

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.

💿 Arduino Setup: Installati	on Options	8 <u>-</u>		×
Check the components you don't want to install	you want to install an . Click Next to contin	d uncheck the ue.	e compone	ents
Select components to install:	 ✓ Install Arduin ✓ Install USB dr ✓ Create Start ✓ Create Deskt ✓ Associate ,in 	river Menu shortcu top shortcut	ıt	
Space required: 535.3MB				
Cancel Nullsoft Insta	all System v3.0	< <u>B</u> ack	Nex	t >

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

Arduino Setup: Installation Folder	87 <u>-</u>		\times
Setup will install Arduino in the following folde folder, click Browse and select another folder installation.			
Destination Folder	_		
C:\Program Files (x86)\Arduino		Browse	·
Space required: 535.3MB			
Space available: 30.8GB	10	_	
Cancel Nullsoft Install System v3.0	< Back	Inst	

6) Wait for the installation to complete.

8 	\times

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

Windows Security		×
Would you like to install this device softwa	re?	
Name: Adafruit Industries LLC Ports (COM & Publisher: Adafruit Industries	2 LPT	
Always trust software from "Adafruit Industries".	Install	Do <u>n</u> 't Install
You should only install driver software from publish which device software is safe to install?	ners you trust. <u>I</u>	<u>How can I decide</u>

8) After the installation is completed, click "Close".

Arduino Setup: Completed	8 <u>—</u>		\times
Completed			
Show details			
	a peak	cla	
Cancel Nullsoft Install System v3.0	< <u>B</u> ack	Clo	se



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:

lcon	Function
0	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
Ø	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".

Select a zip f	ile or a folder conta	ining the library you'd like to add			
Look in:	📙 libraries		~	🧊 📂 🛄 -	
Recent Items	U8g2				
Desktop					
Documents					
This PC					
	File name:	U8g2.zip			Open
	Files of type:	ZIP files or folders		~	Cancel

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.

🧐 sketch_may13a Arduino 1.8.12 —	×
File Edit Sketch Tools Help	
	ø
sketch_may13a	
1 void setup() {	^
2 // put your setup code here, to run once:	
3	
4 }	
5	
6 void loop() {	
7 // put your main code here, to run repeatedly:	
8	
9 }	
	 ~
Library added to your libraries. Check "Include library" menu	
	_

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

4. Compile and Upload Program

 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".

	Size all columns to fit urrent view	Hidde	en items Show/hide	Hide selected items	Option •
sketch_may ile Edit Sketch	18a Arduino 1.8.12 1 Tools Help	1998-599 1998	27 <mark>0800 - 2007 191</mark>	8 <u>-</u> 1	
90 🖬					Ø
🛓 Open an Ari Look in:	I and the second s	~	⊚ ₫ 🕫 🛄 -		
Recent Items Desktop Documents This PC	Name distance.ino Ultrasound.cpp Ultrasound.h		Date modified 06/05/2021 15:27 06/05/2021 15:27 06/05/2021 15:27	Type Arduino file CPP File H File	Size 3 Ki 3 Ki 2 Ki
	Object name: U Objects of type: All Files (*.*)				

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.)

16		Auto Format	Ctrl+T		Ð
-		Archive Sketch			
dista	ince Ul	Fix Encoding & Reload			
1	#includ	Manage Libraries	Ctrl+Shift+I		
2	#includ	Serial Monitor	Ctrl+Shift+M		
3		Serial Plotter	Ctrl+Shift+L		
4 5	Ultraso U8G2_SS	WiFi101 / WiFiNINA Firmware Updater		1	class reset=*/ U8X8_PIN_NONE
6		Board: "Arduino Uno"		>	
7	float d	Port		2	Serial ports
8 9	int i; uintl6_	Get Board Info			COM17 (Arduino Uno)
0	uint16	Programmer: "AVRISP mkII"		>	
1	uint16	Burn Bootloader			

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).

