**電通二甲微處理器實驗 實驗結報**

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| **實驗名稱** | **4X4鍵盤** |
| **組員** | **孫晨瑋** |

1. **實驗目的**

**了解4X4鍵盤的工作原理**

**一.4X4鍵盤如何接線?**

**二.如何使用Arduino keyboard library?**

**三.如何讀取鍵盤的顯示數值?**

**四.如何讓七段顯示器顯示鍵盤的輸入值?**

1. **實驗步驟**

**一.4X4鍵盤之案件值經由串列傳輸，顯示在PC上**

**二.4X4鍵盤之案件值顯示在七段顯示器上**

1. **程式碼**

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| **#include <Keypad.h>**  **const byte ROWS = 4;**  **const byte COLS = 4;**  **byte rowPins[ROWS] = {5,4,3,10};**  **byte colPins[COLS] = {9,8,7,11};**  **char keys[ROWS][COLS] = {{'F','E','D','C'},{'B','3','6','9'},{'A','2','5','8'},{'0','1','4','7'}};**  **Keypad keypad = Keypad(makeKeymap(keys),rowPins,colPins,ROWS,COLS);**  **void setup() {**  **Serial.begin(9600);**  **}**  **void loop() {**  **char key = keypad.getKey();**  **if(key!=NO\_KEY)**  **{**  **Serial.println(key);**  **}**  **}** |

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| **#include <Keypad.h>**  **#include <SevSeg.h>**  **SevSeg sevseg;**  **const byte ROWS = 4;**  **const byte COLS = 4;**  **byte rowPins[ROWS] = {13,12,11,10};**  **byte colPins[COLS] = {17,16,15,14};**  **char keys[ROWS][COLS] = {{'F','E','D','C'},{'B','3','6','9'},{'A','2','5','8'},{'0','1','4','7'}};**  **Keypad keypad = Keypad(makeKeymap(keys),rowPins,colPins,ROWS,COLS);**  **void setup() {**  **byte numDigits = 1;**  **byte digitPins[] = {2};**  **byte segmentPins[]={9,8,7,6,5,4,3};**  **sevseg.begin(COMMON\_CATHODE,numDigits,digitPins,segmentPins);**  **Serial.begin(9600);}**  **void loop() {**  **char key = keypad.getKey();**  **if(key!=NO\_KEY)**  **{**  **Serial.println(key);**  **if(key<='9' && key>='0')**  **sevseg.setNumber(key-'0',0);**  **}**    **sevseg.refreshDisplay();**  **}** |

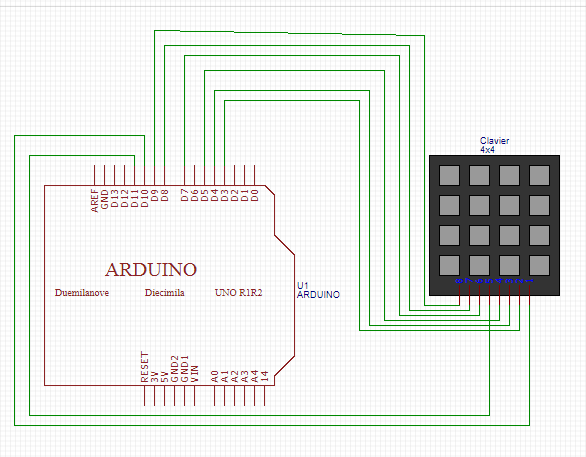
1. **實驗結果及分析**

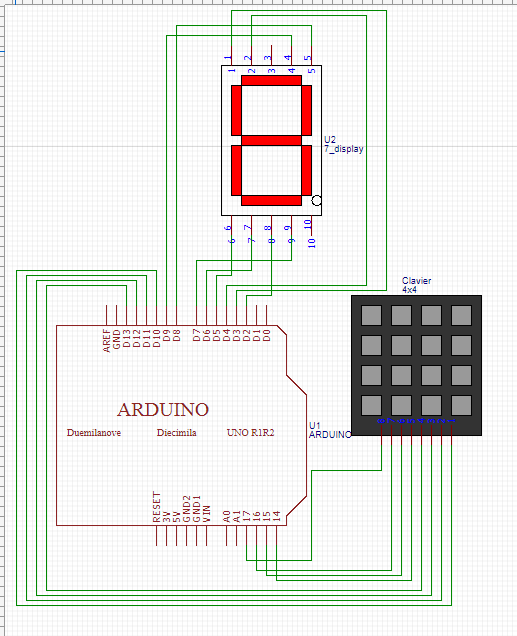
**Pin0跟1絕對不能碰，碰了就失常，要是不碰就很順利。**

1. **心得討論**

**因為有程式庫的關係，使用起來非常方便，只是第二個實驗因為要接的線太多，一定要省略小數點，不然一定會碰到0或1然後就會失常。**

1. **電路圖**

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