Set Environment Development

1. Arduino Software Installation

Arduino IDE is a software specially designed for Arduino microcontroller with powerful function. No matter which versions, the installation process are the same. This section takes Arduino-1.8.12 windows version as example.

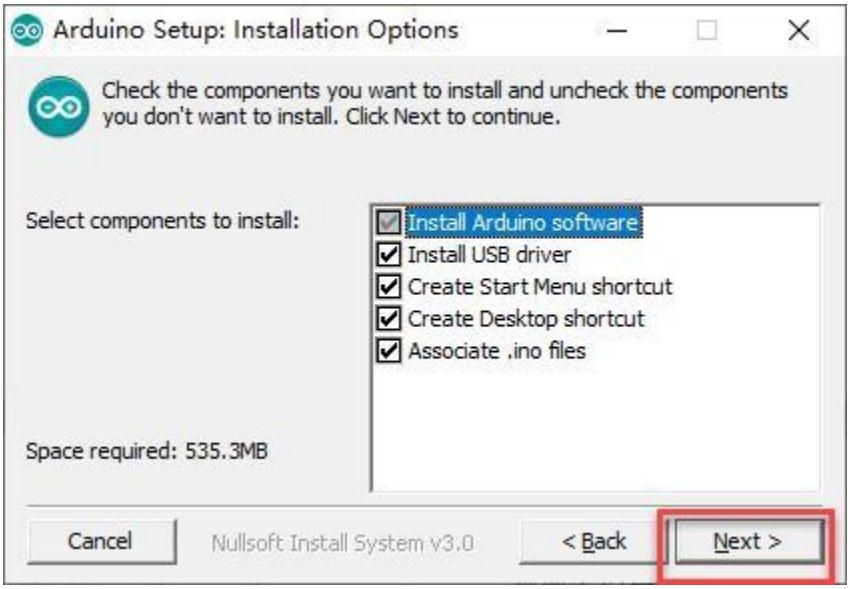
1) Enter the Arduino official website to download:

https://www.arduino.cc/en/Main/OldSoftwareReleases#1.0.x

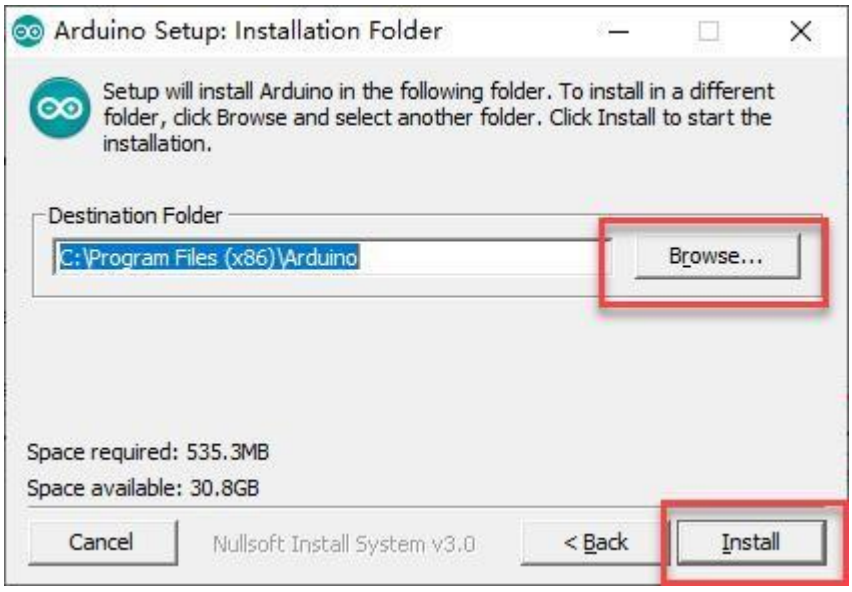
2) After downloading, double click “arduino-1.8.12-windows.exe”.

3) Click “I Agree” to install.

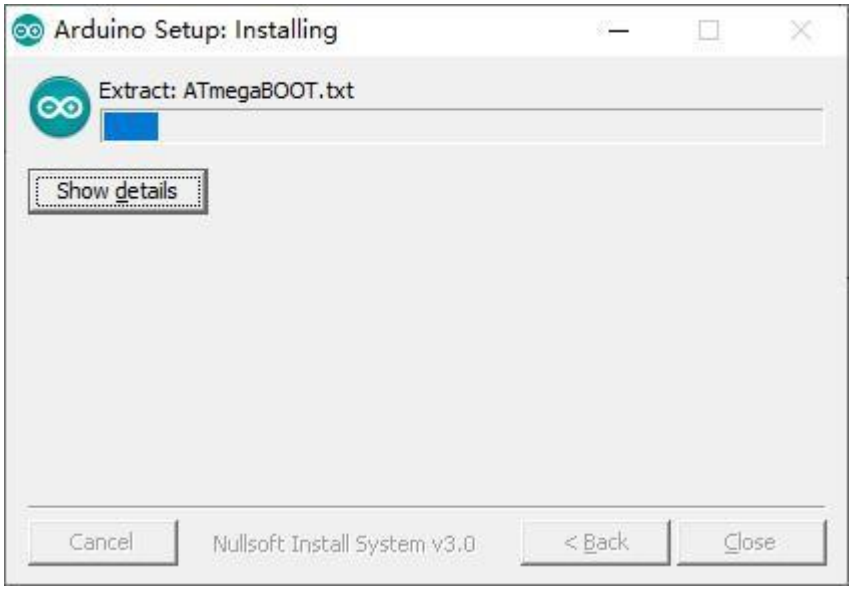
4) Select all the default options, and then click “Next” to come to the next step.



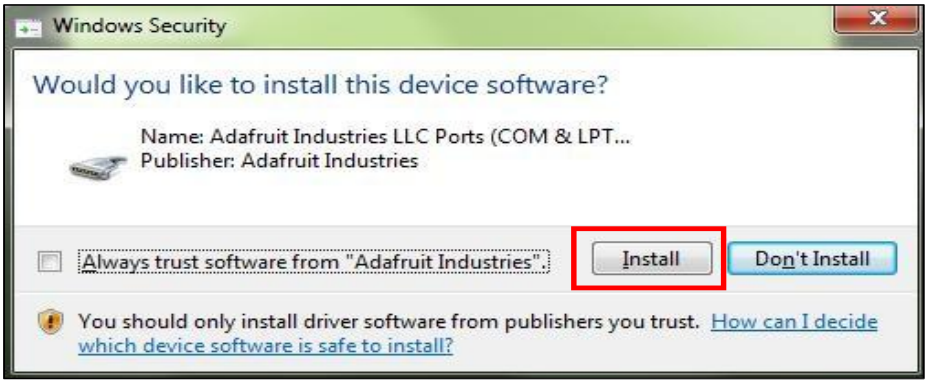
5) Click “Browser” to select the installation path, and then click “Install”.



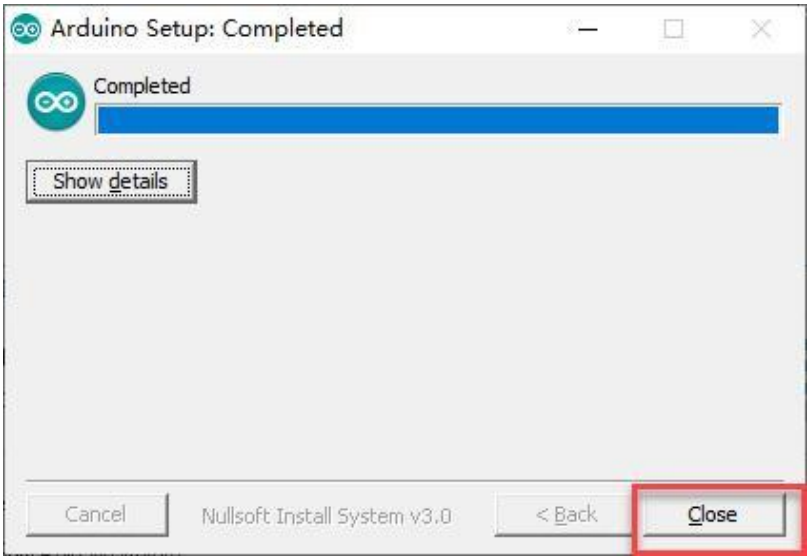
6) Wait for the installation to complete.



7) If the installation of chip driver is prompted, click “Install”.

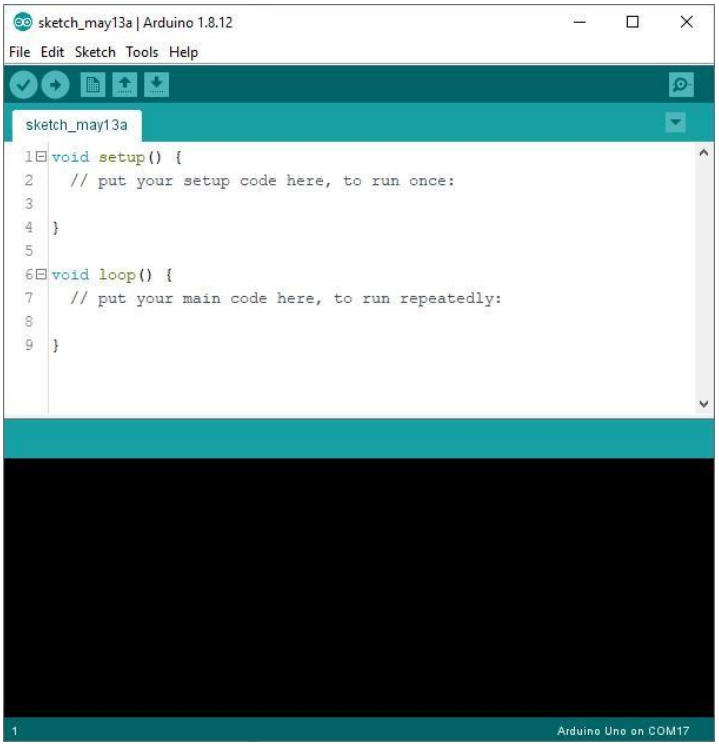


8) After the installation is completed, click “Close”.

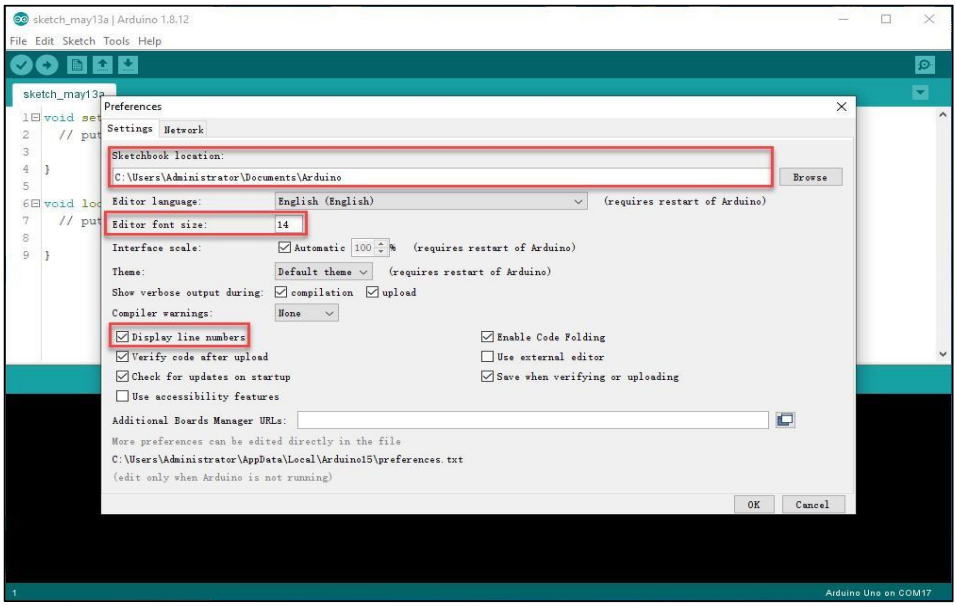


2. Software Description

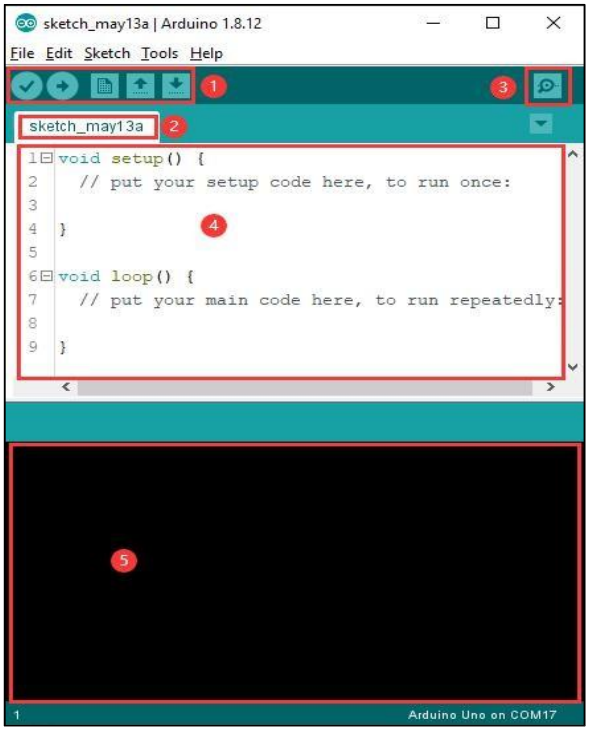
1) After opening the software,the home interface of Arduino IDE is as following:



2) Click “File/Preferences” to set the sketchback of IDE projects, the font size, the display line numbers according to your person preference in the pop-up window.



3) The home interface of Arduino IDE is mainly divided into five parts, which are tool bar, project TAB, serial port monitor, code edit area, debug prompt area. The distribution is as follow:



4) Tool bar contains some shortcut keys for the commonly used functions, as the following table:

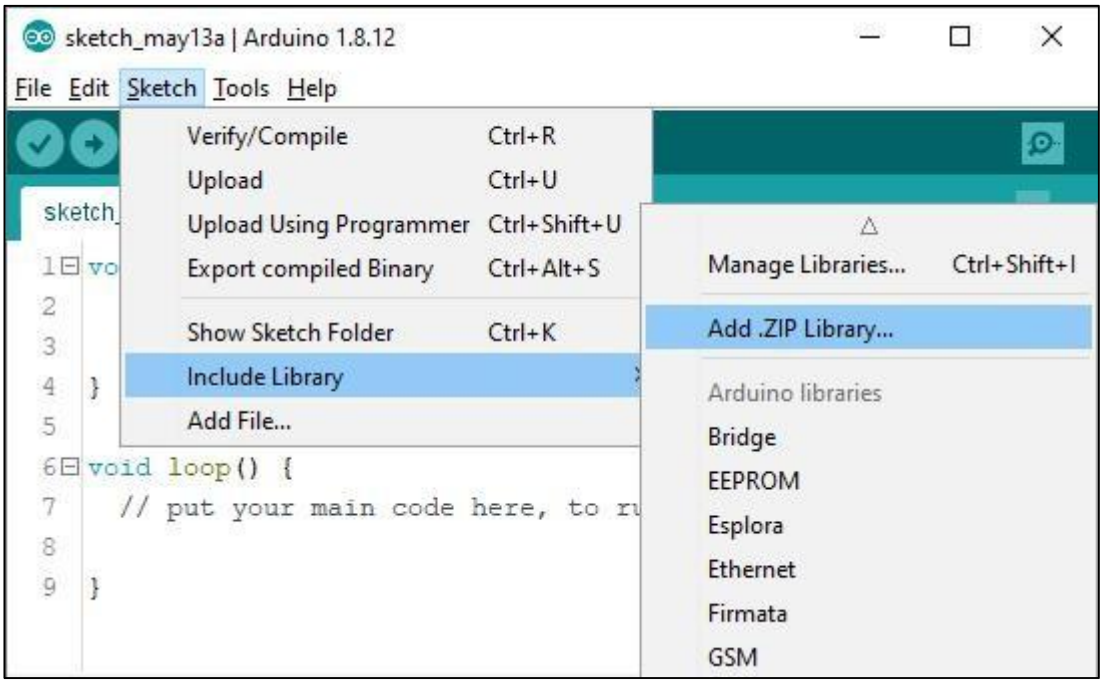
Icon	Function
	Verify whether a program is written correctly, and compile the project if it is correct.
	Download the program to Arduino controller.
	Create a new project
	Open a project
	save the project
	Serial port monitor. It can be used to view the data sent or received by the serial port.

3. Library File Import Method

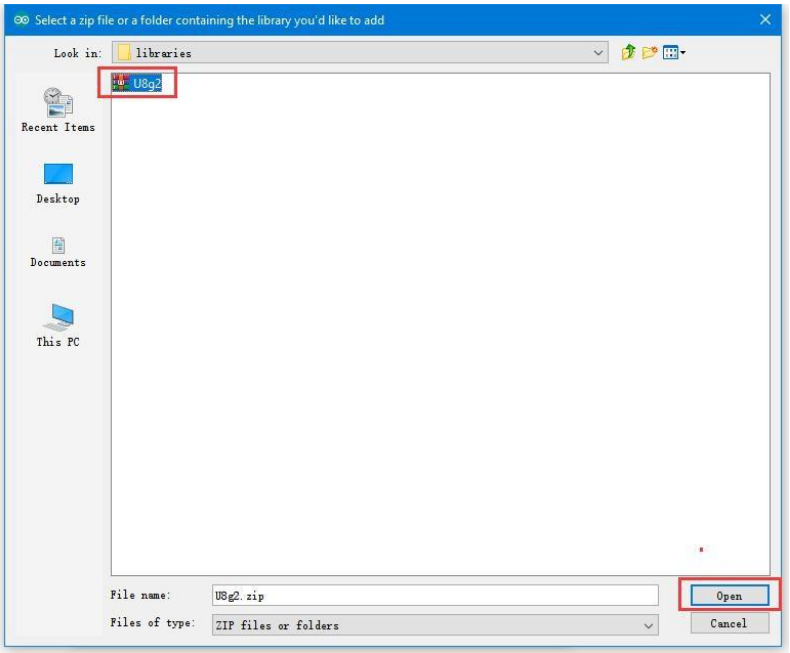
Take library “**U8g2**” needed by OLED display as example. The importing method is as follow:

1) Double click to open Arduino IDE.

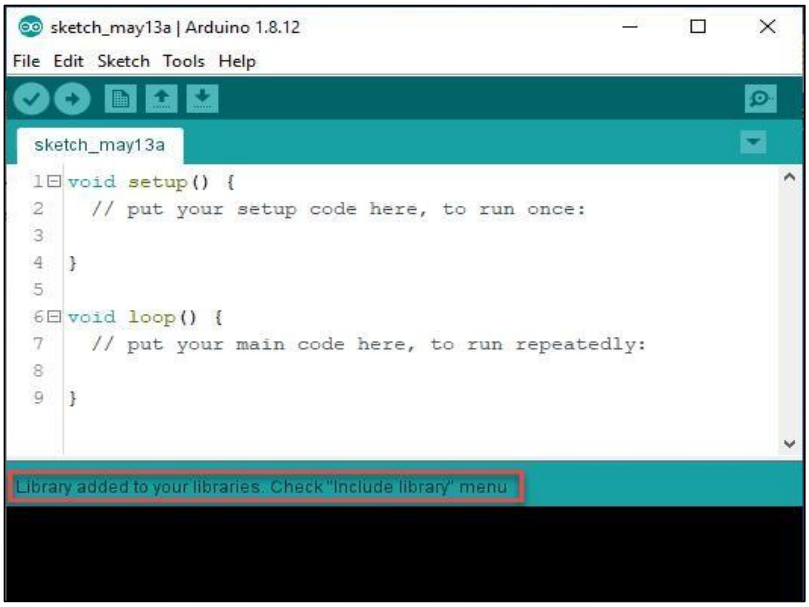
2) Click “Sketch” in menu bar, and then click “Include library” -> “Add .ZIP Library...” .



3) Find U8g2.zip in dialog, and then click “Open”.



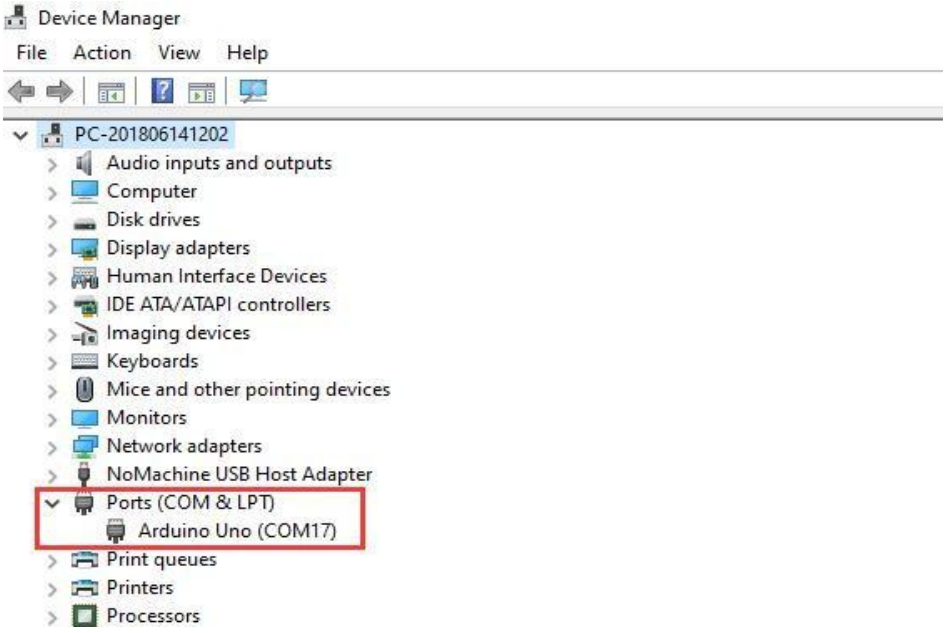
4) Return to IDE home interface. When the prompt “Library added to your libraries. Check “Include library” menu” appears, it means that library has been added successfully.



5) After adding, the following operation does not need to add repeatedly.

4. Compile and Upload Program

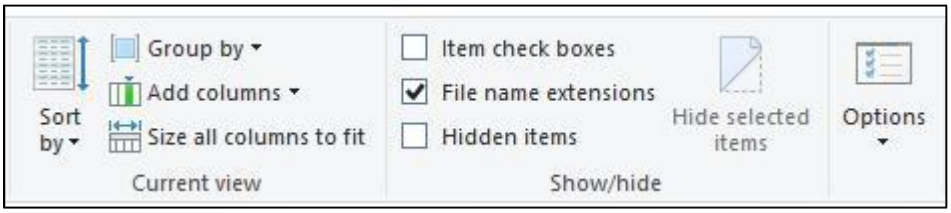
1) Connect UNO development board to computer with USB cable, and then confirm the corresponding port number of the UNO development board. Right click “This Computer” and click “Properties-> Device manger”

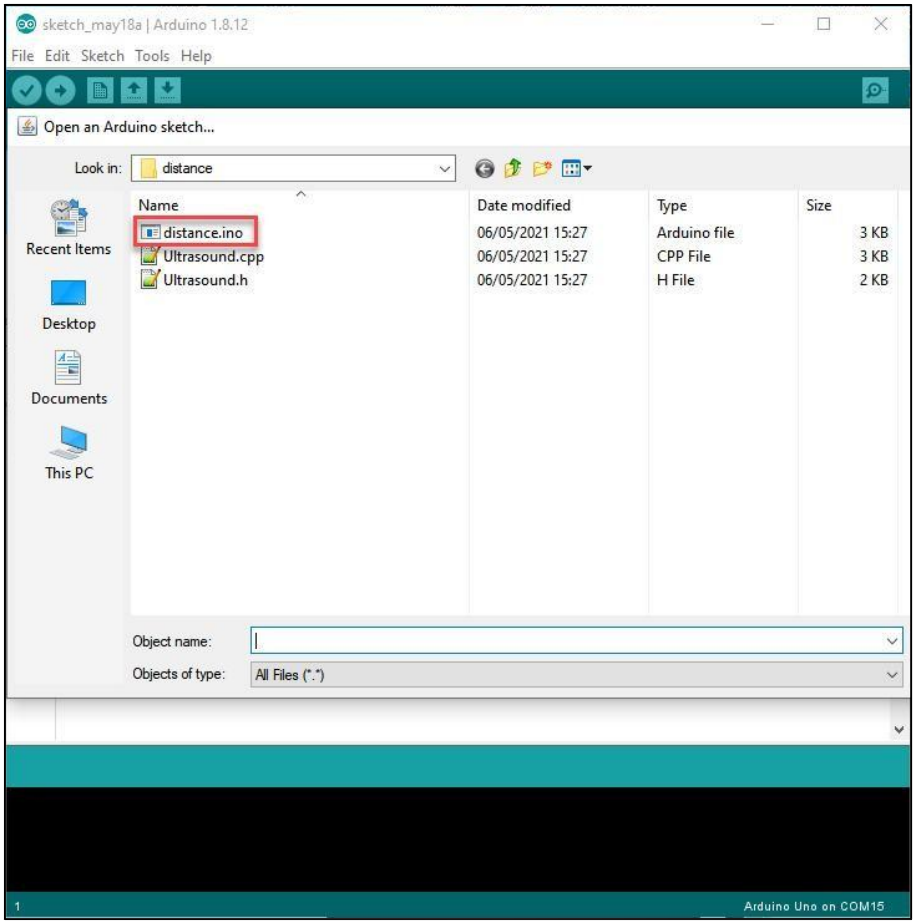


2) Double click Arduino IDE.

3) Write the program in the blank area, or open the program file with the suffix .ino. Here we directly open the program in .ino format as example to illustrate.

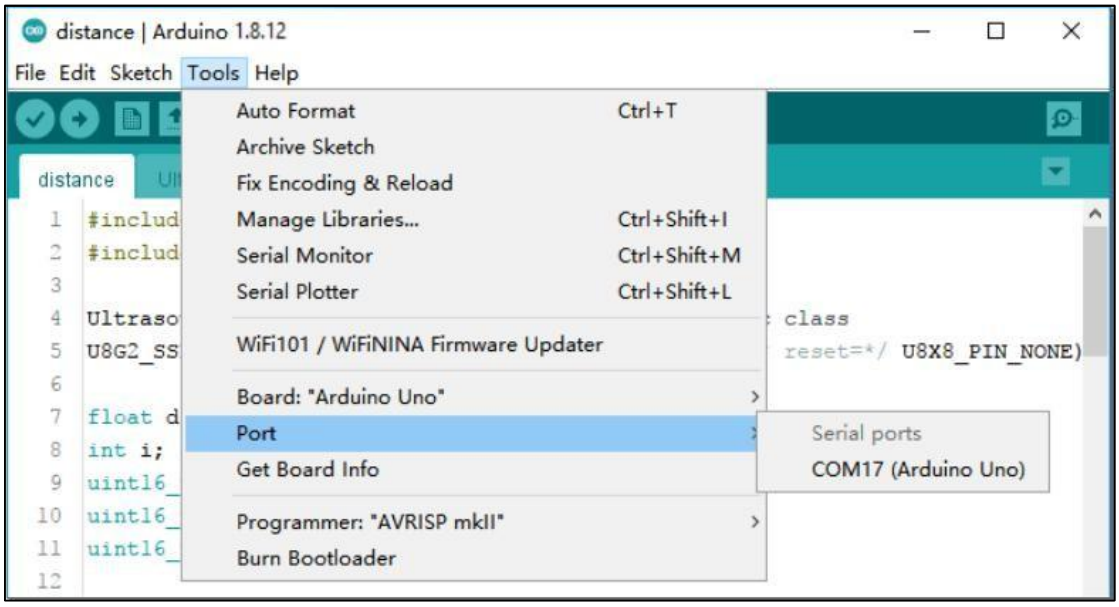
If you can not see .ino extension name in the suffix of file, you can click “View->File extension name” in “This computer”.



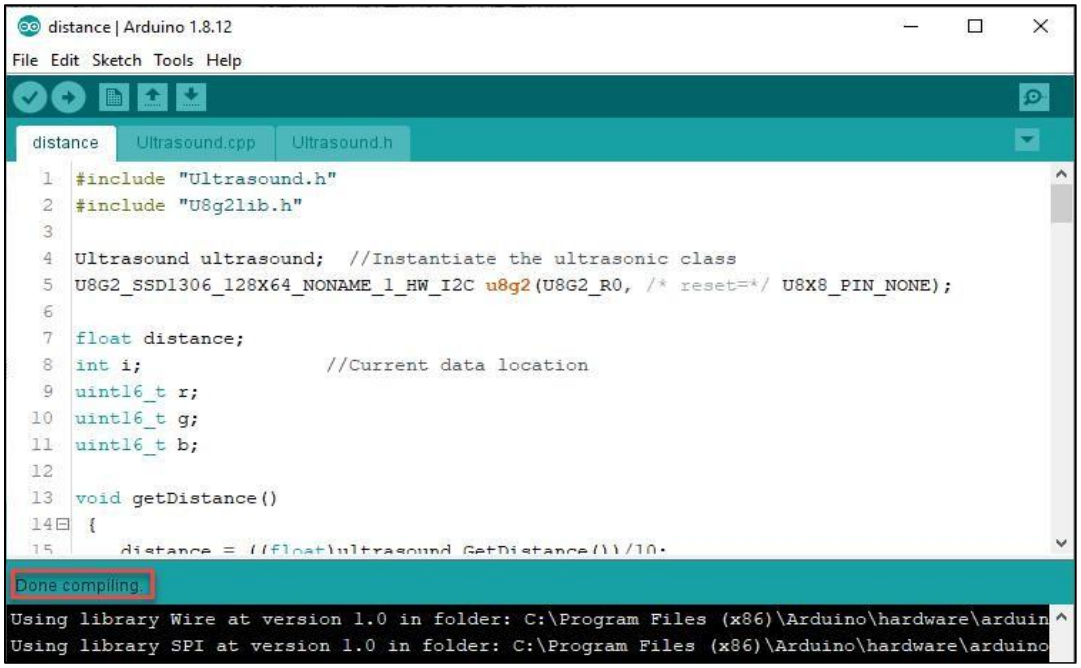


4) Then confirm the selection of the development board and port. (Select Arduino/Genuino UNO for the development board. Here select COM17 port as example. Each computer may be different and you just need to select corresponding port according your computer. If COM1 port appears, it is

generally a communication port but not the actual port of the development port.)



5) Click  icon in toolbar to compile program. Then wait for the prompt “Done compiling” in the lower left corner to complete the compiling.



6) After the steps above are completed, you can upload the program into Arduino. Click “Upload”( ) . When the prompt “Done uploading” appears in the lower left corner, it means that the upload is completed.

After the program is downloaded successfully, Arduino will automatically execute the downloaded program (The program restarts when power is reconnected or the chip receives a “reset” command).