lesson

6

Ultrasonic Range Measurement

Introduction:

Using the ultrasonic module to measure the distance to the obstacle in front and display the distance on the LCD1602.
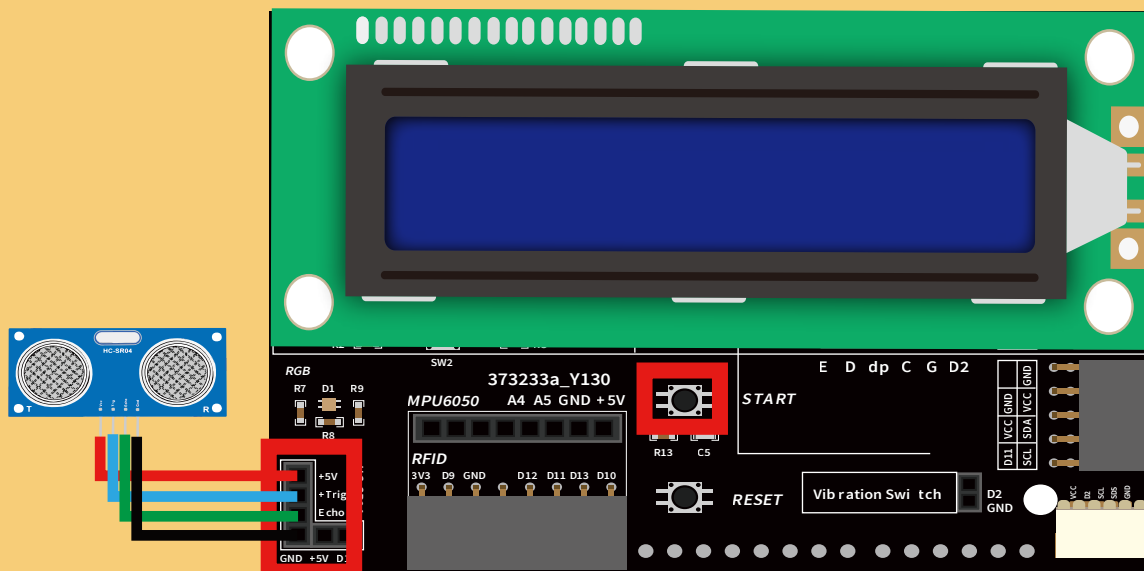
Component:

(1) x ELEGOO UNO R3

(1) x ALL IN ONE Sensor Shield

(1) x LCD1602

(1) x Ultrasonic Module

Extension Board Connection:

Project Introduction:

Keep pressing the button starts measuring the distance to the obstacle in front and displays it through the LCD1602.

Programming Part:

Part1:

LCD Display Section:
Same as the LCD course, the LCD can display normally after the initialization is completed. Please note that if you want to display new content on the LCD, you must clear the original content first.

The "lcd. clear ()" function is introduced to clear the screen every time the data is updated.

```
//Clears the LCD screen
lcd.clear();
lcd.print("Ranging is ");
a=sr04.Distance();
// set the cursor to column 0, line 1
lcd.setCursor(0, 1);
lcd.print(a);
lcd.print("cm");
delay(1000);
```

Part2:

Judge the Keys:
"if (LOW ==digitalVal)" uses the if function to determine whether the button is triggered.
Measure the distance if the button is on and turn off the ultrasonic measuring function
when the button is off.

```
int digitalVal = digitalRead(A0);
 //Press the button
 if(LOW==digitalVal)
 {
int digitalVal = digitalRead(A0);
 //Press the button
 if(LOW==digitalVal)
 {
 //Clears the LCD screen
 lcd.clear();
 lcd.print("Ranging is ");
 a=sr04.Distance();
  // set the cursor to column 0, line 1
 lcd.setCursor(0, 1);
 lcd.print(a);
 lcd.print("cm");
 delay(1000);
 }

 if(HIGH==digitalVal)
 {
 delay(2000);
 lcd.clear();
 lcd.print("Press the button");
 }
 }

 if(HIGH==digitalVal)
 {
 delay(2000);
 lcd.clear();
 lcd.print("Press the button");
 }
```