_this\_direct("Up")

|  |
| --- |
| ''is\_this\_direct("'●dropdown\_direct●'") ' |

Joystick搖桿 方向是

**↑**

}

bool is\_this\_direct(String direct){

return direct == joystick\_direct();

}

String joystick\_direct(){

joystick\_xVal = analogRead('+dropdown\_ypin +');

joystick\_yVal = analogRead(' +dropdown\_xpin +');

String xDirect = "";

String yDirect = "";

if (joystick\_xVal < 480) {

xDirect="Left";

} else if (joystick\_xVal > 520) {

xDirect="Right";

}

if (joystick\_yVal < 480) {

yDirect ="Down";

} else if (joystick\_yVal > 520) {

yDirect ="Up";

}

return xDirect+yDirect;

}

bool is\_click\_sw(){

joystick\_swVal = digitalRead('+ value\_swpin+ ');

return !joystick\_swVal;

}

bool is\_this\_direct(int joystick\_xVal,int joystick\_yVal,String direct){

return direct == joystick\_direct(joystick\_xVal,joystick\_yVal);

}

String joystick\_direct(int joystick\_xVal,int joystick\_yVal){

String xDirect = "";

String yDirect = "";

if (joystick\_xVal < 480) {

xDirect="Left";

} else if (joystick\_xVal > 520) {

xDirect="Right";

}

if (joystick\_yVal < 480) {

yDirect ="Down";

} else if (joystick\_yVal > 520) {

yDirect ="Up";

}

return xDirect+yDirect;

}

bool is\_click\_sw(int joystick\_swVal){

return !joystick\_swVal;

}

(空白)

變數：

#include <.h>

TM1637Display tm\_display23(2, 3);

''TM1637Display tm\_display' ●value\_clk ●value\_dio●'('●value\_clk●', ' ● value\_dio●'); '

void setup() {

tm\_display23.setBrightness(7);

''tm\_display'● value\_clk● value\_dio●'.setBrightness(7); \n '

}

void loop() {

tm\_display value\_clk value\_dio.showNumberDec(num,false);

''tm\_display' ●value\_clk ●value\_dio●'.showNumberDec('●value\_num●', ' ●dropdown\_leading\_zero●'); \n '

4位數字顯示模組 顯示數字(CLK=2,DIO=3,數值,是否補0=false)

}