

# Digital tube display

# 1. Purpose

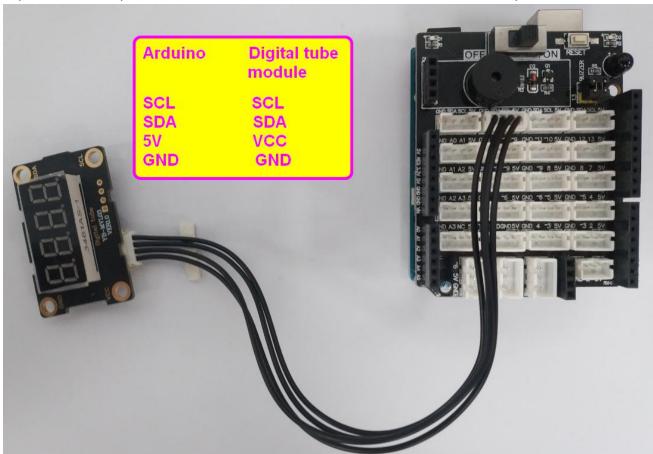
In this course, we mainly learn to use Arduino drive digital tube module display some numbers.

### 2. Preparation

Wiring diagram as shown below.

Digital tube module	Arduino
SCL	SCL
SDA	SDA
VCC	5V
GND	GND

Note: As shown in the figure below, we use the Uno sensor expansion board. If you don't have an expansion board, you can connect the Arduino board and the sensor module by DuPont lines.



#### 3. About code

Please check .ino file.

We encapsulate the operation of TM1650 as a class, and directly drive the display by calling the corresponding operation function in the class.

# 4. Compiling and downloading code



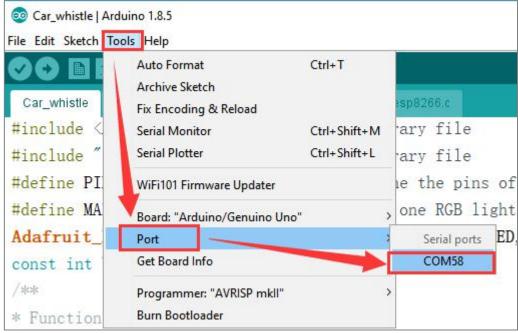
4.1 We need to open the **.ino** file by Arduino IDE software. Then click"\V" under the menu bar to compile the code, and wait for the word "Done compiling" in the lower left corner, as shown in the figure below.

```
File Edit Sketch Tools Help
TM1650.cpp TM1650.h
 pattern_digital_display
  delay (ZUUU);
  if (d.displayRunning("1234567890abcdefg")) {
    while (d. displayRunningShift()) delay(500);
  }
  delay (2000);
  for (int i = 0; i < 20; i++) {
    d. displayOff();
    delay(200);
    d. displayOn();
    delay(200);
  }
Done compiling.
Sketch uses 4596 bytes (14%) of program storage space. Maximum is 32256 bytes.
Global variables use 718 bytes (35%) of dynamic memory, leaving 1330 bytes for local
```

4.2 In the menu bar of Arduino IDE, we need to select 【Tools】---【Port】--- selecting the port that the serial number displayed by the device manager just now, as shown in the figure below.







4.3 After the selection is completed, you need to click "→"under the menu bar to upload the code to the UNO board. When the word "Done uploading" appears in the lower left corner, the code has been successfully uploaded to the UNO board, as shown in the figure below.



```
Car_sing | Arduino 1.8.5

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Car_sing

#include <Arduino. h> //Library file

const int buzzer = 10; //Define the pins of buzzer

/*Individual tones in the score*/

#define BL1 248

#define BL2 278

#define BL3 294

#define BL4 330

#define BL5 371

#dofine RI6 416

Done uploading
```

### 5. Phenomenon

After the program is downloaded successfully, the digital tube will display numbers, letters, with scrolling and flashing effects.