**電通二甲微處理器實驗 實驗預報**

|  |  |  |  |
| --- | --- | --- | --- |
| **實驗名稱** | Lab05 - 4\*4鍵盤 | | |
| **組別** | 27 | **組員** | 04050015陳姿華 04052502許書瑜 |

1. **實驗目的**

\*了解4x4 鍵盤的工作原理

(1)4x4 鍵盤如何接線?

(2)如何使用Arduinokeyboard library?

(3)如何讀取鍵盤的顯示數值?

(4)如何讓七段顯示器顯示鍵盤的輸入值?

1. **實驗步驟**

(1)4x4 鍵盤之按鍵值經由串列傳輸，顯示在PC 上

(2)4x4 鍵盤之按鍵值顯示在七段顯示器上

1. **程式碼**

**(1)Arduino Keypad Library**

#include<Keypad.h> constbyteROWS = 4; // 4 Rows

constbyteCOLS = 4; // 4 Columns

// 定義Keypad 的按鍵

charkeys[ROWS][COLS] = {

{'0', '1', '2', '3'}, {'4','5','6', '7'}, {'8', '9', 'A', 'B'},{'C','D','E','F'}

};

// 定義Keypad連到Arduino的接腳

byterowPins[ROWS] = {5, 4, 3, 2};

// 連到Keypad的4 個Rows

bytecolPins[COLS] = {9, 8, 7, 6};

// 連到Keypad的4 個Columns

// 建立Keypad物件

Keypadkeypad= Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );

voidsetup(){

Serial.begin(9600);

}

voidloop(){

charkey= keypad.getKey(); // 讀取Keypad 的輸入

if(key!= NO\_KEY){

Serial.println(key);

}

}

**(2)Arduino 7-seg lib**

#include "SevSeg.h"

SevSegsevseg; //Instantiate a seven segment object

void setup(){

byte numDigits= 1;

byte digitPins[] = {2};

byte segmentPins[] = {6, 7, 8, 9, 10, 11, 12, 13};

sevseg.begin(COMMON\_ANODE, numDigits, digitPins, segmentPins);

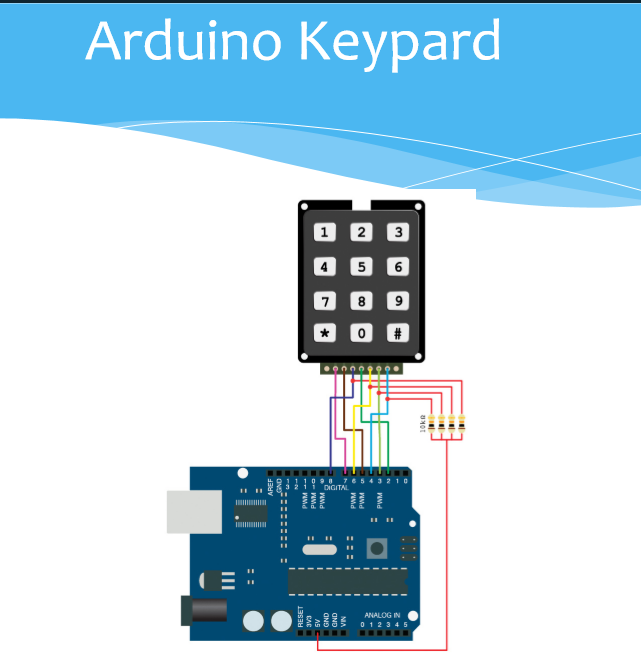
…

Setting the Number sevseg.setNumber(3,0); // Displays '3’

\* The first argument is the number to display \* The second argument indicates where the decimal place should be, counted from the least significant digit. \* To display an integer, the second argument is 0.

Displaying the Number sevseg.refreshDisplay(); \* Your program must run the refreshDisplay() function repeatedly to display the number.

**4.電路圖**

****