## Discussion1

• Why do we need pauseBetweenotes? Try to change the multiplier in "noteDuration\*1.30" to 1, 0.5, and 1.5.

Ans: 為了要判別音符,在兩個音之間設置最短時間。

## Discussion 2

• In addition to use photocell, what else sensors can we use to control a speaker? Ans: 可變電阻。

## Discussion3

Explain Ultrasonic sensor, what is trigger and echo?

Ans: Ultrasonic sensor 是一種通過發射超音波來測量物體距離並且從離它最近的物體接收回音的電子設備,而 Trigger 是送出超音波,echo 是接收超音波。

Why do we use 1/58.2 in the CODE?

Ans: 聲音傳播 1 公分距離,需要 29.1 微秒的時間。而因為聲音需要來回,所以需要除以 29.1 乘 2, 也就是 58.2 來算出距離。

- ◆ What is the difference between delayMicroseconds(us) and delay(ms)? Ans: delayMicroseconds(us)接收以微秒為單位,delay(ms)以毫秒為單位
- Do some experiments. What is the max distance that your ultrasonic sensor can detect?

Ans: 和朋友在客廳用 ultrasonic sensor 量測出的最大距離為 334cm。