

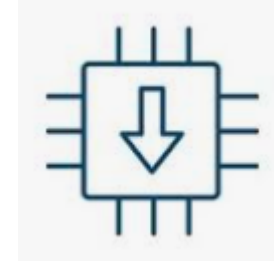
A

Instalación del entorno de trabajo
(IDE) en nuestra Computadora



B

Descarga e instalación de librerías
para nuestro hardware



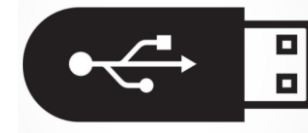
C

Le indicamos al IDE que modelo de
hardware vamos a usar



D

Instalación del driver USB que
vamos a utilizar



A(1/1) – Descargamos e instalamos el IDE (Arduino)

Abrir el explorador de internet e ingresar a: [Software | Arduino](#)

Bring Your Projects to Life with Arduino Software



Arduino IDE 2.3.6
[Release notes](#)

The new major release of the Arduino IDE is faster and even more powerful! In addition to a more modern editor and a more responsive interface it features autocompletion, code navigation, and even a live debugger. For more details, check the [Arduino IDE 2.0 documentation](#).

Windows Win 10 or newer (64-bit) **DOWNLOAD**

Nightly Builds
Download a preview of the incoming release with the most updated features and bugfixes.

The Arduino IDE 2.0 is open source and its source code is hosted on [GitHub](#).

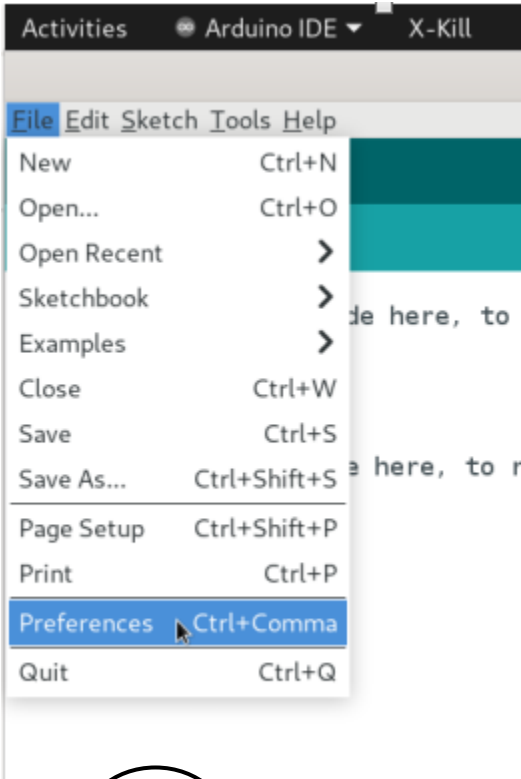
Descargar e instalar

Las instrucciones de instalación las podrá encontrar en este link: [ide-v2/tutorials/getting-started/ide-v2-downloading-and-installing/](#)

B(1/3) - Le indicamos al IDE (Arduino) de donde descargar la información para nuestro hardware

1

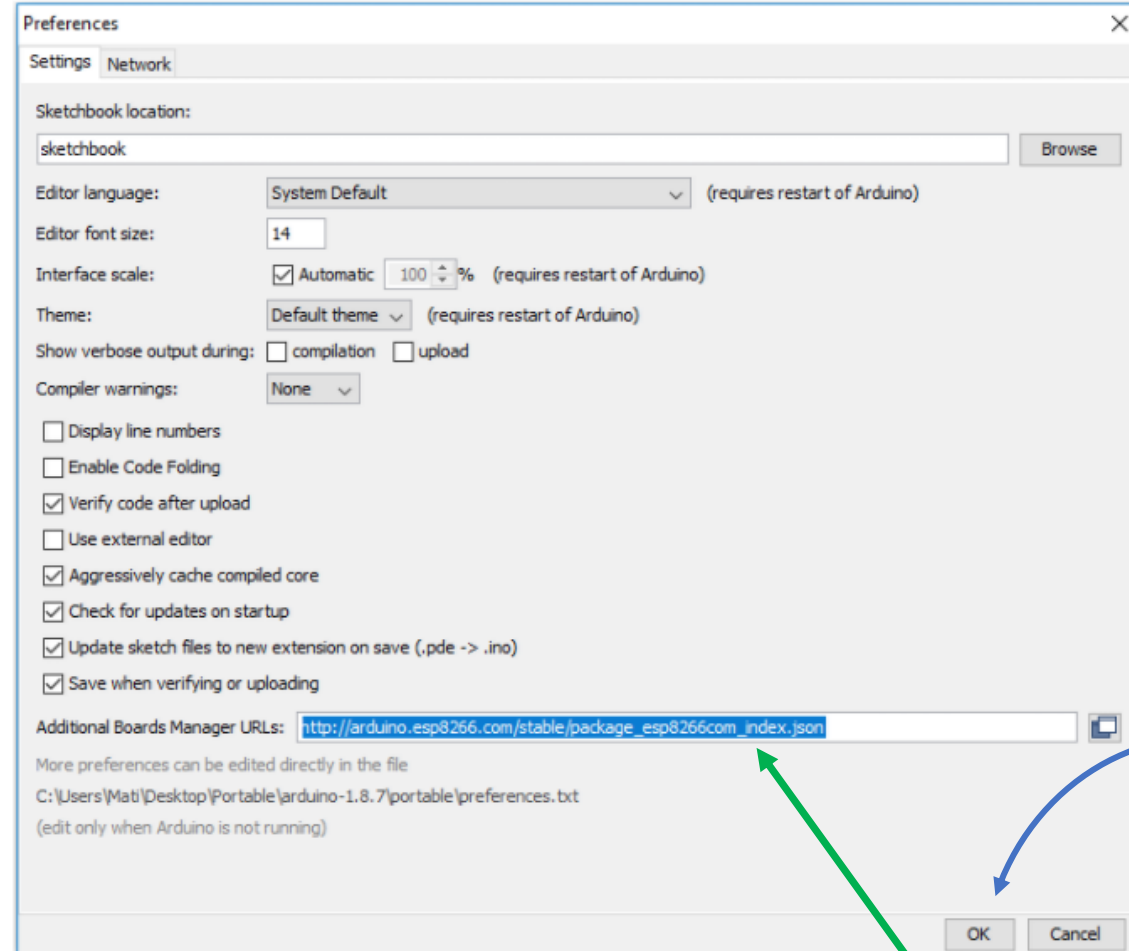
File -> Preferences



2

Copiar el siguiente enlace y pegar en “Additional Boards Manager URLs:”

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



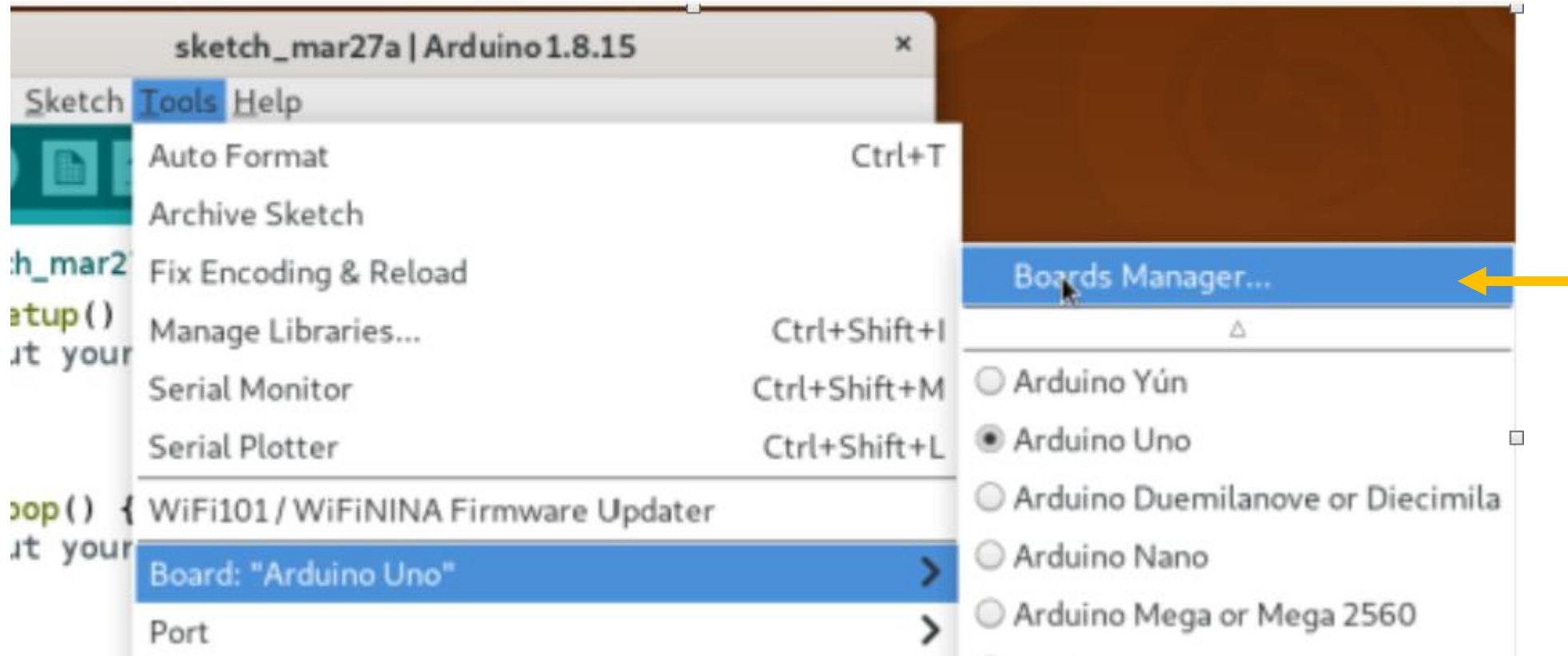
3

OK para Finalizar

B(2/3) – Usamos el Selector de Hardware (Board Manager) para buscar las librerías para nuestro hardware

Procedemos ahora a la instalación de las librerías para el procesador ESP8266

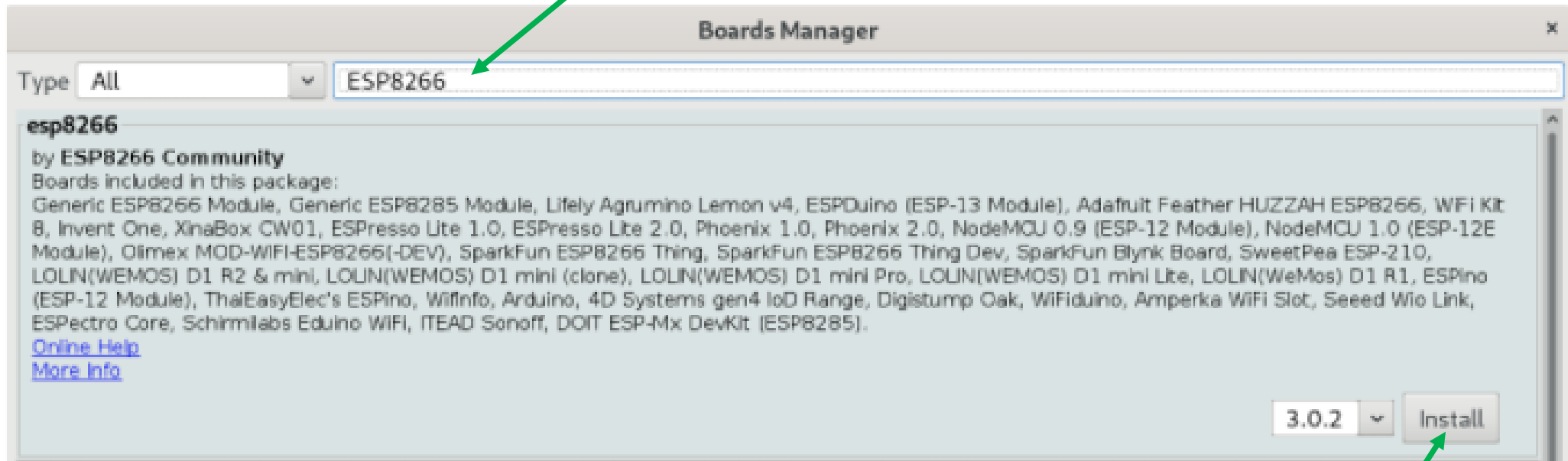
Tools -> Board: "Arduino Uno" -> Boards Manager...



B(3/3) – Usando el Selector de Hardware buscamos el hardware que vamos a usar (ESP8266).

1

En el buscador ingresamos el nombre del procesador “ESP8266”

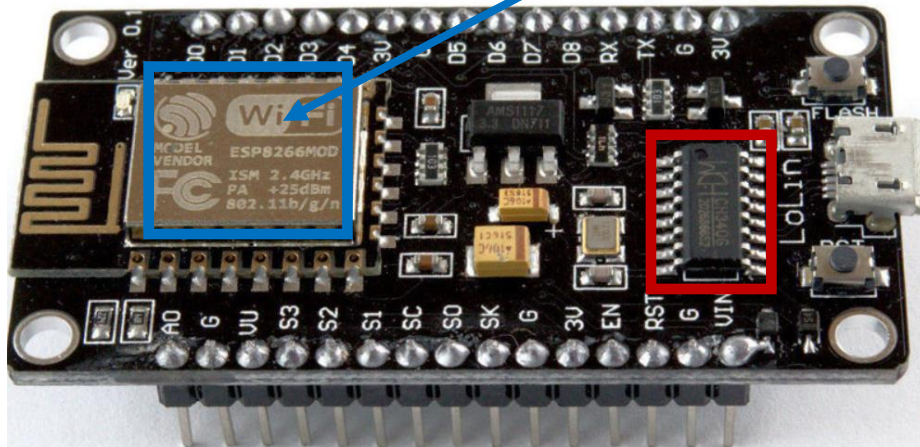


Una vez que aparezca la librería pulsamos el botón instalar
(La descarga e instalación puede llevar unos minutos)

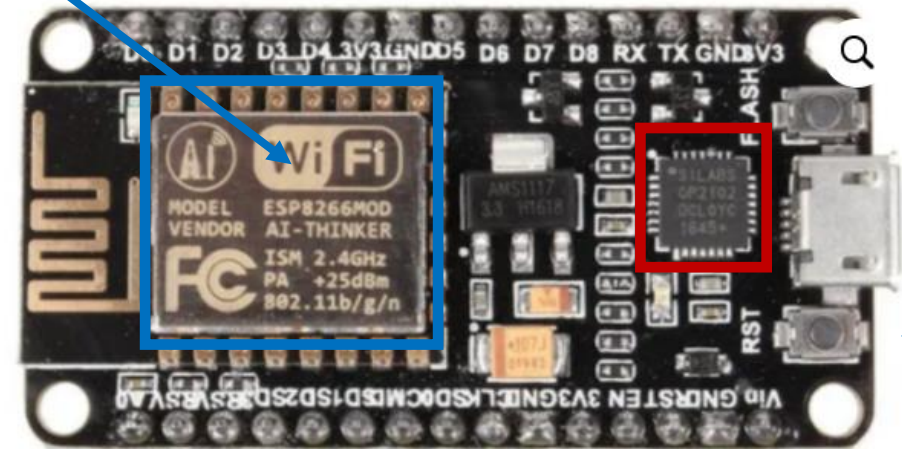
2

C1 - Instalación del driver USB para que nuestro sistema operativo reconozca el hardware.

ESP8266 Micro Controller Unit



LOLIN Board USB chip **CH340**

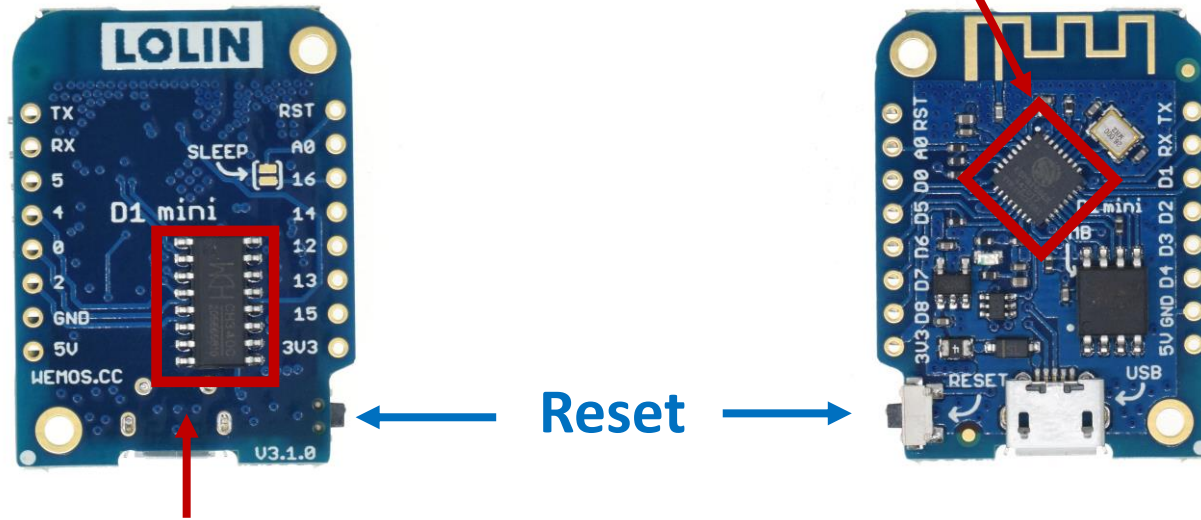


AMICA Board USB chip **CP2102 Silabs**



C2 - Instalación del driver USB para que nuestro sistema operativo reconozca el hardware.

ESP8266 Micro Controller Unit



LOLIN Wemos D1 mini Board
USB chip **CH340**



CH340 USB Driver

En el siguiente link tenemos los drivers para el conversor USB-Serie CH340.

<https://learn.sparkfun.com/tutorials/how-to-install-ch340-drivers/all#windows-710>

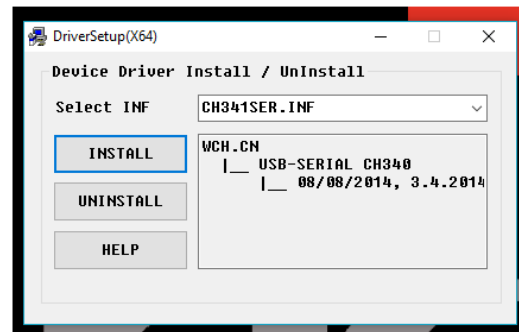
Windows 7/10

Note for Educators: You will need to obtain administrative privileges from your network or IT administrator in order to install these drivers. Make sure to test the drivers before class and set aside some time with students in the classroom when installing the drivers.

Download and run the executable.

CH341SER (EXE)

Click the "Uninstall" button first. Then click on the "Install" button.



Windows CH340 Driver Installation

Sections

Introduction

Meet the CH340

Drivers (If You Need Them)

Windows 7/10

Mac OSX

Linux

Troubleshooting

Resources and Going Further

Comments

3

View Paginated

Print

Desplazar hasta el menú Windows 7/10 , descargar el ejecutable e instalar el programa (CH341SER.exe)

CP2102 - Silabs USB Driver

En el siguiente link tenemos los drivers para el conversor USB-Serie CP2102 de Silabs.

<https://www.silabs.com/developers/usb-to-uart-bridge-vcp-drivers>

Descargar el controlador bajo el nombre de “CP210x Universal Windows Driver” e instalarlo.

Download and Install VCP Drivers

Downloads for Windows, Macintosh, Linux and Android below.

*Note: The Linux 3.x.x and 4.x.x version of the driver is maintained in the current Linux 3.x.x and 4.x.x tree at www.kernel.org.

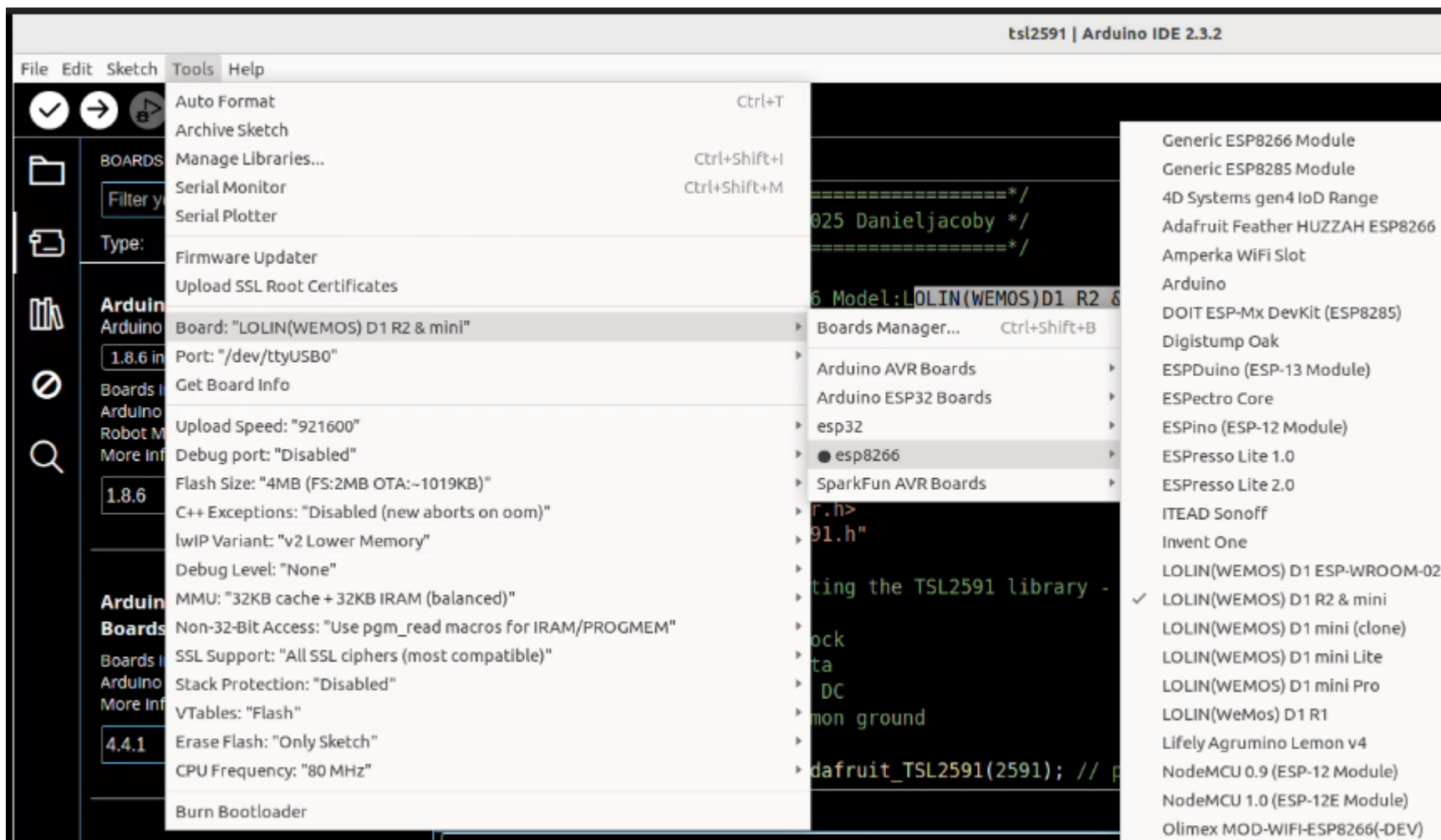
Software Downloads

Software (11)

Software • 11

CP210x Universal Windows Driver	v10.1.10 1/13/2021
CP210x VCP Mac OSX Driver	v6.0 12/22/2020
CP210x VCP Windows	v6.7 9/3/2020
CP210x Windows Drivers	v6.7.6 9/3/2020
CP210x Windows Drivers with Serial Enumerator	v6.7.6 9/3/2020

D - El siguiente paso es indicarle al entorno de Arduino que versión de firmware y modelo de procesador vamos a usar.



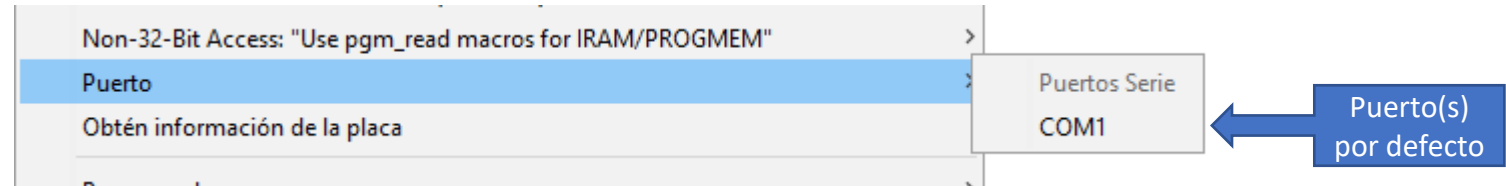
Al Finalizar debe
quedar así



Detección del Puerto de comunicaciones

1

Sin conectar nada al puerto USB seleccionamos del menú del IDE **Herramientas -> Puerto**

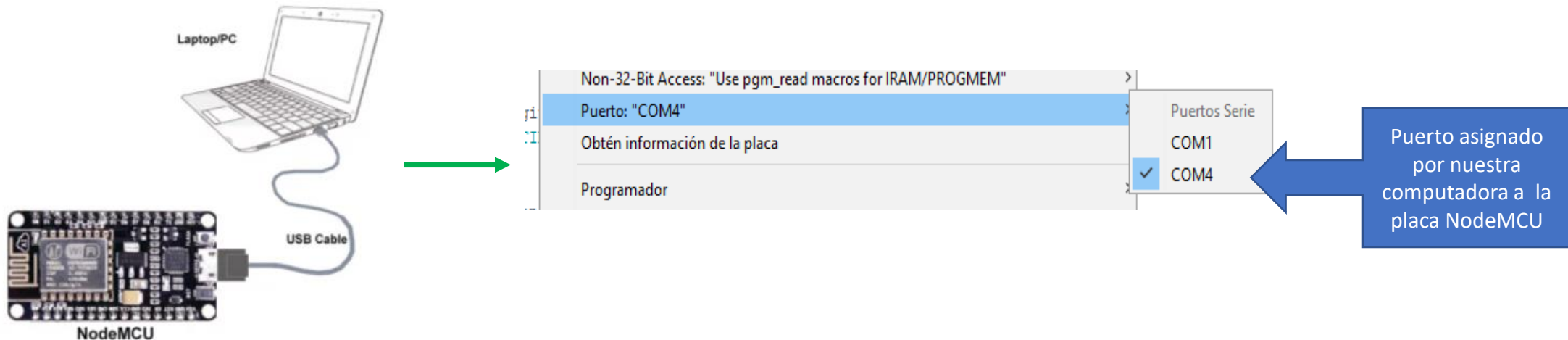


2

Conectar la placa D1 mini a un puerto USB de nuestra Computadora.

Repetir el comando: **Herramientas -> Puerto**.

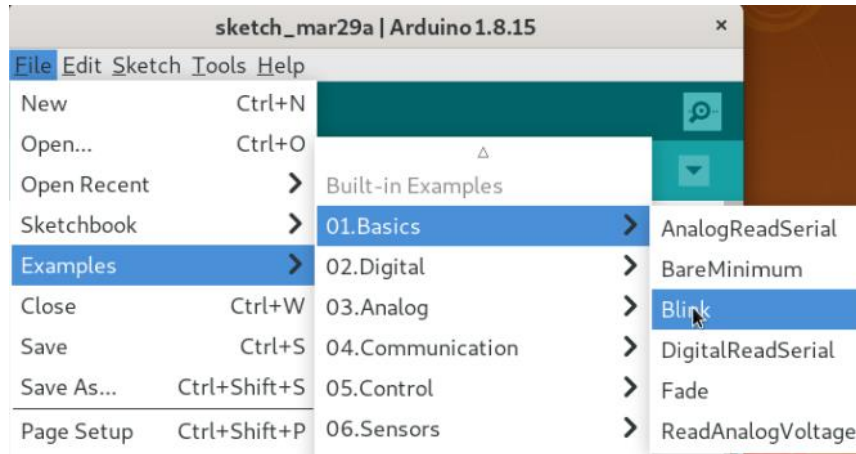
Ahora debe aparecer un puerto nuevo distinto al anterior. **Seleccionarlo**.



Mi primer Programa

1

Vamos a seleccionar un ejemplo ya hecho. Del menú del IDE hacemos **File -> Examples -> Basics -> Blink**



Al Finalizar debe
quedar así

```
File Edit Sketch Tools Help
Blink
Most Arduinos have an on-board LED you can control. On the UNO, MEGA and ZERO
it is attached to digital pin 13, on MKR1000 on pin 6. LED_BUILTIN is set to
the correct LED pin independent of which board is used.
If you want to know what pin the on-board LED is connected to on your Arduino
model, check the Technical Specs of your board at:
https://www.arduino.cc/en/Main/Products

modified 8 May 2014
by Scott Fitzgerald
modified 2 Sep 2016
by Arturo Guadalupi
modified 8 Sep 2016
by Colby Newman

This example code is in the public domain.

https://www.arduino.cc/en/Tutorial/BuiltInExamples/Blink
*/

// the setup function runs once when you press reset or power the board
void setup() {
  // initialize digital pin LED_BUILTIN as an output.
  pinMode(LED_BUILTIN, OUTPUT);
}

// the loop function runs over and over again forever
void loop() {
  digitalWrite(LED_BUILTIN, HIGH); // turn the LED on (HIGH is the voltage level)
  delay(1000); // wait for a second
  digitalWrite(LED_BUILTIN, LOW); // turn the LED off by making the voltage LOW
  delay(1000); // wait for a second
}
```

Mi primer Programa

1

Ahora vamos a compilar (pasar a código maquina) nuestro programa presionando



Al Finalizar debe
quedar así



Done compiling.

Sketch uses 260889 bytes (24%) of program storage space. Maximum is 1044464 bytes.

Global variables use 27980 bytes (34%) of dynamic memory, leaving 53940 bytes for local variables. Maximum is 81920 bytes.

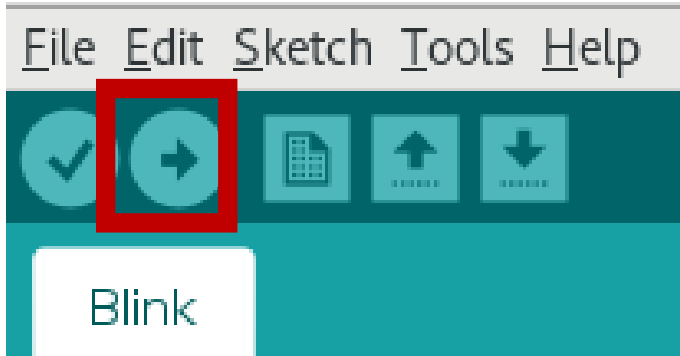
Mi primer Programa

1

Ahora vamos a “subir” nuestro programa a la placa presionando



Antes de hacer esto recomendamos verificar una vez mas que el puerto de comunicaciones sea el correcto

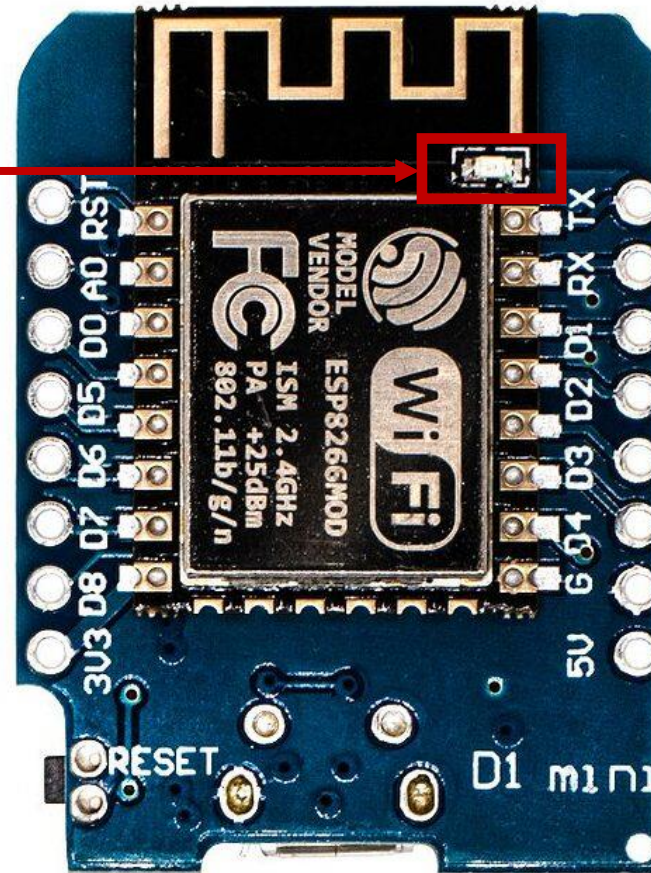


Durante el proceso
veremos estos
mensajes y al
Finalizar deberemos
ver el LED en la
placa titilando a un
ritmo de 1seg

```
Done uploading.  
Sketch uses 260889 bytes (24%) of program storage space. Maximum is 1044464 bytes.  
Global variables use 27980 bytes (34%) of dynamic memory, leaving 53940 bytes for local variables  
esptool.py v3.0  
Serial port /dev/ttyUSB0  
Connecting....  
Chip is ESP8266EX  
Features: WiFi  
Crystal is 26MHz  
MAC: ec:fa:bc:13:9e:32  
Uploading stub...  
Running stub...  
Stub running...  
Configuring flash size...  
Auto-detected Flash size: 4MB  
Compressed 265040 bytes to 195061...  
Writing at 0x00000000... (8 %)  
Writing at 0x00004000... (16 %)  
Writing at 0x00008000... (25 %)  
Writing at 0x0000c000... (33 %)  
Writing at 0x00010000... (41 %)  
Writing at 0x00014000... (50 %)  
Writing at 0x00018000... (58 %)  
Writing at 0x0001c000... (66 %)  
Writing at 0x00020000... (75 %)  
Writing at 0x00024000... (83 %)  
Writing at 0x00028000... (91 %)  
Writing at 0x0002c000... (100 %)  
Wrote 265040 bytes (195061 compressed) at 0x00000000 in 17.3 seconds (effective 122.3 kbit/s)...  
Hash of data verified.  
  
Leaving...  
Hard resetting via RTS pin...
```

Leds disponibles en la placa

LED_BUILTIN



LOLIN Board USB chip CH340

Leds disponibles en la placa

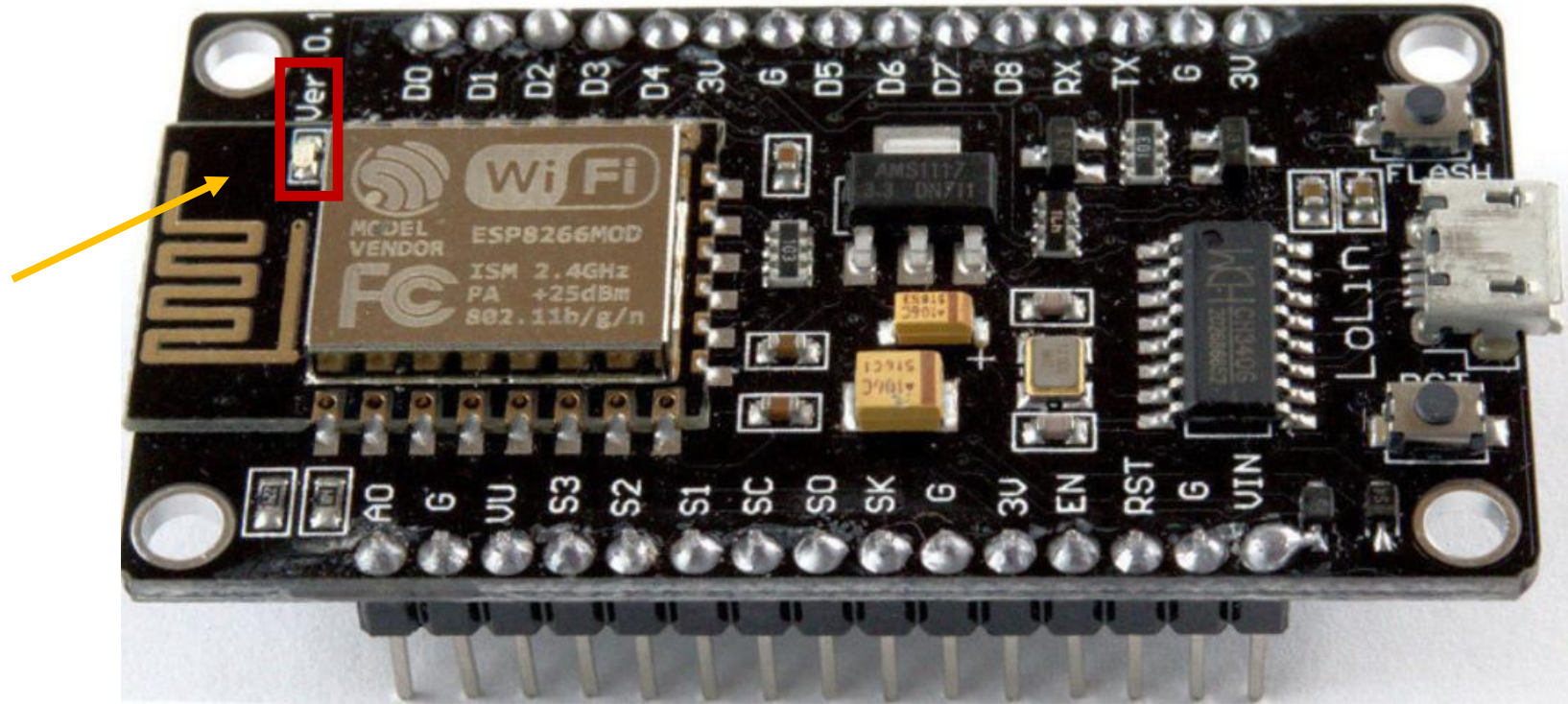
LED – D4 - GPIO2
(LED_BUILTIN)



LED – D0 - GPIO16

AMICA Board USB chip **CP2102** Silabs

Leds disponibles en la placa



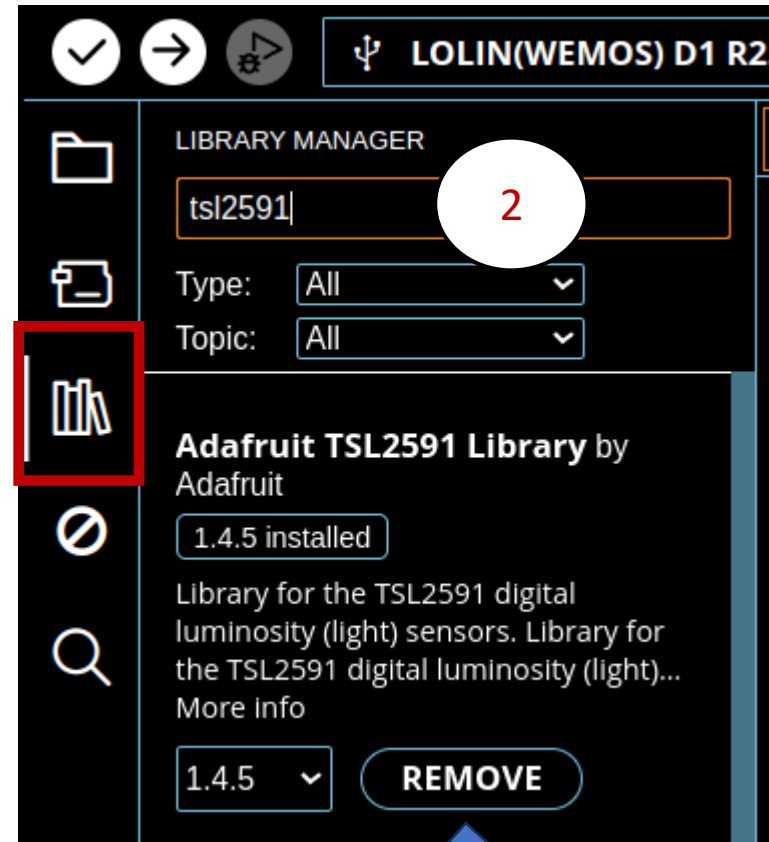
LED - D4 - GPIO2
(LED_BUILTIN)

LOLIN Board USB chip **CH340**

Grabar programa del fotómetro

Instalar librería del sensor TSL2591

Tools -> Manage Libraries



3

Install

Grabar programa del fotómetro

Aho deberíamos poder instalar el programa del fotómetro en la Placa D1 Mini

Nombre del archivo que contiene el programa del fotómetro **TSL2591.ino** en la carpeta Firmware

