First of all, you need to assemble the car and connect the lines correctly according to the assembly manual or video.

Next, follow the tutorial below to create a programming environment correctly.

1. Install the Arduino IDE

Arduino software

The Arduino Integrated Development Environment (IDE) is the software side of the Arduino platform. Used to write and upload code to the dashboard . Follow the tutorial to install the Arduino software (IDE) .

1.1 Enter the Arduino software official website

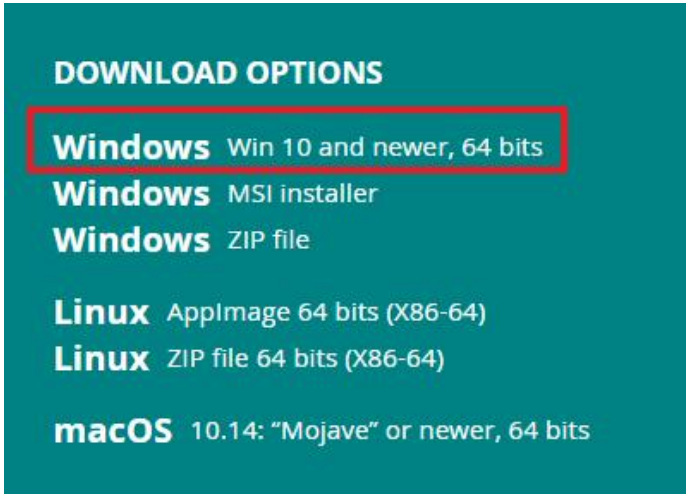
Enter in the browser and click to go to https://www.arduino.cc/en/software webpage, you can see the following webpage

location:

(Here, take win10 system to install version 2.0.0 IDE as an example. For lower systems, please slide the webpage below to install version 1.8.X software. At the same time, when you see this tutorial, there may be a newer version on the website!)

1.2 Select the system version for software adaptation

Select the development software compatible with your computer system to download, here take Windows 10 as an example.

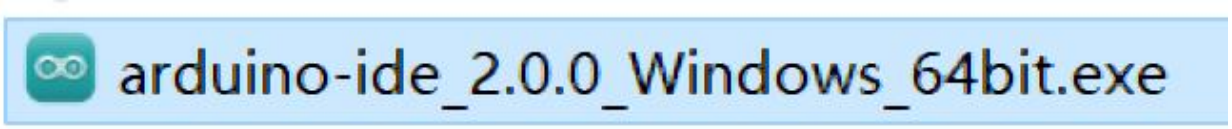


You can choose between an installer (.exe) and a Zip package. We recommend that you use the first "Windows Win10 and newer" to directly install everything you need to use the Arduino software (IDE), including drivers. Whereas with the Zip package, you need to install the drivers manually. Of course Zip files are also useful if you want to create a portable installation.

Click "Windows Win10 and newer"

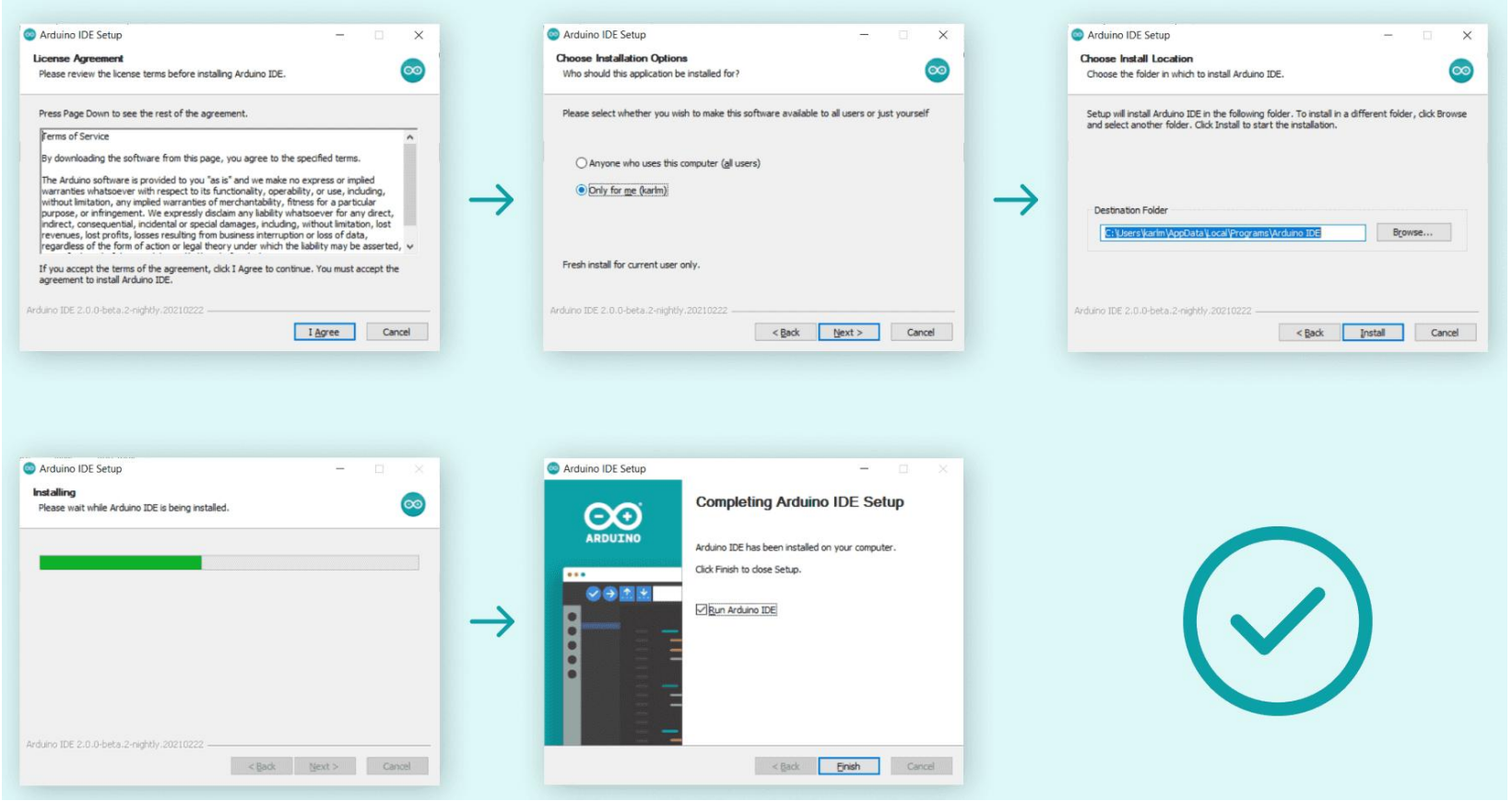
Click "JUST DOWNLOAD".

After the download is complete, you will get the installation package file with the suffix "exe"



1.3 Formal installation of Arduino IDE

Double click to run the installer

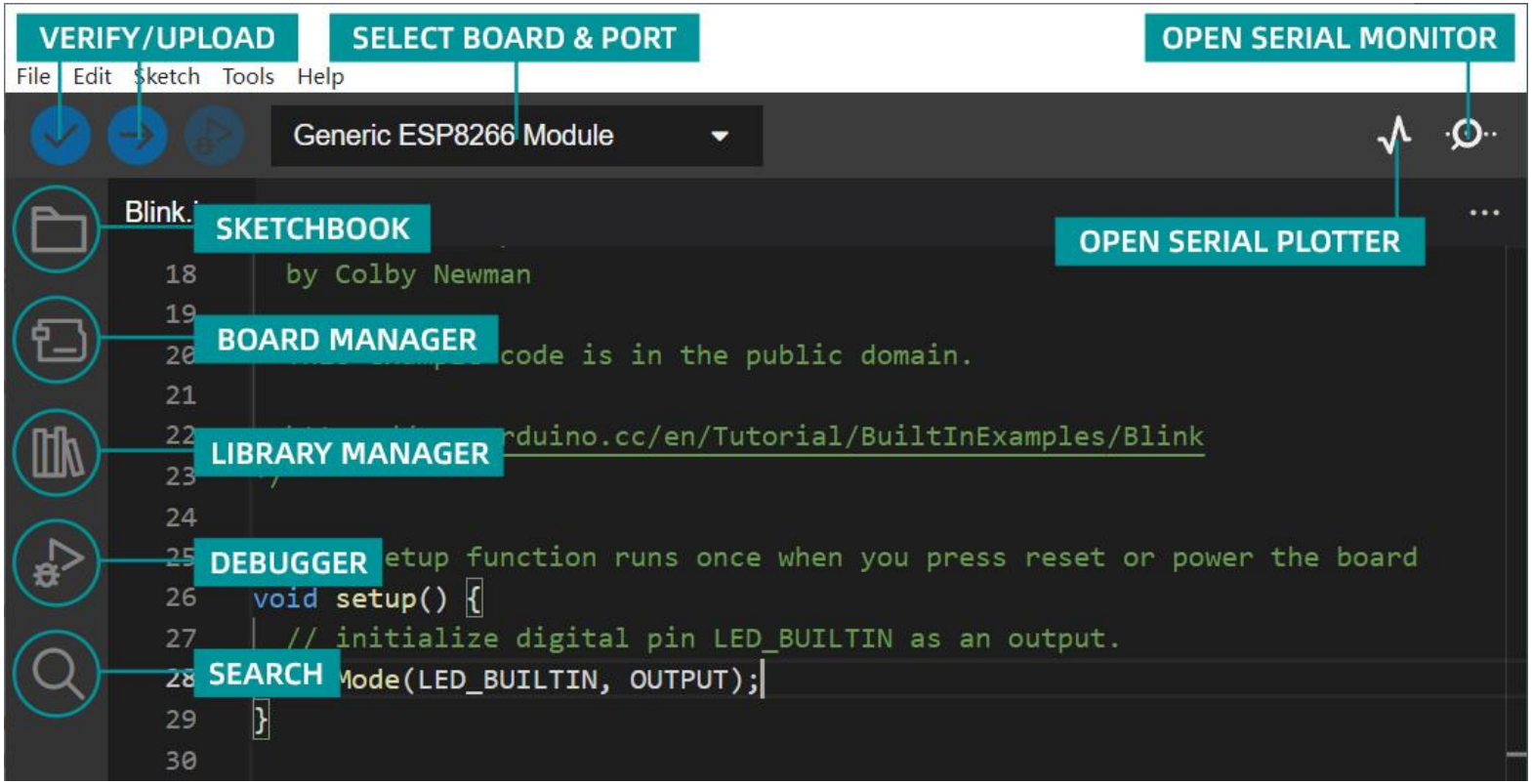


You can press "Browse..." to select the installation path or directly enter the directory you want. Then click "Install" to install. (For Windows users, a driver installation dialog box may pop up during the installation process , when it pops up, please allow the installation)

shortcut to the Arduino IDE software will be generated on the desktop 

, double-click to enter the Arduino software platform environment .

After the installation is complete, open the software and you can see the software platform interface as shown below (different versions of the interface will be different):



Each area\button function:

compile /upload - compile and upload your code to your Arduino board

Select board type and port number - .The detected Arduino board and port number will be displayed here automatically

Project Sketches - Here you will find all your sketches stored locally on your computer. Also, you can sync with the Arduino cloud and get your sketches from the online environment

Board Manager - Browse Arduino and 3rd party packages that can be installed. For example, using the MKR WiFi 1010 board requires the Arduino SAMD Boards package to be installed

Library Manager - Browse thousands of Arduino libraries contributed by Arduino and its community

Debug - Test and debug programs in real time

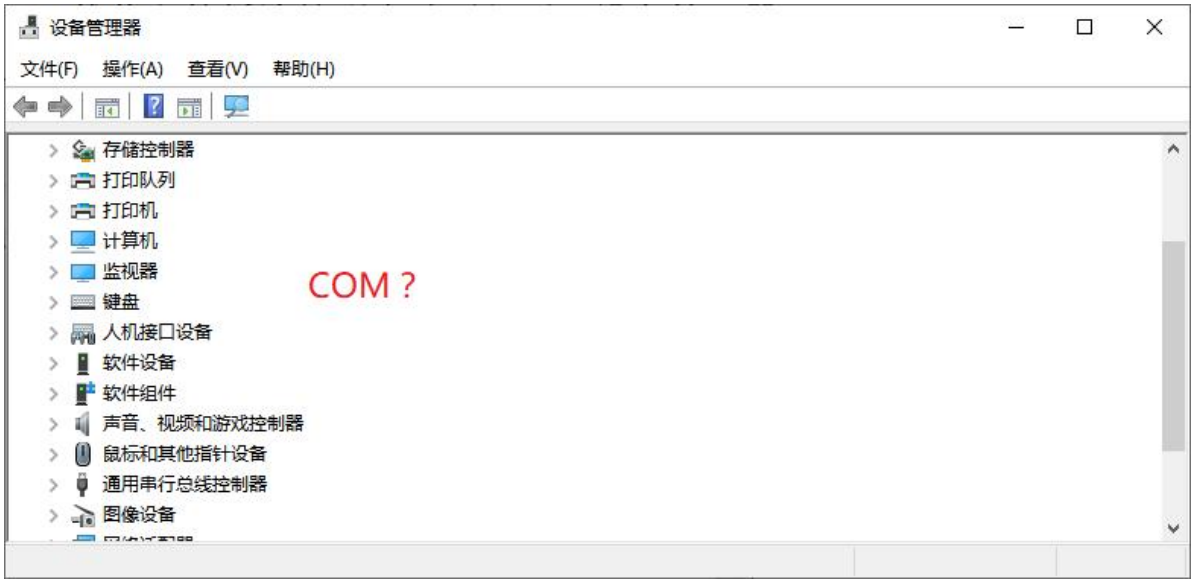
Search - Search for a keyword in the code

Open Serial Monitor - Opens the Serial Monitor tool as a new tab in the console

A program written using the Arduino software (IDE) is called a "Sketch". These "Sketches" are written in a text editor and saved with the file extension " .ino " . It is worth noting that the "ino" file must be saved in a folder with the same name as itself. If it is not in the folder with the same name, it will be forced to automatically create a file with the same name when opening the program .

1.4 Install CH340 driver

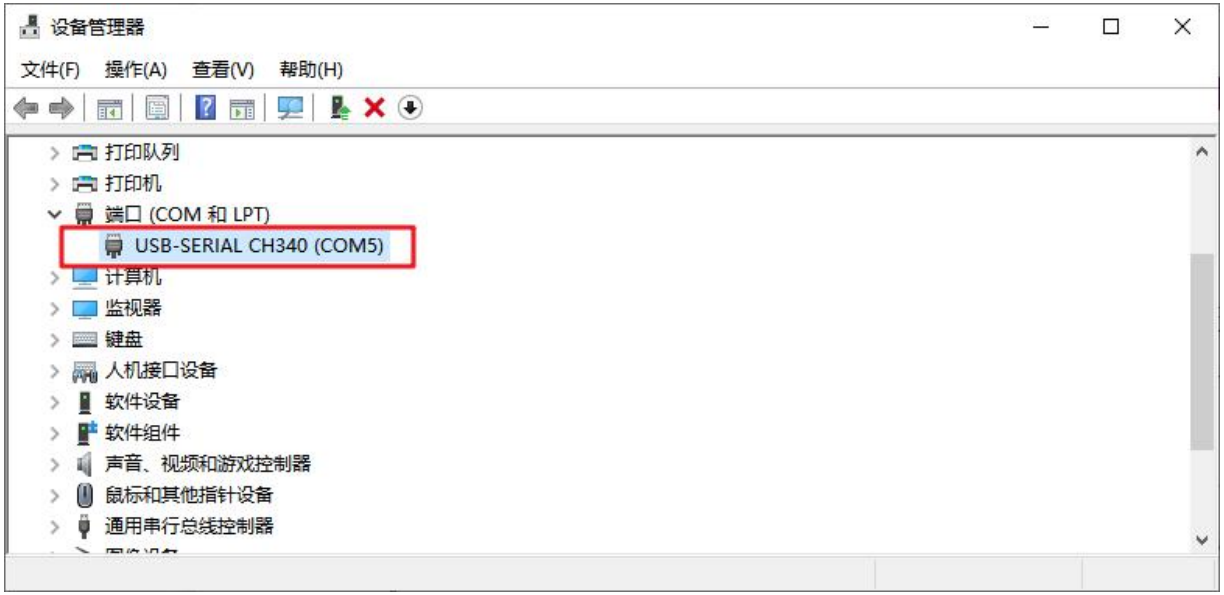
Sometimes the computer lacks the CH340 serial port driver. Use a USB cable to connect the UNO main control board to the computer, and then search and open the "Device Manager". (If you can see CH340 under COM and LPT, you don't need to install it, just skip it)



If you don't see the CH340 serial port in the above picture, you need to install the driver according to the following operations.Open the folder CH340 Driver File-Windows, double-click the exe program installation package of CH340 to

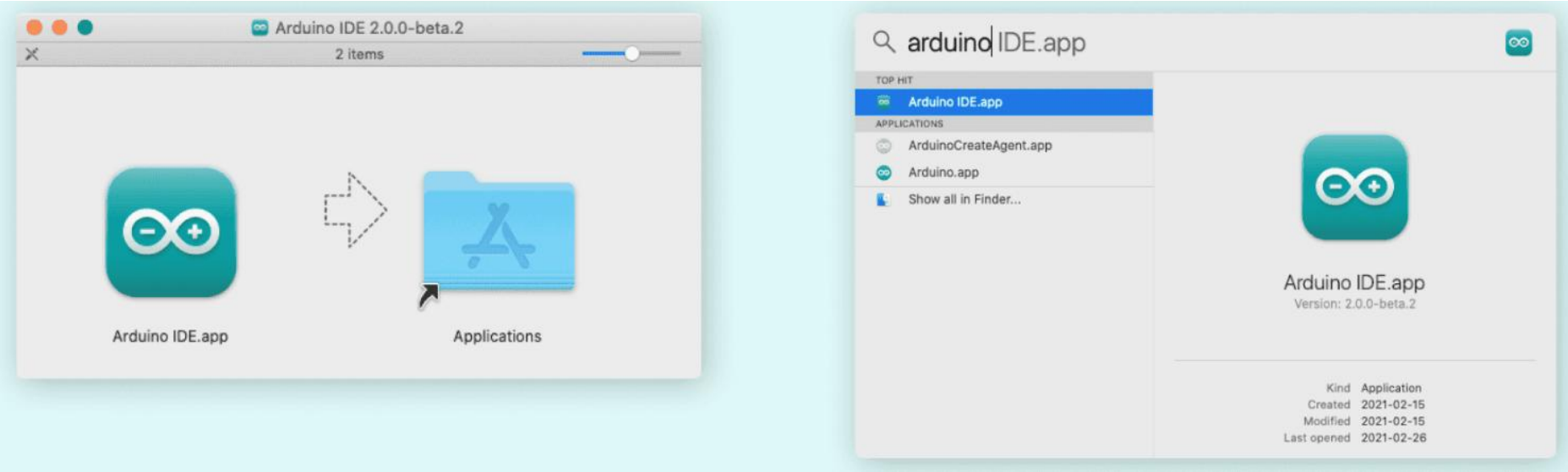
start the installation.

After the installation is complete, you can see that the driver has been displayed in the device manager (make sure the main control board is properly connected to the computer)

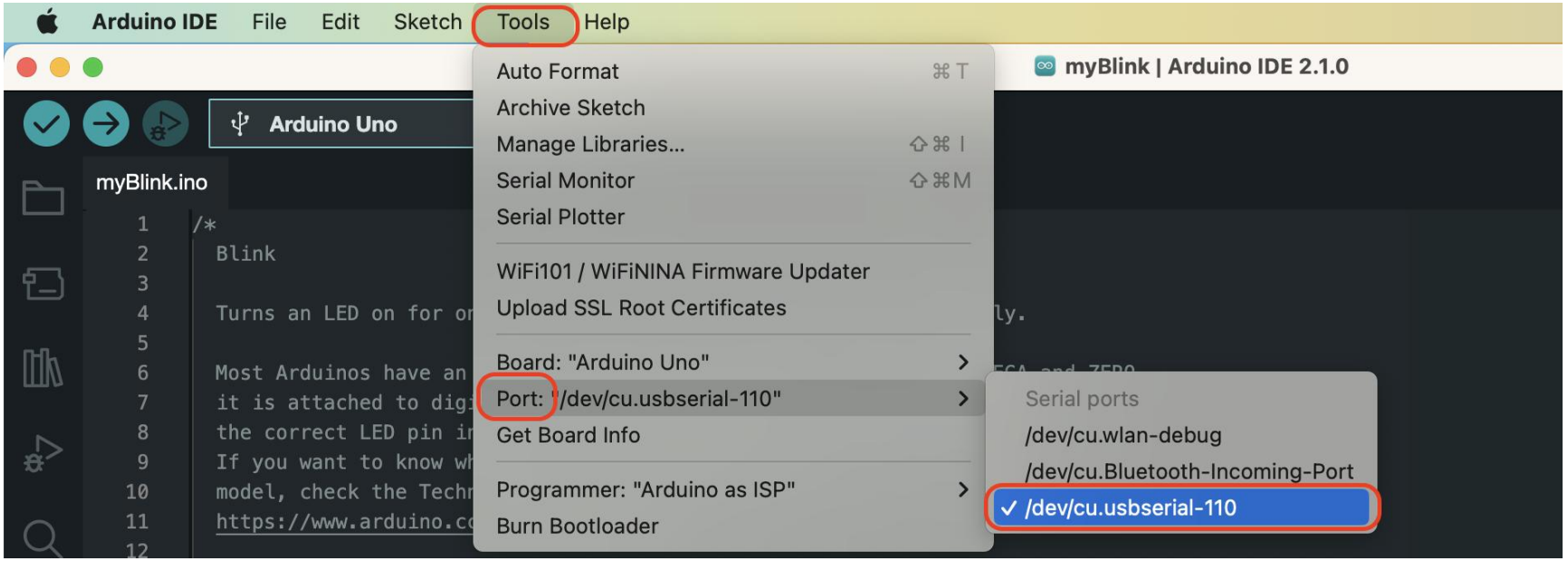


Arduino IDE on Mac OS X

Download and unzip the zip file, double-click Arduino.app to install; if there is no Java runtime library in your computer, the system will ask you to install it, after the installation is complete, you can run the Arduino IDE.

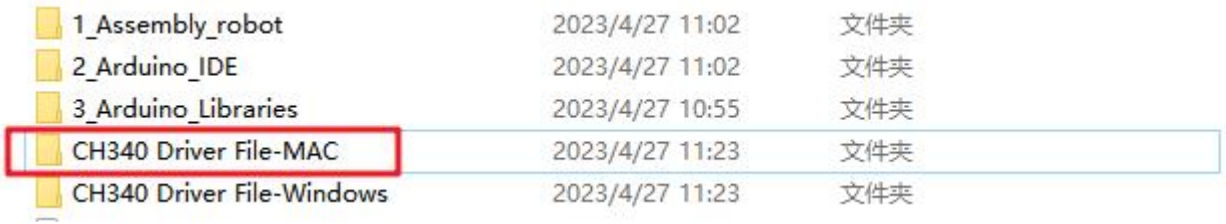


Similarly, when you connect the main control board to the computer with a USB cable, you will find that the software recognizes "USBserial" as shown in the figure below



If you do not see the USB serial port, you need to install the CH340 driver.

Open the folder CH340 Driver File-MAC, double-click to install the pkg file



During the installation process, if the computer prompts that the installation permission is required, you need to go to the

"Security and Privacy" setting to allow the APP from any source

2. Add "Library" in Arduino IDE

(No additional libraries are required for this project, so you can skip this section as an introduction)

2.1 How to install other libraries in Arduino IDE

Once you're familiar with the Arduino software and using the built-in functionality, you may wish to extend the capabilities of the Arduino with additional libraries.

2.2 What is Libraries (library)?

A library is a set of code that allows you to easily connect to sensors, displays, modules, and more. For example, the LiquidCrystal library allows you to easily interact with character LCD displays. There are thousands of libraries available for download directly through the Arduino IDE, and you can find them all in the Library Manager.

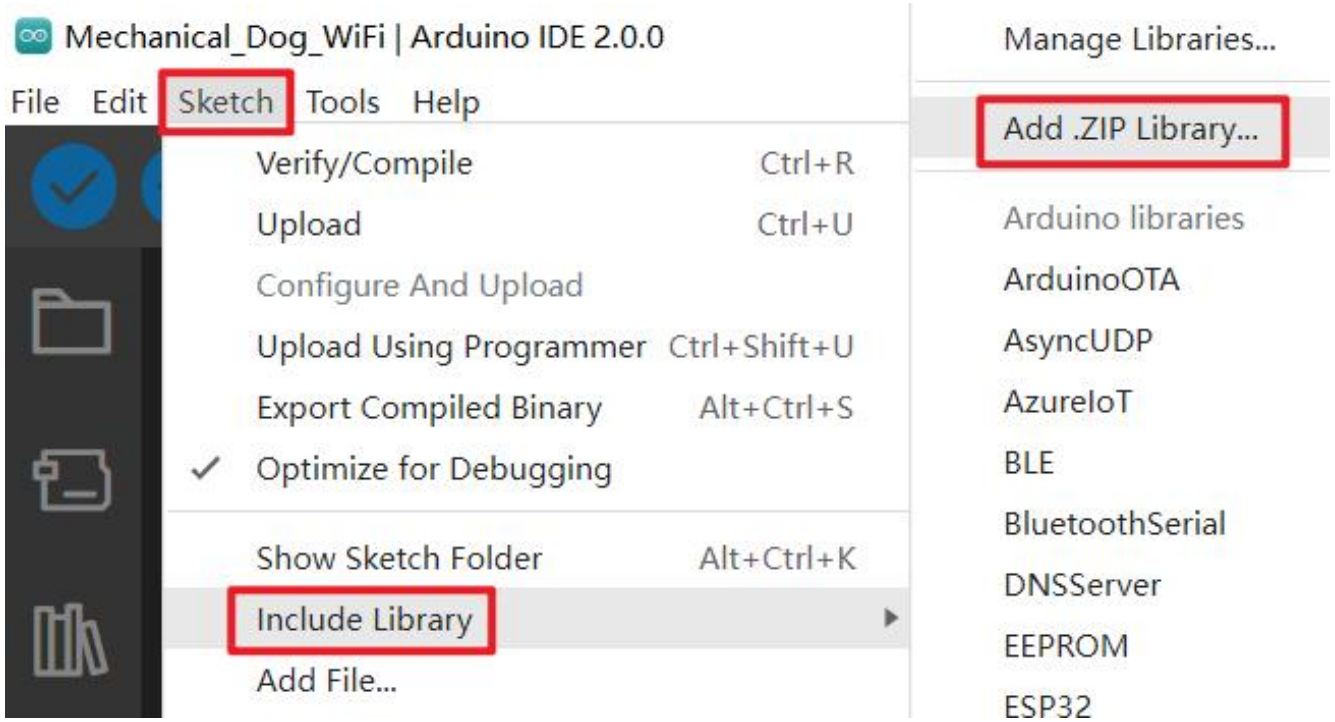
2.3 Method: Import the .zip library

Libraries are usually distributed as ZIP files or folders. The name of the folder is the name of the library. Inside this folder

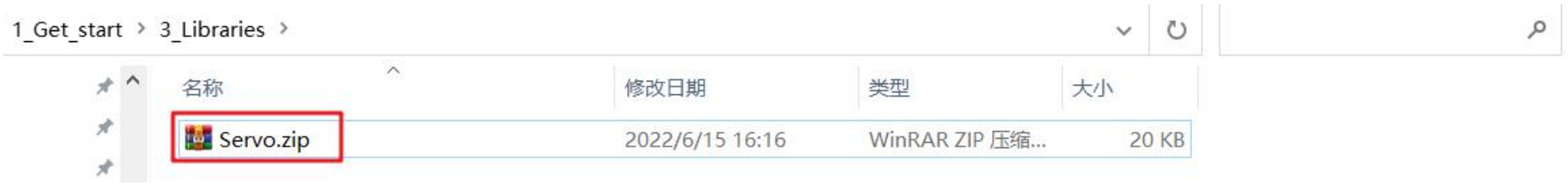
will contain a .cpp file, a .h file and usually a keywords.txt file, examples folder and other files required by the library.

Starting with version 1.0.5, you can install 3rd party libraries in the IDE. Do not unzip the downloaded library.

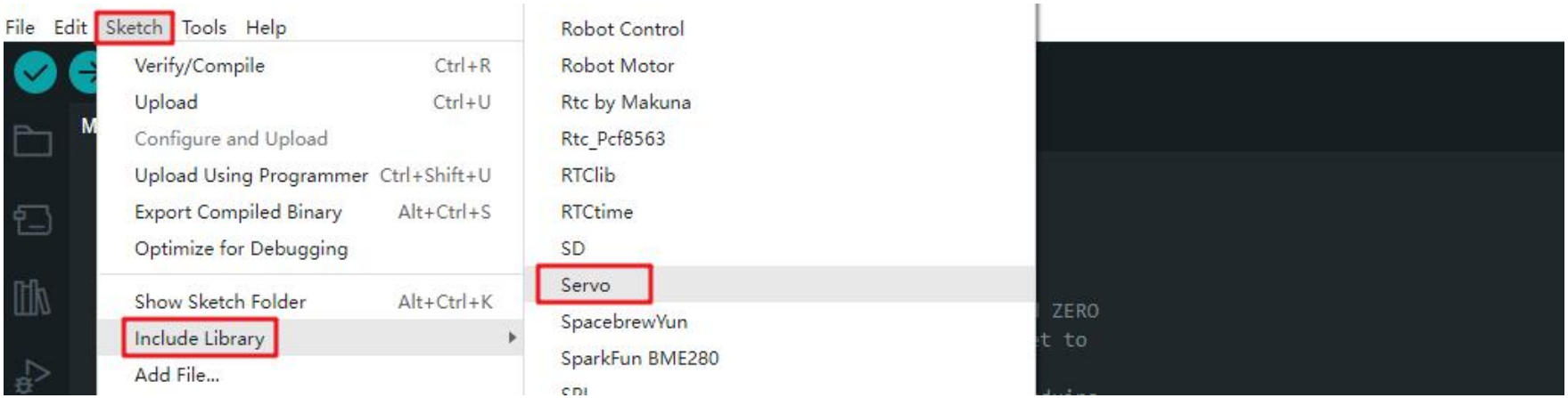
In the Arduino IDE, navigate to Sketch > Include Library > Add .ZIP Library and at the top of the dropdown, select the "Add .ZIP Library" option.



The system will prompt you to select the library to add , navigate to the path location of the saved *servo* .zip file in the computer (*1_Get_start\3_Libraries\servo.zip*) as shown in the figure below and open it .



Open the Sketch > Include Library menu. You should now see Libraries at the bottom of the drop-down menu. It's ready to use in your sketches .

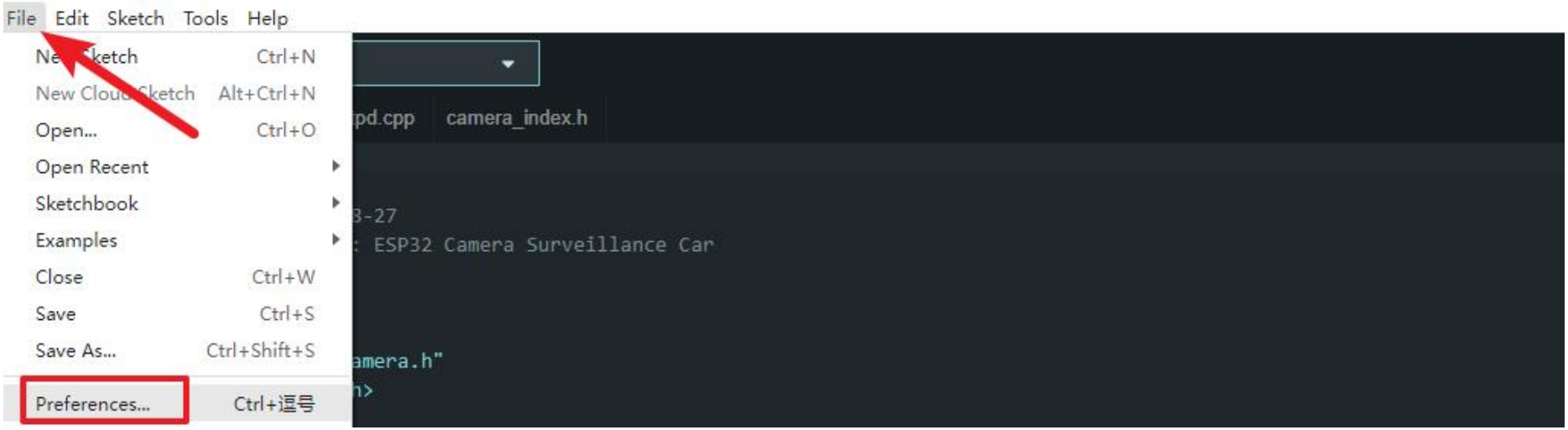


This method can be used to add the required native libraries to the Arduino IDE.

3. Add ESP32 board in Arduino IDE

3.1 Add board resource connection in "Preferences"

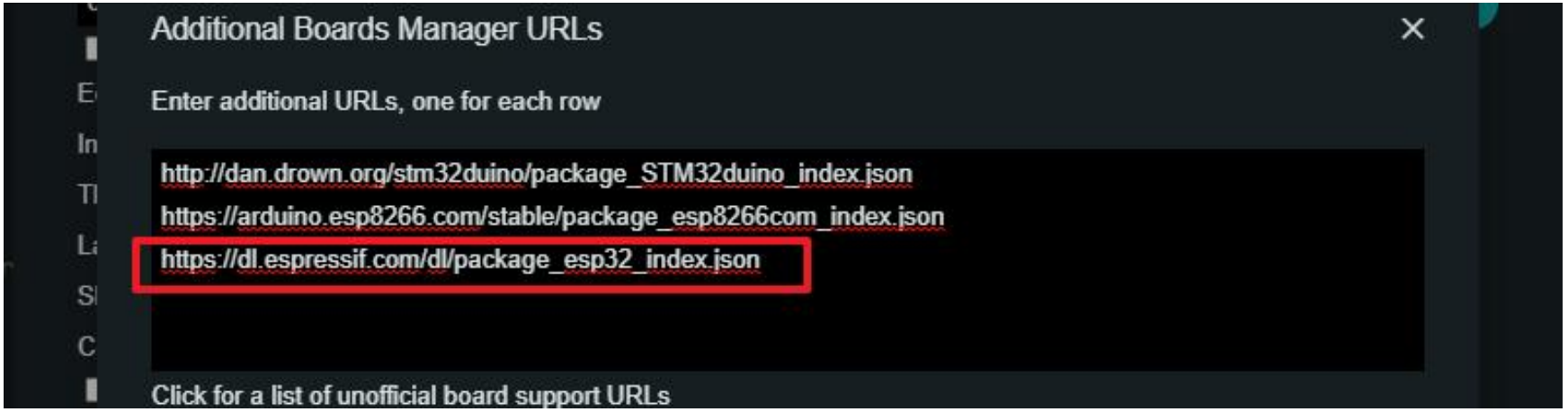
Click "File" in the IDE, and then enter "Preferences"



Copy and paste the following resource links to "Board Management URLs", and click OK to save after completion

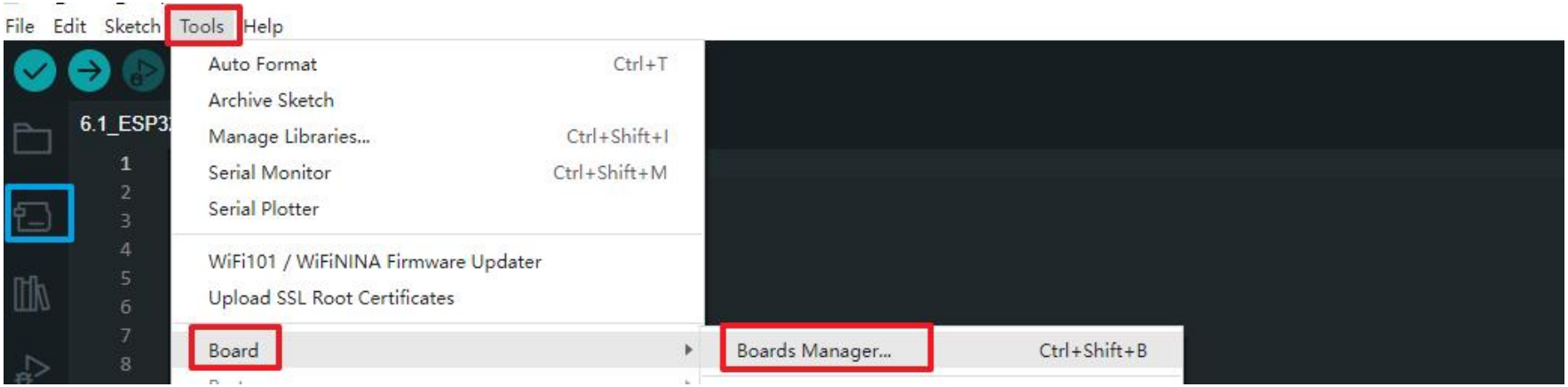
https://dl.espressif.com/dl/package_esp32_index.json


Sketchbook location:
d:\Arduino
BROWSE
Show files inside Sketches
Editor font size:
14
Interface scale:
Automatic
100
%
Theme:
Dark
Language:
English
(Reload required)
Show verbose output during
compile
upload
Compiler warnings
None
Verify code after upload
Auto save
Editor Quick Suggestions
Additional boards manager URLs:
http://dan.drown.org/stm32duino/package_STM32duino_index.json,https://arduin

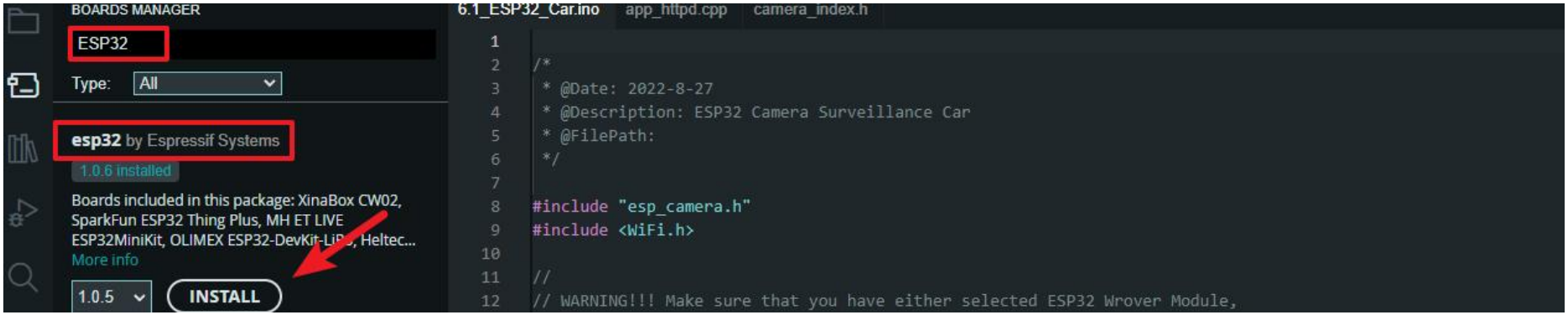

Additional Boards Manager URLs
Enter additional URLs, one for each row
http://dan.drown.org/stm32duino/package_STM32duino_index.json
https://arduino.esp8266.com/stable/package_esp8266com_index.json
https://dl.espressif.com/dl/package_esp32_index.json
Click for a list of unofficial board support URLs

3.2 Search ESP32

opens directly from the "Board Management" icon on the left)



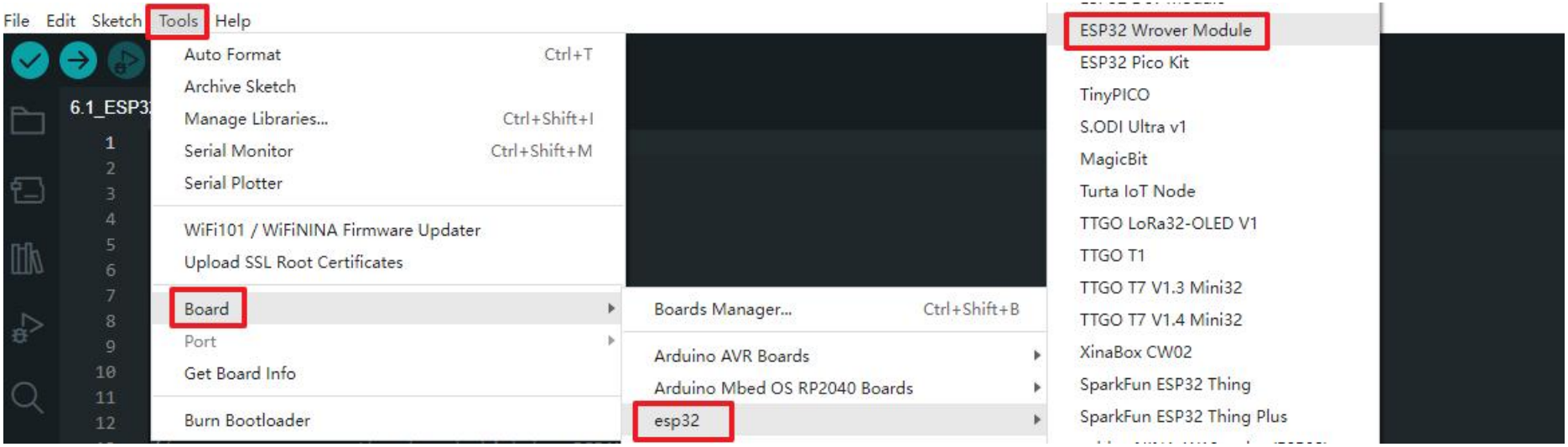
Enter "ESP32" in the search bar and click "install" to install



Make sure the network is smooth and wait for the installation to complete.

3.3 Check that the board is installed successfully

You can see that "esp32" appears under "Board"



So far, you have completed the creation of the programming environment!