**電通二甲微處理器實驗 實驗結報**

|  |  |  |  |
| --- | --- | --- | --- |
| **實驗名稱** | LAB 01 - Blink | | |
| **組別** | **20** | **組員** | **張家瑋,游騰鈞** |

1. **實驗目的**

**使用 circuits.io 模擬 Arduino UNO 電路及程式**

繪製電路圖

觀察 Arduino UNO 之輸出

學習將程式碼及實驗報告上傳至 Github

1. **實驗步驟**

填寫分組表單

啓動 Arduino IDE, 載入 Blink 程式碼

至 circuits.io 註冊帳號，啟動 Arduino 模擬器

接上 LED 電路

修改程式，將 LED 輸出改為 Pin 9

觀察 LED 之閃爍間隔

修改程式, 使 LED 閃爍間隔分別增加為 2 倍及 1/2倍, 重新量測並截圖

畫出電路圖

1. **程式碼**

|  |  |  |
| --- | --- | --- |
| +int led = 13; |  |  |
|  |  | + |
|  |  | +// the setup routine runs once when you press reset: |
|  |  | +void setup() { |
|  |  | + // initialize the digital pin as an output. |
|  |  | + pinMode(led, OUTPUT); |
|  |  | +} |
|  |  | + |
|  |  | +// the loop routine runs over and over again forever: |
|  |  | +void loop() { |
|  |  | + digitalWrite(led, HIGH); // turn the LED on (HIGH is the voltage level) |
|  |  | + delay(1000); // wait forec |
|  |  | + digitalWrite(led, LOW); // turn the LED off by making the voltage LOW |
|  |  | + delay(1000); // wait for a second |
|  |  | +} |

**1000→2000**

|  |  |
| --- | --- |
| int led = 13; |  |
|  |  |
|  | // the setup routine runs once when you press reset: |
|  | void setup() { |
|  | // initialize the digital pin as an output. |
|  | pinMode(led, OUTPUT); |
|  | } |
|  |  |
|  | // the loop routine runs over and over again forever: |
|  | void loop() { |
|  | digitalWrite(led, HIGH); // turn the LED on (HIGH is the voltage level) |
|  | delay(2000); // wait forec |
|  | digitalWrite(led, LOW); // turn the LED off by making the voltage LOW |
|  | delay(2000); // wait for a second |
|  | } |

**改pin腳**

|  |  |
| --- | --- |
| int led = 9; |  |
|  |  |
|  | // the setup routine runs once when you press reset: |
|  | void setup() { |
|  | // initialize the digital pin as an output. |
|  | pinMode(led, OUTPUT); |
|  | } |
|  |  |
|  | // the loop routine runs over and over again forever: |
|  | void loop() { |
|  | digitalWrite(led, HIGH); // turn the LED on (HIGH is the voltage level) |
|  | delay(2000); // wait forec |
|  | digitalWrite(led, LOW); // turn the LED off by making the voltage LOW |
|  | delay(2000); // wait for a second |
|  | } |

1. **實驗結果及分析**

**藉由更改delay時間變更LED燈閃爍頻率**

**增加電阻可以減少LED燈亮度**

1. **心得討論**

**今天學習了github的使用方法,感覺很方便,知道自己更改的歷程,不會因為一部分的小失誤導致無法返回的結果**

1. **修正電路圖**
2. **修正程式碼**