

1. Introduction to Testing Platform

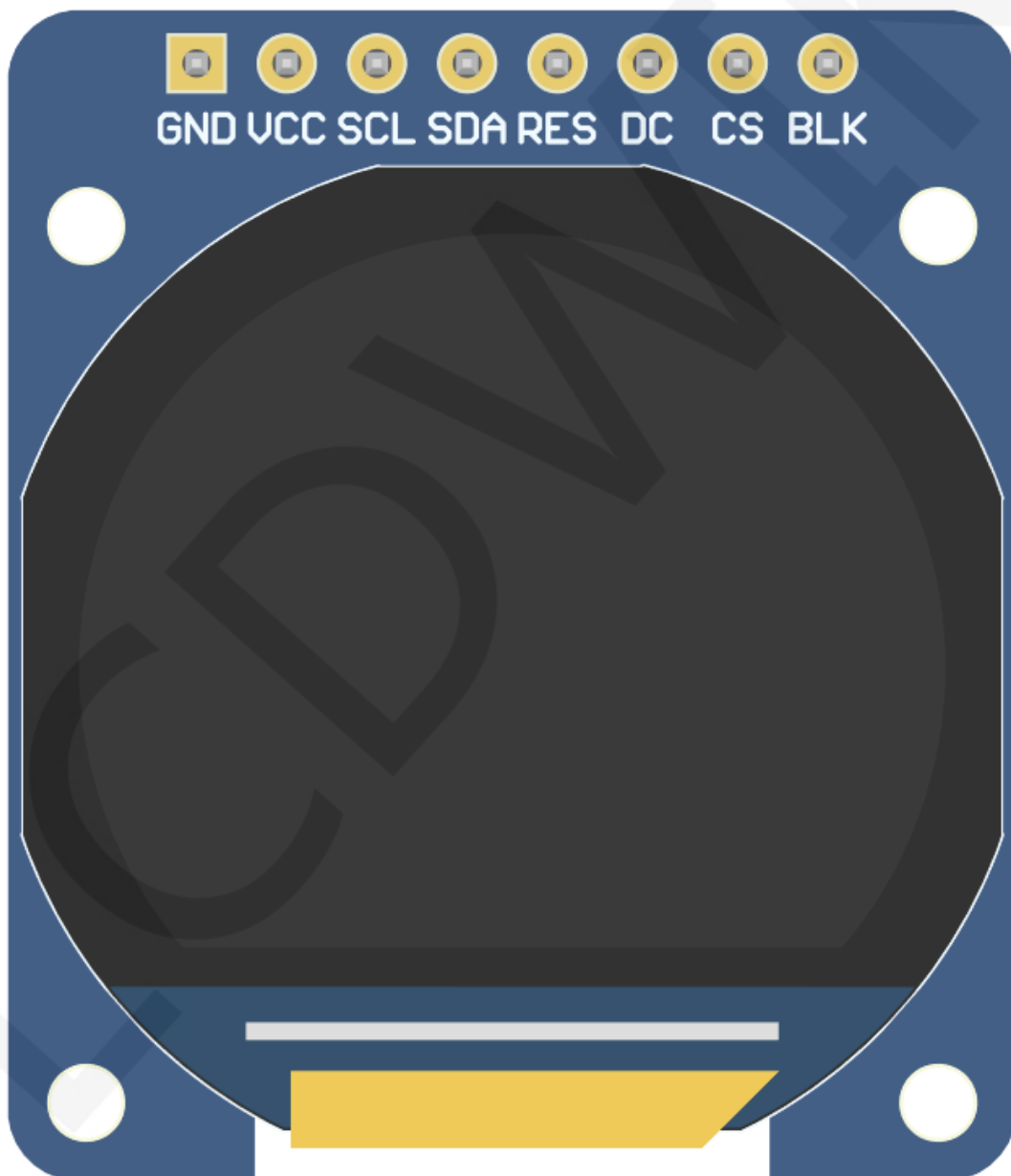
Development board: Arduino UNO/MEGA2560

MCU: AVR_ATmega328P/AVR_ATmega2560

Frequency: 16MHz/16MHz

2. Pin connection instructions

The display module is connected to the microcontroller using a DuPont cable, with specific instructions as follows:



Picture1. Module front pin diagram

Arduino UNO microcontroller test program wiring instructions

Number	Module Pin	Corresponding to UNO development board wiring pin	Remarks
1	GND	GND	LCD Power ground
2	VCC	5V/3.3V	LCD power positive(It is recommended to connect to 5V. When connected to 3.3V, the backlight brightness will be slightly dim)
3	SCL	13	LCD SPI bus clock signal
4	SDA	11	LCD SPI bus write data signal
5	RES	A4	LCD reset control signal, Low level reset
6	DC	A3	LCD command / data selection control signal
7	CS	A2	LCD selection control signal, Low level active
8	BLK	A0	LCD backlight control signal (If you need control, please connect the pins. If you don't need control, you can skip it)

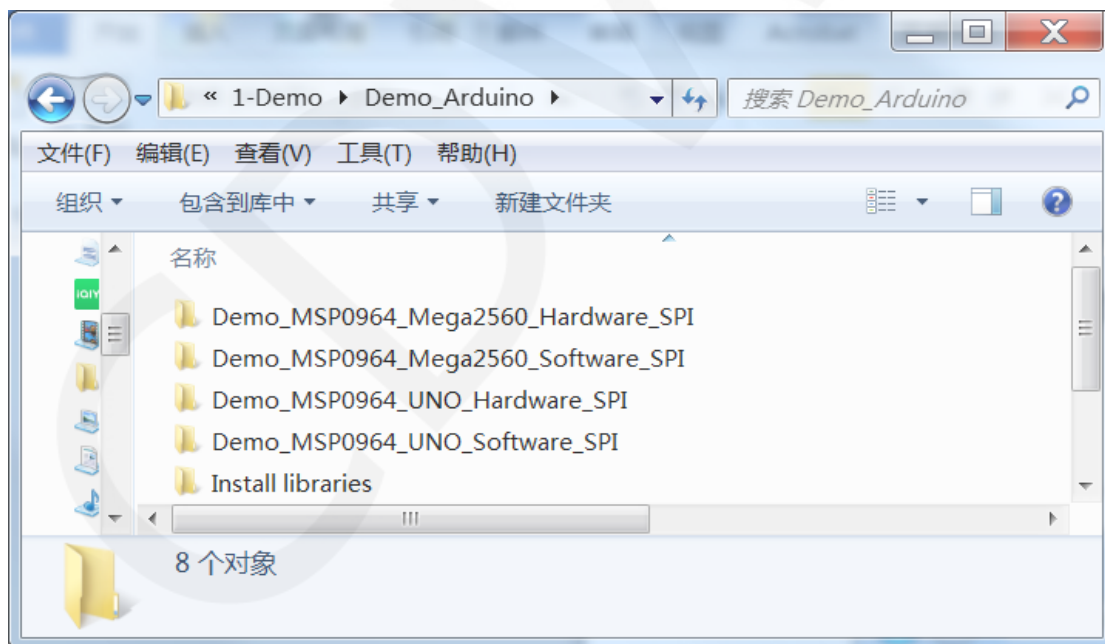
Arduino MEGA2560 microcontroller test program wiring instructions

Number	Module Pin	Corresponding to MEGA2560 development board wiring pin	Remarks
1	GND	GND	LCD Power ground
2	VCC	5V/3.3V	LCD power positive(It is recommended to connect to 5V. When connected to 3.3V, the backlight brightness will be slightly dim)
3	SCL	52	LCD SPI bus clock signal
4	SDA	51	LCD SPI bus write data signal

5	RES	A4	LCD reset control signal, Low level reset
6	DC	A3	LCD command / data selection control signal High level: data, low level:
7	CS	A2	LCD selection control signal, Low level active
8	BLK	A0	LCD backlight control signal (If you need control, please connect the pins. If you don't need control, you can skip it)

3. Demo Function Description

This testing program program includes two MCU programs, Arduino UNO and Mega2560. Each MCU program includes software spi and hardware spi function programs, which are located in **Demo_Arduino** directory, as shown in the following figure:



✧ Description of sample program content

- A. Example_01_Simple_Test is a screen swiping test that does not rely on the library;
- B. Example_02_clear_Screen is a simple screen brushing test that cycles the

- screen in the order of black, white, red, green, and blue colors;
- C. Example_03_colligate_Test is a comprehensive test that displays graphics, lines, and counts program runtime;
- D. Example_04_display_Graphics is a graphical display test that displays various graphics;
- E. Example_05_display_Scroll is a scrolling test that displays text scrolling;
- F. Example_06_display_String is a text display test that displays different sizes of Chinese and English;
- G. Example_07_display_clock tests for simulate testing for a circular clock dial, displaying clock operation;

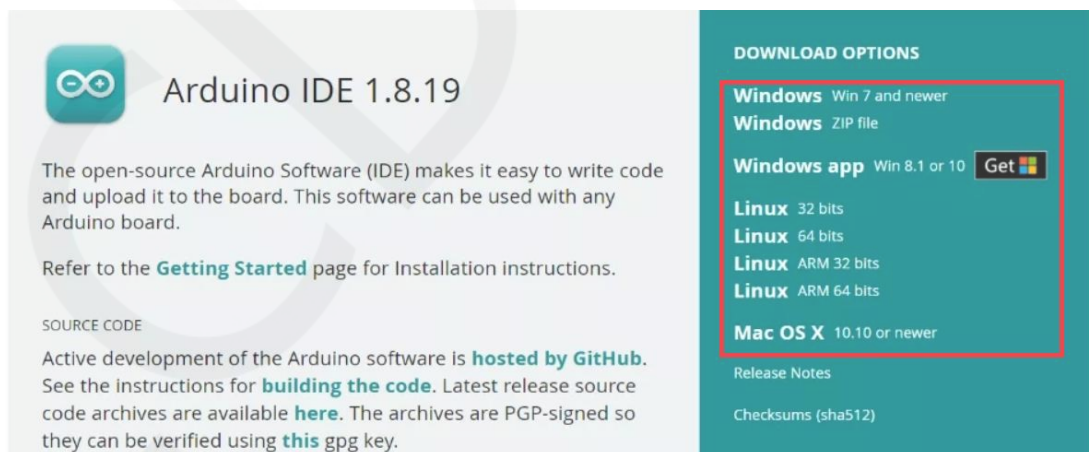
4. Demo Usage Instructions

✧ Installing development tool software

Download the installation package from the Arduino official website.

Download address:<https://www.arduino.cc/en/software>

Download the corresponding installation package according to your PC system, as shown in the following figure (the version in the picture may not be the latest version, and the download interface may not be the latest):

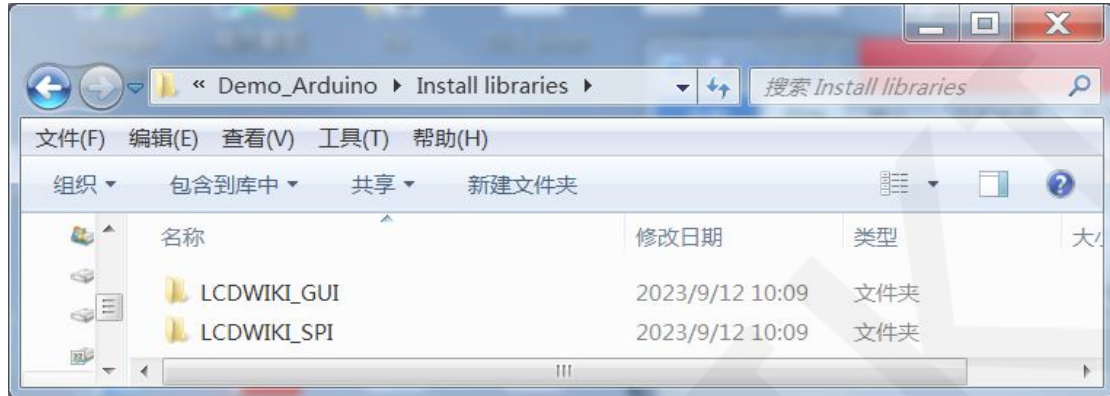


After the download is completed, unzip and click Install.

✧ Installing software library

After the development environment is set up, the software library used by the

sample program needs to be copied to the project library directory so that the sample program can be called. The software library is located in the **Demo_Arduino\Install libraries** directory, as shown in the following figure:



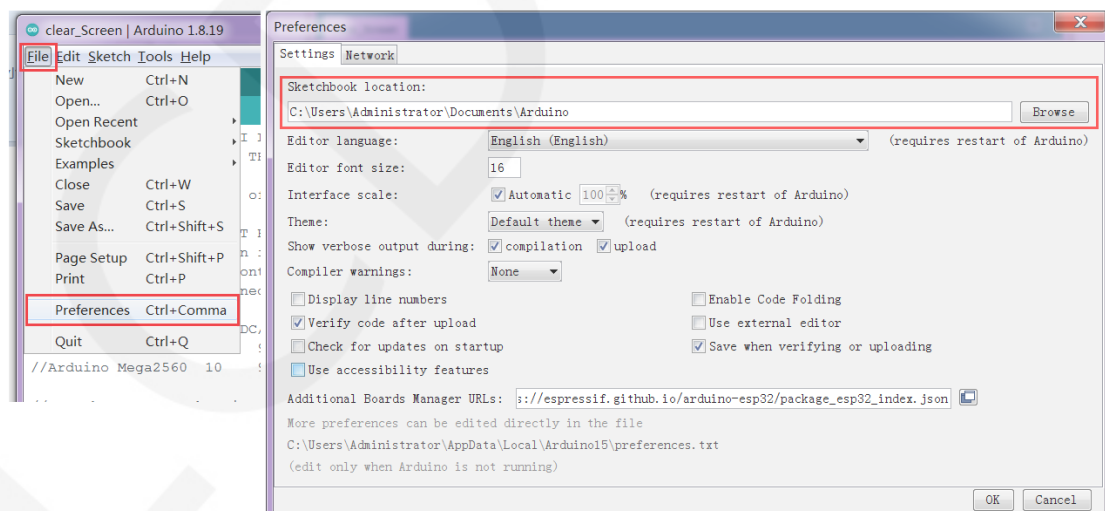
Among them:

LCDWIKI_ GUI is a graphical library for the application layer;

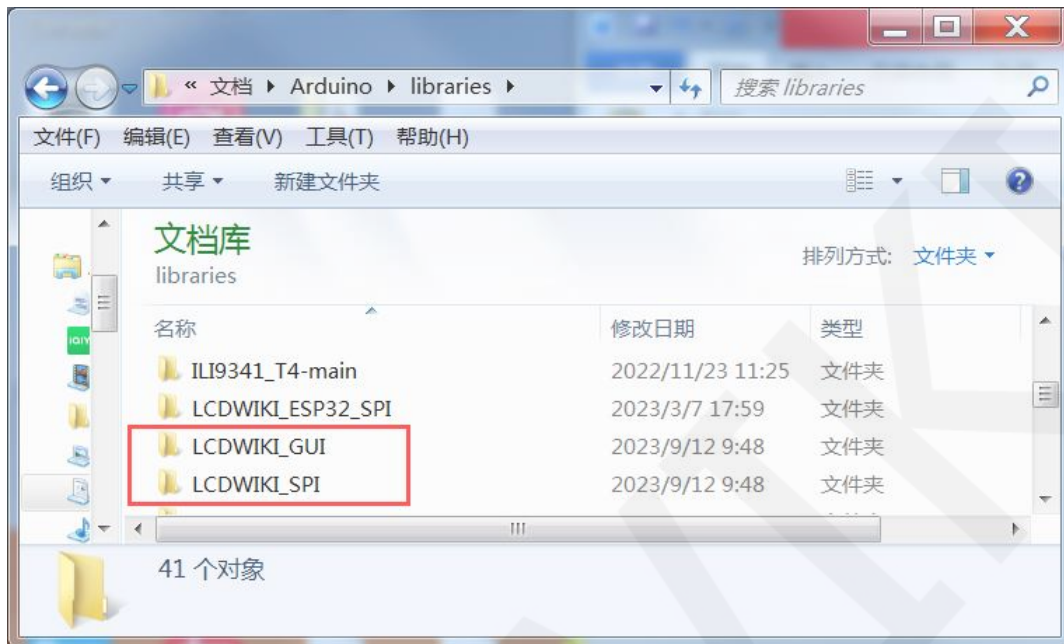
LCDWIKI_ SPI is the SPI driver for the underlying display screen;

LCDWIKI_ TOUCH is a touch screen driver;

The default path for the engineering library directory is **C: Users\Administrator \Documents\Arduino\libraries**. You can also change the project library directory: open the Arduino IDE software, click **File ->Preferences**, and reset the **Sketchbook location** in the pop-up interface, as shown in the following figure:



Copy the software library to the project library directory, as shown in the following figure:



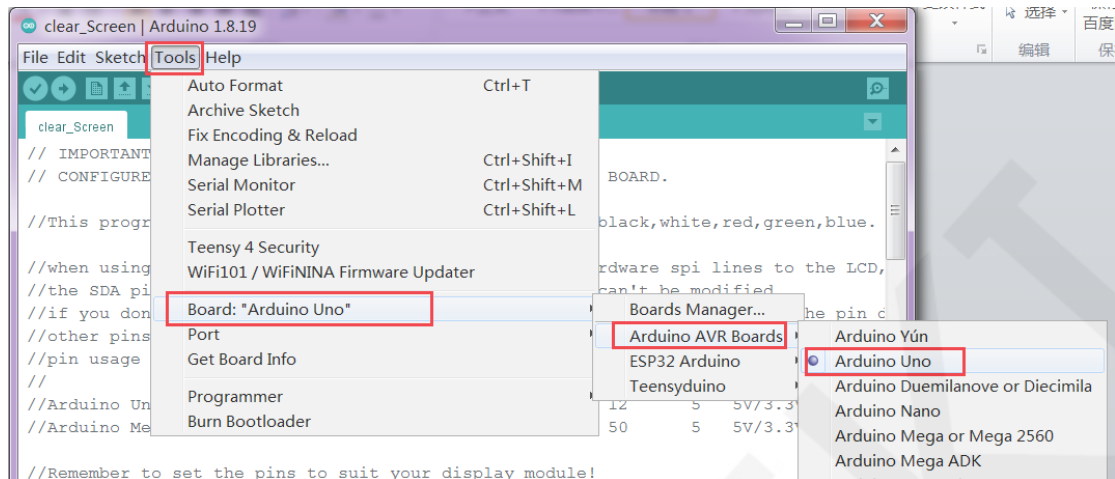
❖ Compile and Run Programs

- A. Connect the display module to the UNO or Mega2560 development board, and then power up the development board.
- B. Open any example (using clear_screen as an example), as shown in the following figure:

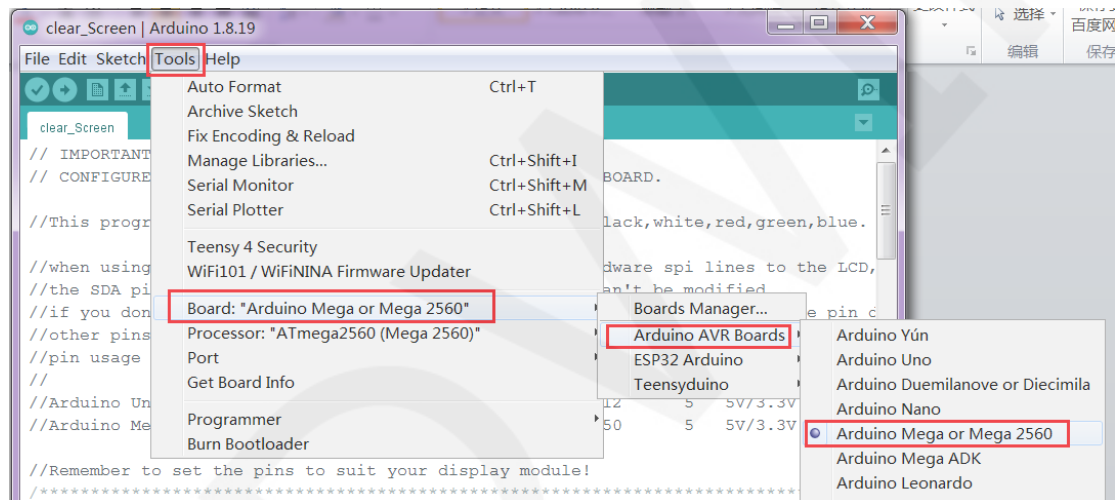


- C. After opening the sample project, select the UNO or Mega2560 device, as shown in the following figure:

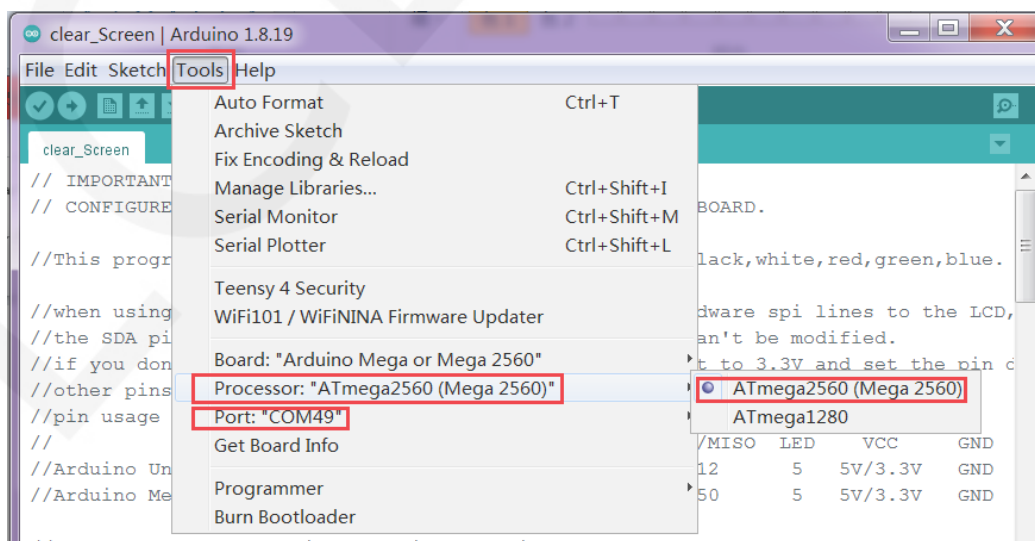
Select UNO:



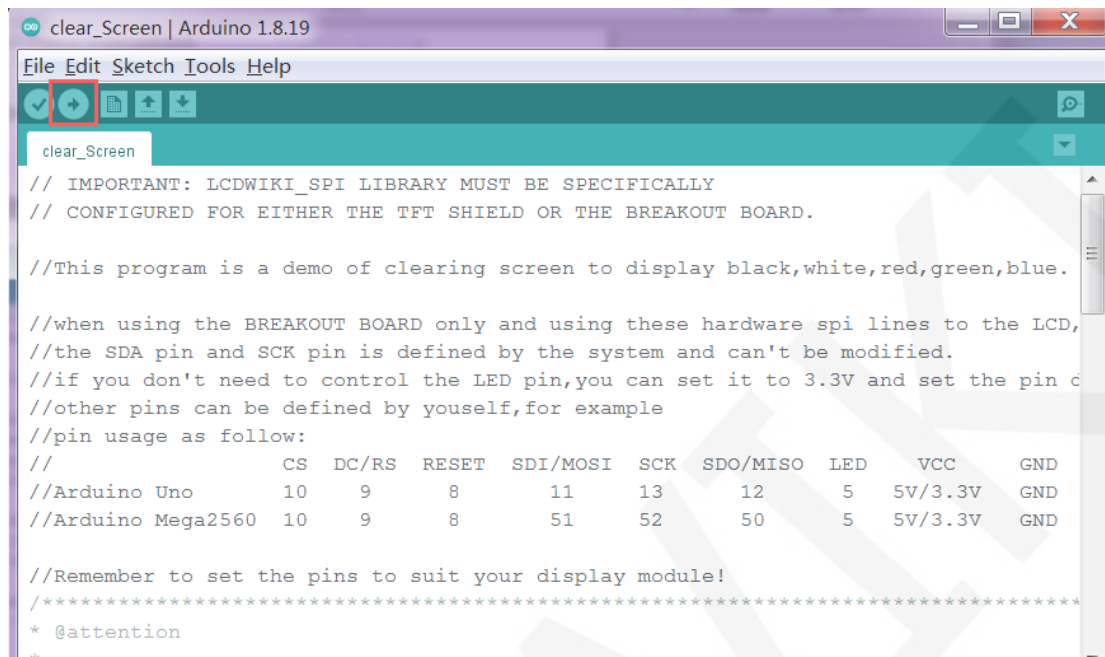
Select Mega2560:



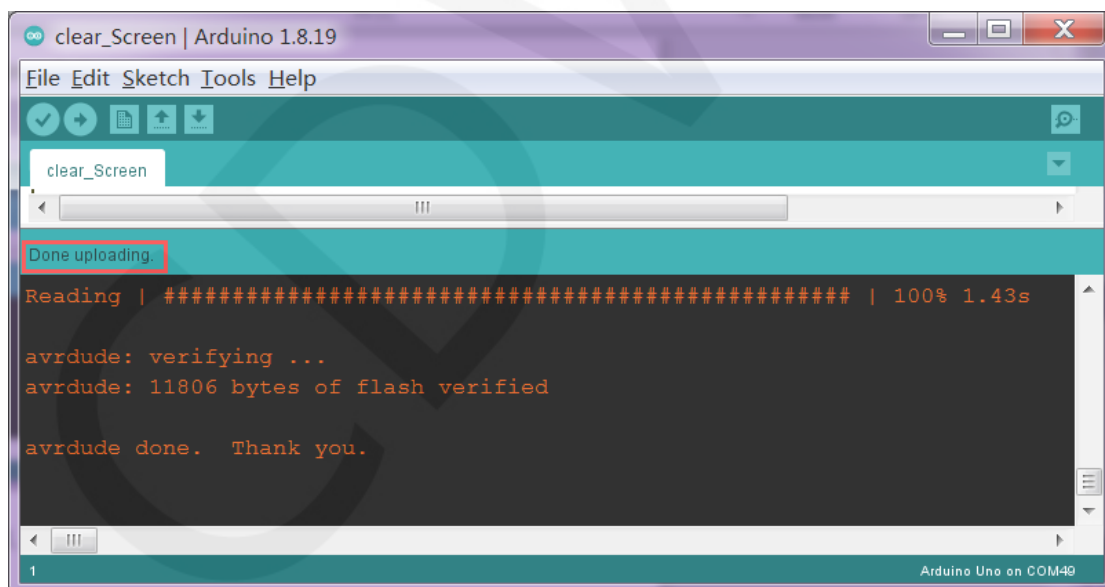
D. Set the **port**. If you choose Mega2560, you also need to set the processor based on the development board used, as shown in the following figure:



- E. Click the upload button to compile and download the program, as shown in the following figure:



- F. If the following prompt appears, it indicates that the program has been compiled and downloaded successfully, and has already been run:



- G. If the display module displays content, it indicates that the program has run successfully.