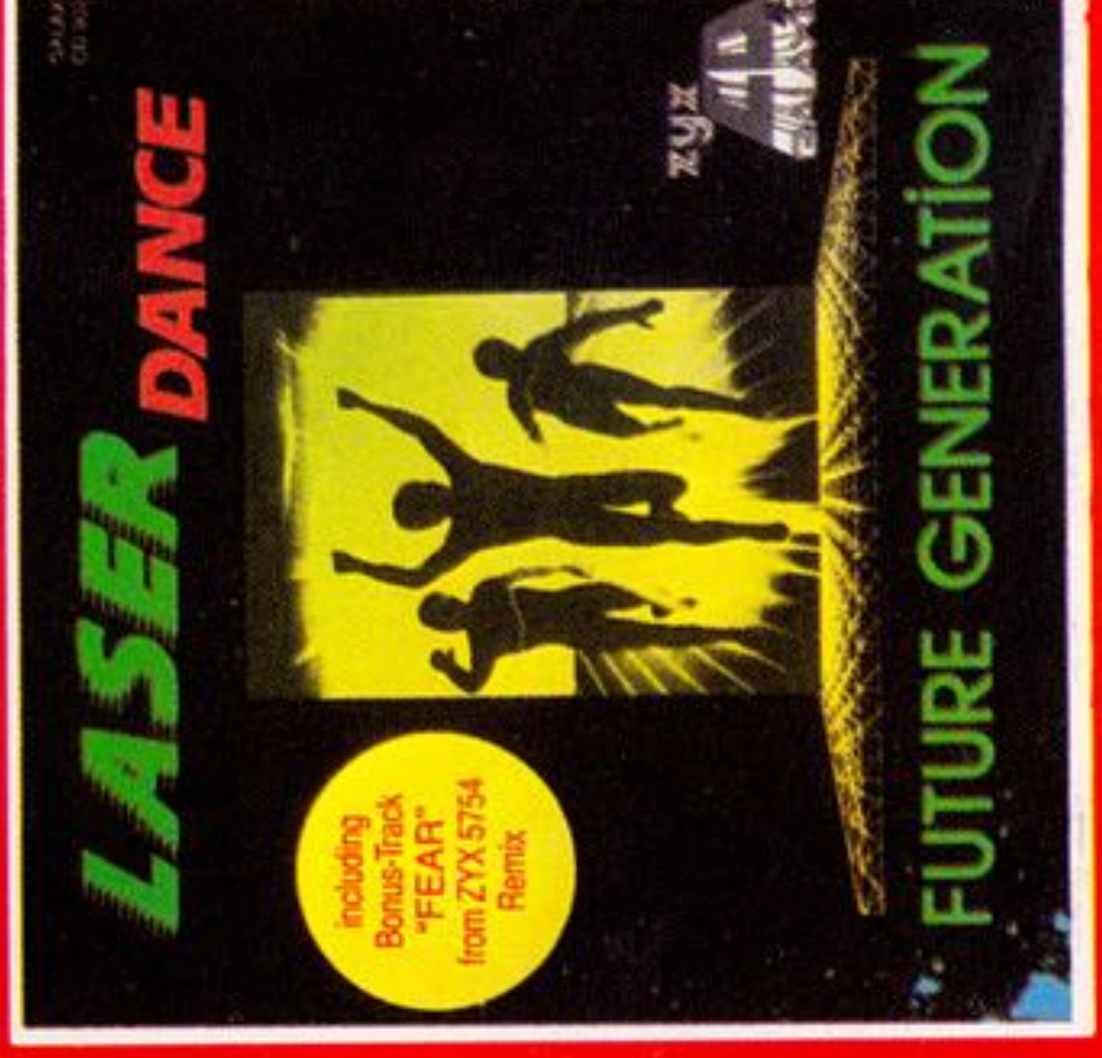


LASER DANCE

FUTURE GENERATION

Space Rock

STEREO

DOLBY SYSTEM

324

LASERDANCE
FUTURE GENERATION

BIEM
ZAIKS

SUPER
QUALITY

11:00 - 11:30 Welcome & Introduction & exercise
11:30 - 12:30 Introduction to Electronics, Arduino and Touch sensors
12:30 - 13:30 Lunch
13:30 - 17:00 Constructing Wearables
17:00 - 18:00 Outcomes, Conclusions, Discussions
19:00 onwards Dance, Jan van Eyck Basement

Download the Arduino IDE

ARDUINO 1.8.10

The open-source Arduino Software (IDE) makes it easy to write code and upload it to the board. It runs on Windows, Mac OS X, and Linux. The environment is written in Java and based on Processing and other open-source software.
This software can be used with any Arduino board.
Refer to the Getting Started page for Installation instructions.

Windows Installer, for Windows XP and up
Windows ZIP file for non admin install

Windows app Requires Win 8.1 or 10
Get

Mac OS X 10.8 Mountain Lion or newer

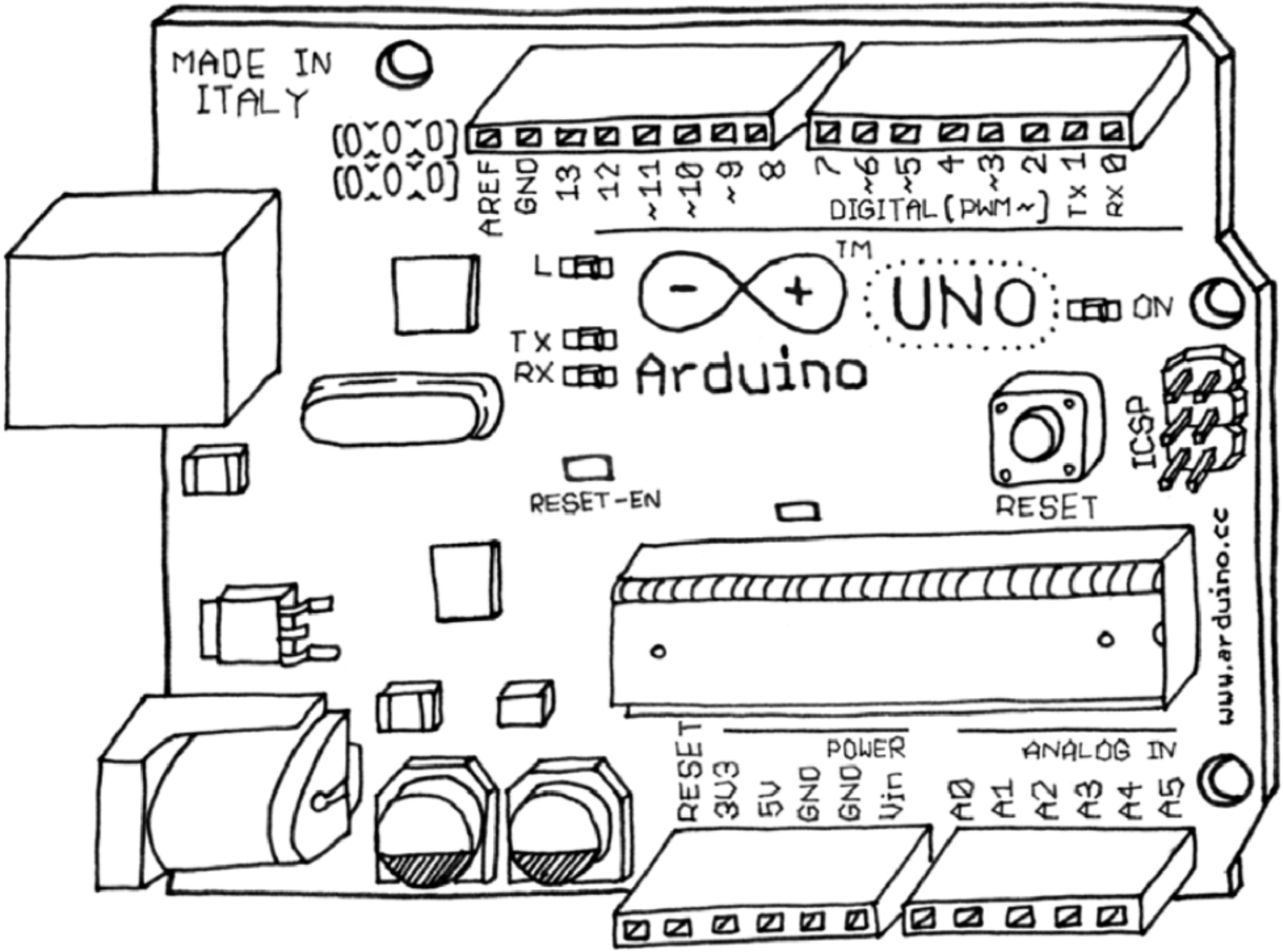
Linux 32 bits
Linux 64 bits
Linux ARM 32 bits
Linux ARM 64 bits

Release Notes
Source Code
Checksums (sha512)

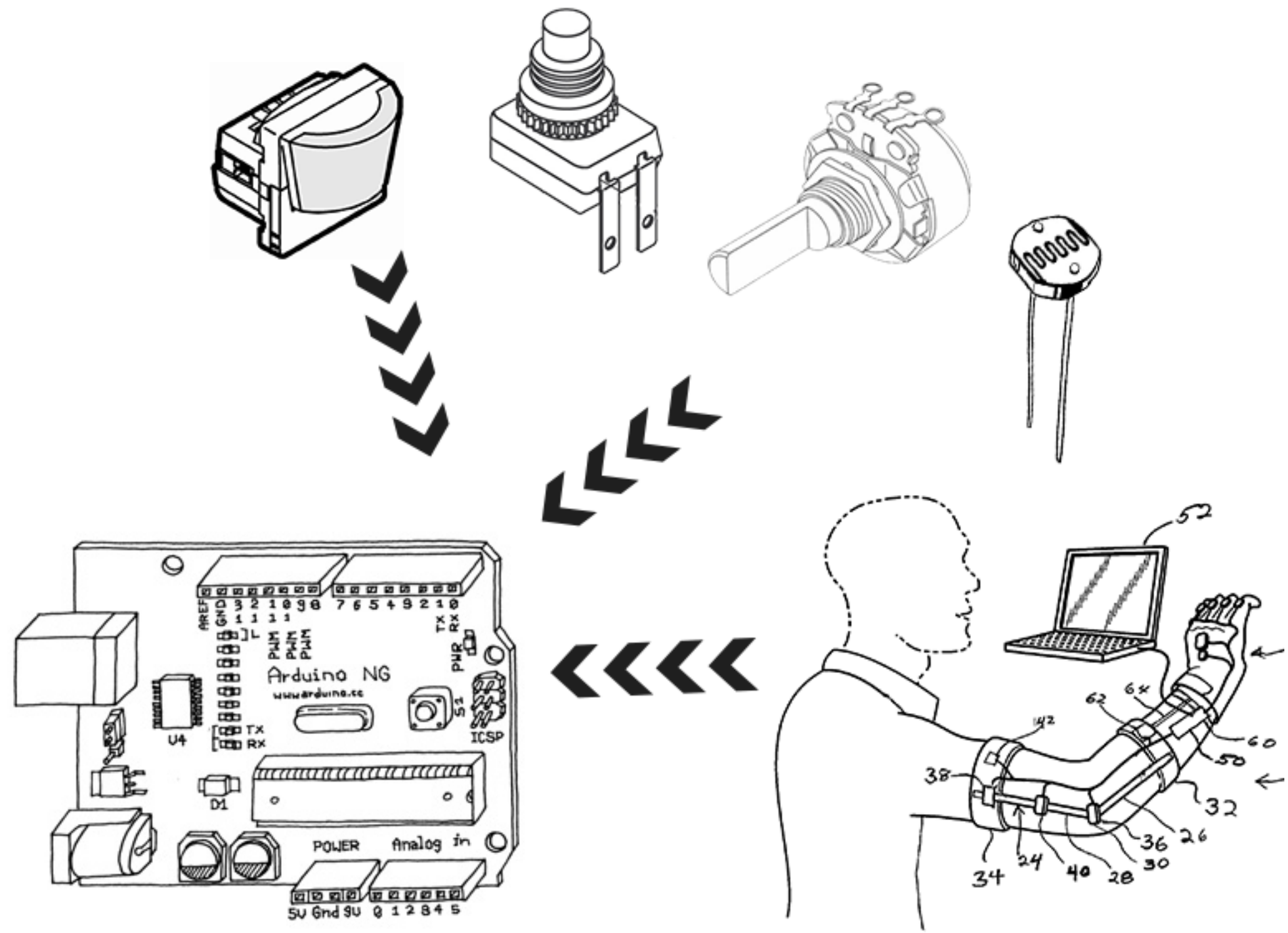
Go to www.arduino.cc and click Downloads > Software

or

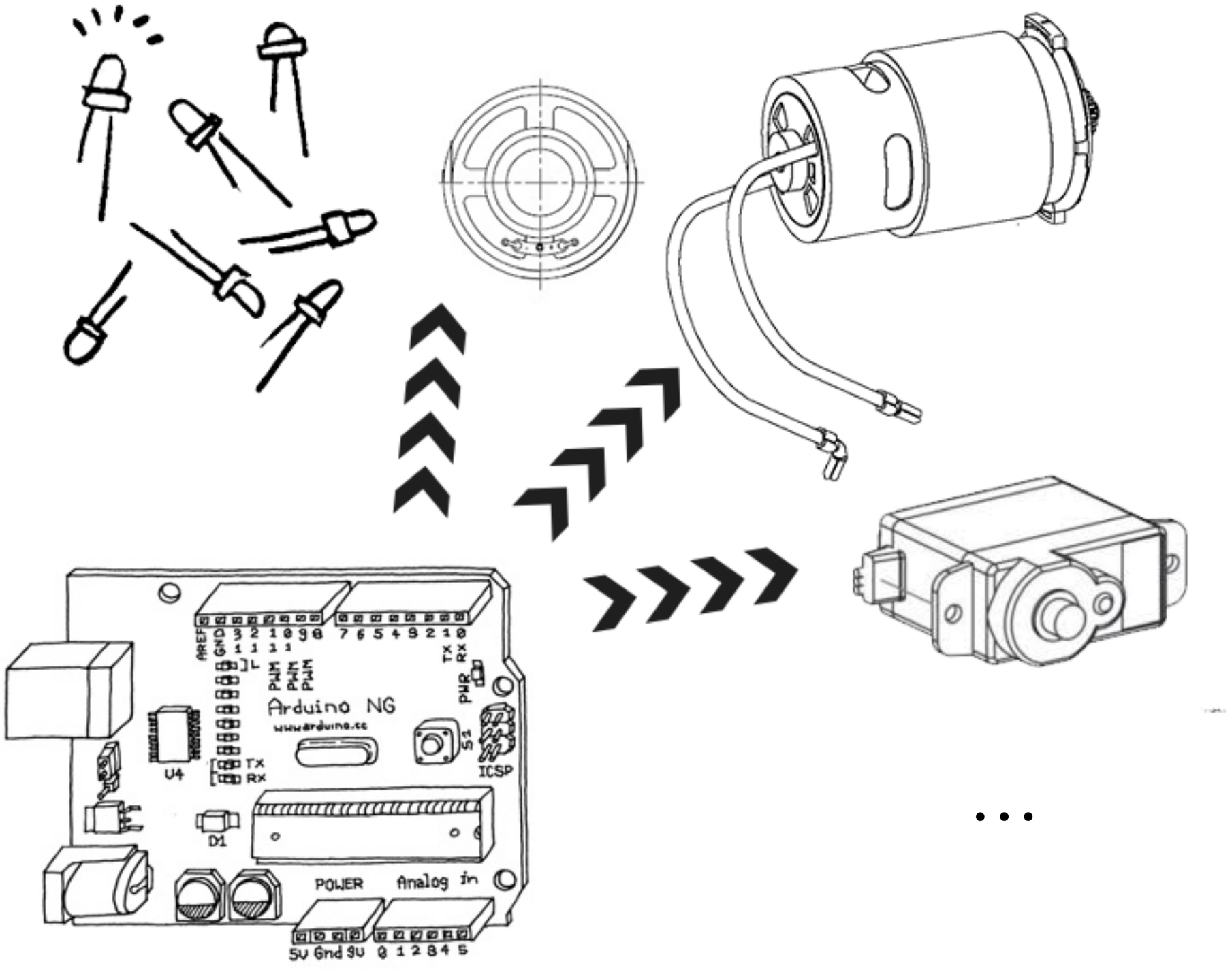
https://www.arduino.cc/en/Main/Software


MADE IN ITALY
AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TX
1
RX
0
DIGITAL (PWM~)
L
TX
RX
TM
UNO
ON
Arduino
RESET-EN
ICSP
RESET
POWER
ANALOG IN
RESET
3V3
5V
GND
GND
Vin
A0
A1
A2
A3
A4
A5
www.arduino.cc

sensors - input

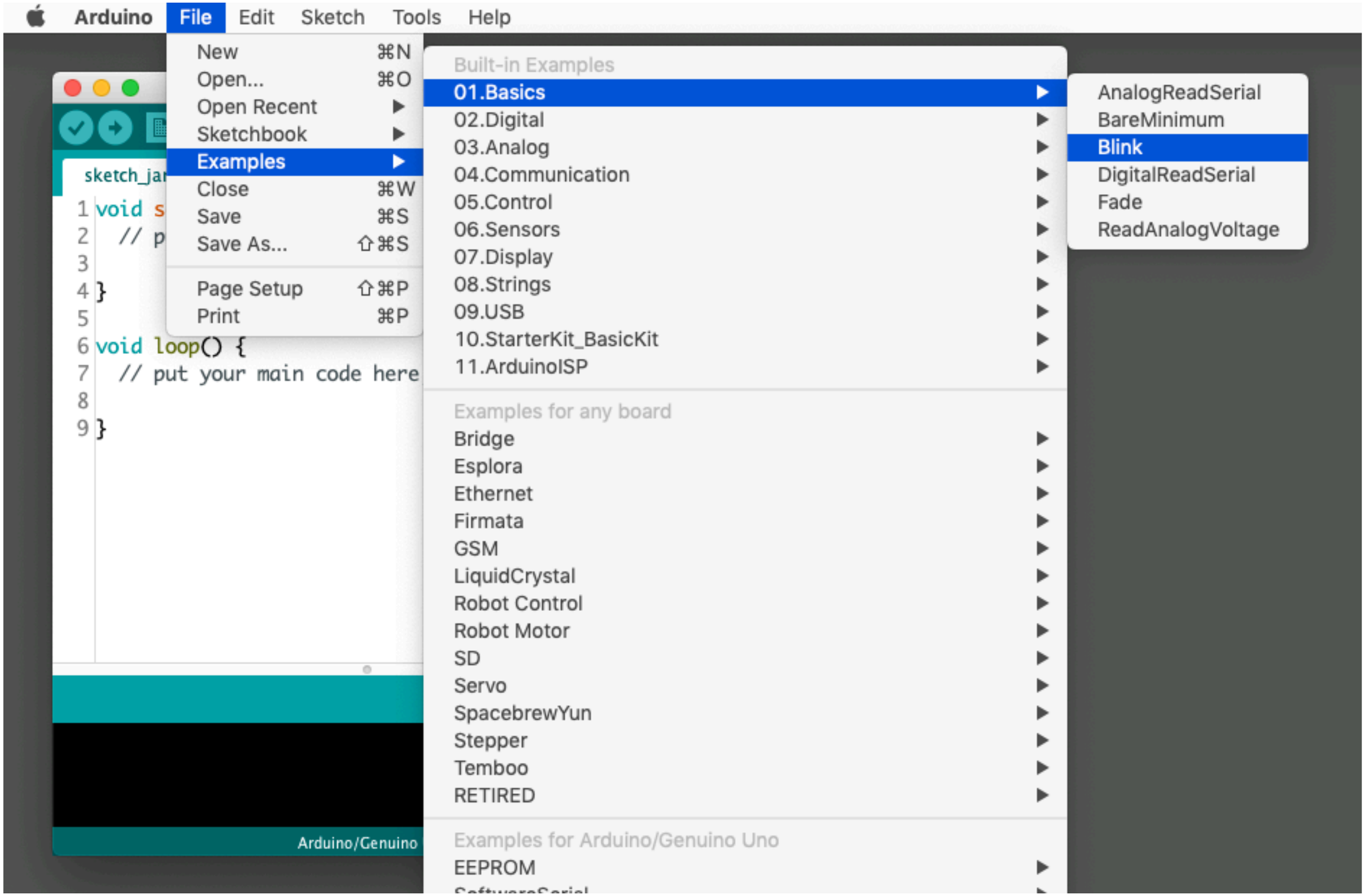


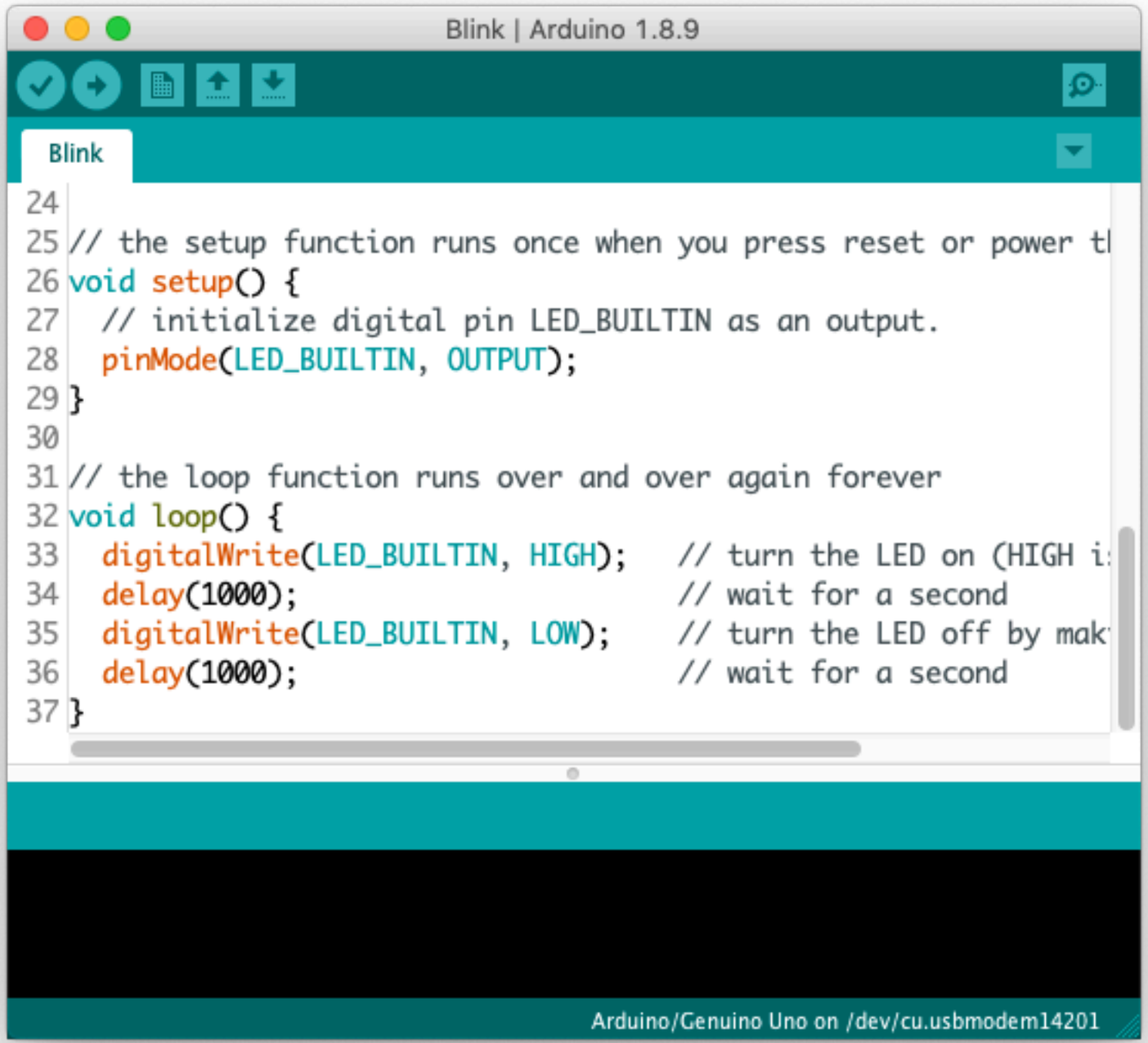
actuator - output

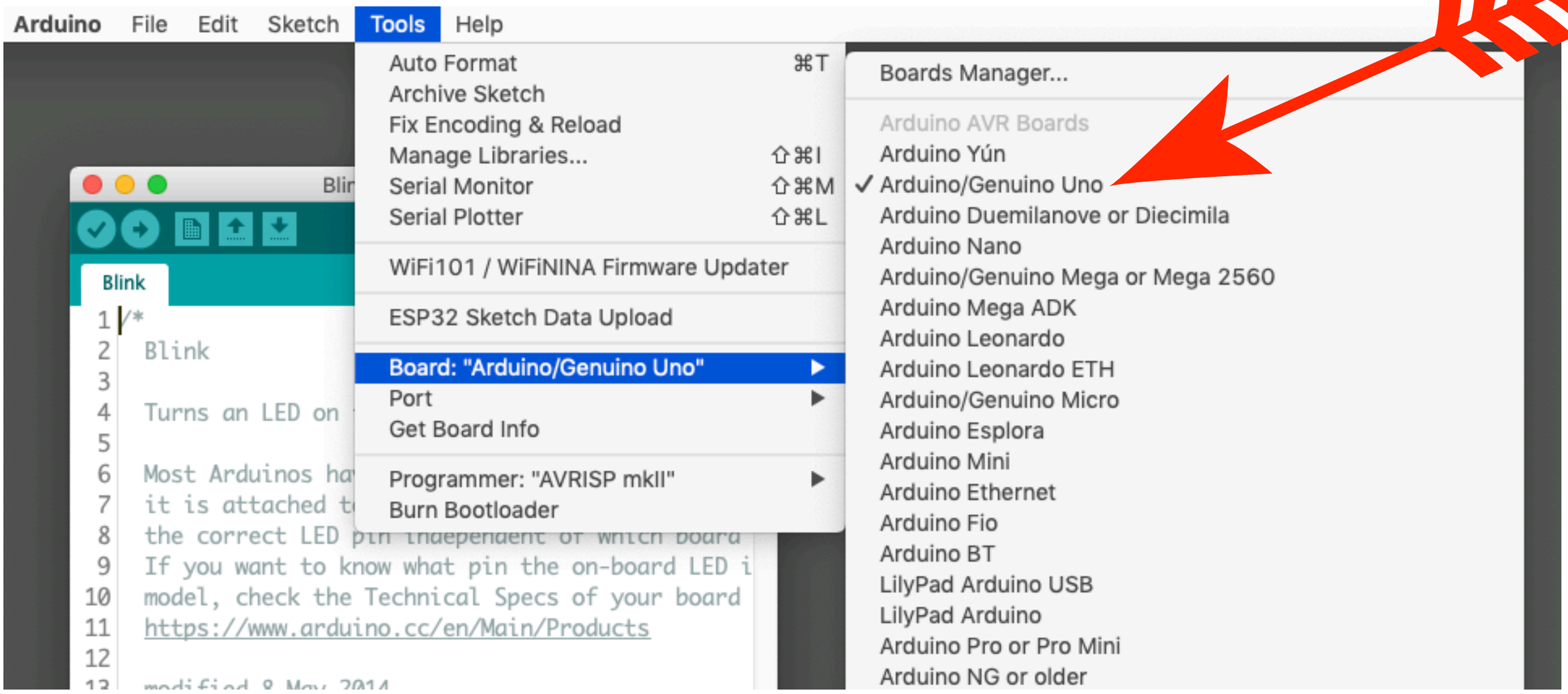


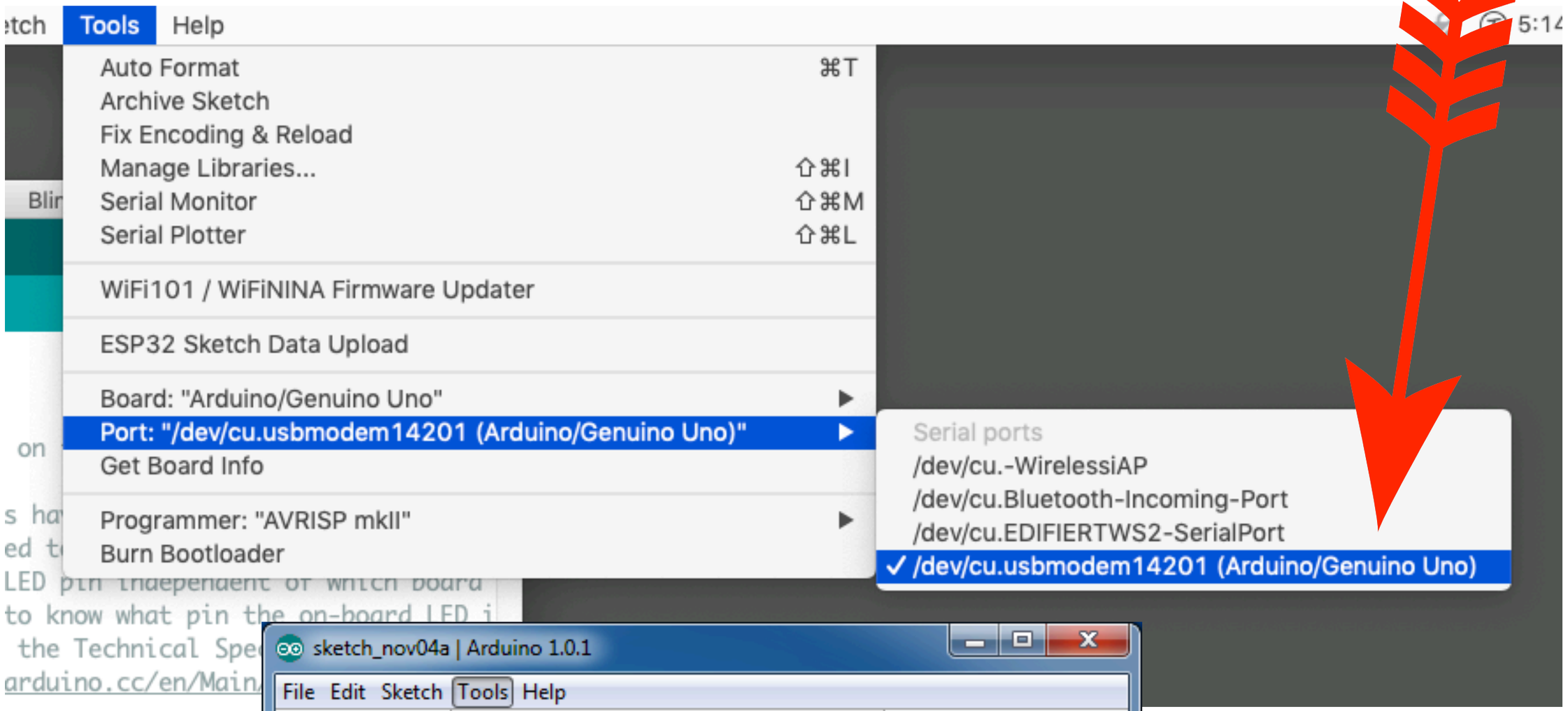
Arduino Terms

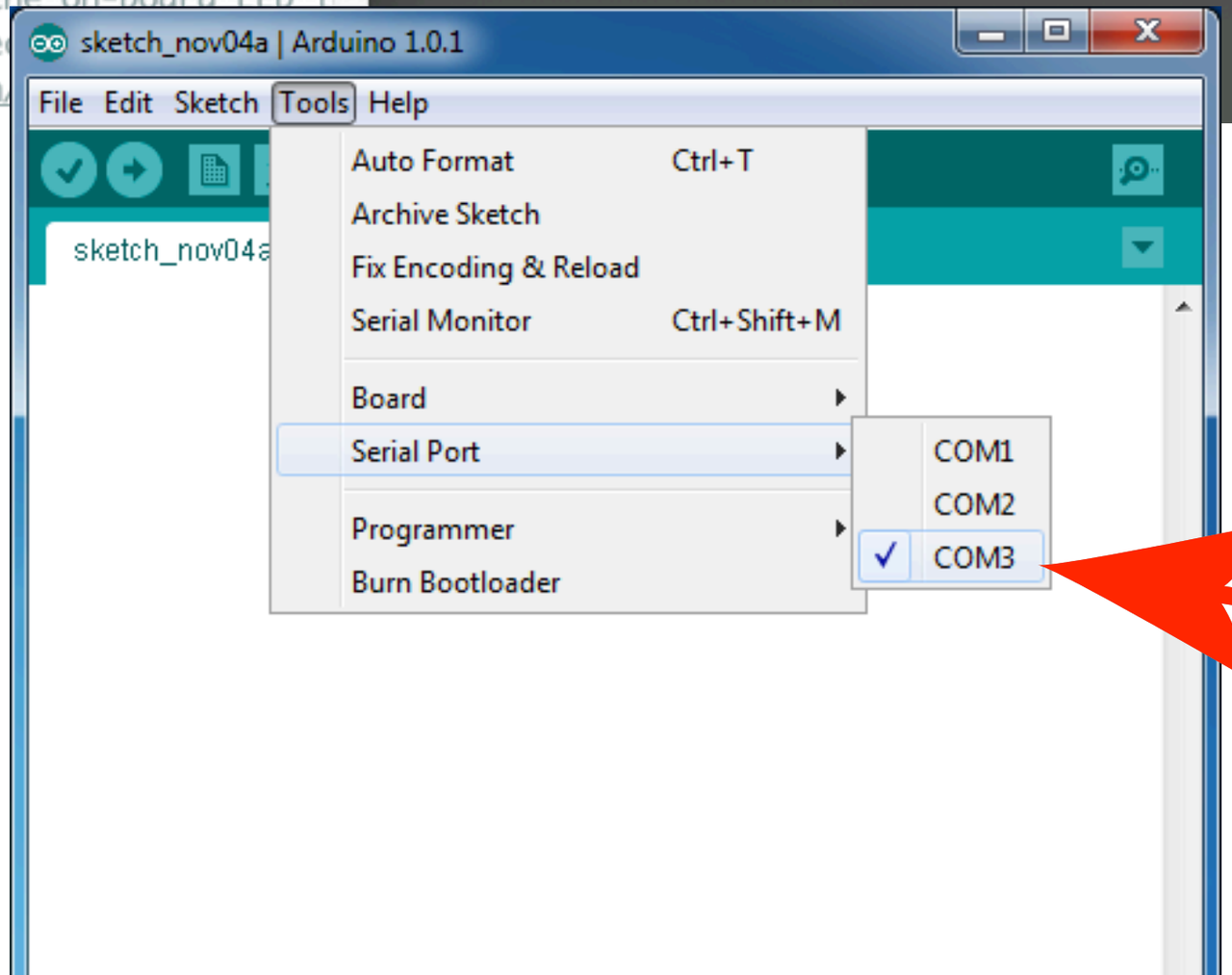
- ‘sketch’ – program that runs on the Arduino
- ‘pin’ – input or output connected to something, like a LED or a switch


Arduino
File
Edit
Sketch
Tools
Help
New ⌘N
Open... ⌘O
Open Recent
Sketchbook
Examples
Close ⌘W
Save ⌘S
Save As... ⇧⌘S
Page Setup ⇧⌘P
Print ⌘P
sketch_jan
1 void s
2 // p
3
4 }
5
6 void loop() {
7 // put your main code here
8
9 }
Arduino/Genuino
Built-in Examples
01.Basics
02.Digital
03.Analog
04.Communication
05.Control
06.Sensors
07.Display
08.Strings
09.USB
10.StarterKit_BasicKit
11.ArduinoISP
Examples for any board
Bridge
Esplora
Ethernet
Firmata
GSM
LiquidCrystal
Robot Control
Robot Motor
SD
Servo
SpacebrewYun
Stepper
Temboo
RETIRED
Examples for Arduino/Genuino Uno
EEPROM
AnalogReadSerial
BareMinimum
Blink
DigitalReadSerial
Fade
ReadAnalogVoltage


Blink | Arduino 1.8.9
Blink
24
25 // the setup function runs once when you press reset or power t
26 void setup() {
27   // initialize digital pin LED_BUILTIN as an output.
28   pinMode(LED_BUILTIN, OUTPUT);
29 }
30
31 // the loop function runs over and over again forever
32 void loop() {
33   digitalWrite(LED_BUILTIN, HIGH);   // turn the LED on (HIGH i
34   delay(1000);   // wait for a second
35   digitalWrite(LED_BUILTIN, LOW);   // turn the LED off by mak
36   delay(1000);   // wait for a second
37 }
Arduino/Genuino Uno on /dev/cu.usbmodem14201


Arduino File Edit Sketch Tools Help
Auto Format ⌘T
Archive Sketch
Fix Encoding & Reload
Manage Libraries... ⇧⌘I
Serial Monitor ⇧⌘M
Serial Plotter ⇧⌘L
WiFi101 / WiFiNINA Firmware Updater
ESP32 Sketch Data Upload
Board: "Arduino/Genuino Uno"
Port
Get Board Info
Programmer: "AVRISP mkII"
Burn Bootloader
Boards Manager...
Arduino AVR Boards
Arduino Yún
✓ Arduino/Genuino Uno
Arduino Duemilanove or Diecimila
Arduino Nano
Arduino/Genuino Mega or Mega 2560
Arduino Mega ADK
Arduino Leonardo
Arduino Leonardo ETH
Arduino/Genuino Micro
Arduino Esplora
Arduino Mini
Arduino Ethernet
Arduino Fio
Arduino BT
LilyPad Arduino USB
LilyPad Arduino
Arduino Pro or Pro Mini
Arduino NG or older
Blink
1 /*
2 Blink
3
4 Turns an LED on
5
6 Most Arduinos ha
7 it is attached t
8 the correct LED pin independent of which board
9 If you want to know what pin the on-board LED i
10 model, check the Technical Specs of your board
11 https://www.arduino.cc/en/Main/Products
12
13 modified 8 May 2014


Tools
Help
Auto Format ⌘T
Archive Sketch
Fix Encoding & Reload
Manage Libraries... ⇧⌘I
Serial Monitor ⇧⌘M
Serial Plotter ⇧⌘L
WiFi101 / WiFiNINA Firmware Updater
ESP32 Sketch Data Upload
Board: "Arduino/Genuino Uno"
Port: "/dev/cu.usbmodem14201 (Arduino/Genuino Uno)"
Get Board Info
Programmer: "AVRISP mkII"
Burn Bootloader
Serial ports
/dev/cu.-WirelessiAP
/dev/cu.Bluetooth-Incoming-Port
/dev/cu.EDIFIERTWS2-SerialPort
/dev/cu.usbmodem14201 (Arduino/Genuino Uno)


sketch_nov04a | Arduino 1.0.1
File Edit Sketch Tools Help
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Serial Monitor Ctrl+Shift+M
Board
Serial Port
Programmer
Burn Bootloader
COM1
COM2
COM3

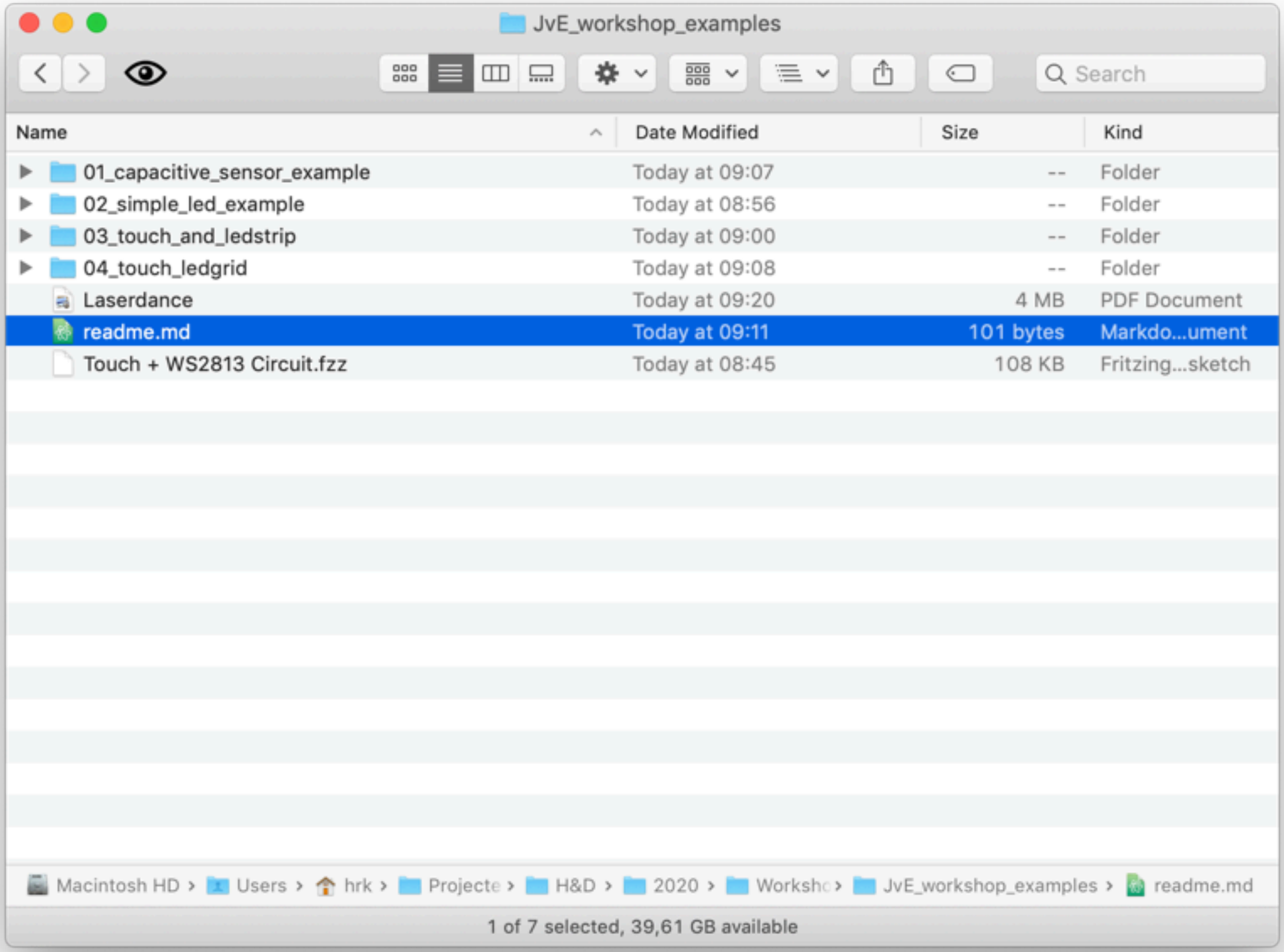
Verify and Upload

woohoo!

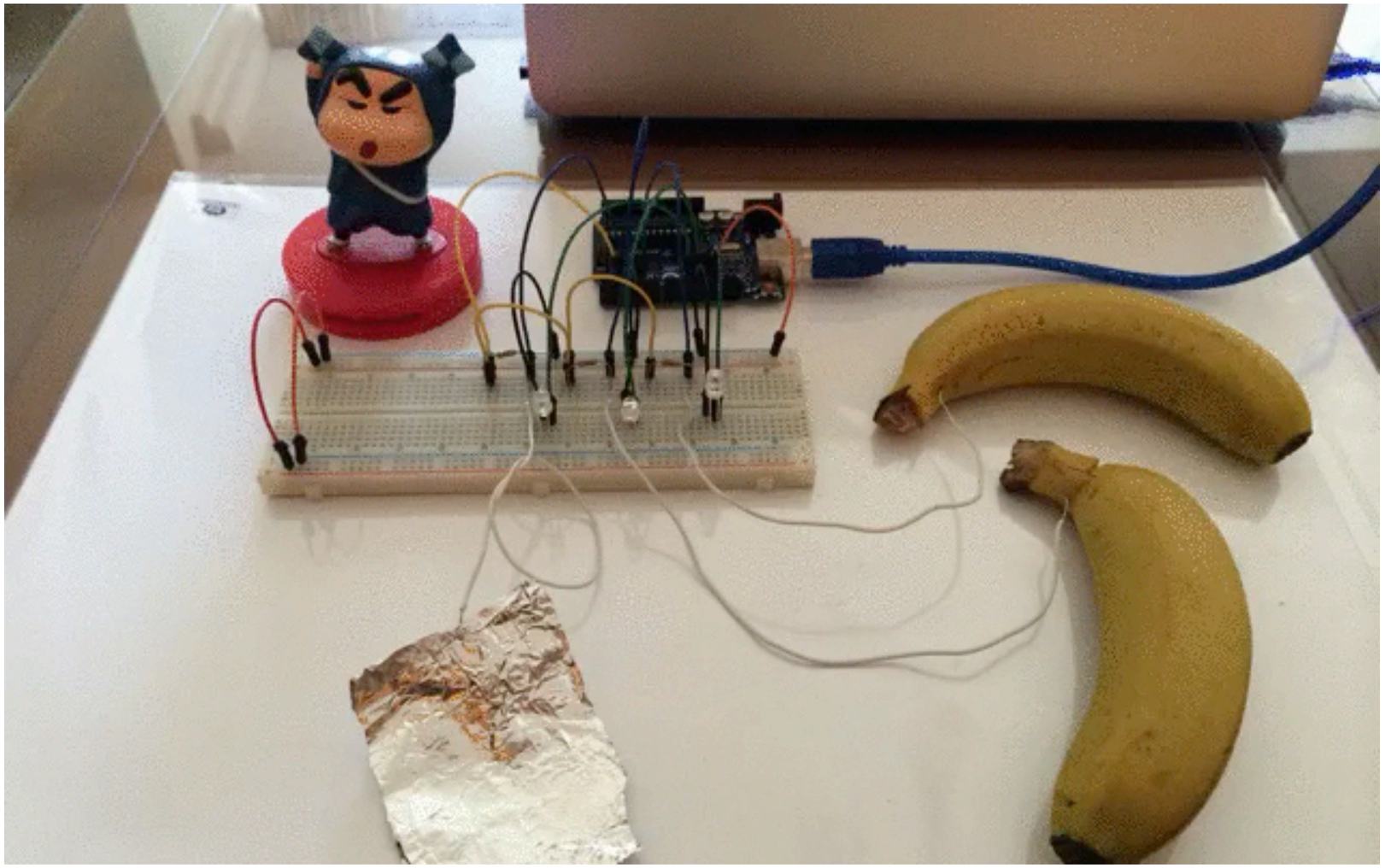
Be careful

- Your computer is connected to the Arduino. Be careful with short circuits. Avoid metallic surfaces.
- Components can be toxic.

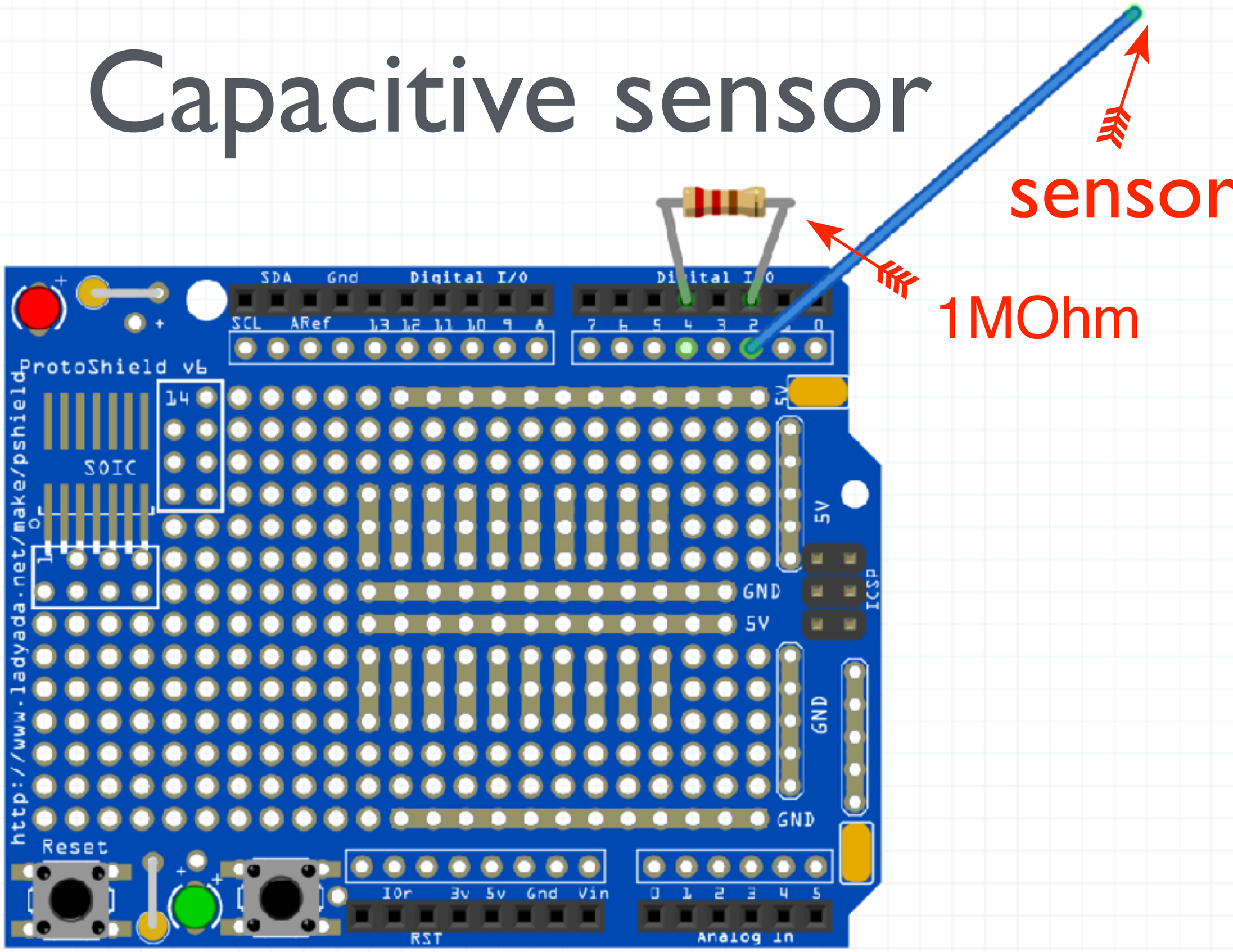
https://github.com/hackersanddesigners/Laserdance

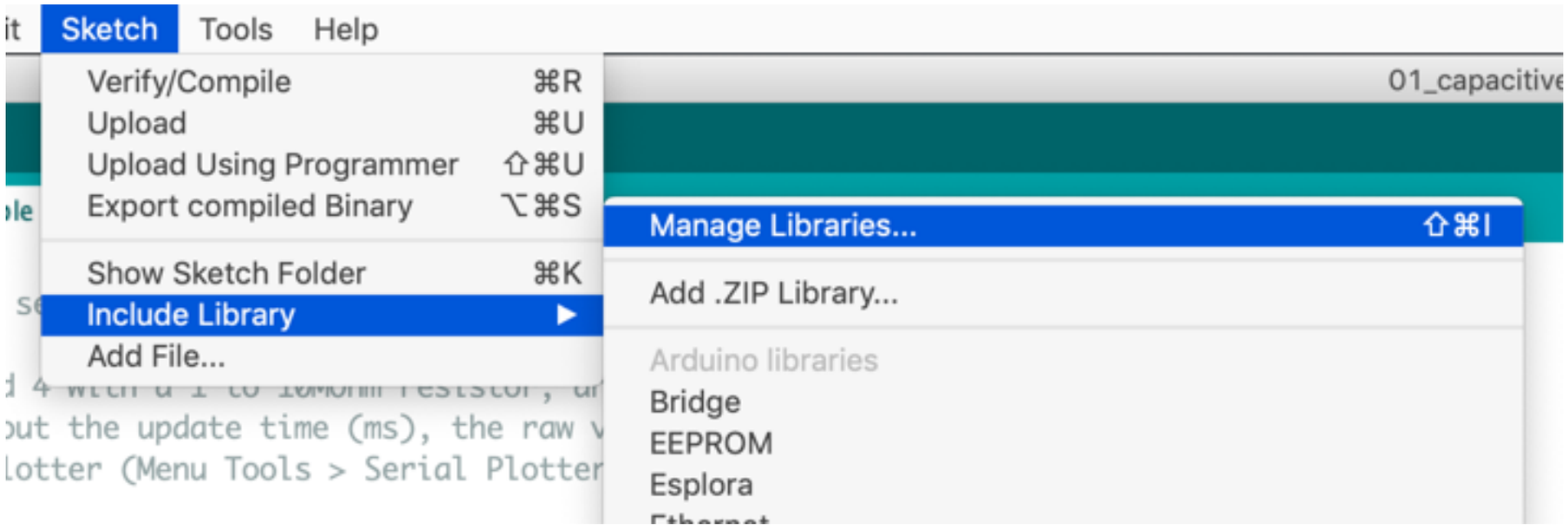


Capacitive sensor



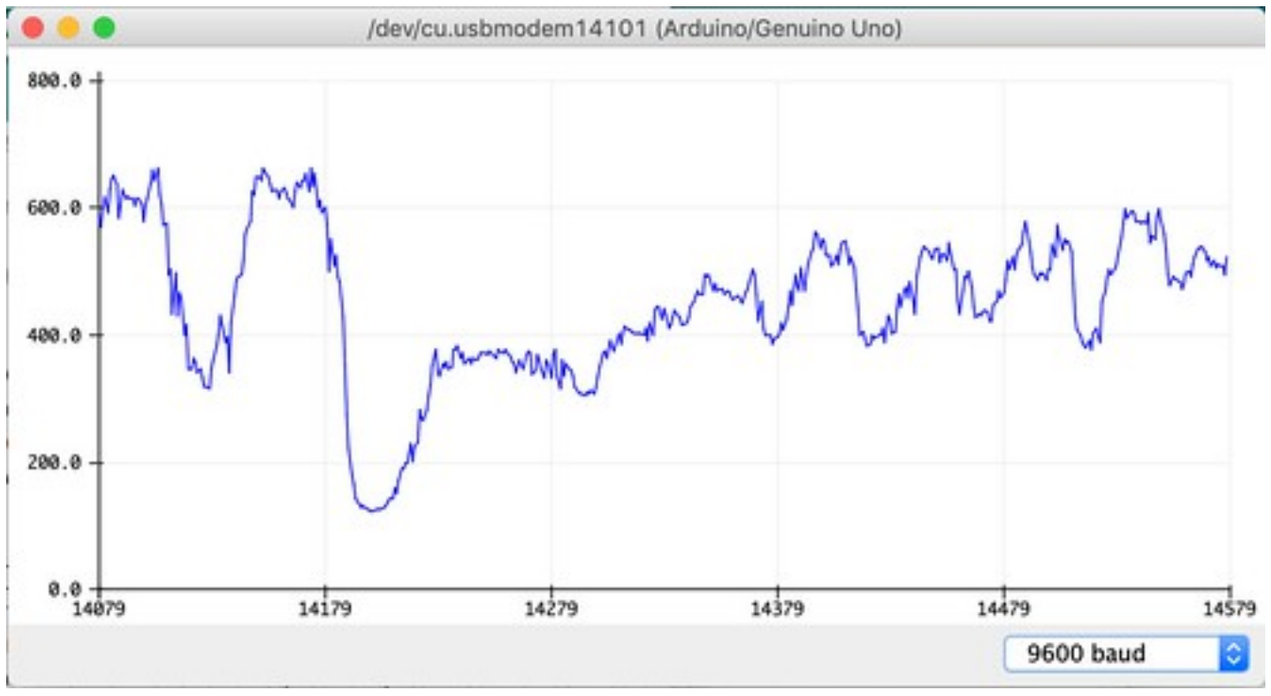
Capacitive sensor





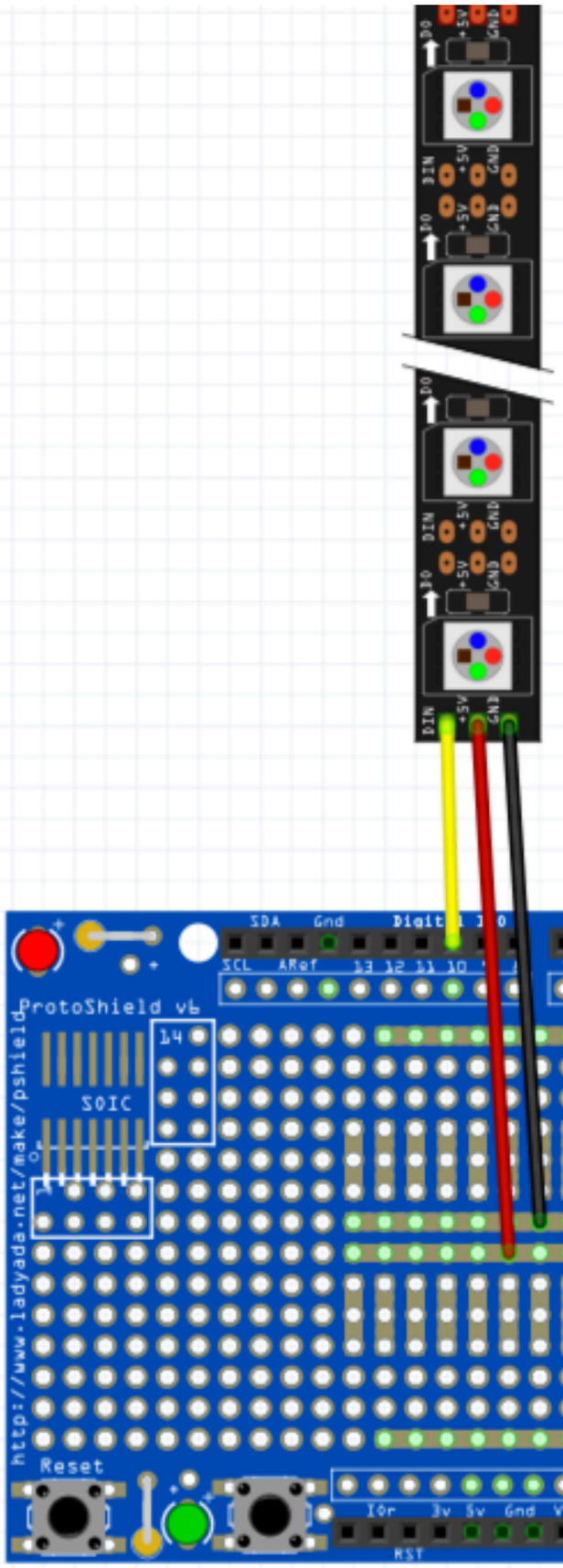
Install ‘CapacitiveSensor’ library.

Open & upload example
01_capacitive_sensor_example



View the values:

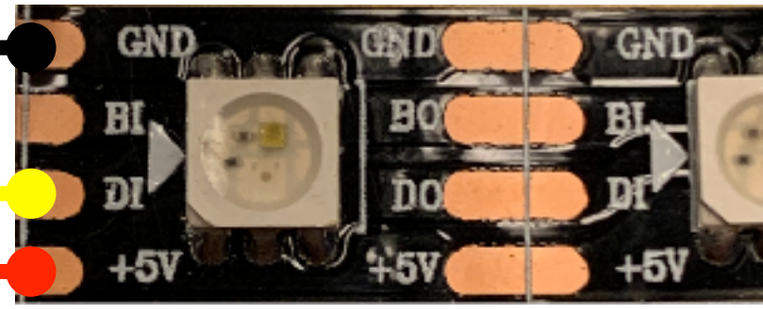
Tools > Serial Plotter



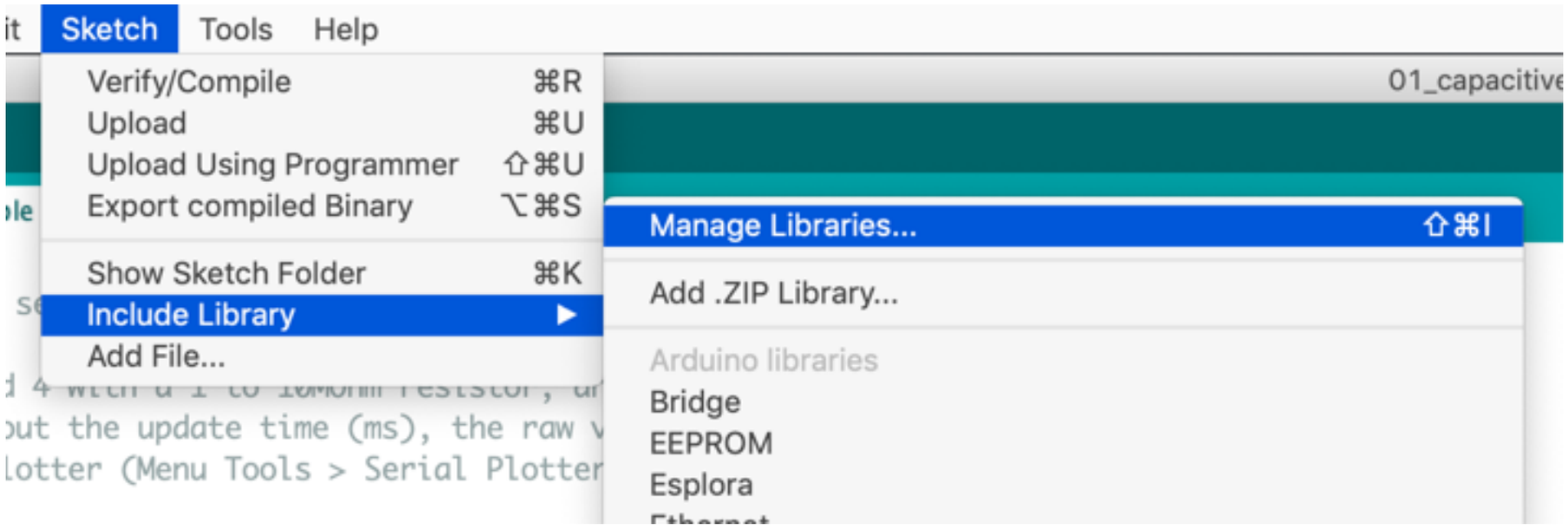
GND

Output pin

5V



Led strip

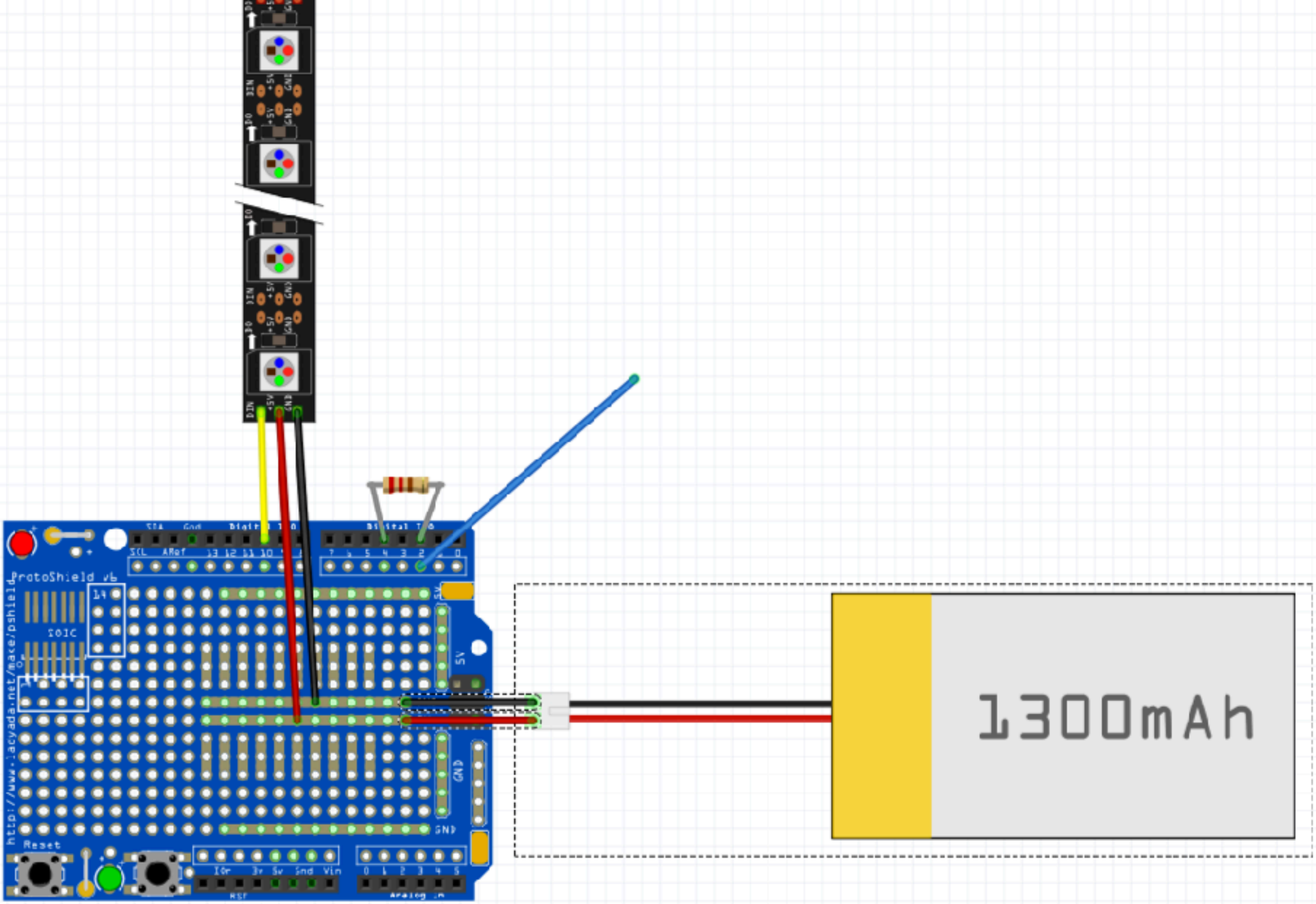


Install ‘FastLed’ library.

Open & upload 02_simple_led_example

Next Steps:

- ★ Try the other examples.
- ★ Experiment.
- ★ Magic.
- ★ Dance.


DIN
+5V
GND
DO
ProtoShield v6
http://www.ladyada.net/make/pshield
Reset
1300mAh