Lab 5

報告撰寫人：0616037張皓鈞 組別：12

1. Lab5.1 MAX7219 displayer

用C語言去Call Function

int display(unsigned char \*data, int num\_digs)

{

int i, n;

n = (num\_digs > 8) ? 8 : num\_digs;

for (i = 0; i < n; i++)

{

int digit;

digit = data[num\_digs-i-1] - 48;

max7219\_send(i+1, digit);

}

return (num\_digs > 8) ? -1 : 0;

}

int main()

{

unsigned char student\_id[8] = "0616037";

GPIO\_init();

max7219\_init();

display(student\_id, 7);

}

1. Lab5.2 KaypadScanning

用雙層for迴圈去掃哪個按鍵背按

while (1)

{

int flag\_keypad = GPIOB->IDR & 10111<<5;

if (flag\_keypad != 0)

{

int k = 40000, flag\_debounce;

while (k != 0)

{

flag\_debounce = GPIOB->IDR & 10111<<5;

k--;

}

if (flag\_debounce != 0)

{

int position\_c, position\_r;

for (int i = 0; i < 4; i++)

{ //scan keypad from first column

position\_c = i+8;

if (i == 3)

position\_c++;

//set PA8,9,10,12(column) low and set pin high from PA8

GPIOA->ODR = (GPIOA->ODR & 0xFFFFE8FF) | 1<<position\_c;

for (int j = 0; j < 4; j++)

{ //read input from first row

position\_r = j+5;

if (j == 3)

position\_r++;

int flag\_keypad\_r = GPIOB->IDR & 1<<position\_r;

if (flag\_keypad\_r != 0) display(table[j][i]);

}

}

}

}

int a = GPIOB->IDR & 10111<<5;

if (flag\_keypad == 0)

max7219\_send(1, 15);

keypad\_init();

}

1. Lab5.3 Multi buttons

for掃兩次去看哪個按鈕被按下 如果偵測到兩個按鈕被按下就相加兩個按鈕的總和

scan();

while (press)

{

temp = 0;

for (int i = 0; i < 4; i++)

{

for (int j = 0; j < 4; j++)

{

if (pressed[j][i] && !temp)

{

pressed[j][i] = 0;

display(table[j][i]);

temp = table[j][i];

}

else if (pressed[j][i] && temp && temp != table[j][i])

{

pressed[j][i] = 0;

display(temp + table[j][i]);

break;

}

}

}

keypad\_init();

press = 0;

flag\_keypad = 0;

flag\_debounce = 0;

position\_c = 0;

position\_r =0 ;

flag\_keypad\_r = 0;

scan();

}