Add libraries to the Arduino IDE

How to Install Additional Libraries in Arduino IDE 1

Once you are familiar with the Arduino software and use the built-in functions, you may wish to extend the functionality of the Arduino with other libraries.

What are Libraries?

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 talk to character LCD displays.

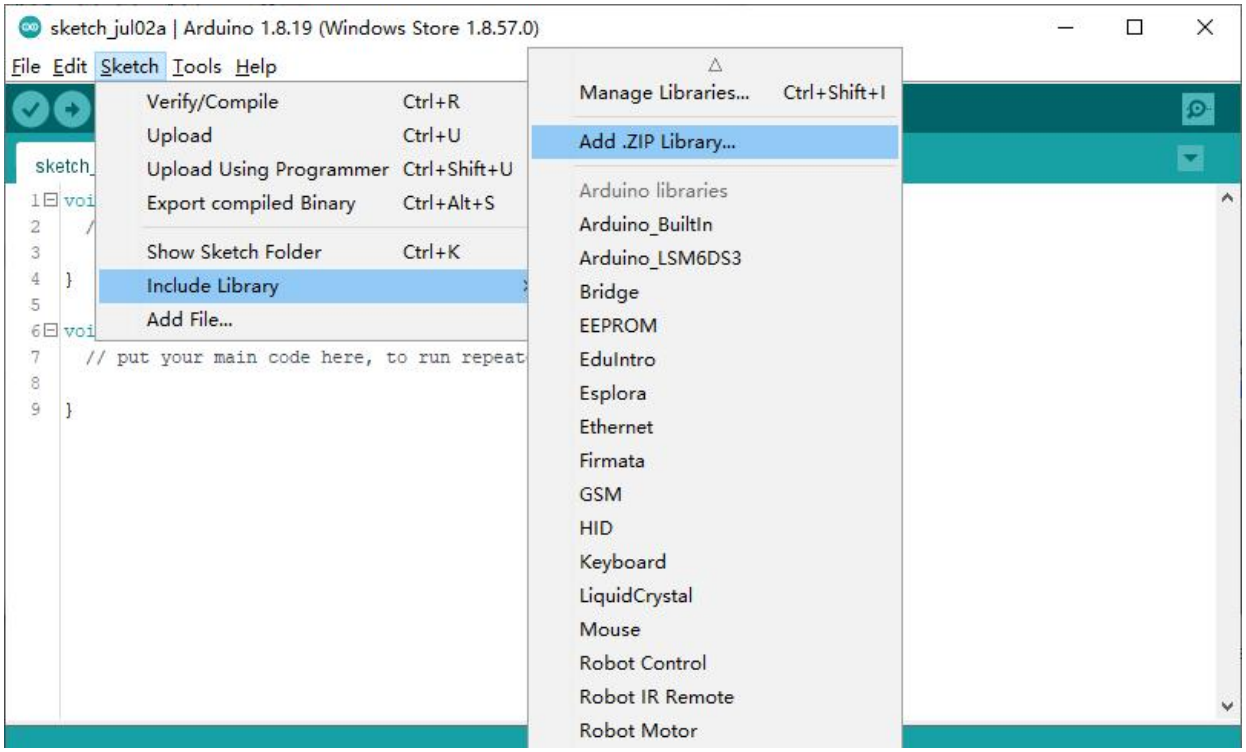
There are thousands of libraries available for download directly through the Arduino IDE, all of which you can find in the Arduino Library Reference .Here are a few different ways to add a library.

Method 1: Import the .zip library

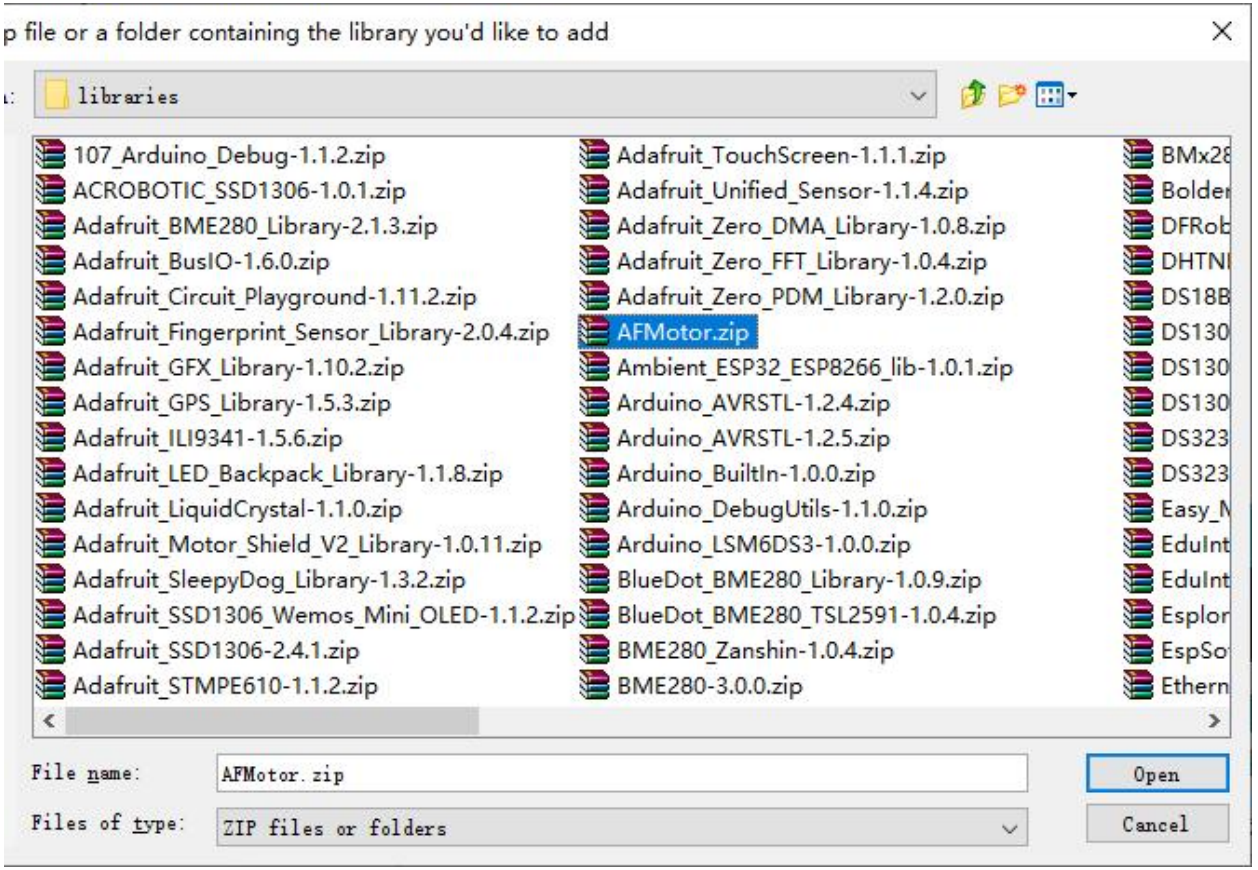
Libraries are usually distributed as ZIP files or folders. The name of the folder is the name of the library. This folder will contain a .cpp file, a .h file, and usually a keywords.txt file, examples folders, and other files needed by the library.

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

In the Arduino IDE, navigate to *Sketch* > *Include Library* > *Add .ZIP Library* , and at the top of the drop-down list, select the "Add .ZIP Library" option.

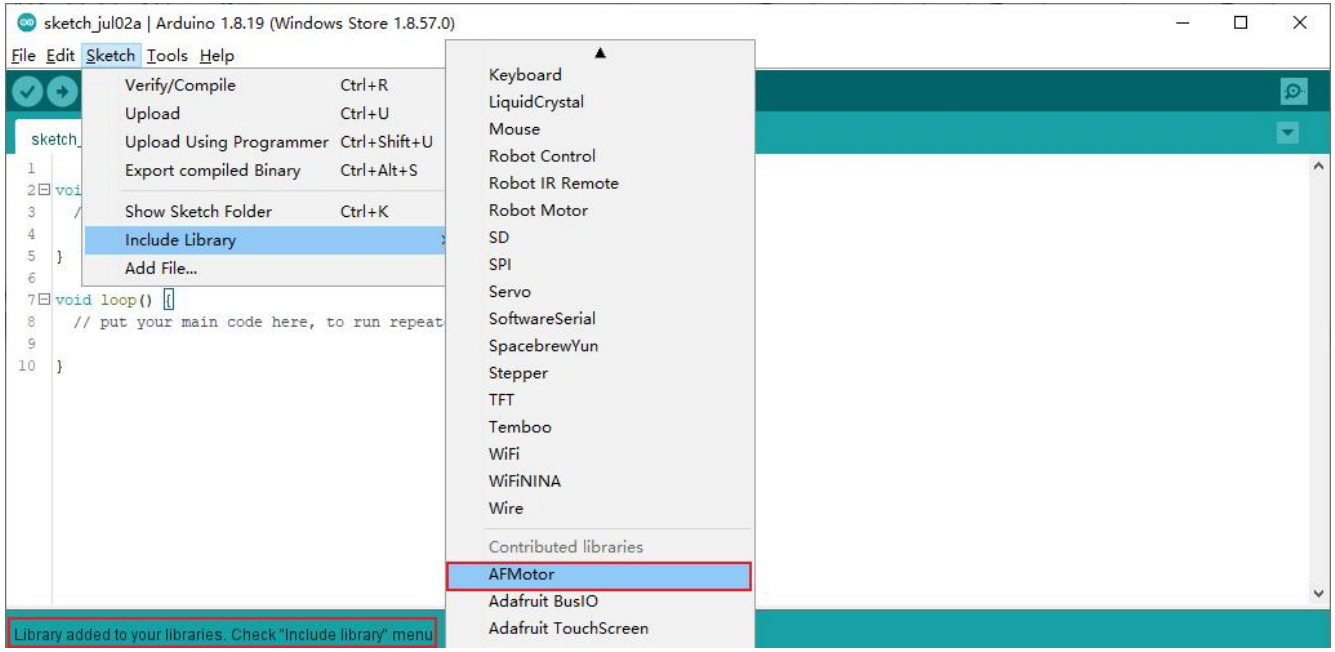


You will be prompted to select the library to add , navigate to the location of the saved .zip file on your computer as shown below and open it . (Here is an example of adding the AFMotor library)



Return to 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 .



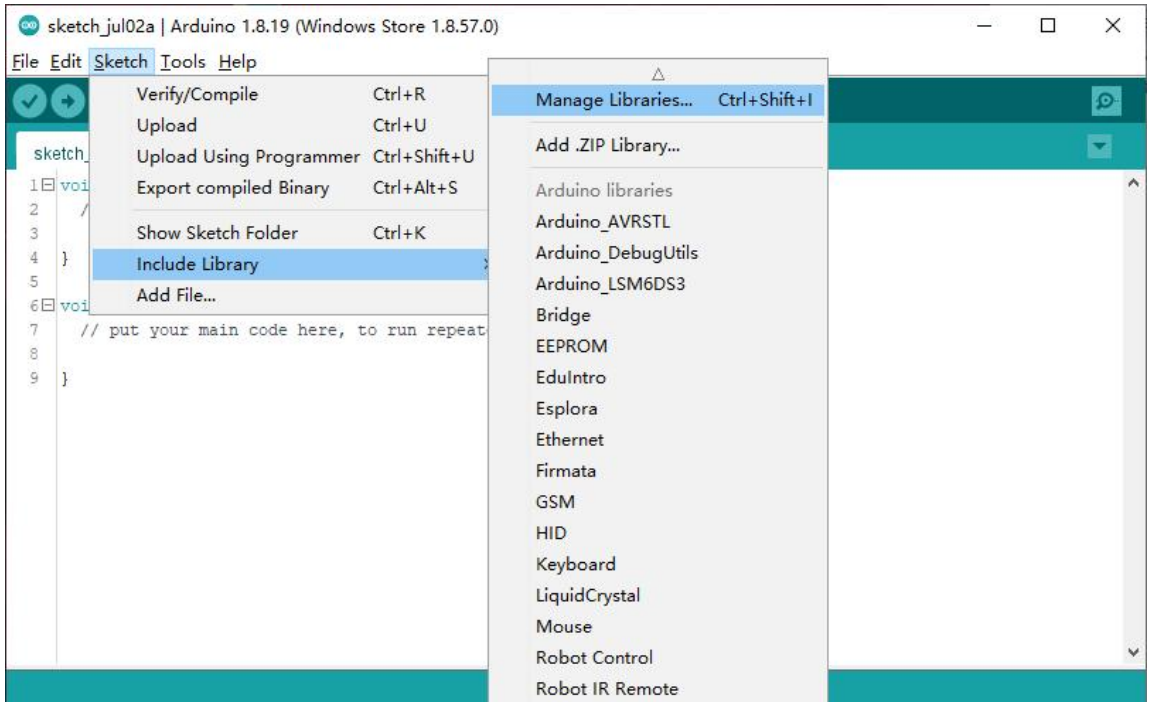
Note: The library will be available for sketches, but with older IDE versions, the library's examples will not be exposed in File > Examples until the IDE is restarted.

Method 2: (This method requires networking) In addition to adding the library that has been prepared, you can also use the library manager to search and download the desired library

Using the library manager

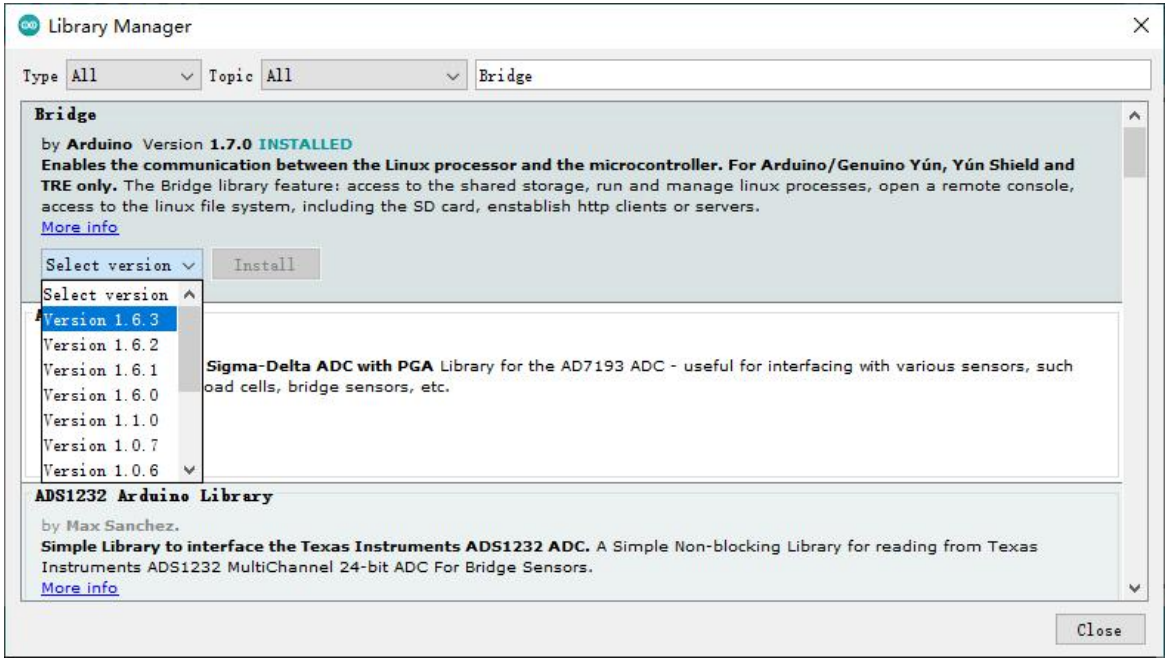
To install new libraries into your Arduino IDE, you can use the library manager (available from IDE 1.6.2 and above).

Open the IDE and click the *Sketch* menu, then *Include Library* > *Manage Libraries*.



The library manager will then open and you will find a list of libraries that are installed or ready to be installed. Here, we take the installation of the Bridge library as an example, and the same is true for installing other libraries. Scroll the list to

find it, click it, and select the version of the library to install, sometimes only one version of the library is available. Don't worry if the version selection menu doesn't appear, this is normal.



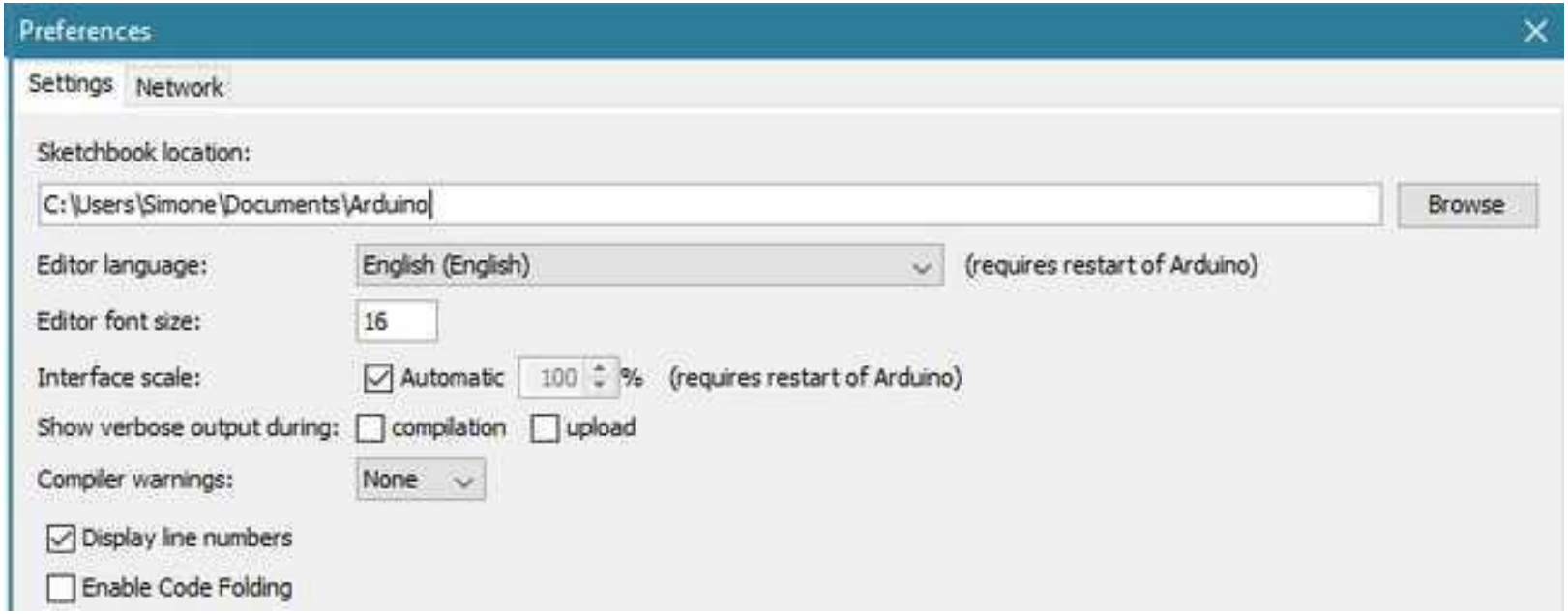
Finally click Install and wait for the IDE to install the new library. The download may take some time, depending on your connection speed. When done, an Installed mark should appear next to the Bridge library, and you can close the library manager.

You can now find new libraries available in the Sketch > Include Library menu. If you want to add your own library to the library manager, follow these instructions .

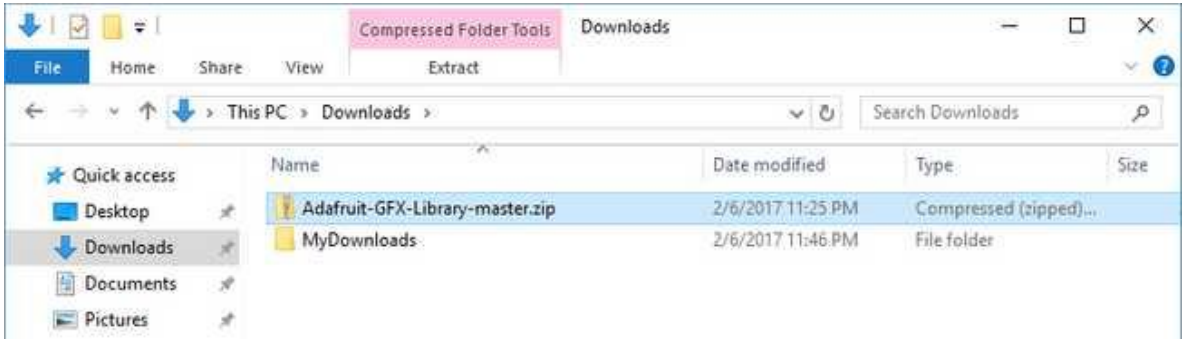
above two methods are the most common, and MAC and Linux systems can also be handled similarly. The alternative described below is probably rarely used and users who don't need it can skip it.

Method 3: Manual installation

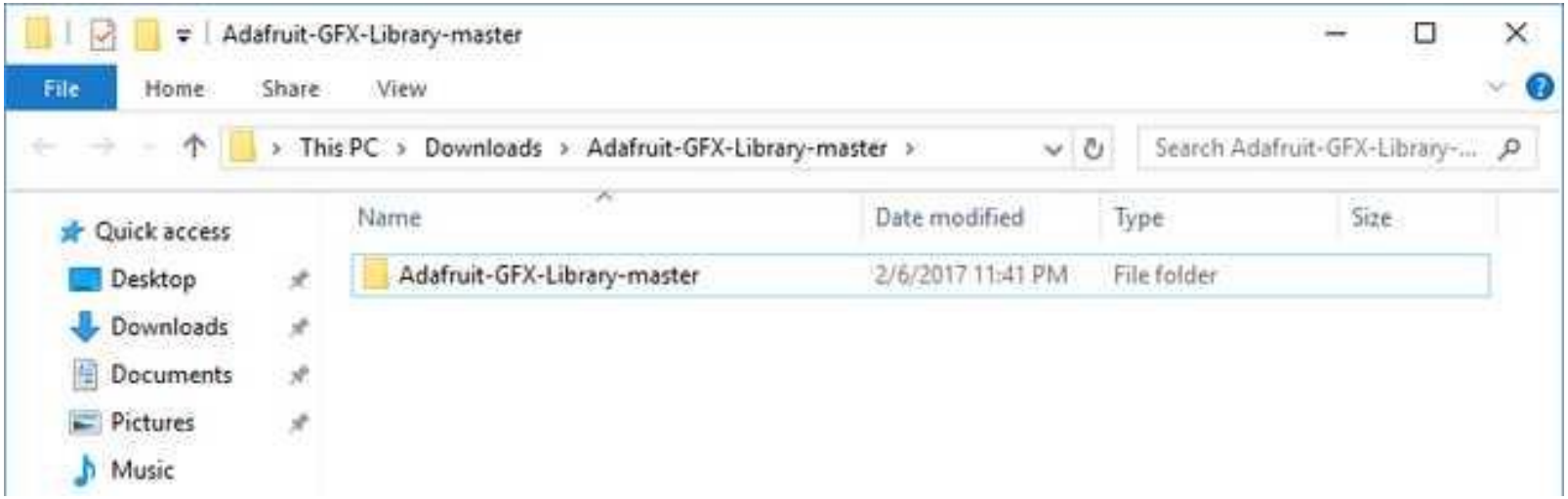
When you want to add the library manually, you need to download it as a ZIP file, expand it and put it in the correct directory. The ZIP file contains everything you need, including usage examples provided by the author. The library manager is designed to automatically install this ZIP file, as described in the previous chapter, but in some cases you may want to manually go through the installation process and place the library into the sketchbook's library folder yourself . You can find the location of the folder in *File* > *Preferences* > *Sketchbook* Locations



Navigate to the ZIP file you downloaded earlier

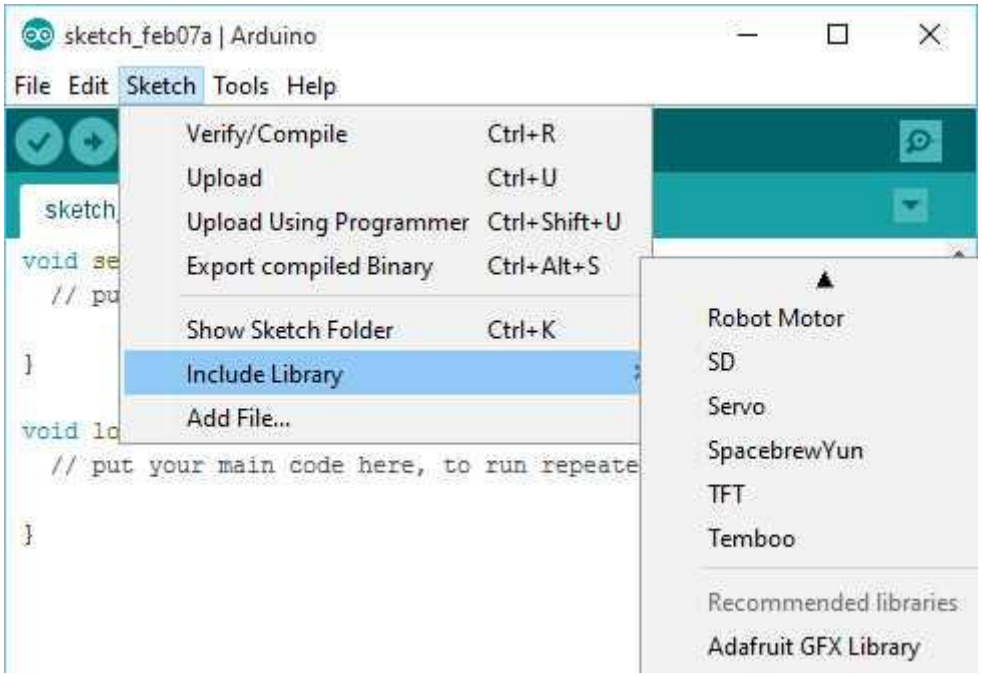


Extract the ZIP file and all its folder structure into a temporary folder and select the main folder with the library name



Copy it to the "Libraries" folder path inside Sketchbook as shown in "Preferences" ;

Start the Arduino software (IDE) and go to *Sketch* > *Include Library*. Verify that the library you just added is available in the list ;



Please note: Arduino libraries are managed in three different locations: within the IDE installation folder, within the core folder, and within the library folder within Sketchbook. The way libraries are selected during compilation is designed to allow updating libraries present in the distribution. This means that placing a library in Sketchbook's "Libraries" folder will overwrite other library versions.

The same happens with libraries present in other core installations. It's also important to note that the version of the library you put into your sketchbook may be lower than the version in the distribution or core folder, but it will be the version used during compilation. When you select a specific kernel for a board, the library in the kernel folder will be used instead of the same library in the IDE distribution folder.

Last but not least is the way the Arduino software (IDE) upgrades itself: all files in Programs/Arduino (or the folder where you installed the IDE) will be deleted and a new folder created with the new content. That's why we recommend that you only install libraries into the sketchbook folder so they won't be removed during an Arduino IDE update.