

# Arduino

資訊學院 - 110年度智慧創新跨域人才培育聯盟計畫

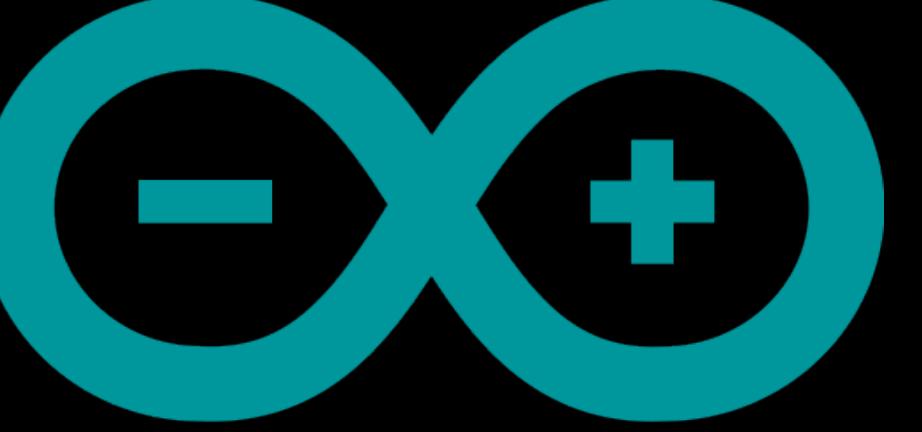
咪路 <[mail@mirumo.org](mailto:mail@mirumo.org)>



# whoami

咪路

- > SITCON'21 開發組
- > 基礎 Python 講師 (nptuccs)
- > 網頁應用、行動裝置應用
- > [mail@mirumo.org](mailto:mail@mirumo.org)

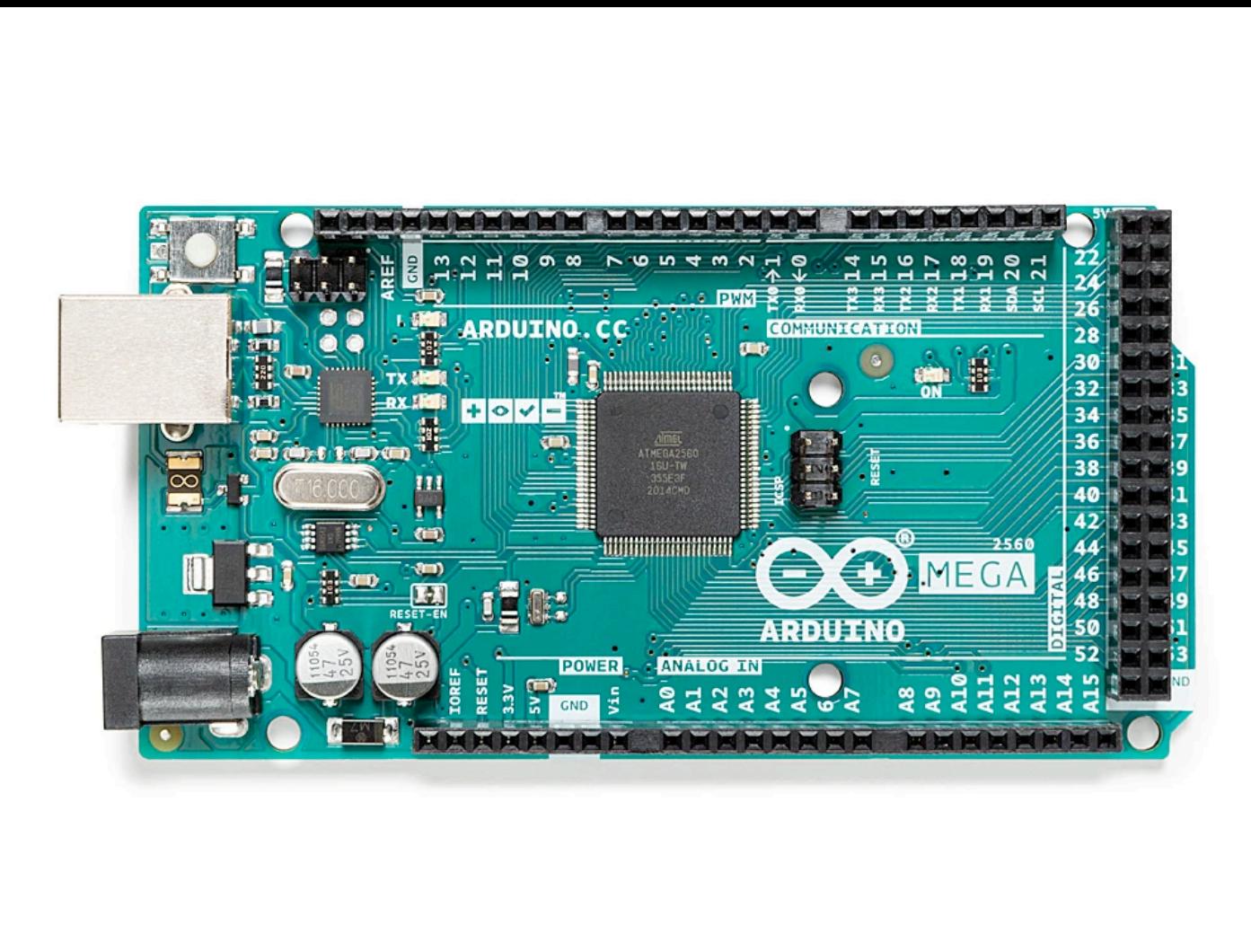
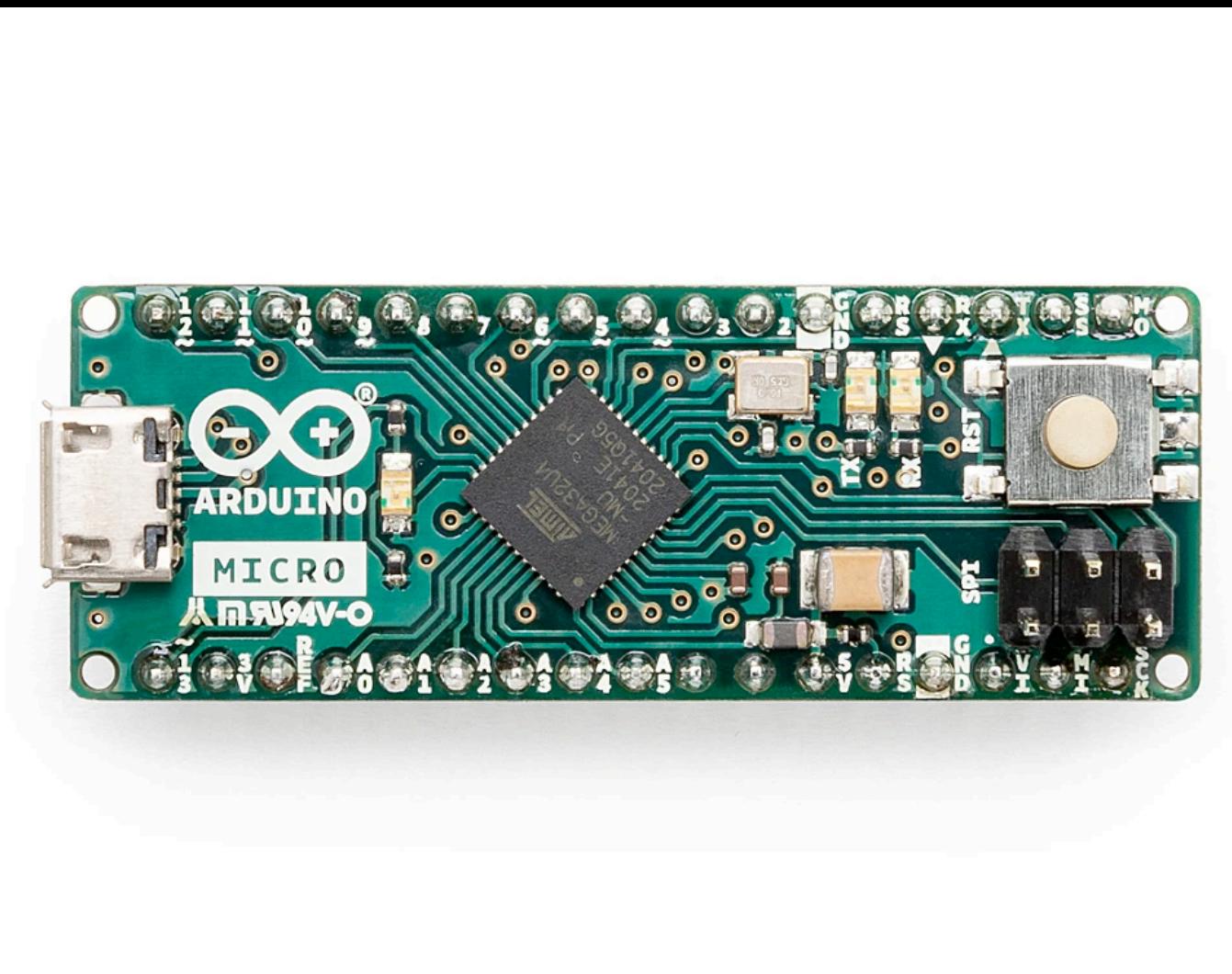
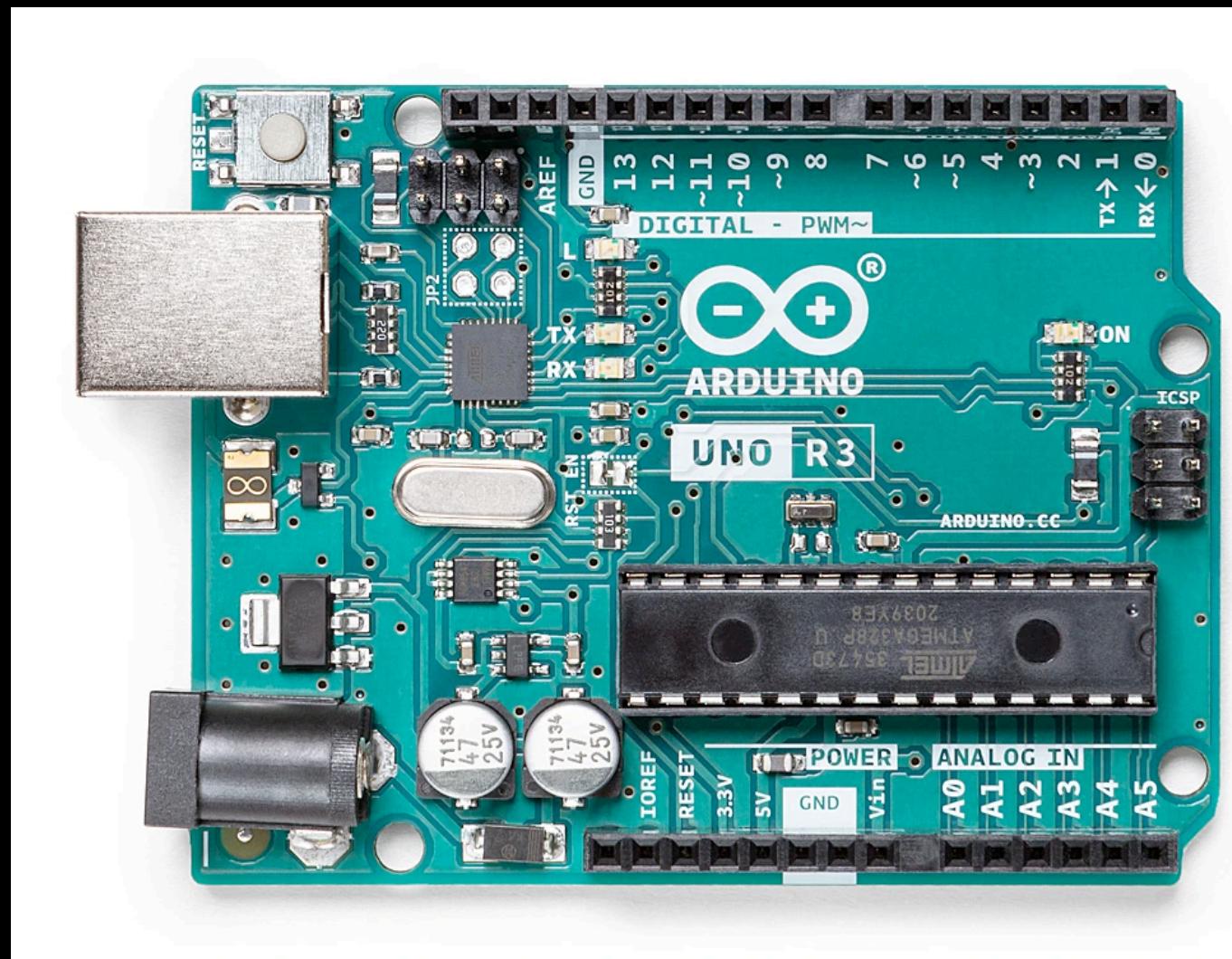
What is Arduino ? 

# What Is Arduino?

Arduino 是一個開源的微電腦控制器

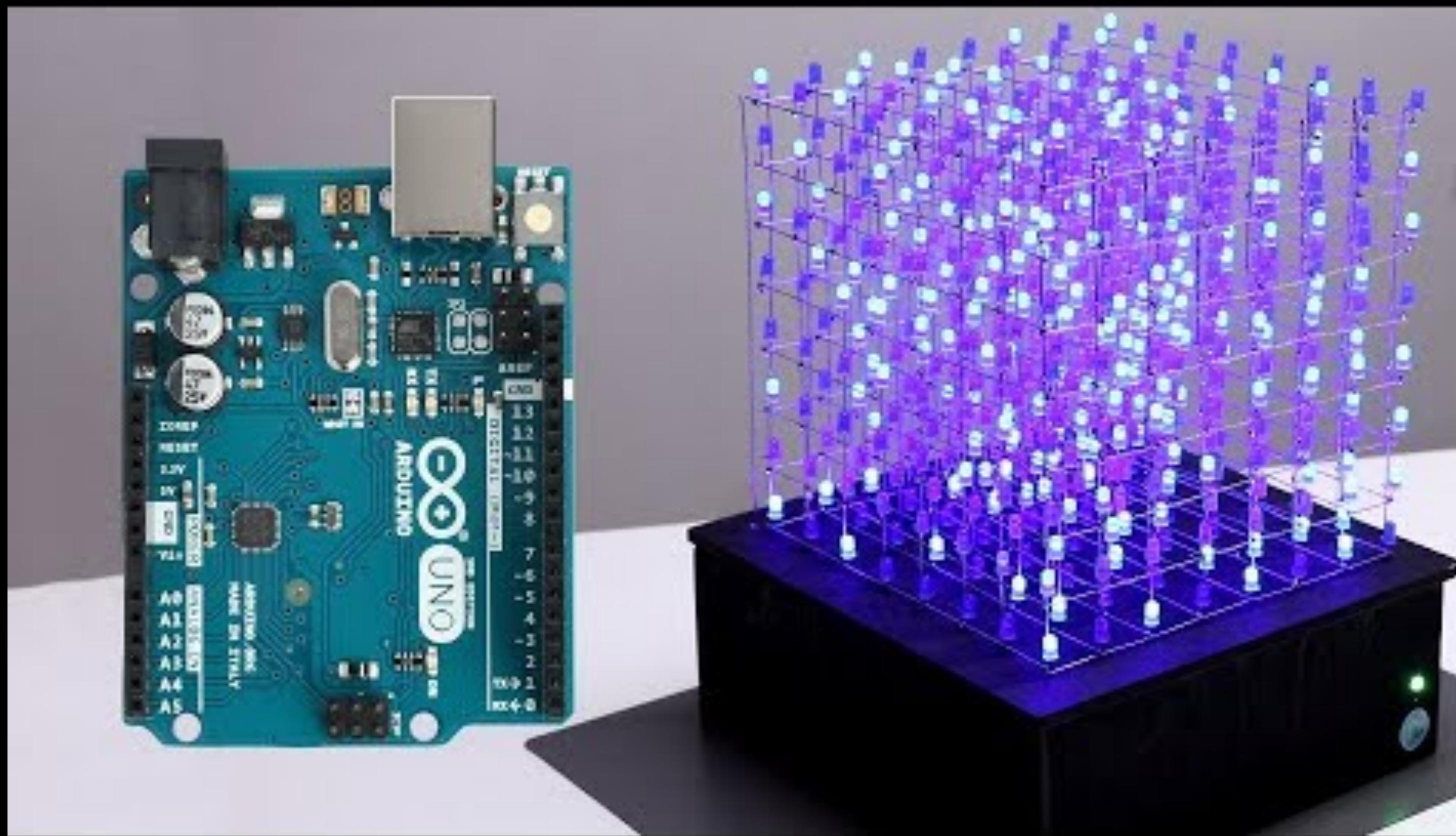
用來供使用者製作可互動式的嵌入式專案

[Arduino Office Website](#)



# What Can I Do with Arduino ?

# What Can I Do with Arduino ?

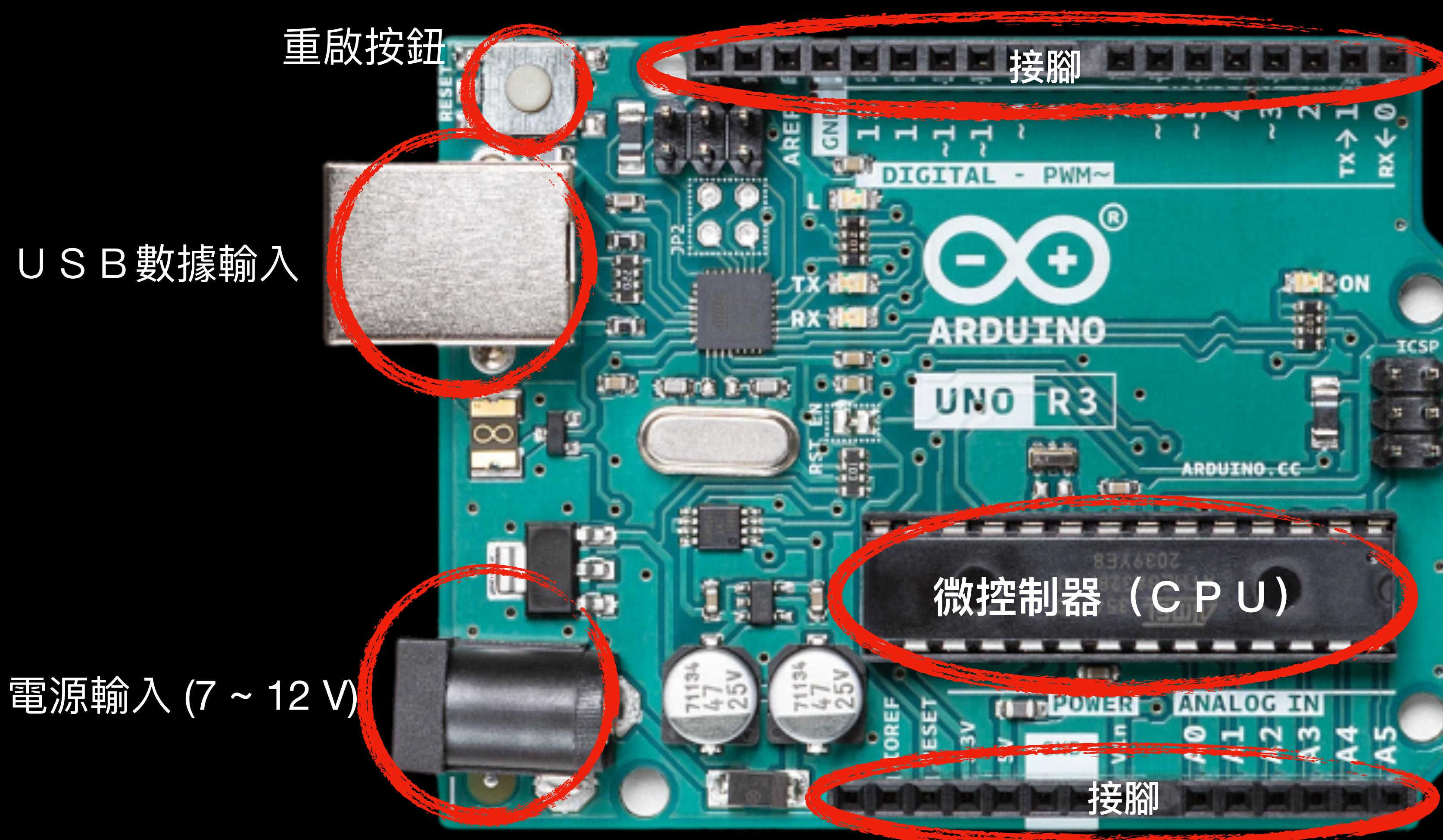


# What Can I Do With Arduino ?



# Introduction Arduino Uno

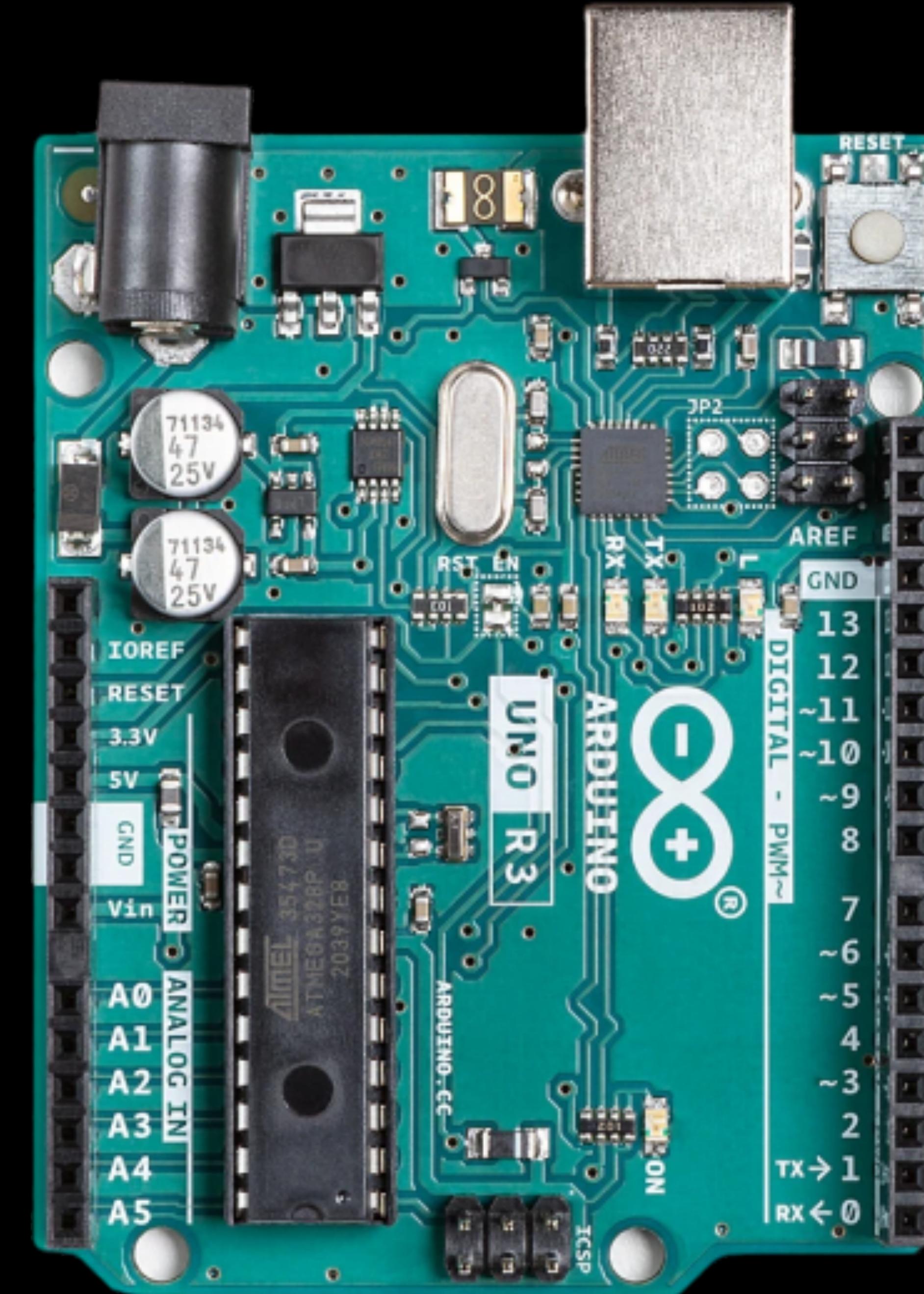
# Arduino Uno Layout



# Arduino Uno

## Pin

3.3V / 5V	電源輸出
Vin	電源輸入 ( 7~12V )
GND	接地
DIGITAL ( 0~13 )	數位接腳
ANALOG IN ( A0~A5 )	類比接腳
TX / RX	數據發送 / 數據接收
RESET	重設接腳 ( 低地位觸發 )
AREF	類比基準



# Other Items with Arduino Uno

# LED

A.K.A. 發光二極體



電流由長腳進入  
由短腳離開

長腳 – 高電位  
短腳 – 低電為

# 電阻

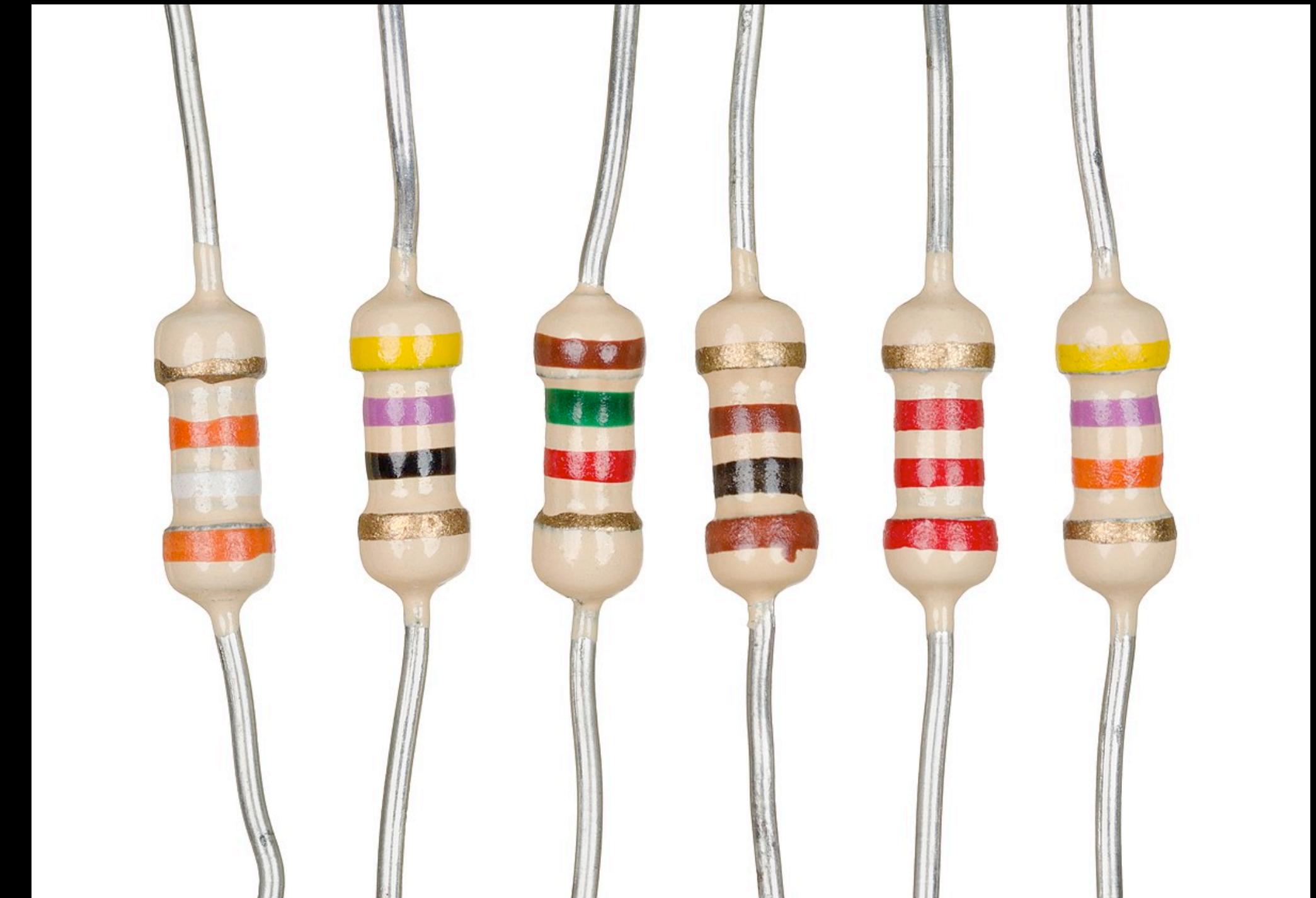
## 插版式電阻

如果不加限流電阻直接接發光二極體，  
流過管子的電流會大大超出它的工作電流，  
導致過熱損壞。

$$R = (U - UF) / IF$$

$$R = (5V - 3.2V) / 10 \text{ mA}$$

$$R = 180 \Omega$$



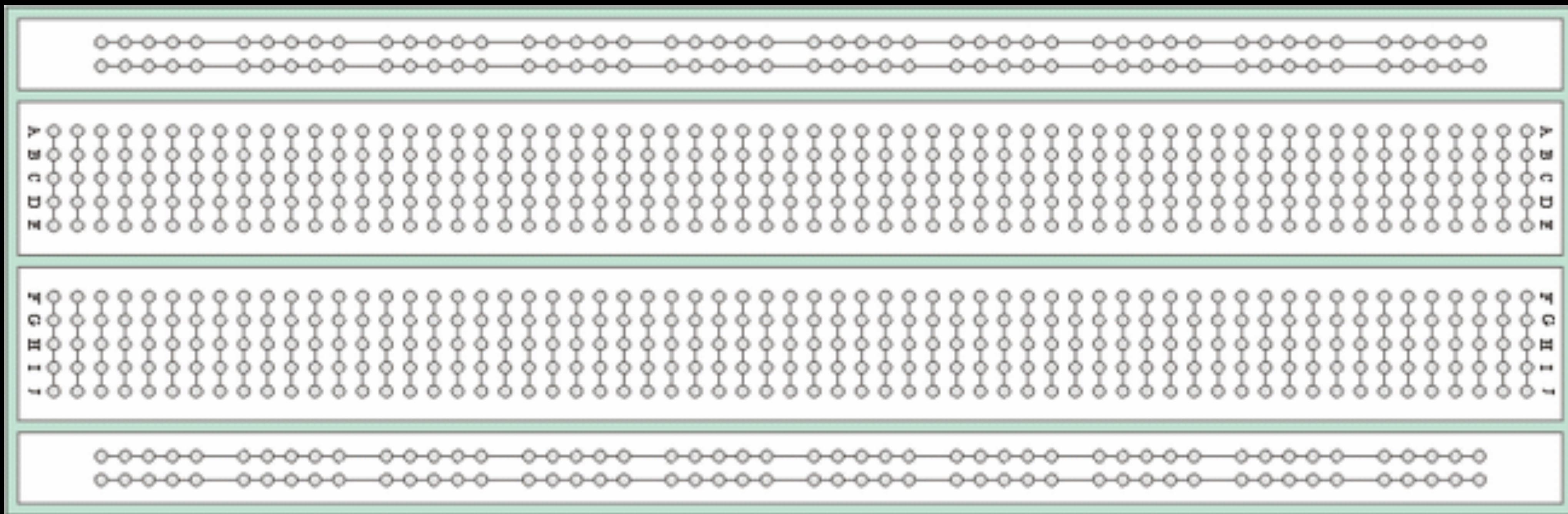
# 光敏電阻

## Photoresistor ( CDS )



# 麵包板

## Solderless breadboard



# Let's Coding

mBlock / mLink

Install mLink & Open mBlock

**Remove the default device & Add arduino**

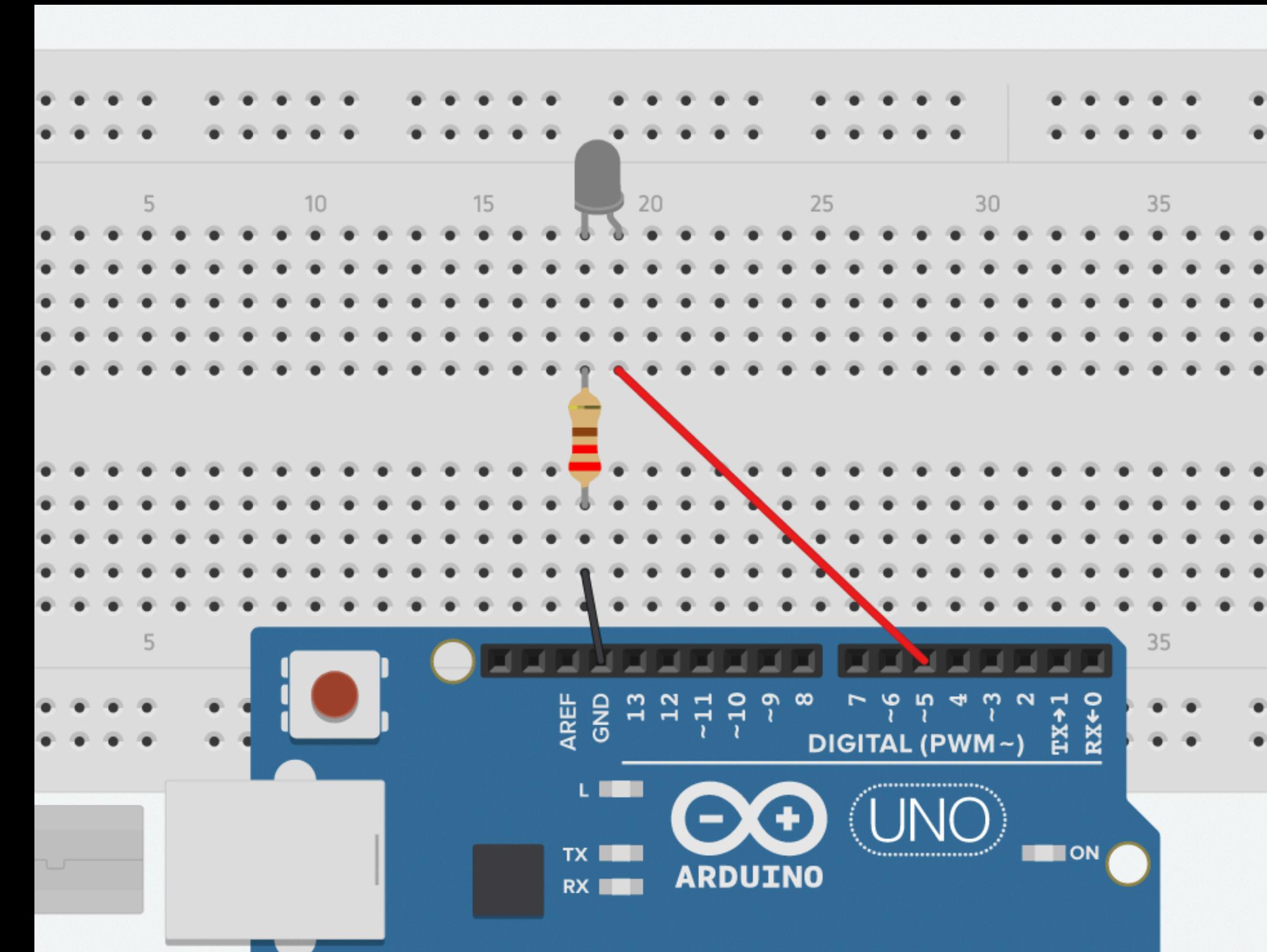
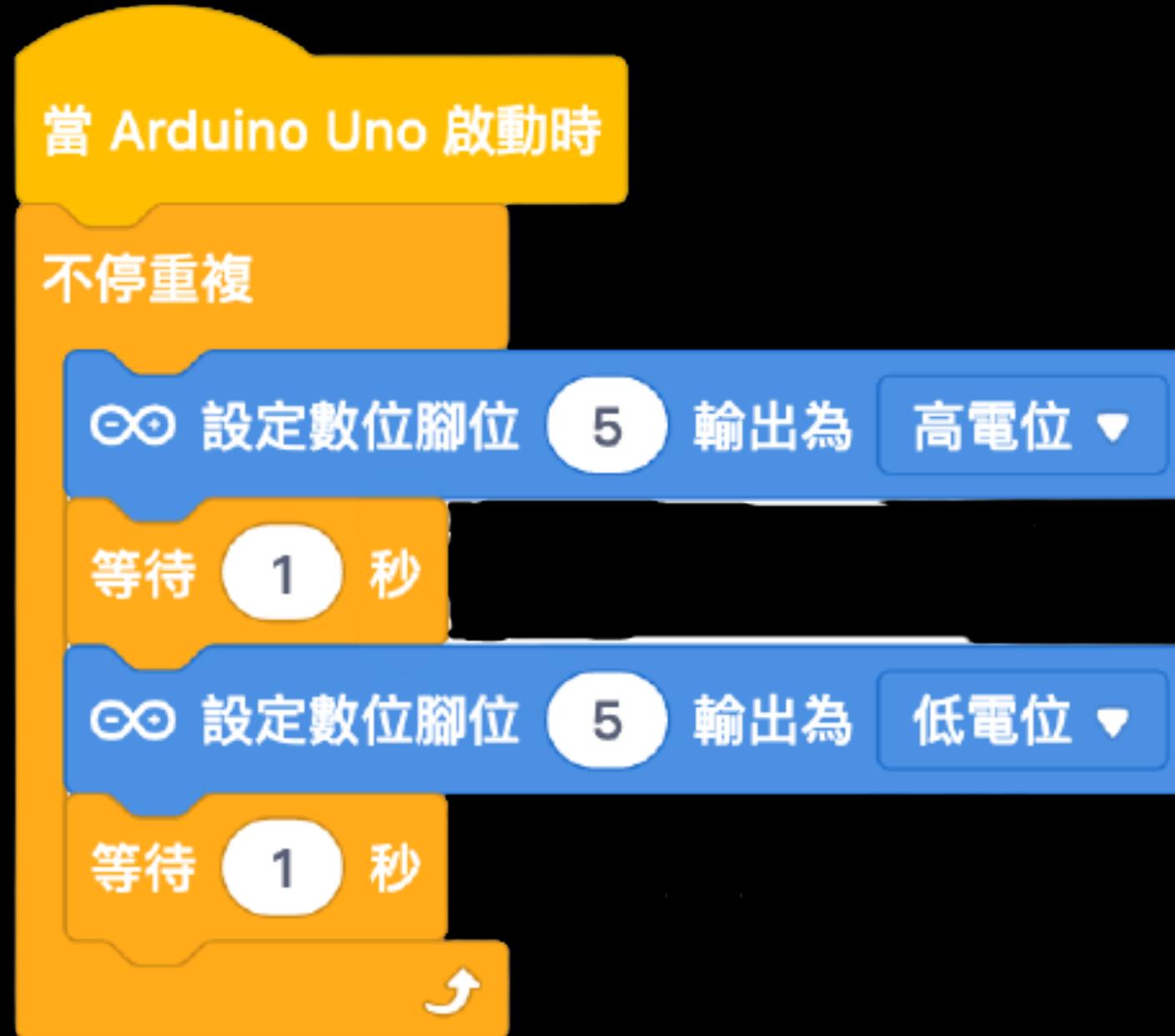
# Control the LED on PIN 13



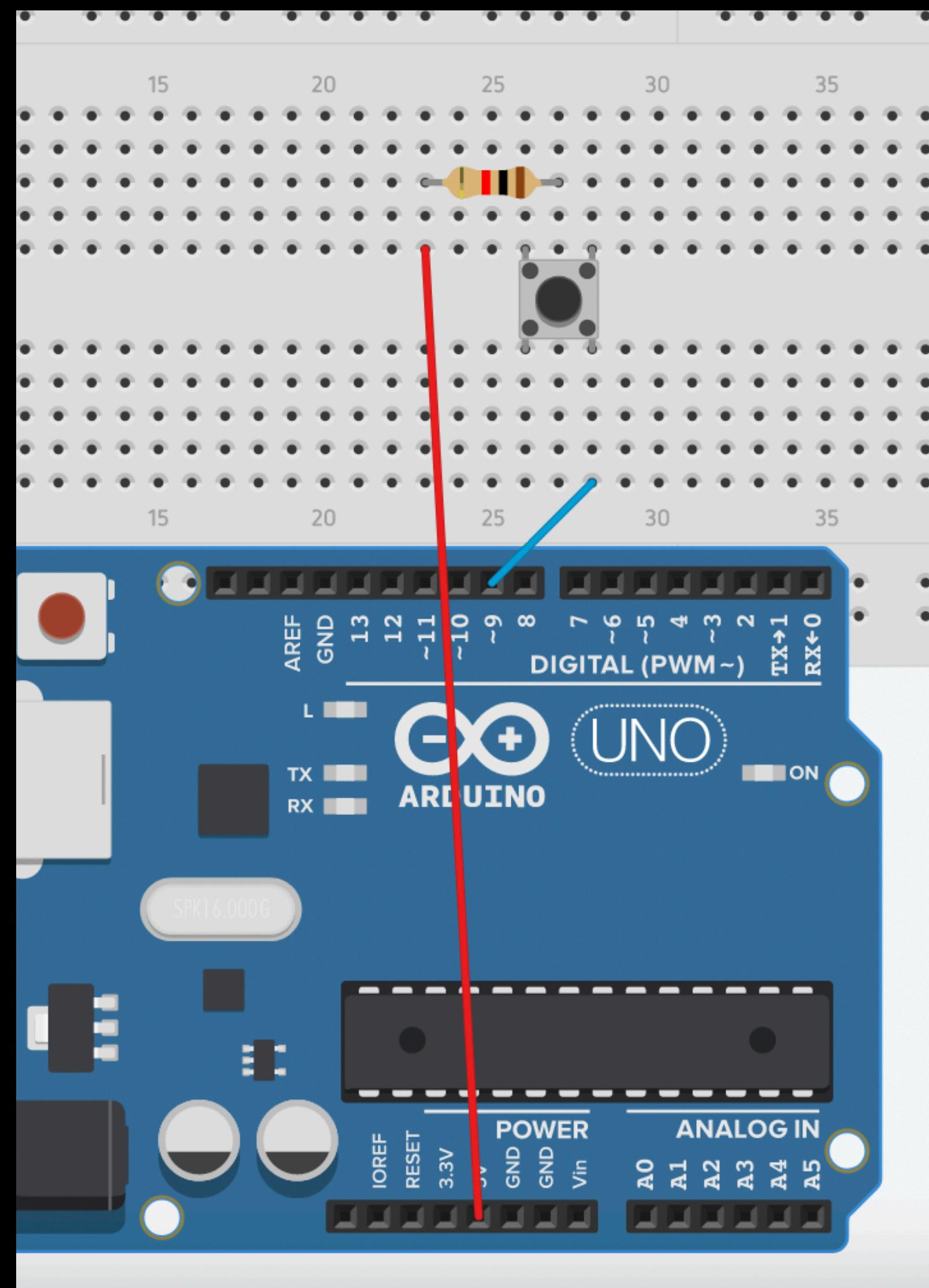
# Control the LED on PIN 13



# Control the Other LED

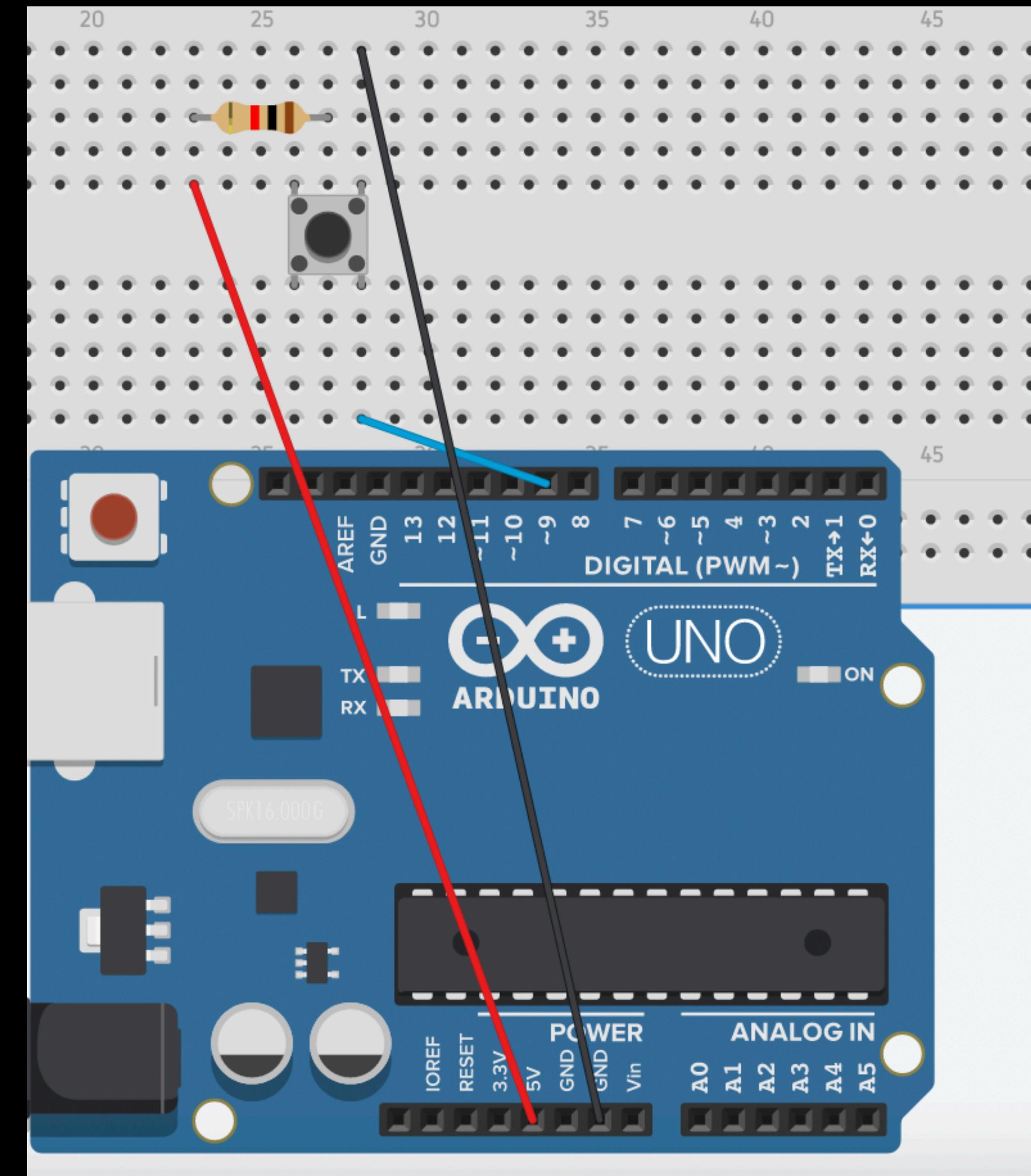


# Control LED with Button

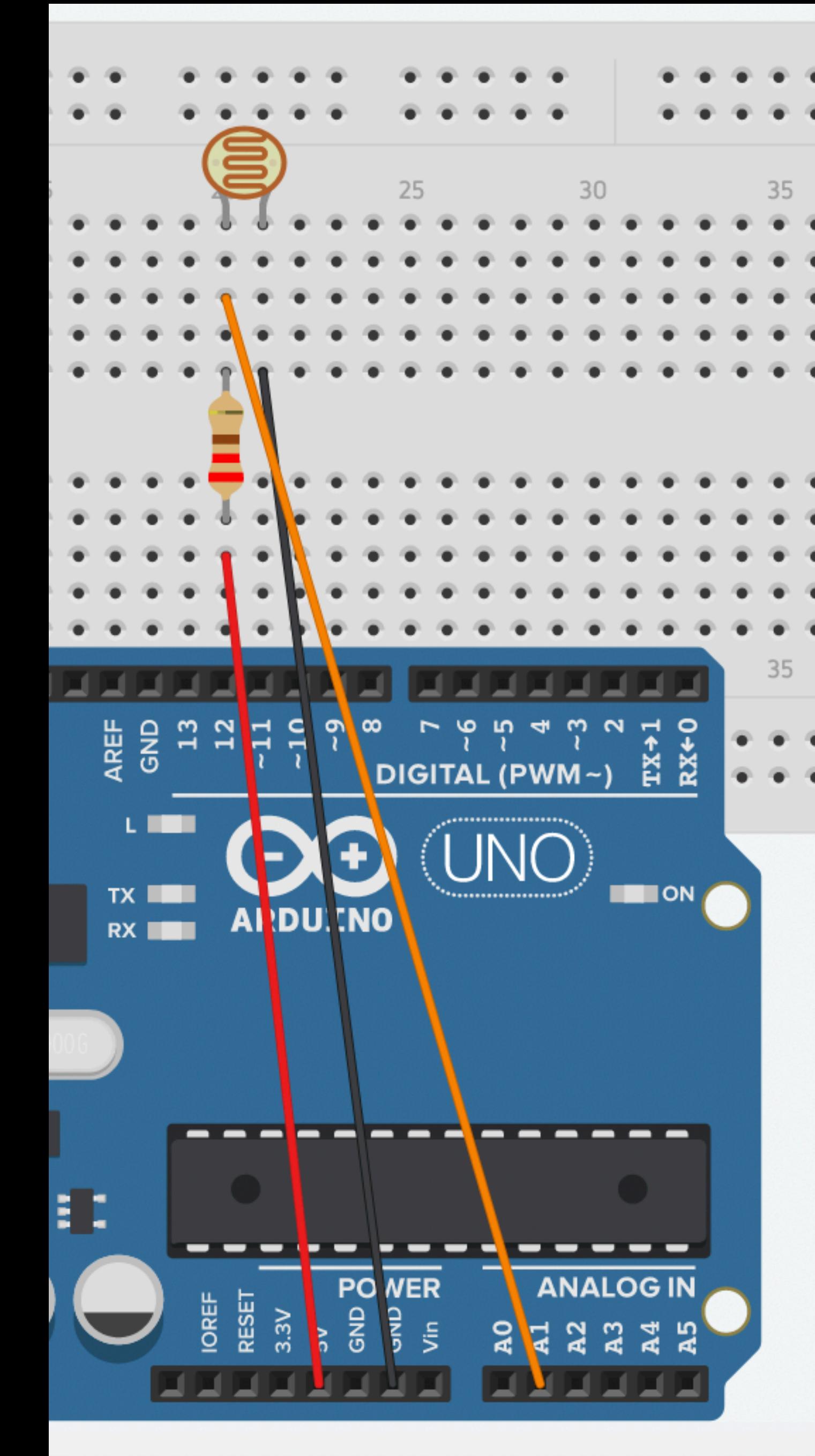


# Something Wrong ?

上拉電阻



# 類比輸入 加上光敏電阻



# 會呼吸的燈

## PWD 介紹



# 問卷調查



咪路 <[mail@mirumo.org](mailto:mail@mirumo.org)>