**電通二甲微處理器實驗 實驗結報**

|  |  |  |  |
| --- | --- | --- | --- |
| **實驗名稱** | **Lab 02 – LED 走馬燈** | | |
| **組別** | **13** | **組員** | **04050865 高健銘** |
| **03050095 廖偉成** |

1. **實驗目的**

透過虛擬機來模擬8個led燈亮的順序

1. **實驗步驟**

先接虛擬電路板然後再依題目需求更改程式

1. **程式碼**

**第一加二題**

void setup()

{

for (byte i = 0; i<= 7; i++) {

pinMode(i, OUTPUT);

}

for (byte i = 0; i<= 7; i++) {

digitalWrite(i,LOW);

}

}

void loop()

{

for(int i=0;i<8;i++){

digitalWrite(i,HIGH);

delay(500);

digitalWrite(i,LOW);

}

///

for(int i=0;i<8;i++){

digitalWrite(i,HIGH);}

delay(500);

for(int i=0;i<8;i++){

digitalWrite(i,LOW);}

delay(500);

for(int i=0;i<8;i++){

digitalWrite(i,HIGH);}

delay(500);

for(int i=0;i<8;i++){

digitalWrite(i,LOW);}

delay(500);

////

////

for(int i=8;i>=0;--i){

digitalWrite(i,HIGH);

delay(500);

digitalWrite(i,LOW);

}

//

for(int i=0;i<8;i++){

digitalWrite(i,HIGH);}

delay(500);

for(int i=0;i<8;i++){

digitalWrite(i,LOW);}

delay(500);

for(int i=0;i<8;i++){

digitalWrite(i,HIGH);}

delay(500);

for(int i=0;i<8;i++){

digitalWrite(i,LOW);}

delay(500);

//

}

第三題

byte data = B00000001;

byte shift = 0;

byte max = 8;

const byte sw=8;

void setup() { // 將 Digital Pin 0-7 設定為

pinMode(sw,INPUT);

DDRD = B11111111;

}

void led\_0(){

PORTD=B11111111;

delay(1000);

}

void led\_1(){

PORTD=B00000000;

delay(1000);

}

void led\_l(){

PORTD = B00000000; //關閉全部 LED

delay(500);

data=B00000001;

for(byte i=0; i<8; i++) {

PORTD = data;

delay(500);

data=data<<1; //左旋轉

}

}

void led\_r(){

PORTD = B00000000;

delay(500);

data = B10000000;

for(byte i=0; i<8; i++){

PORTD = data;

delay(500);

data=data>>1; // 右旋轉

}

}

void loop() {

boolean val = digitalRead(8);

if (val){

led\_l();

led\_r();}

else {

led\_0();

led\_1();

}

}