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Discussion1:

1. Explain Ultrasonic sensor, what is trigger and echo?

Trigger送出超音波，echo接收超音波

2. Why do we use 1/58.2 in the TUT. 1?

因為音速約1cm/29.1us，然後聲音需要來回，所以要除以58.2來算出距離

3. What is the difference between delayMicroseconds(us) and delay(ms)?

delayMicroseconds(us)的單位是us，delay(ms)的單位是ms

4. Do some experiments. What is the max distance that your ultrasonic sensor can detect?

1206cm

Discussion2:

1. How does Arduino distinguish bit value which is represented as 0 and 1 in DHT11?

利用濕度感測器的Data角位會回傳很多個bit，每個bit之前會有50us的low-voltage-level，然後才是要的資料。而要的資料如果是0，就會有較短時間的high-voltage-level，如果是1，則會有較長時間的high-voltage-level。

2. Please write down the temperature and humidity of the classroom?

濕度66.0RH，攝氏溫度24.6

3. Blow the DHT-11, then write down the temperature and humidity and check if there is difference

濕度77.6RH，溫度27.3

Discussion3

以教室的濕度溫度為例，Tdp = 24.6 – (100 – 66.0) / 5 = 17.8 (攝氏溫度)

Discussion4

以教室的濕度溫度為例，

體感溫度 = 1.04 \* 24.6 + 0.2 \* (66.0 / 100 \* 6.105 \* exp(17.27 \* 24.6 / (237.7 + 24.6))) – 0.65 \* 2.7 – 2.7 = 25.2 攝氏溫度