

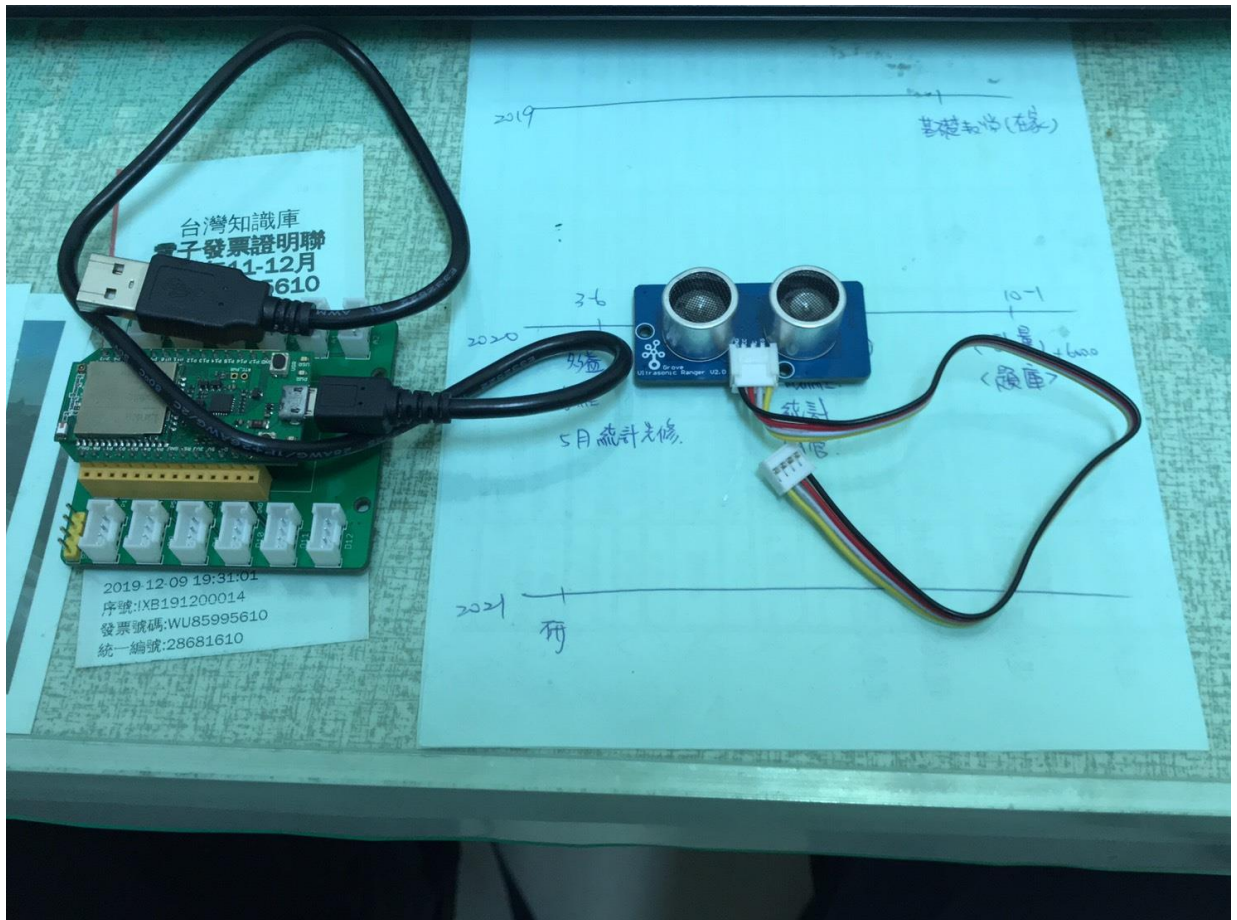
超音波停車感測器

目的:

以超音波感測來判斷此停車格是否有停放車輛。

使用材料:

- 1、Grove - Ultrasonic Ranger 超音波測距模組 距離探測傳感器
- 2、linkit 7697



完整程式碼:

```
#include "Ultrasonic.h"

Ultrasonic ultrasonic(2);
void setup()
{
  Serial.begin(9600);
}
void loop()
{
  long RangeInInches;
  long RangeInCentimeters;

  Serial.println("The distance to obstacles in front is: ");
  RangeInInches = ultrasonic.MeasureInInches();
  Serial.print(RangeInInches);//0~157 inches
  Serial.println(" inch");
  delay(250);

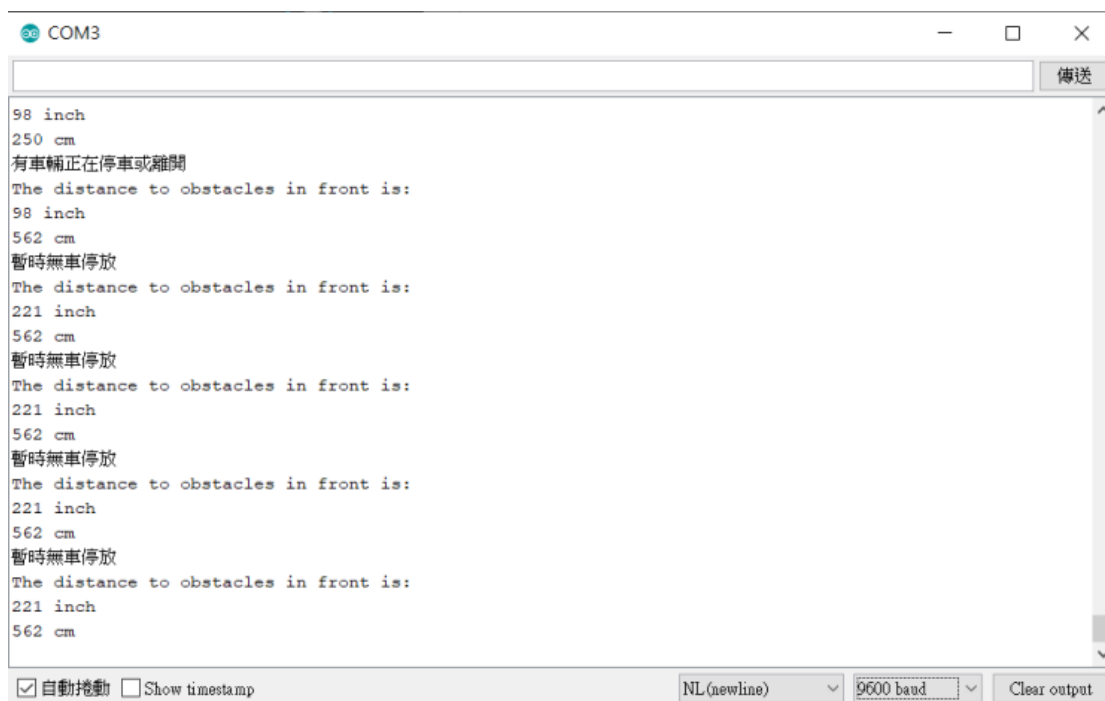
  RangeInCentimeters = ultrasonic.MeasureInCentimeters(); // two measurements should keep an interval
  Serial.print(RangeInCentimeters);//0~400cm
  Serial.println(" cm");
  delay(250);

  if(RangeInCentimeters>400)
  {
    Serial.println("暫時無車停放");
  }else if(RangeInCentimeters>100&&RangeInCentimeters<400)
  {
    Serial.println("有車輛正在停車或離開");
  }else
  {
    Serial.println("已有車輛停放");
  }
}
```

操作過程:

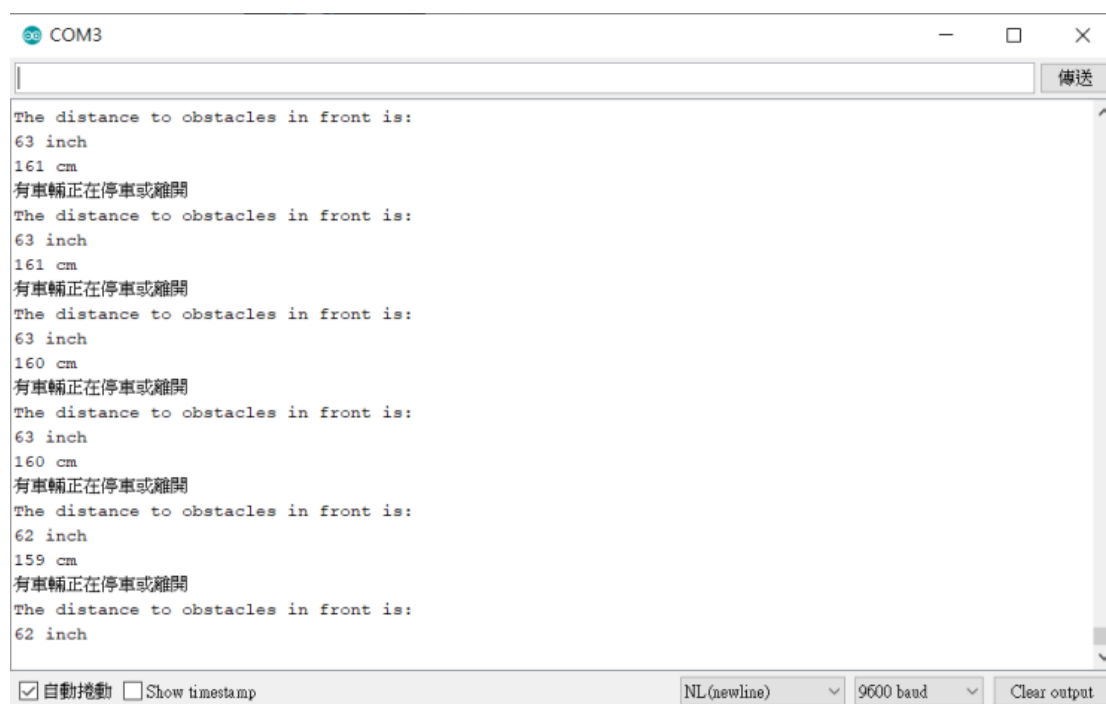
(1)

啟動後，超音波感測器即開始偵測前方範圍(562 公分)是否有物體，若在 4 公尺以上範圍無物體，我們即判定為暫時無車停放。



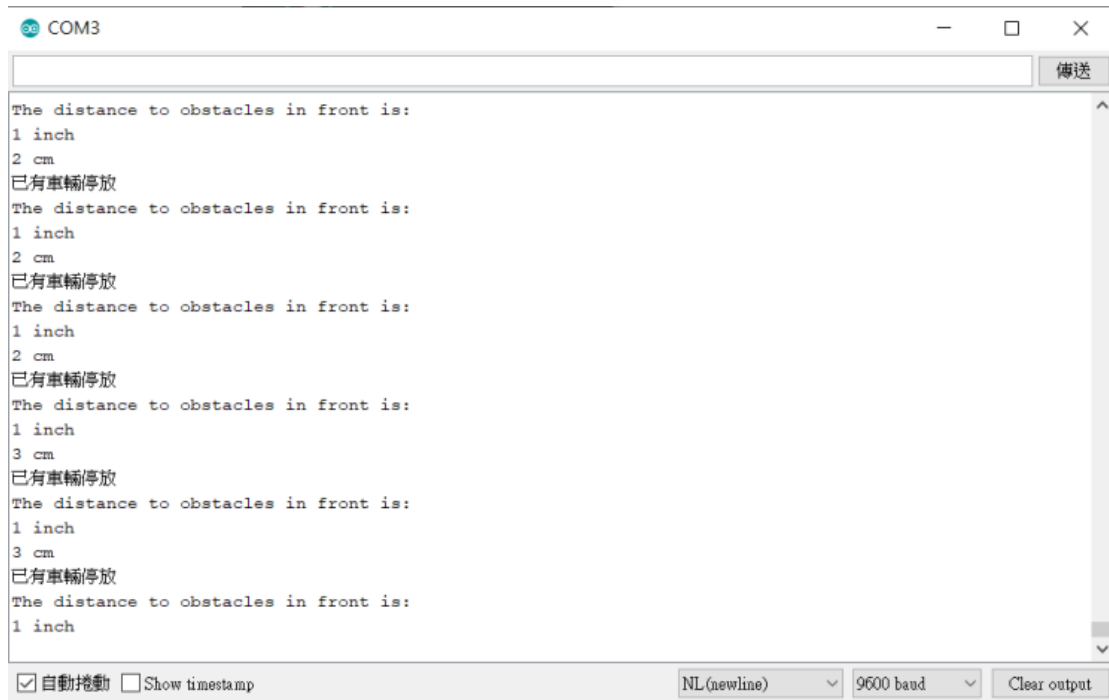
(2)

如果超音波感測器偵測到前方一公尺至四公尺的範圍有物體靠近，我們就判定有車輛正在停車或正在離開。



(3)

如果偵測物體靠近小於一公尺，即判定已有車輛停放。



The screenshot shows a serial monitor window titled "COM3". The main text area displays the following output:

```
The distance to obstacles in front is:  
1 inch  
2 cm  
已有車輛停放  
The distance to obstacles in front is:  
1 inch  
2 cm  
已有車輛停放  
The distance to obstacles in front is:  
1 inch  
2 cm  
已有車輛停放  
The distance to obstacles in front is:  
1 inch  
3 cm  
已有車輛停放  
The distance to obstacles in front is:  
1 inch  
3 cm  
已有車輛停放  
The distance to obstacles in front is:  
1 inch
```

At the top right of the window is a "傳送" (Send) button. At the bottom, there is a control bar with the following elements from left to right:

- A checked checkbox labeled "自動捲動" (Auto scroll).
- An unchecked checkbox labeled "Show timestamp".
- A dropdown menu currently set to "NL(newline)".
- A dropdown menu currently set to "9600 baud".
- A "Clear output" button.