Arduino IDE installation and configuration guide
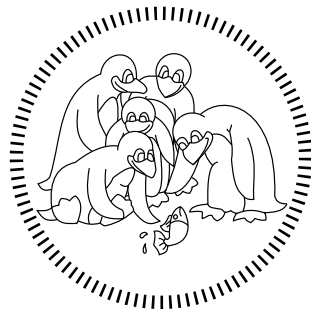
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Contents

Chapter 1

Introduction

1.1   Notes

In the following sections you'll find guides for Windows, MacOS and most of the well-known GNU/Linux distros (that we recommend).

You can start with Ubuntu, it's a pretty easy and accessible one; the only hard thing about the switch is getting used to the new OS.

You will need the following things to get started:

- Preparing a USB stick: Create a bootable USB stick on Windows
- Installing Ubuntu: Installation guide

1.2   Synopsis

In this guide you'll understand how to install Arduino IDE, an open source platform used to develop and load programs on compatible boards.

We'll use the **Arduino Uno** and **Arduino Leonardo** boards during this workshop.

1.3   IDE version history

- Arduino IDE 1.8.19 - May 13, 2022
- Arduino IDE 2.0.0 - September 17, 2022

N.B. (Windows & MacOS) If the version of the OS of your computer isn't compatible with the current installation of Arduino IDE it's always possible to try and proceed with the installation following the procedure in the most recent guide anyways; in the event that the application doesn't work or it's impossible to install, it might be necessary to install a previous version of Arduino IDE following the past guides. (**BEWARE:** only the most recent guide is kept updated in parallel with the courses, therefore, no guarantees are given on the correctness of previous versions)
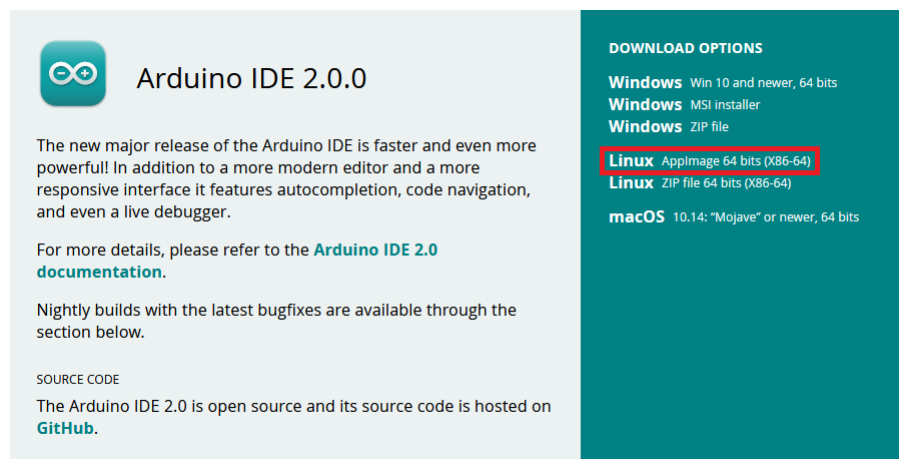
Chapter 2

GNU/Linux

2.1 Download

Use your browser to search for the term **"Arduino"** and, in the first result, select the **Software** section; alternatively you can go directly to https://www.arduino.cc/en/software.
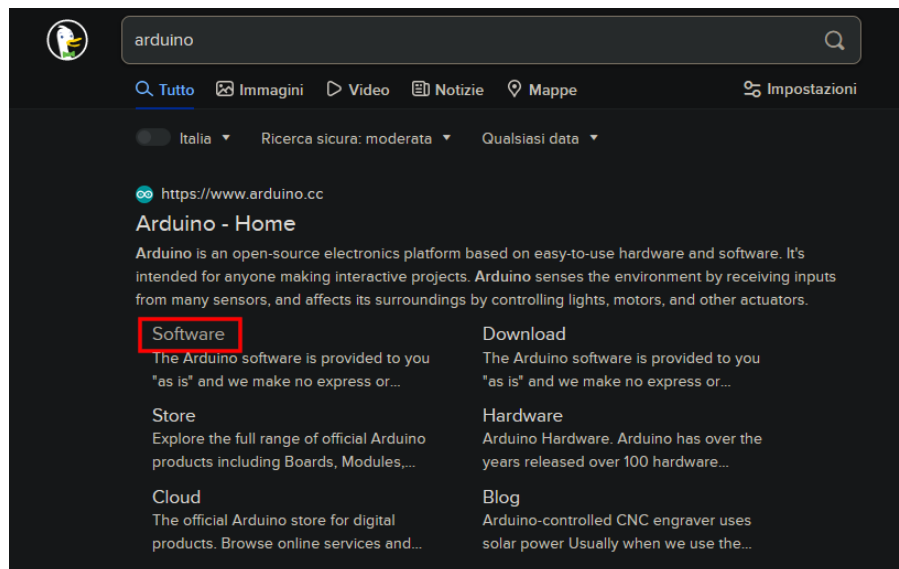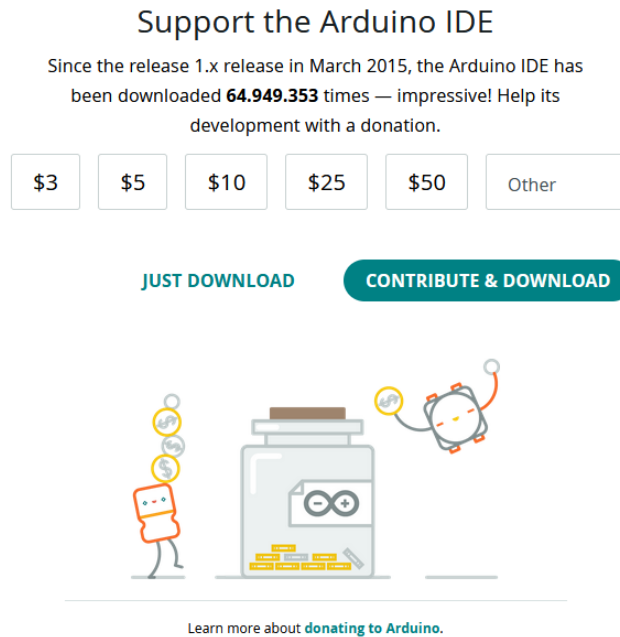

In the **Downloads** section of the web page, choose the *Linux AppImage 64 bits (X86-64)* option for the Arduino IDE 2.x.x version as shown in the image.

Support

The website will prompt you with the choice for a donation, if you don't want to support the project you can just continue with the option `Just Download`.

2.2   Installation

The downloaded file will have the `.AppImage` extension and it will be placed in the downloads folder. In order to execute the file it must be actually made executable via the command:

```
chmod a+x [filename].AppImage
# [filename] must correspond to the file name
# (it should be arduino-ide_2.0.0_Linux_64bit)
```

Finally, the application can be exectued utilizing the command:

```
./[filename].AppImage
```

2.3   Troubleshooting

2.3.1   Serial communication permissions

In order to establish a serial connection to the board, it may be necessary to set the correct read and write permissions for the serial device.

Debian-based (Ubuntu, Pop!_OS, Debian, Linux Mint, etc.)

Arch-based (Arch Linux, Manjaro)

```
sudo usermod -aG uucp [username]
# Replace [username] with your username
```

N.B. It may be necessary to reboot the system after executing the command for the changes to take effect.

Other distros

```
sudo chmod a+rw [serial device]
# Replace [serial device] with the reference to the device utilized for the
# communication (in most cases it's /dev/ttyACM0)
```

2.3.2 FUSE

If, after executing the `.AppImage` file, you are met with error messages similar to *failed to exec fusermount* or which mention the *FUSE* acronym, then it may mean that the FUSE interface is missing; it is possible to solve this problem by installing it using the package manager of your own Linux distro.

Debian-based (Ubuntu, Pop!_OS, Debian, Linux Mint, etc.)

```
sudo apt update
sudo apt install fuse
```

Arch-based (Arch Linux, Manjaro)

In most Arch-based distros, FUSE should already be present and working, the only problem that may arise is tied to incorrect permissions for the `fusermount` binary.

```
sudo chmod u+s "$(which fusermount)"
```
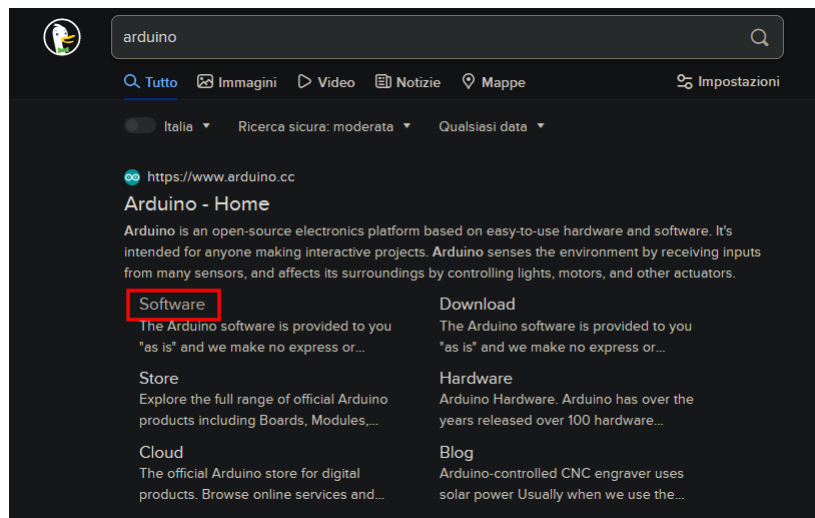
Fedora

```
sudo dnf -y install fuse
```

OpenSUSE

```
sudo zypper install fuse libfuse2
```

Chapter 3

Windows & MacOS

3.1   Download

Use your browser to search for the term `"Arduino"` and, in the first result, select the `Software` section; alternatively you can go directly to https://www.arduino.cc/en/software.
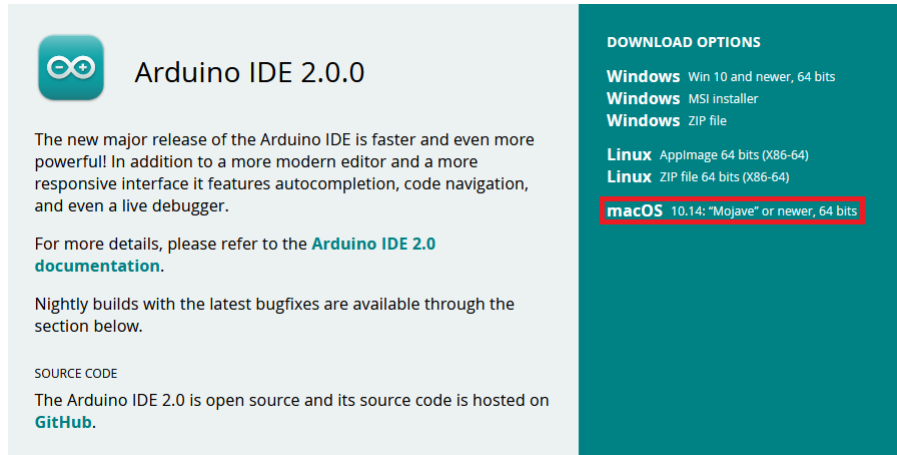

Windows

In the `Downloads` section of the web page, choose the *Windows 10 and newer, 64 bits* option for the Arduino IDE 2.x.x version as shown in the image. The other Windows installation choices are equivalent.

MacOS

In the `Downloads` section of the web page, choose the *macOS 10.14: "Mojave" or newer, 64 bits* option for the Arduino IDE 2.x.x version as shown in the image.

Support

The website will prompt you with the choice for a donation, if you don't want to support the project you can just continue with the option `Just Download`.

3.2 Windows installation

When downloading, if the browser asks for it, select the download folder (if you don't know where the folder is click `Win+R` and type `"C:\Users\[username]\Downloads"`, where `[username]` is your Windows username) and open the executable file shown in the picture.
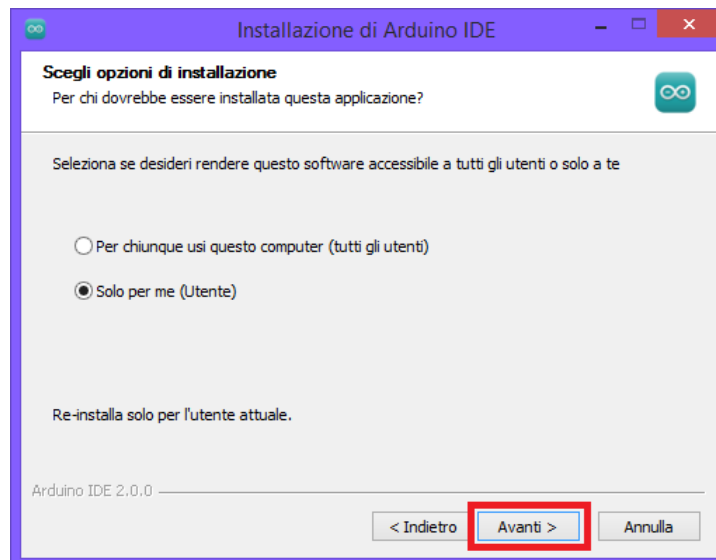

Now the installation procedure has started.
The first thing to do is to accept the terms & conditions by clicking on `I Agree`.
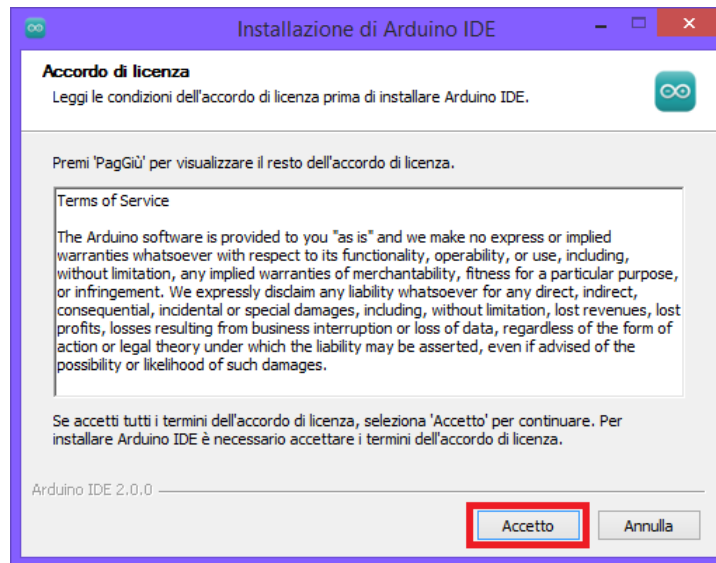
After that select for which users do you want to install the application (you can leave the default option if you don't have any particular preference) and click on `Next`:
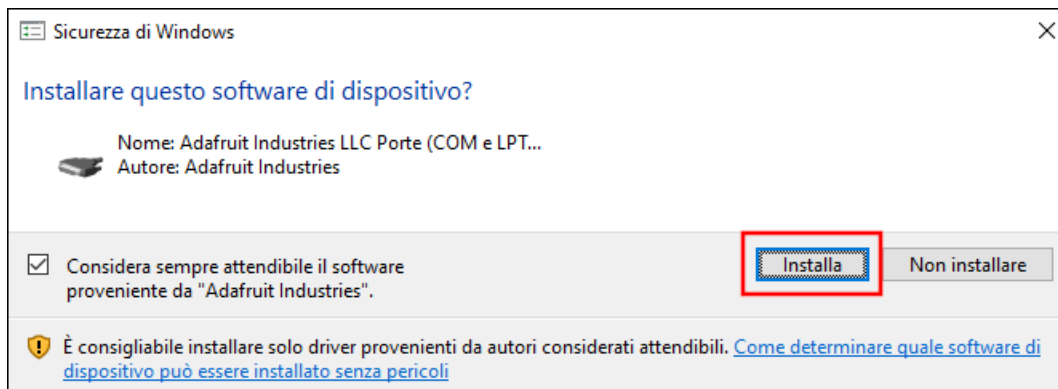
The installer gives you the possibility of choosing the installation path (keep the default one if you don't know what you are doing).
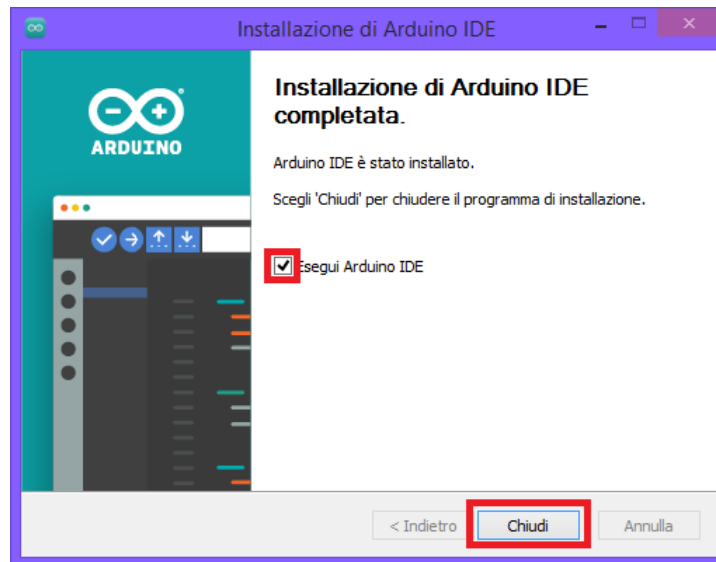Finally, click on `Install` and wait for the program to end.
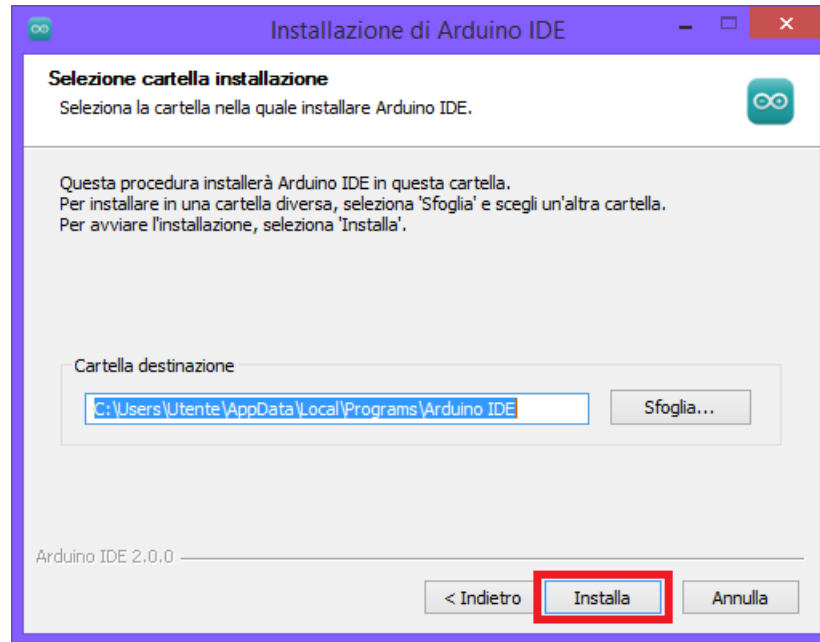

If you get the prompt shown in the next picture, you can continue the installation by pressing the `Install` button.

Now you can finish the installation procedure by clicking on `Finish`, if you want to execute immediately Arduino IDE you can tick the checkbox shown in the next image and skip the last step.
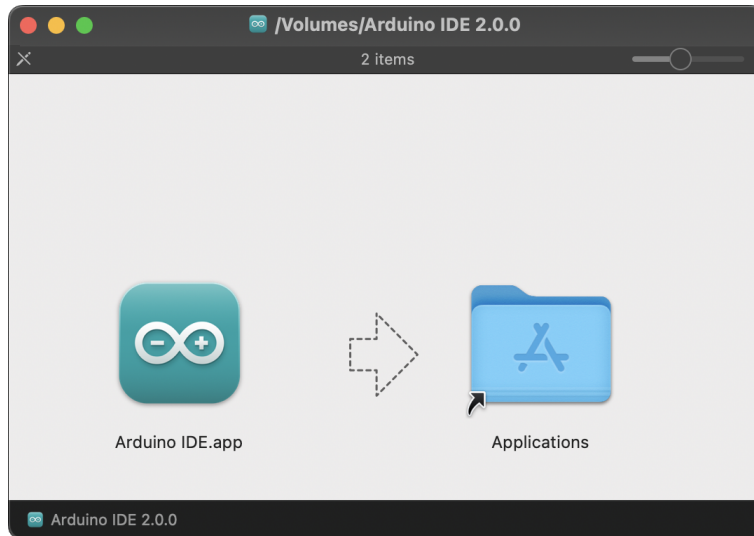

Now you should have a shortcut of Arduino IDE on your desktop, and by clicking it you can open the Arduino IDE.
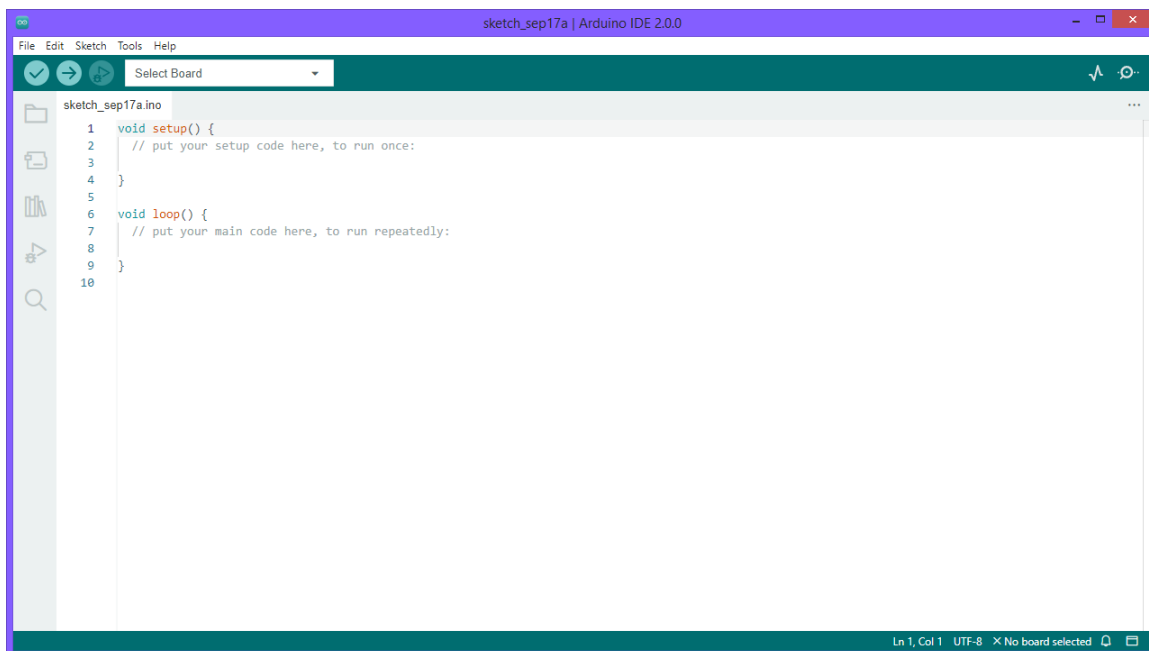
3.3 MacOS installation

Once the file has been downloaded, unzip it using the appropriate tools and drag it inside the `Applications` folder in order to install it.

Now you can access the Arduino IDE.