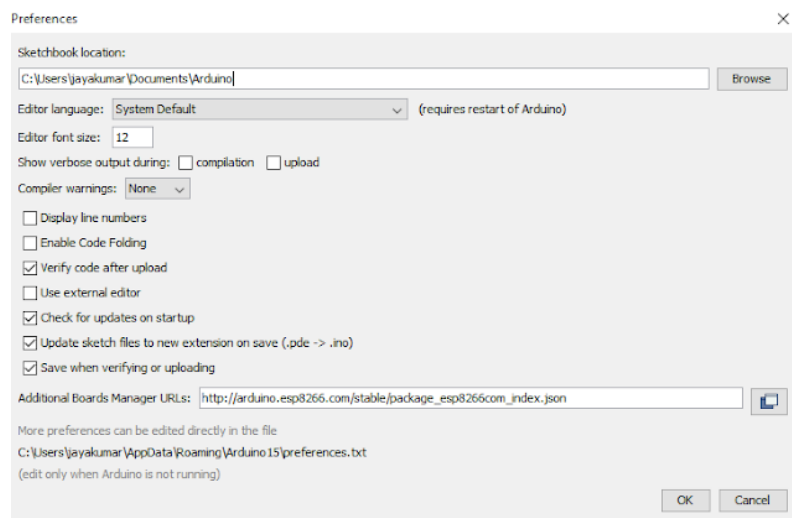


Intro: Quick Start to NodeMCU (ESP8266) on Arduino IDE

To install the ESP8266 support for the Arduino and see you need to follow the following steps:

Firstly, open the Arduino IDE---- Go to files and click on the preference in the Arduino IDE

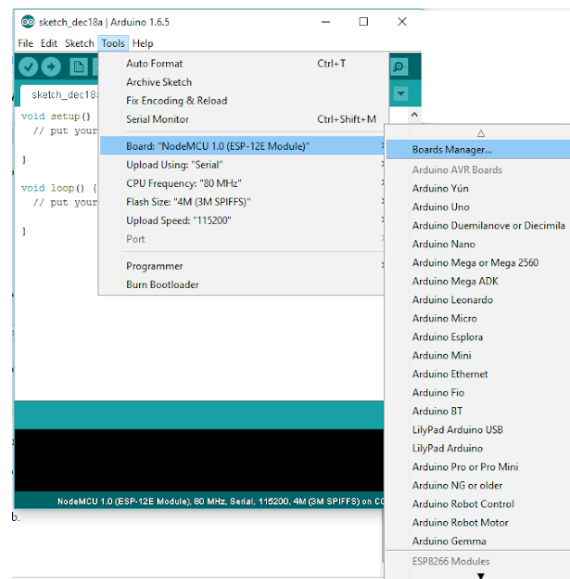


copy the below code in the Additional boards Manager

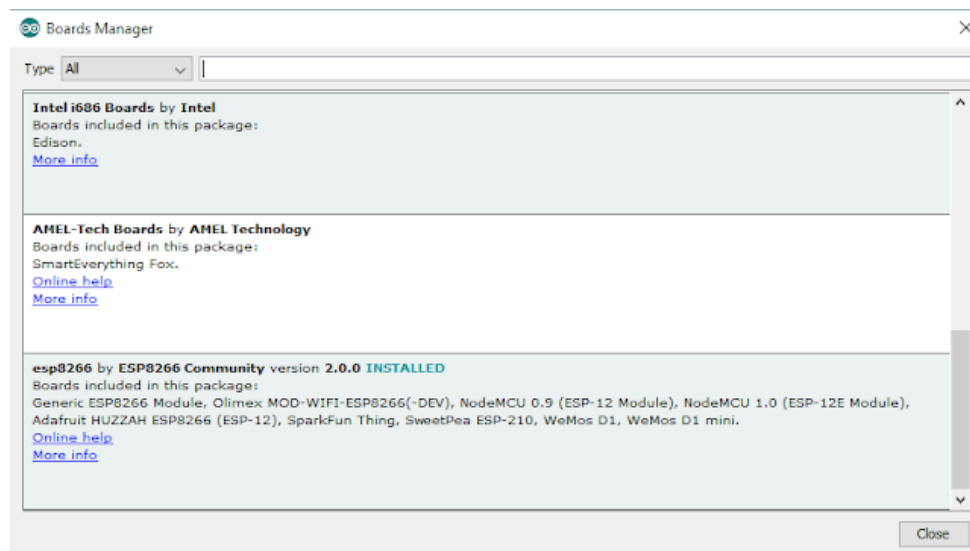
http://arduino.esp8266.com/stable/package_esp8266com_index.json

click OK to close the preference Tab.

Secondly, After completing the above steps , go to Tools and board, and then select board Manager



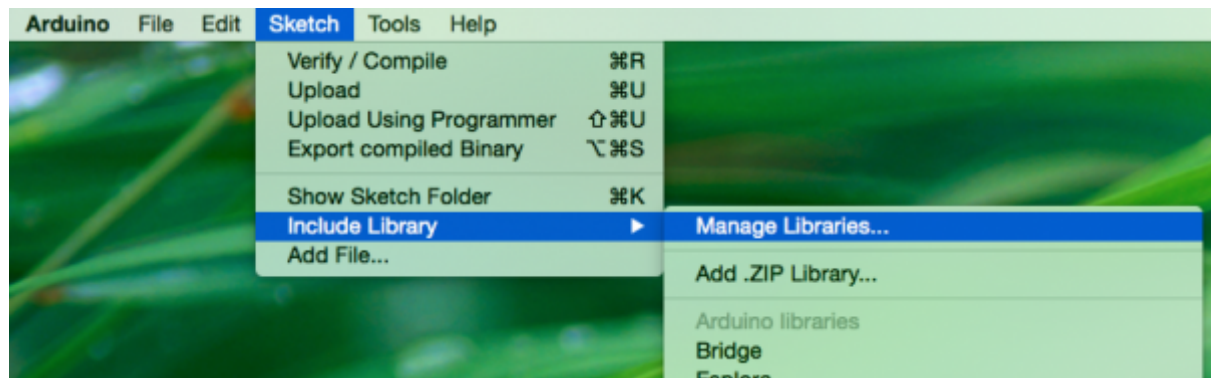
Navigate to esp8266 by esp8266 community and install the software for Arduino.



Installing libraries to Arduino

Using the Arduino Library Manager

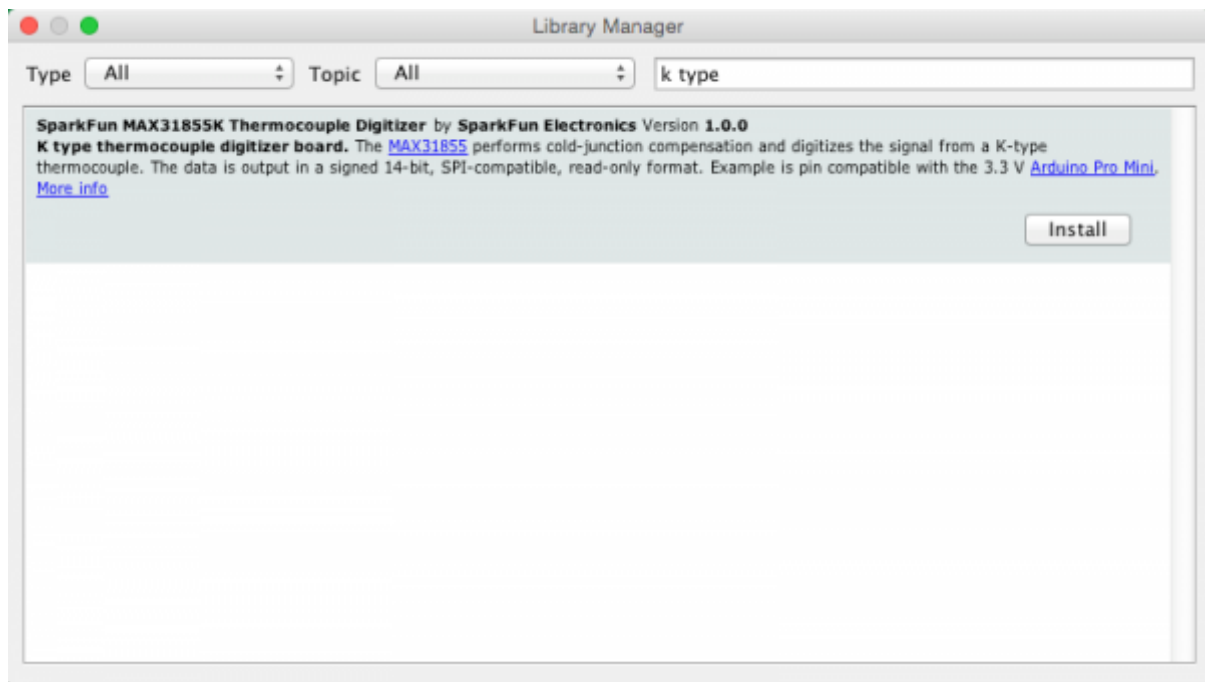
The library manager is found in the 'Sketch' menu under 'Include Library', 'Manage Libraries...'



Arduino Library Manager Menu Option

When you open the Library Manager you will find a large list of libraries ready for one-click install.

To find a library for your product, search for the product name or a keyword such as 'k type' or 'digitizer', and the library you want should show up. Click on the desired library, and the 'Install' button will appear. Click that button, and the library should install automatically. When installation finishes, close the Library Manager.

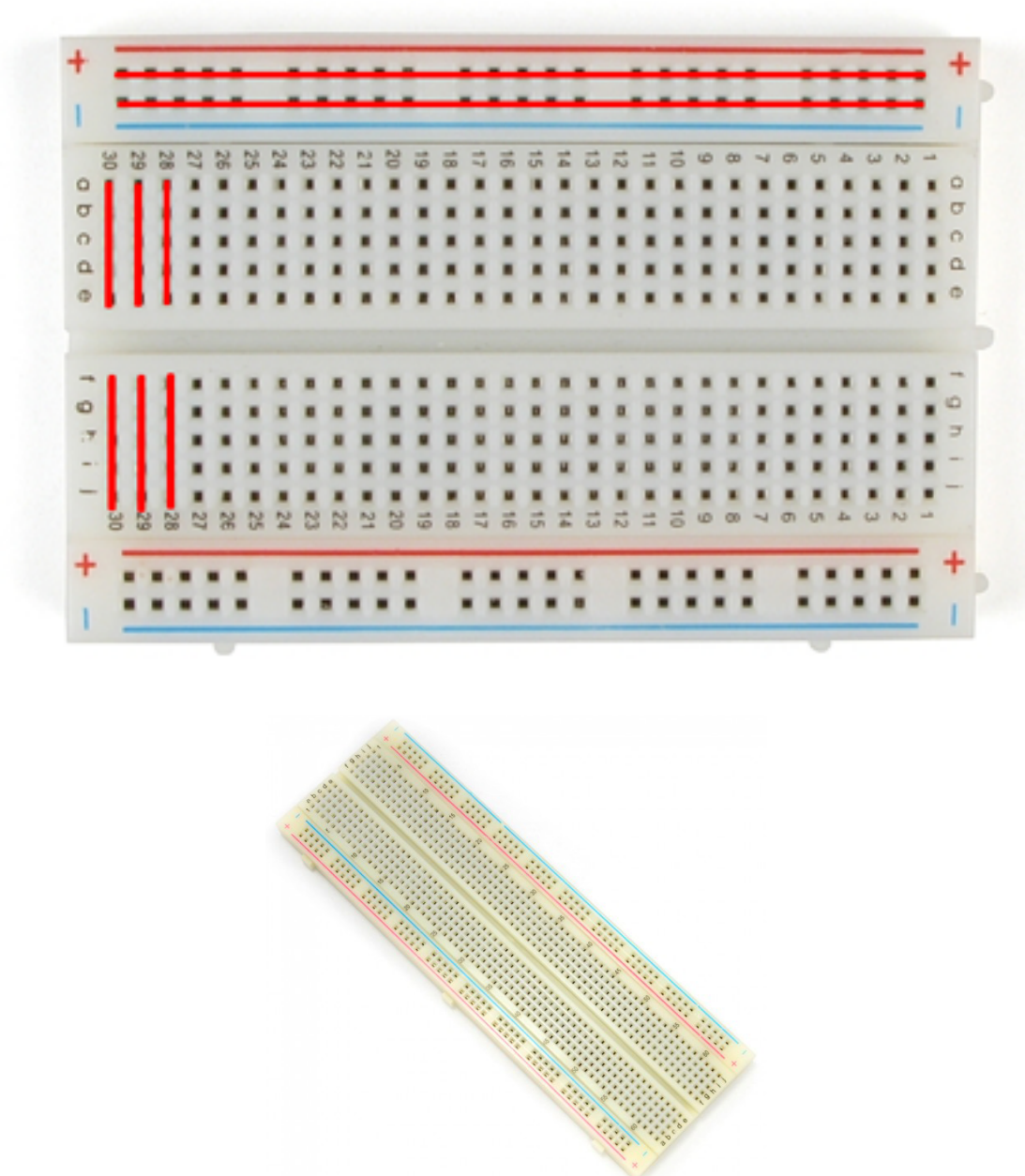


Alternatively, if you have a library of your own you would like to add or a library that hasn't been added to the Library Manager yet, you can click the **'Add .ZIP Library'** option, which will then allow you to choose a folder or *.zip file containing the library of your choice. And then repeat the above method.

HOW DO breadboards WORK?

A breadboard is a very simple, yet useful piece of gear. Its name originates from times when circuit prototypes would be made using a wooden board (typically used for cutting bread), and nails/tacks hammered into solder to. This method has evolved into what we have today which is the solderless breadboard.

A typical breadboard consists of a 0.1" spaced grid of holes in which you can place component leads (0.1"/2.54mm is the most common standard for through-hole components). Inside each hole is a spring-loaded metal contact which grabs the wire/lead and strips of these holes are connected together to allow components to be connected together. Every breadboard will have numbered rows of 5 holes which are connected together, and every row is electrically isolated. Many also have power rail strips on the outside where all the holes in the rail are connected which makes it easy to power your circuit. Check out the diagram below to see which pins are connected.



Breadboards feature a divider down the middle of two spaces, to separate the rows, and allow Dual In-Line packages ICs to be mounted across the divider, which makes standard through-hole prototyping fairly easy.

The best way to connect points together is using jumper wires. These are insulated wires which rigid pins on the end designed to create a secure connection to the breadboard pin. Long flexible jumper wires are great for general connections, while smaller, rigid jumper wires can be used for low profile, fixed connections. Our favourite jumper wires are the **DFRobot High-Quality Jumper wires** which are the best possible quality wires available, and the **Sparkfun Jumper Wire Kit**, which contains a bunch of different sized pre-formed, solid core, insulated wires all organised into a divider organiser.

Speaking of connections, breadboards are categorized by the number of connection points, or tie points that they have. For example, a full-size breadboard will have 740 or 830 tie points on it, whereas a miniature breadboard will only have 170.

Something to be aware of is that on some breadboards, the power rails are separated in the middle to avoid inductance issues. Normally it is denoted by a break in the coloured line of the rail, and an extra space between the holes, however before diving into using one, it always pays to double check the connection with a multimeter.

If you're looking at powering your breadboard projects, then look no further than our tutorial on **Breadboard Power Supplies**.