Lesson 1 Set Arduino Development Environment

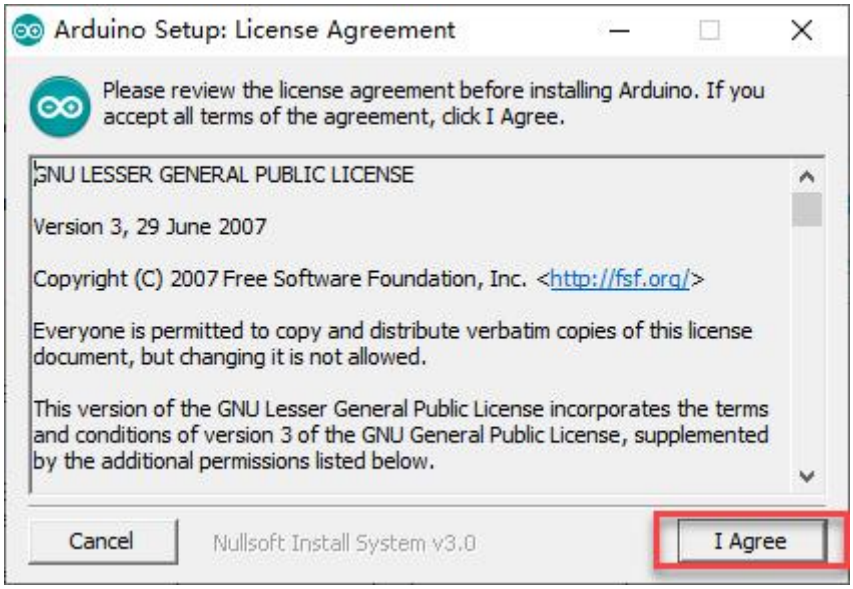
1. Install and Configure Arduino Software

Arduino IDE is a powerful software specially designed for Arduino microcontrollers. Regardless of the version, the installation process is the same. This section takes the windows version of the arduino-1.8.12 as an example.

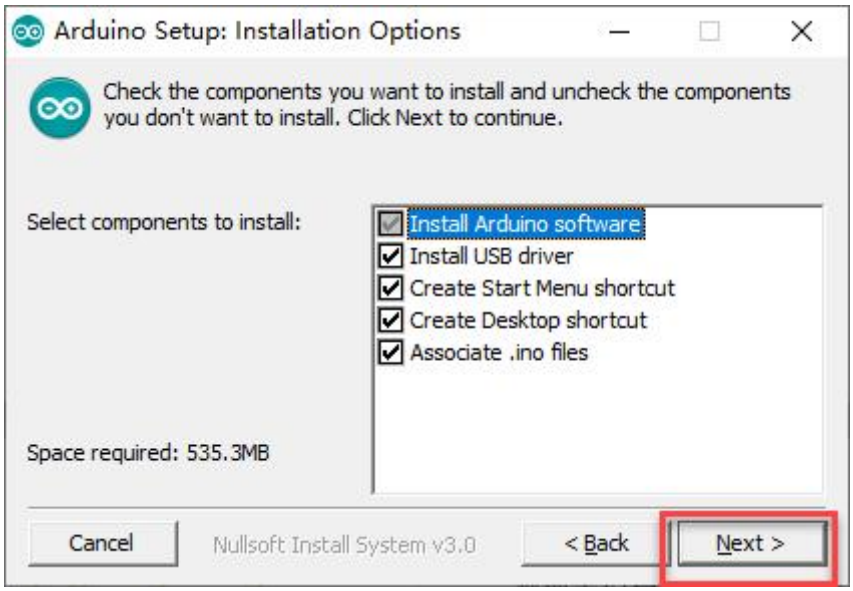
1.1 Install Software

1) Navigate to the installation package in the folder “Arduino Installation Package” , and then double click to install.

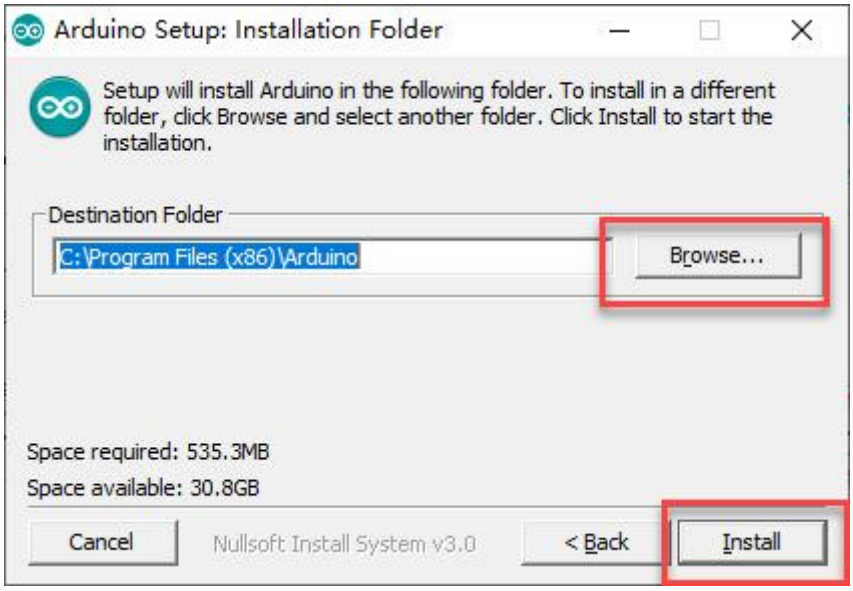
2) Click “I Agree”.



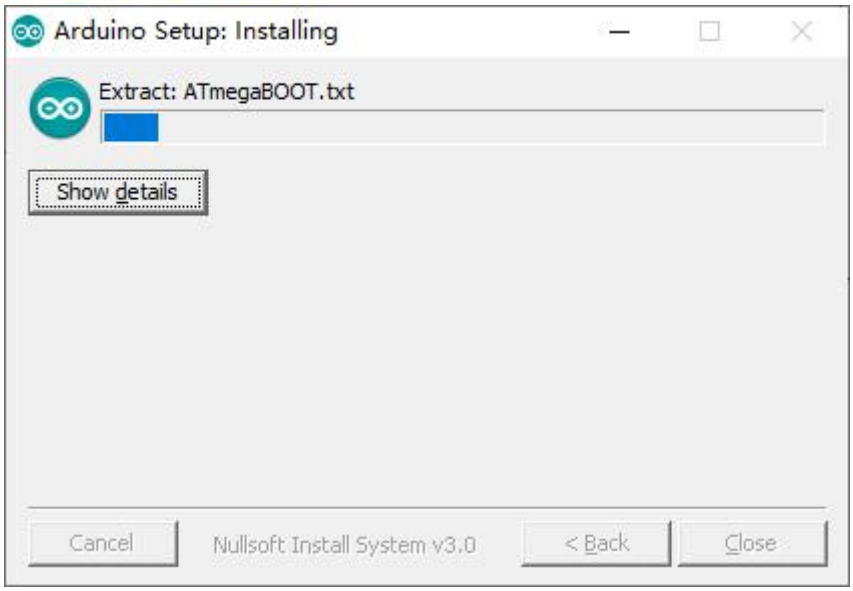
3) Check all the options by default, and click “Next” to enter the next step.



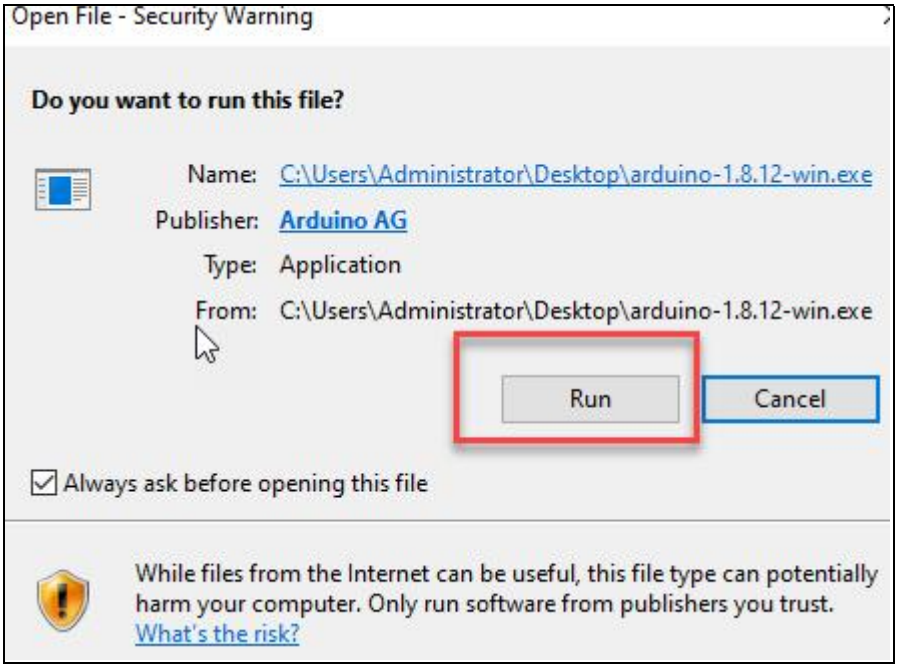
4) Click “Browser” and select the path to install. Then click “Install”.



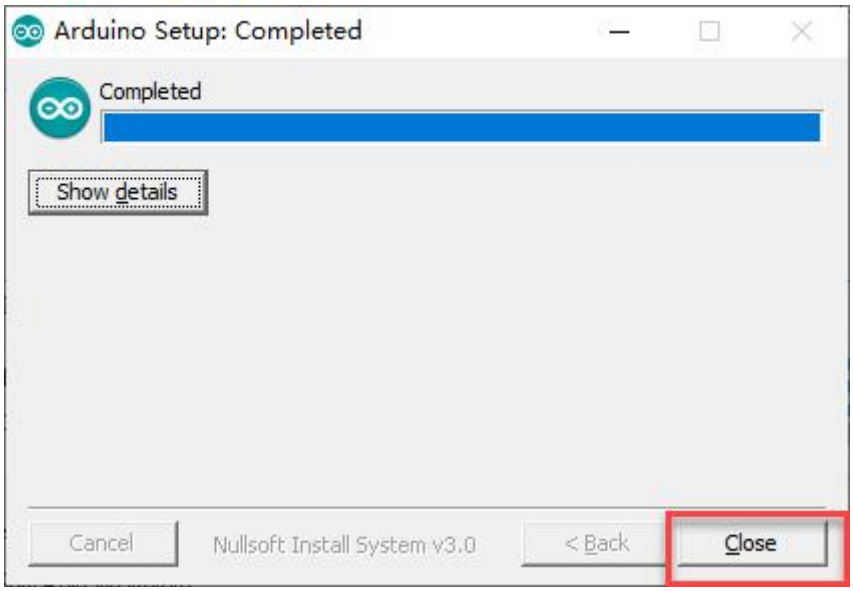
5) Wait for the installation to complete.



6) If you're prompted to install the chip driver, please click "Install".



7) After installing, click "Close".



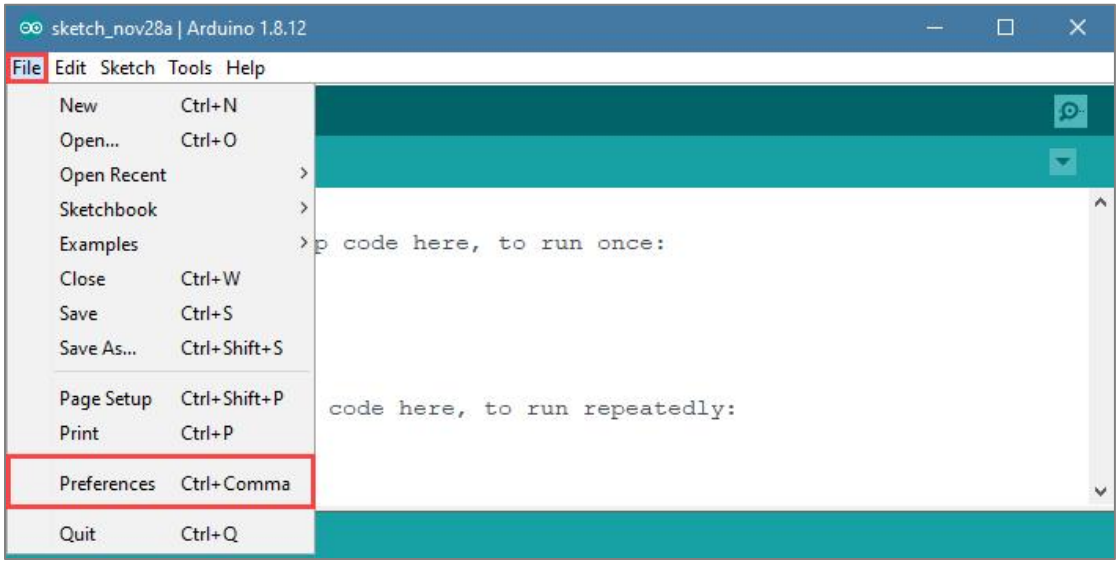
1.2 Configure Development Board

After installing software for programming, the development board is required be configured (Please do this while connected to the Internet). Here will provide two configuration methods. Method 1 can directly install the development board package with one-click, which which greatly improves the success rate of installation. Method 2 can online download the development board package so that user can select the different versions of development board package.

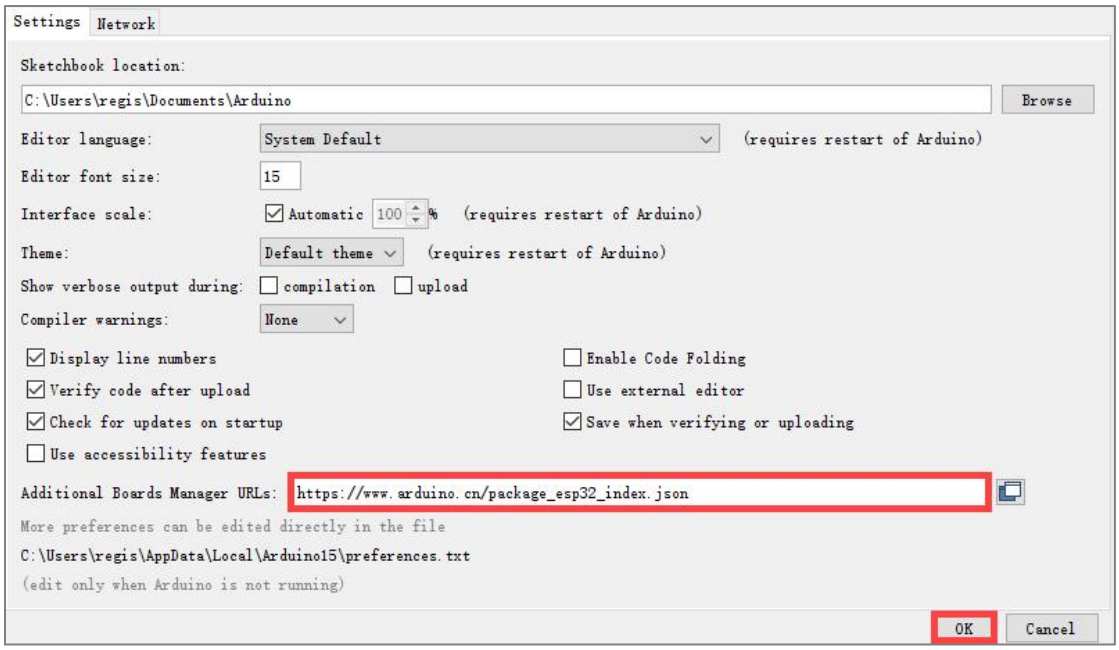
Method 1:

1) Double click on the icon to open the edit interface.

2) Then click “File->Preference”.

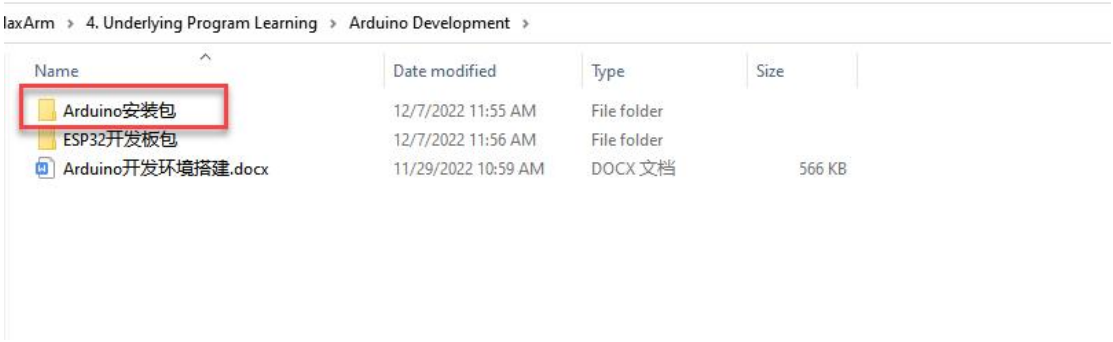


3) In the opened page, find to the box “Additional Board Manager URLs” and paste the link “https://www.arduino.cn/package_esp32_index.json”, and then click “Ok”.

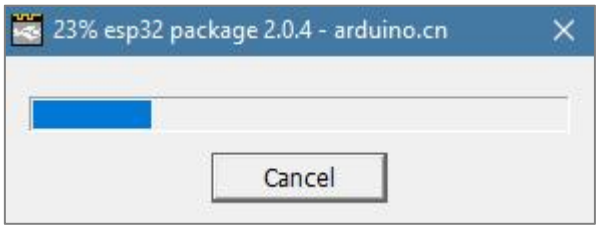


4) Close the current edit interface (Do not skip this step, otherwise you may fail to configure).

5) Find the ESP32 Development Board Package under the same path.



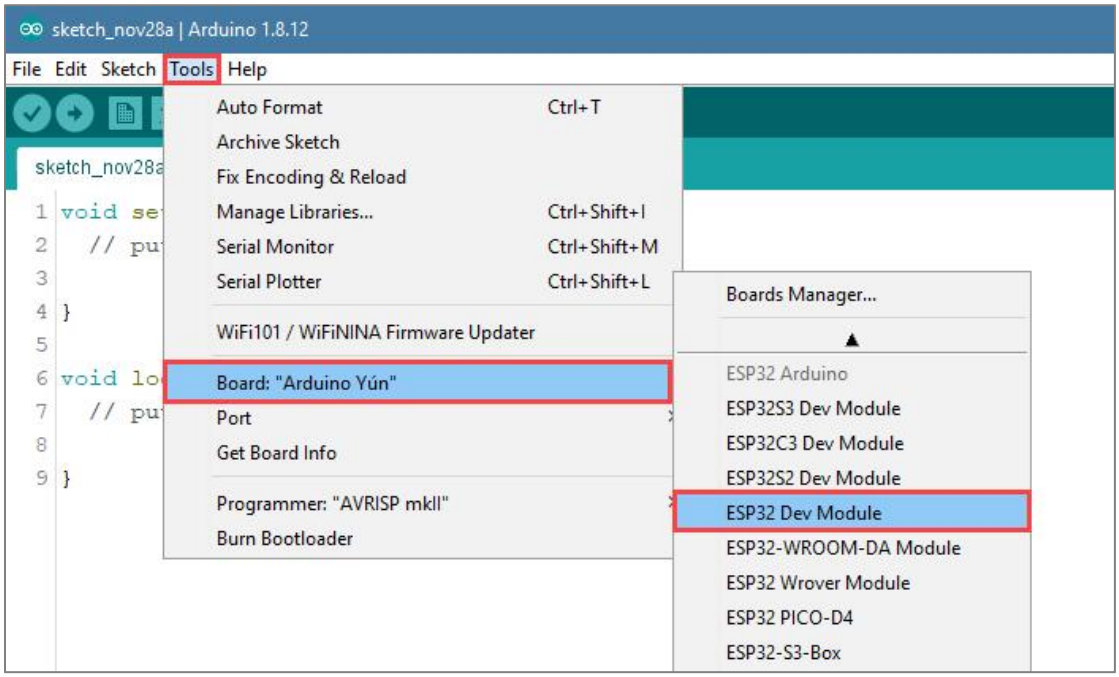
6) Then double click to install.



7) Wait for the installation to complete, double click top open Arduino software.

(If it has been opened already, please close and open it again)

8) Click “Tool”, and then select “ESP32 Dev Module” in the boards options.



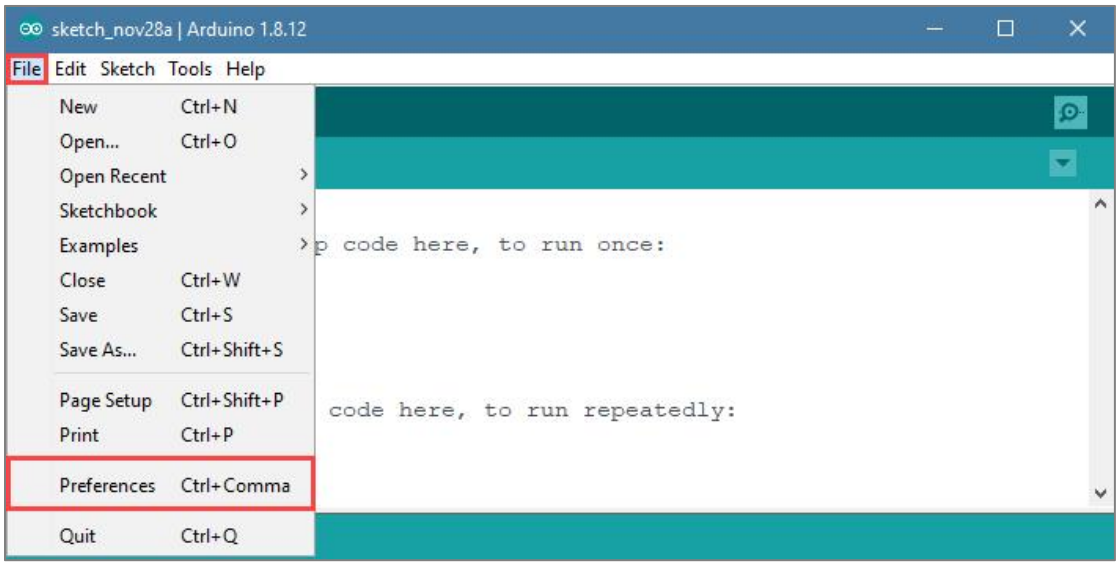
All the configurations have been done till now.

After configuring, the ESP32 development board shown in the above figure can not be found when closing and opening the programming interface again. Please repeat the above steps.

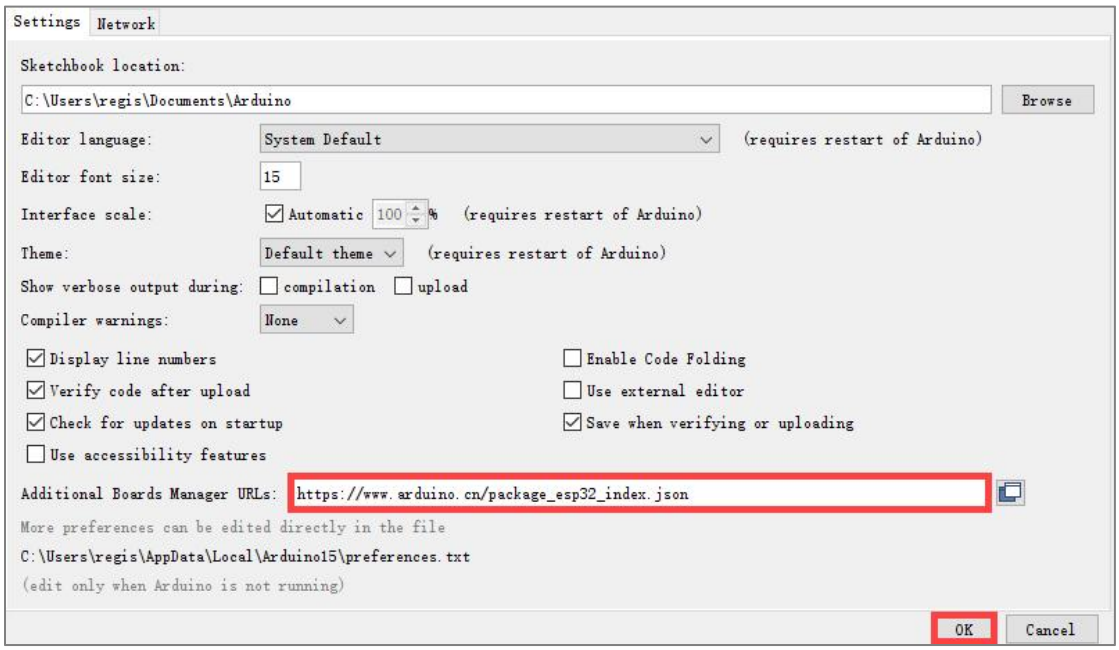
Method 2:

1) Double click to open the programming software.

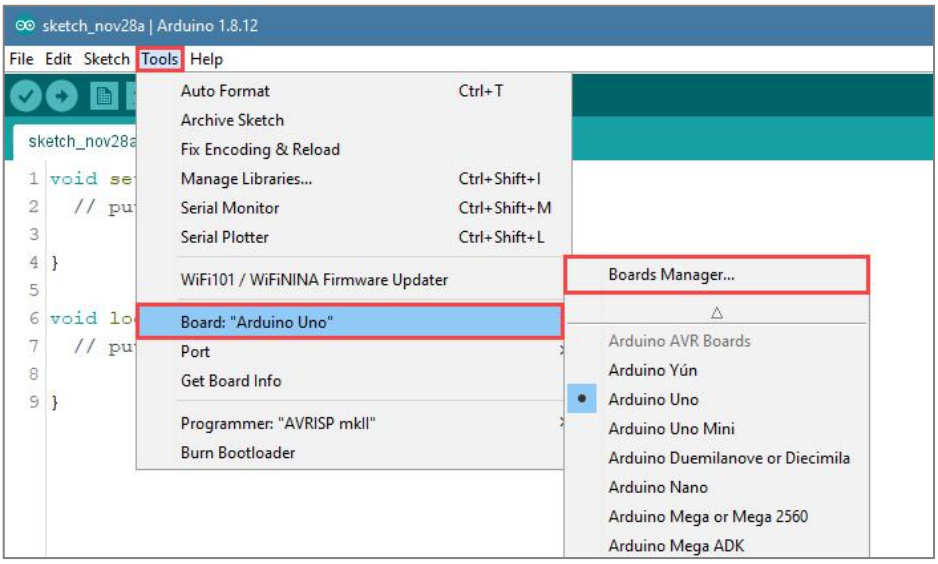
2) Then click “File->Preference” in sequence.



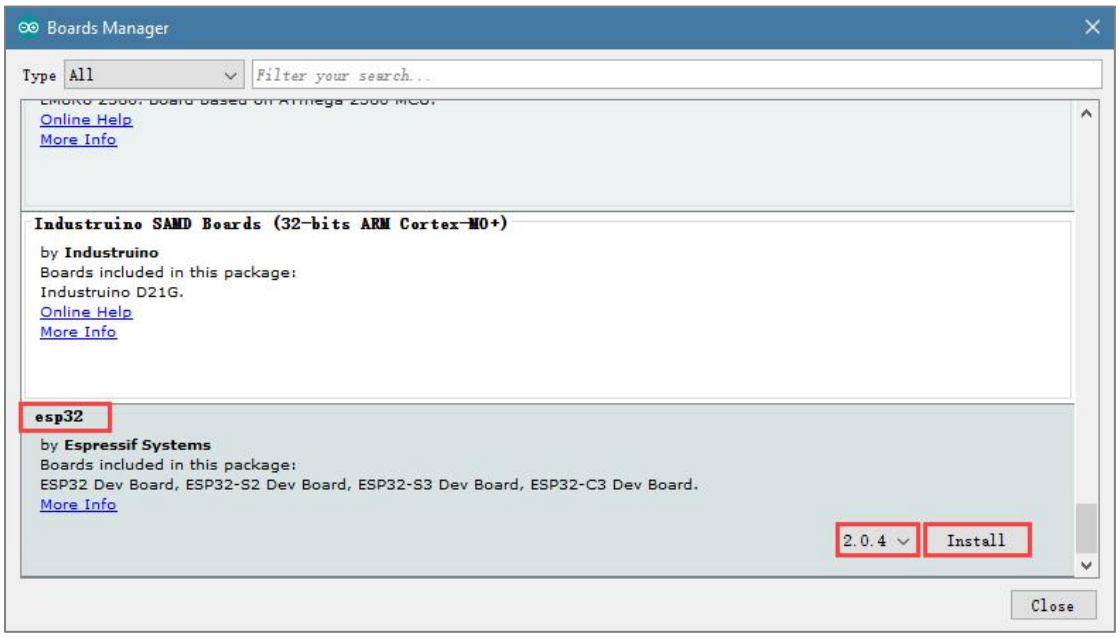
3) In the opened page, find to the box “Additional Board Manager URLs” and paste the link “https://www.arduino.cn/package_esp32_index.json”, and then click “OK”.



4) Then click “Tool-> Board->Boards Manger”.



5) Scroll down to find esp32 and select the version of development board package in the drop-down list of the version options (it is recommended to select the version above 1.0.5, and here take 2.0.4 version as an example), and then click “Install”.



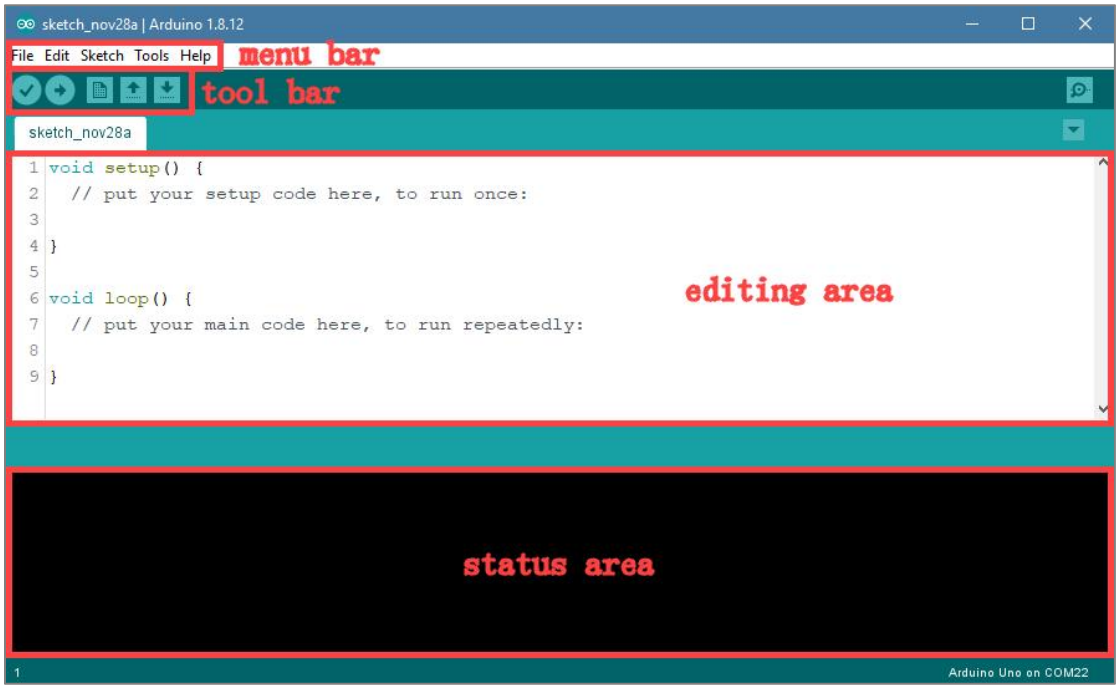
6) After installing, click “Close”. (It need to take some time to install, please wait patiently. If fail to install, you can repeatedly click “Install”.)

2. Open Project

2.1 Arduino IDE Interface

1) Double click to open Arduino IDE.

The interface of Arduino interface is as follow:



Menu bar: it includes File, Edit, Sketch, Tools and Help.

Tool bar:

Icon	Function
	Compile
	Upload button is used for downloading the program to the controller
	Create new program

	Open program
	Save sketch
	Serial monitor is used for viewing the printed content and feedback information

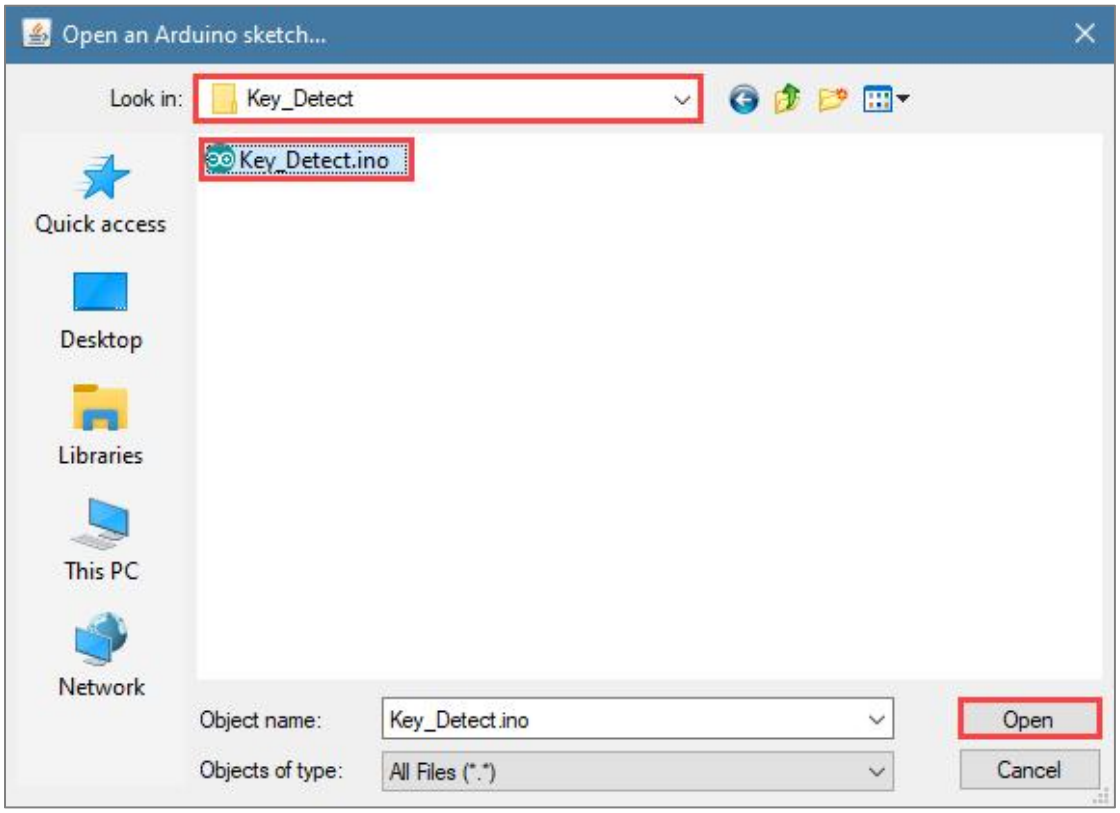
Editing area: write the program.

Status area: Displays the information such as program compilation and upload. If the program fails, you can scroll up to view the cause of the error.

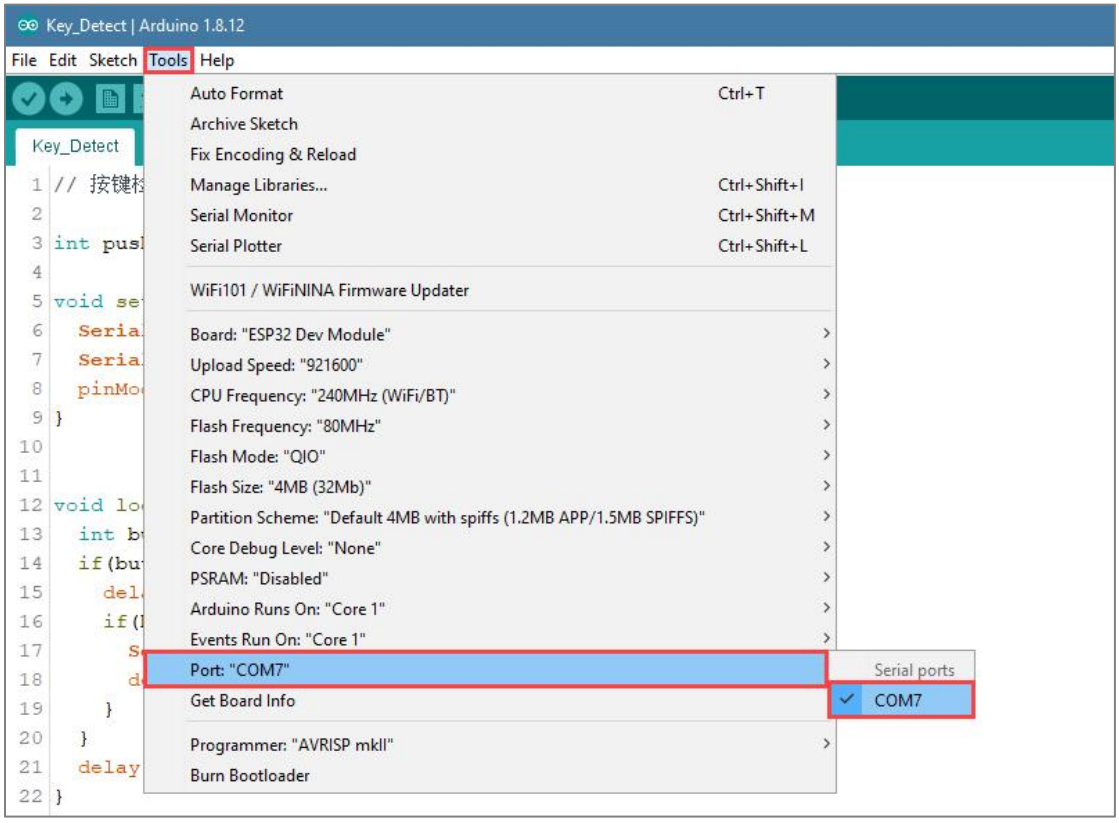
2.2 Compile and Download Program

1) Click “File-> Open”.

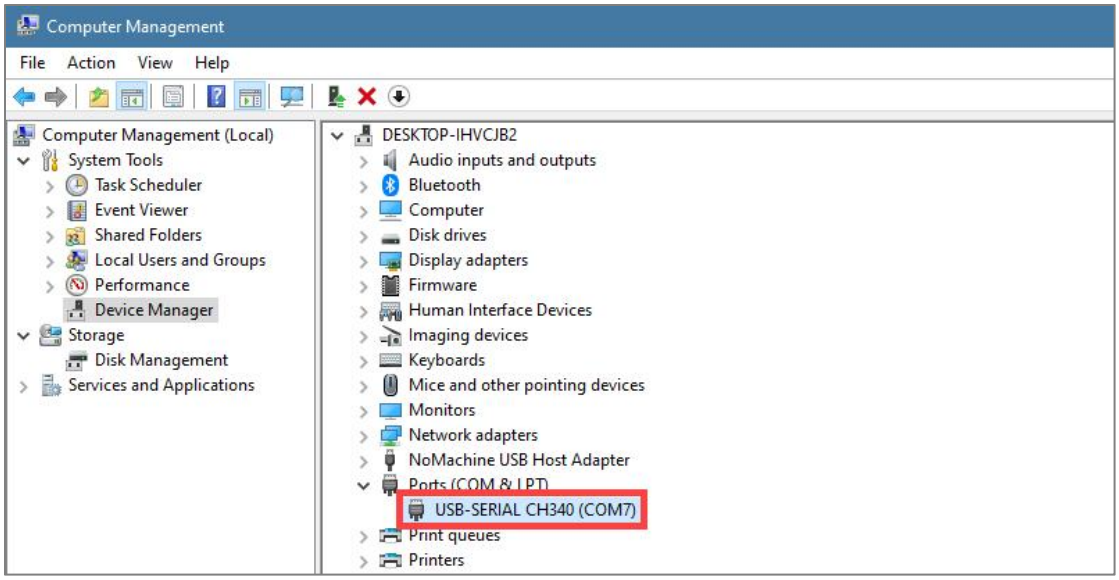
2) Please go the folder “5. MaxArm Hardware Basic Learning/Arduino Development/ Game Programs” or “Appendix/6.Hardware Basic Programs/Arduino Development”, and select the game program suffixed with ".ino".



3) Then select the port number in the interface of the opened program. (Here take the port “COM3” as example. Please select the port based on your computer. If COM1 appears, please do not select because it is the system communication port but not the actual port of the development port.)

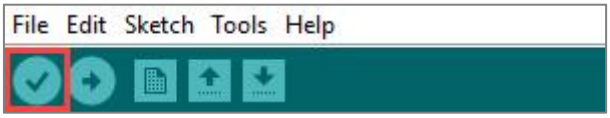


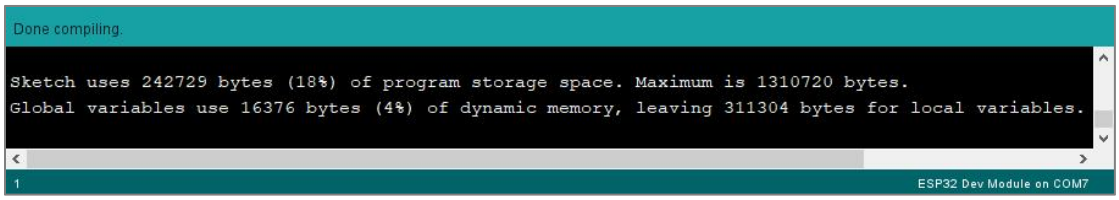
4) If you are not sure the port number, please open the “This PC” and click “Properties->Device Manger” in turns to check the corresponding port number.



5) After setting, click on the verify icon in the upper left corner. If the program is correct, wait for a while, the prompt “Compile complete” will appear in the lower left corner. In the meantime, the information such as the current

used bytes, and occupied program storage space will be displayed in the debug prompt area.





6) After compiling, click on upload icon. Then check the prompt in the lower left corner.