**電通二乙微處理器實驗 實驗結報**

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| **實驗名稱** | **跑馬燈** | | |
| **組別** |  | **組員** | **王裕生** |

1. **實驗目的**
2. **實驗步驟**

**接線,打程式,寫報告**

1. **程式碼**

**const byte LEDs[] =**

**{0,1,2,3,4,5,8};**

**const byte total = sizeof(LEDs);**

**byte index = 0;**

**void setup(){**

**for (byte i=0;i<total;i++) {**

**pinMode(LEDs[i], OUTPUT);**

**}**

**}**

**void loop() {**

**for(int j=0;j<=1;j++)**

**{**

**for(int i=0;i<=7;i++)**

**{**

**digitalWrite(LEDs[i], HIGH);**

**}**

**delay(100);**

**for(int i=0;i<=7;i++)**

**{**

**digitalWrite(LEDs[i], LOW);**

**}**

**}**

**for (index=0; index<=7; index++)**

**{**

**for (byte i=0;i<total;i++) {**

**digitalWrite(LEDs[i], LOW);**

**}**

**digitalWrite(LEDs[index], HIGH);**

**delay(100);**

**}**

**for (index=7; index <= 0; index--)**

**{**

**for (byte i=7;i>total;i--) {**

**digitalWrite(LEDs[i], LOW);**

**}**

**digitalWrite(LEDs[index], HIGH);**

**delay(100);**

**}**

**}**

1. **實驗結果及分析**

**用程式控制LED的亮滅**

1. **心得討論**
2. **燈泡一直壞掉修正電路圖**
3. **修正程式碼**

**#自訂花色**

**void setup() {**

**for(int i =0;i<=7;i++)**

**{**

**pinMode(10+i, OUTPUT);**

**}**

**}**

**void loop() {**

**for(int j=0;j<=1;j++)**

**{**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(10+i,HIGH);**

**}**

**delay(300);**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(10+i,LOW);**

**}**

**delay(300);**

**}**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(10+i,HIGH);**

**delay(200);**

**digitalWrite(10+i,LOW);**

**delay(200);**

**}**

**for(int j=0;j<=1;j++)**

**{**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(10+i,HIGH);**

**}**

**delay(300);**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(10+i,LOW);**

**}**

**delay(300);**

**}**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(17-i,HIGH);**

**delay(200);**

**digitalWrite(17-i,LOW);**

**delay(200);**

**}**

**}**

**#用按鈕控制**

**const byte sw=6;**

**void setup() {**

**for(int i =0;i<=7;i++)**

**{**

**pinMode(10+i, OUTPUT);**

**}**

**pinMode(sw,INPUT);**

**}**

**void loop() {**

**boolean val=digitalRead(sw);**

**if(val)**

**{**

**for(int j=0;j<=1;j++)**

**{**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(10+i,HIGH);**

**}**

**delay(300);**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(10+i,LOW);**

**}**

**delay(300);**

**}**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(10+i,HIGH);**

**delay(200);**

**digitalWrite(10+i,LOW);**

**delay(200);**

**}**

**for(int j=0;j<=1;j++)**

**{**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(10+i,HIGH);**

**}**

**delay(300);**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(10+i,LOW);**

**}**

**delay(300);**

**}**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(17-i,HIGH);**

**delay(200);**

**digitalWrite(17-i,LOW);**

**delay(200);**

**}**

**}**

**else**

**{**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(10+i,HIGH);**

**delay(200);**

**digitalWrite(10+i,LOW);**

**delay(200);**

**}**

**for(int i =0;i<=7;i++)**

**{**

**digitalWrite(17-i,HIGH);**

**delay(200);**

**digitalWrite(17-i,LOW);**

**delay(200);**

**}**

**}**

**}**