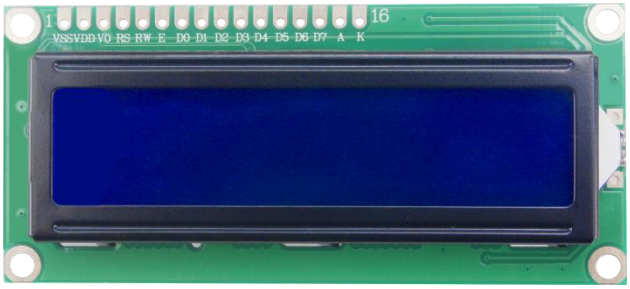
I2C_LCD1602 Display Screen Experiment

Module Introduction

LCD1602 is a character LCD module specially used to display letters, numbers and symbols. It is widely used in industry, such as electronic clock, temperature display. “1602” means 2 lines and 16 characters per line. LCD1602 display with adapter board uses IIC communication and saves a lot of I/O ports. 1602 liquid crystal display (short for 1602 LCD) is a kind of common character liquid crystal display. It is named because it can display 16*2 characters. Generally, the 1602LCD we use is integrated with a font chip. Through the API provided by liquidCrystal class library, we can easily use 1602LCD to display English letters and some symbols.



In this module, we use IIC LCD1602 module to integrate IIC I/O expansion chip PCF8574, which makes the use of LCD 1602 easier.

The wiring pins on the back are GND, VCC, SDA and SCL (SDA and SCL are the data line and clock line of IIC communication respectively). For details of LCD 1602 or PCF8574, please refer to the data manual. Through the two-wire IIC bus (serial clock line SCL, serial data line SDA),and through Arduino IIC, the purpose of controlling LCD 1602 display can be realized. It not only simplifies the circuit, but also saves the I/O port, so that Arduino can realize more functions. By setting the wire jumper, you can also set the address: 0x20-0x27. Arduino can control multiple LCD 1602.

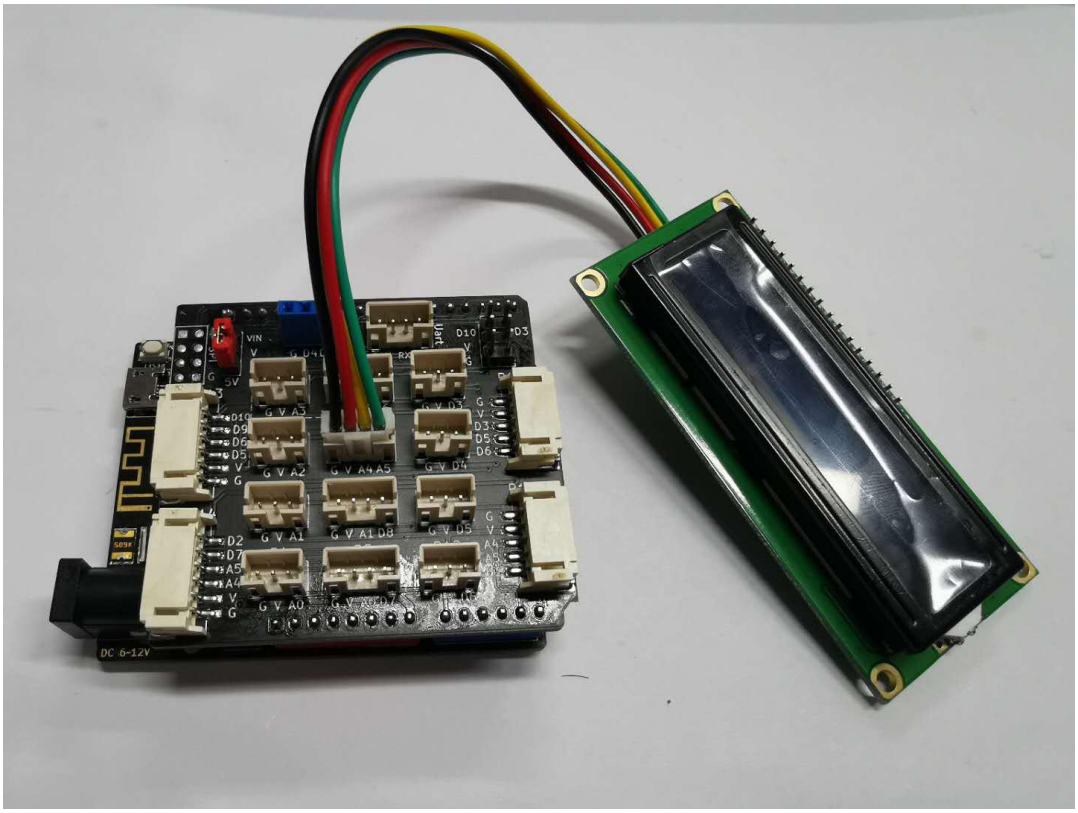
Purpose of the Experiment

Be familiar with LCD1602 display to show characters.

Device List

- BLE-UNO Main Board: 1
- Expansion Board of H2.0 Sensor :1
- USB Data Wire: 1
- 1602LCD Display: 1
- 4PIN Wire Jumper: 1

Physical Wiring Diagram

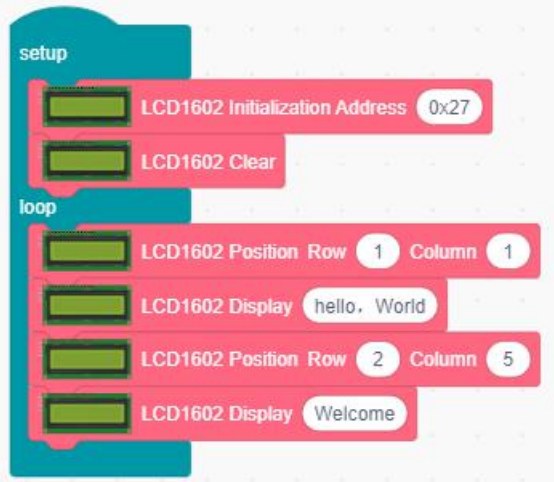


Arduino Program

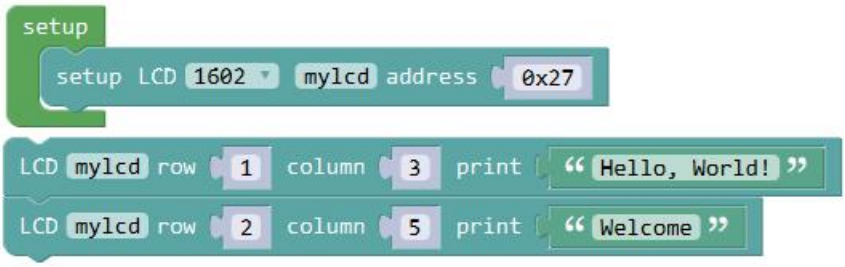
```
#include <Wire.h>
#include "LiquidCrystal_I2C.h"

LiquidCrystal_I2C lcd(0x27,16,2);    // Set the LCD address to 0x27 to display 16 characters and 2 lines

void setup()
{
    lcd.init();                              //init LCD1602
    // Print a message to the LCD.
    lcd.backlight();

}

void loop()
{
    lcd.setCursor(2,0); //
    lcd.print("Hello, world!");//display Hello, World!
```

```
    lcd.setCursor(4,1); //
    lcd.print("Welcome");//display Welcome
}
```

MagicBlock Program



Mixly Program



LCD1602 Display Cleaning etc

Experimental Conclusion

After the device is wired, burn the above program to the UNO board and power on the UNO board. You will find that the LCD1602 screen displays Hello, World! and Welcome.