



GitHub + VS Code for Makers



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# What we'll see today?

Let's face it: Arduino IDE works but it is not the best IDE out there.

If you're tired of:

1. Using a non-extendable, non-integrated Arduino IDE interface
2. Saving that code just to never finding it ever again this workshop is for you.

Topics we'll cover today:

1. What is VS Code
2. Installing VS Code
3. Adding useful extension to VS Code
4. Using VS Code to program your Arduino
5. What is GitHub
6. Setting up source control and first usage
7. Sharing your projects with the World

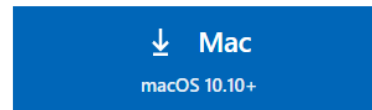
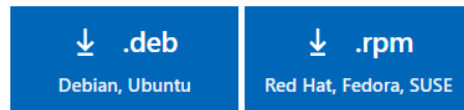
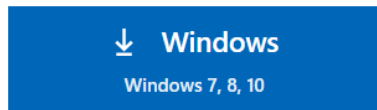
# Visual Studio - VS Code

Visual Studio Code is a lightweight but powerful source code editor.

Available for Windows, Linux and macOS

## Built-in Intellisense

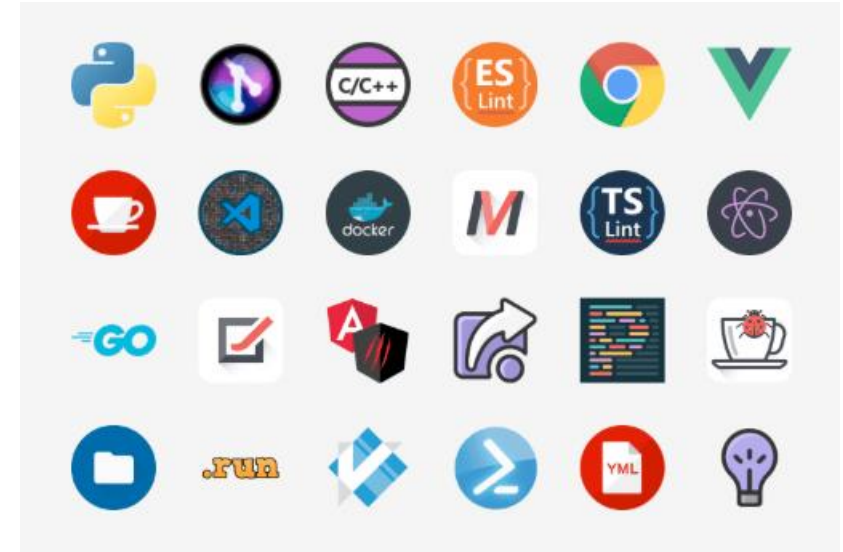
## Dozens of extensions available



User Installer	64 bit	32 bit
System Installer	64 bit	32 bit
.zip	64 bit	32 bit

.deb	64 bit
.rpm	64 bit
.tar.gz	64 bit

## Snap Store



# VS Code Setup

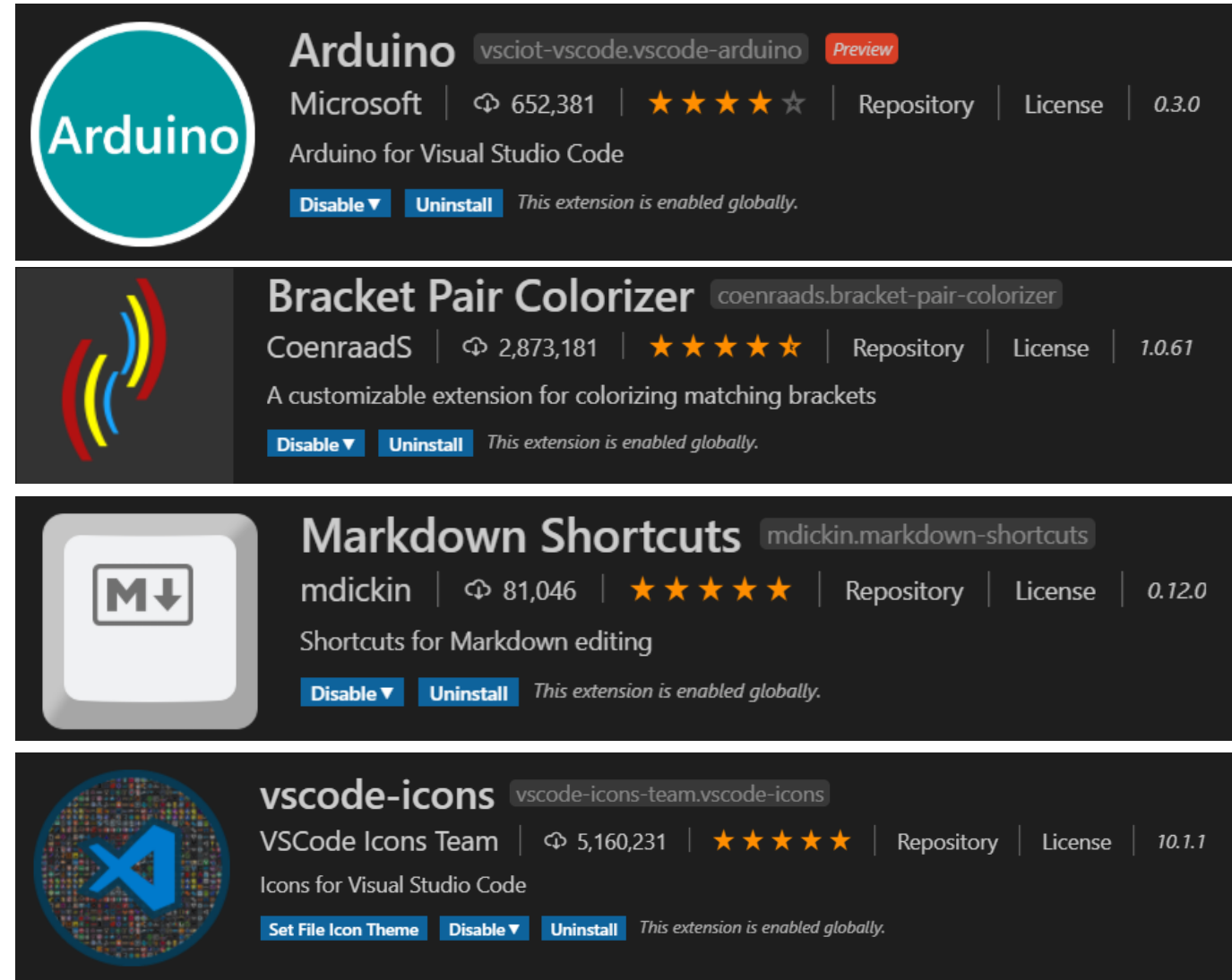
<https://code.visualstudio.com>

No need for any special step here, just download the latest stable build, and follow the NNF pattern (next-next-finish)

VS Code - Basic navigation

Some useful extensions you'll want to add to your VS code (Ctrl+Shift+X):

1. Arduino (it requires you have Arduino IDE installed on your computer)
2. Bracket Pair colorizer
3. Markdown shortcuts
4. Vscode-icons



The screenshot displays the VS Code Extensions sidebar with four extensions installed globally. Each extension card includes its icon, name, publisher, download count, star rating, and version number. Action buttons for 'Disable' and 'Uninstall' are present for each extension, along with a status message indicating they are enabled globally.

Extension Name	Publisher	Downloads	Stars	Version
Arduino	Microsoft	652,381	4.5	0.3.0
Bracket Pair Colorizer	CoenraadS	2,873,181	5.0	1.0.61
Markdown Shortcuts	mdickin	81,046	5.0	0.12.0
vscode-icons	VSCode Icons Team	5,160,231	5.0	10.1.1

# VS Code + Arduino ???

Press F1 and type "Arduino": this will show all commands available.  
Get your Arduino Uno ready and connect it.  
Select Examples: let's open Blink

Common tasks are available at the bottom of the interface:

- Select programmer → AVR ISP
- Select board type → Arduino Uno
- Select COM port → [check on your computer]
- Open Serial monitor / Select serial port

All other commands are in the F1 : Arduino

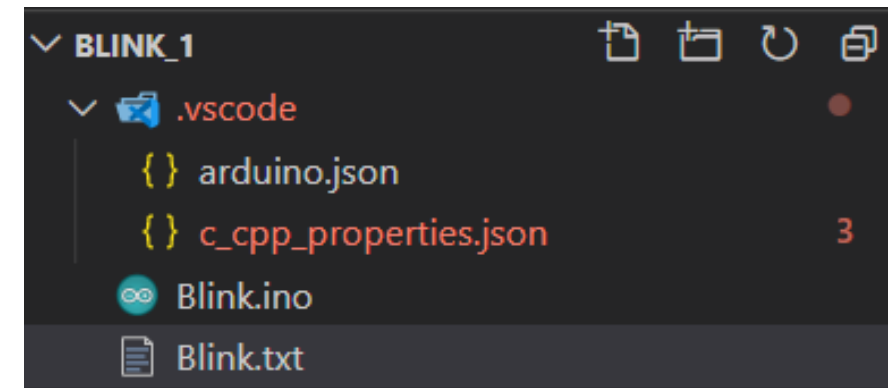
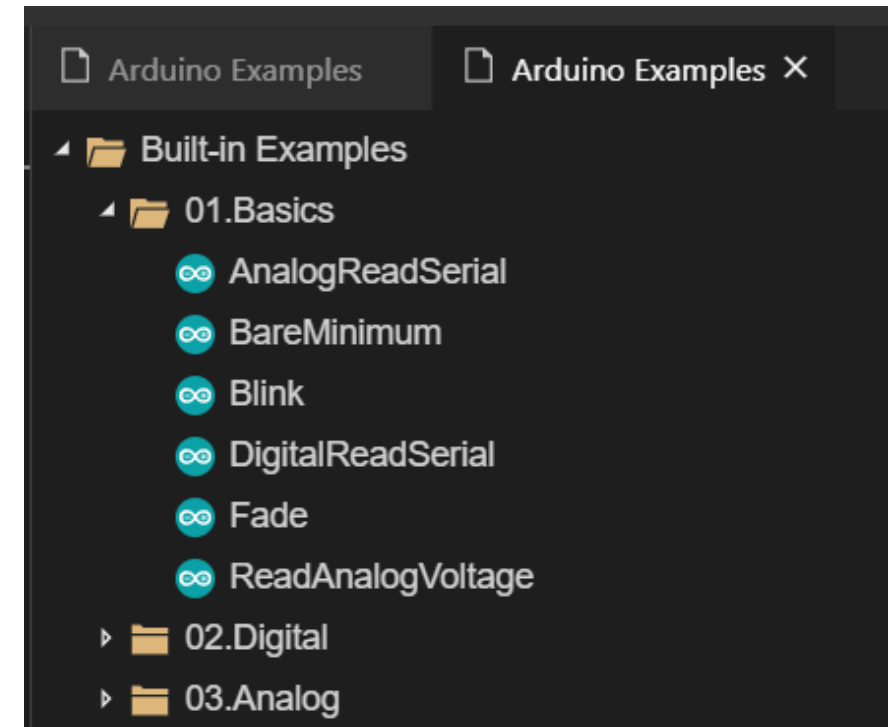
Let's open the Blink sample:

Verify → Ctrl+Alt+R

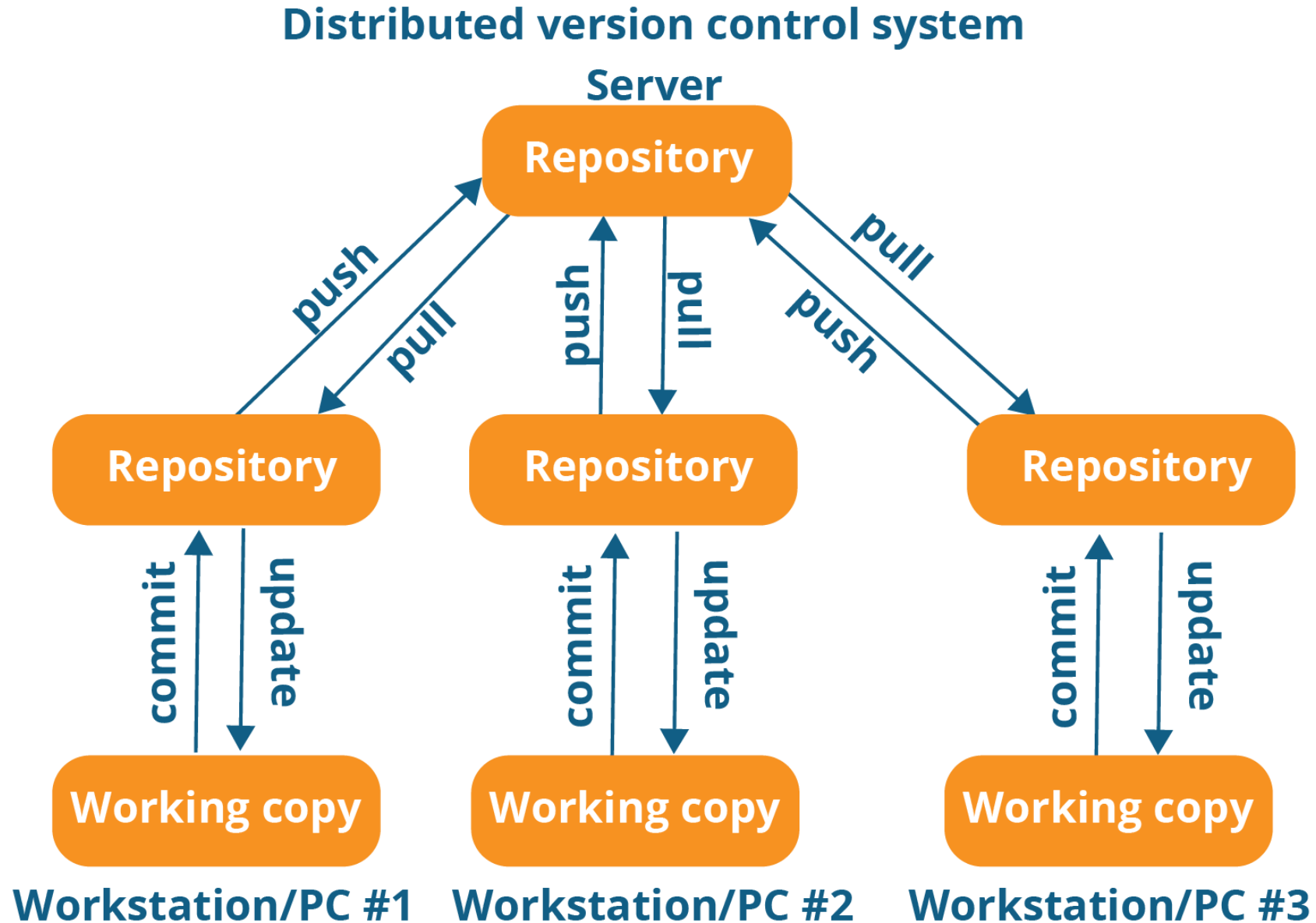
Upload → Ctrl+Alt+U

Intellisense??? How to setup your c\_cpp\_properties.json

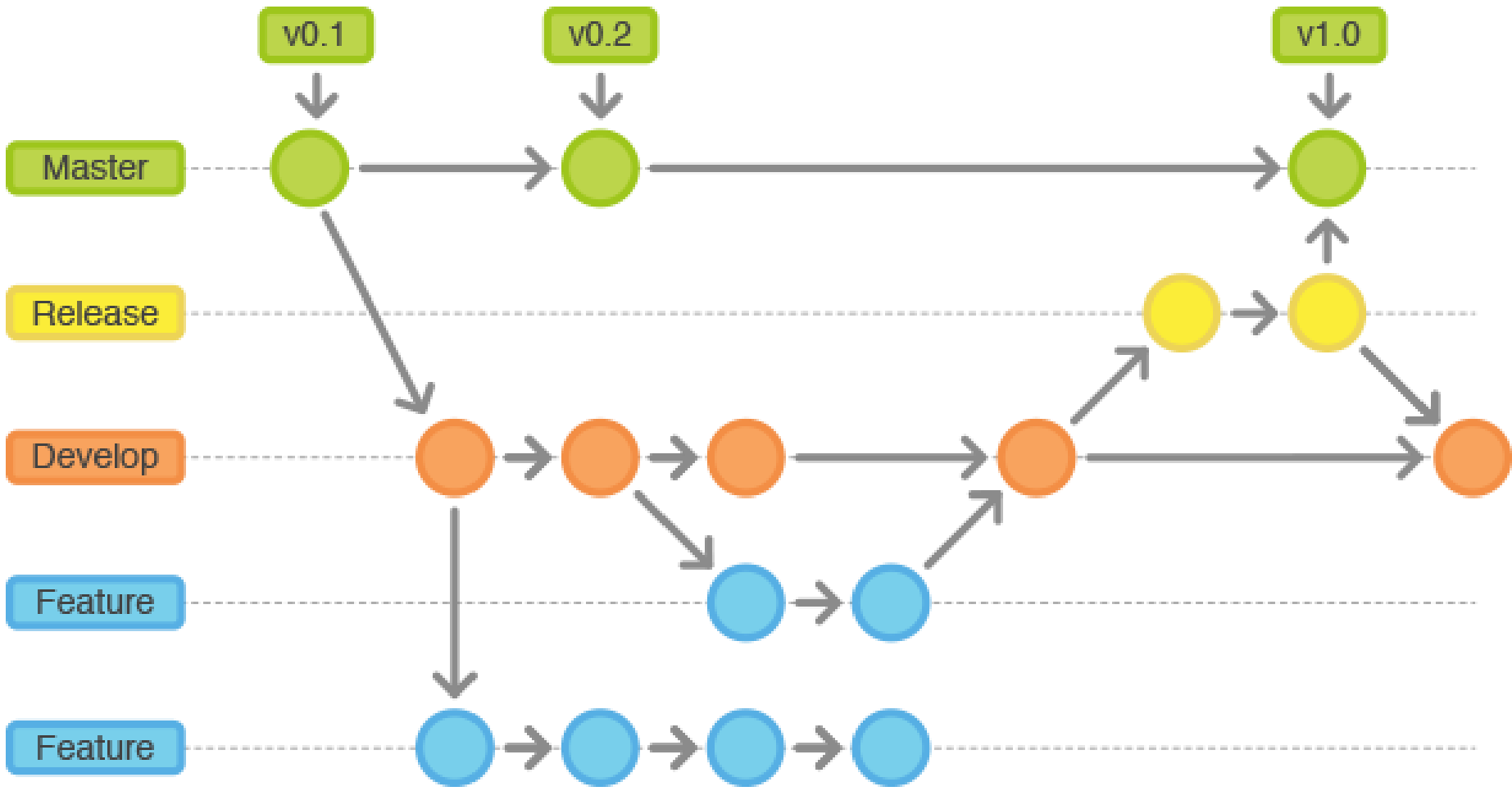
Check Serial port



# What is GitHub?

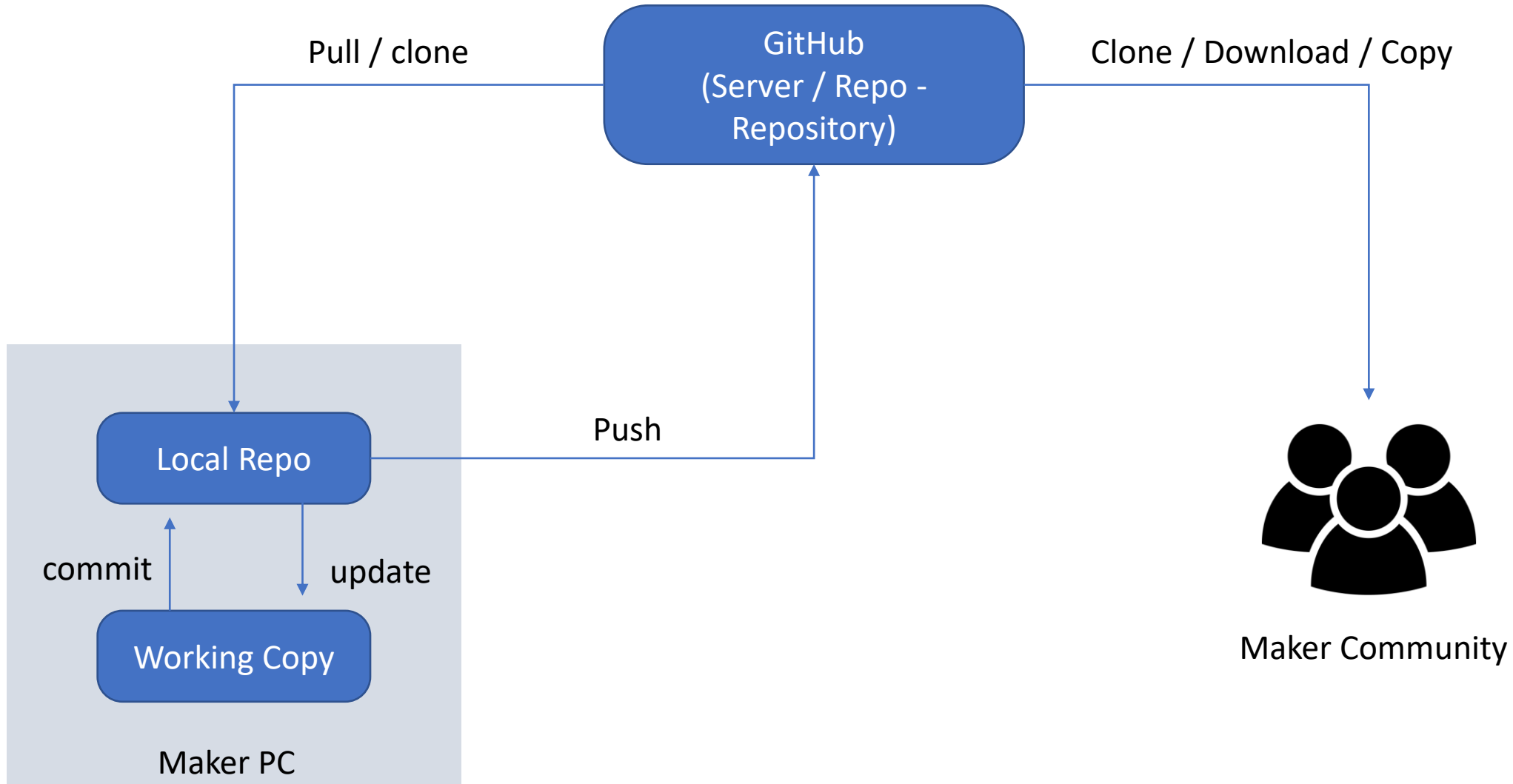


# What is GitHub?





# As a Maker, how can I take advantage of GitHub?



# Setting up source control and first usage

Install Git - <https://git-scm.com/download/win>

Create a GitHub account

Creating a Repository on GitHub

Get the link / clone it

Open the directory on VS Code

Make a change & Commit to local repo (set to auto-stage)

Pull it to remote (online repo)

Set username and password (your ID) → pull

Check the updated version on GitHub

Make an online change

Pull updates to your local machine

Check the updates

Files I don't want there: gitignore

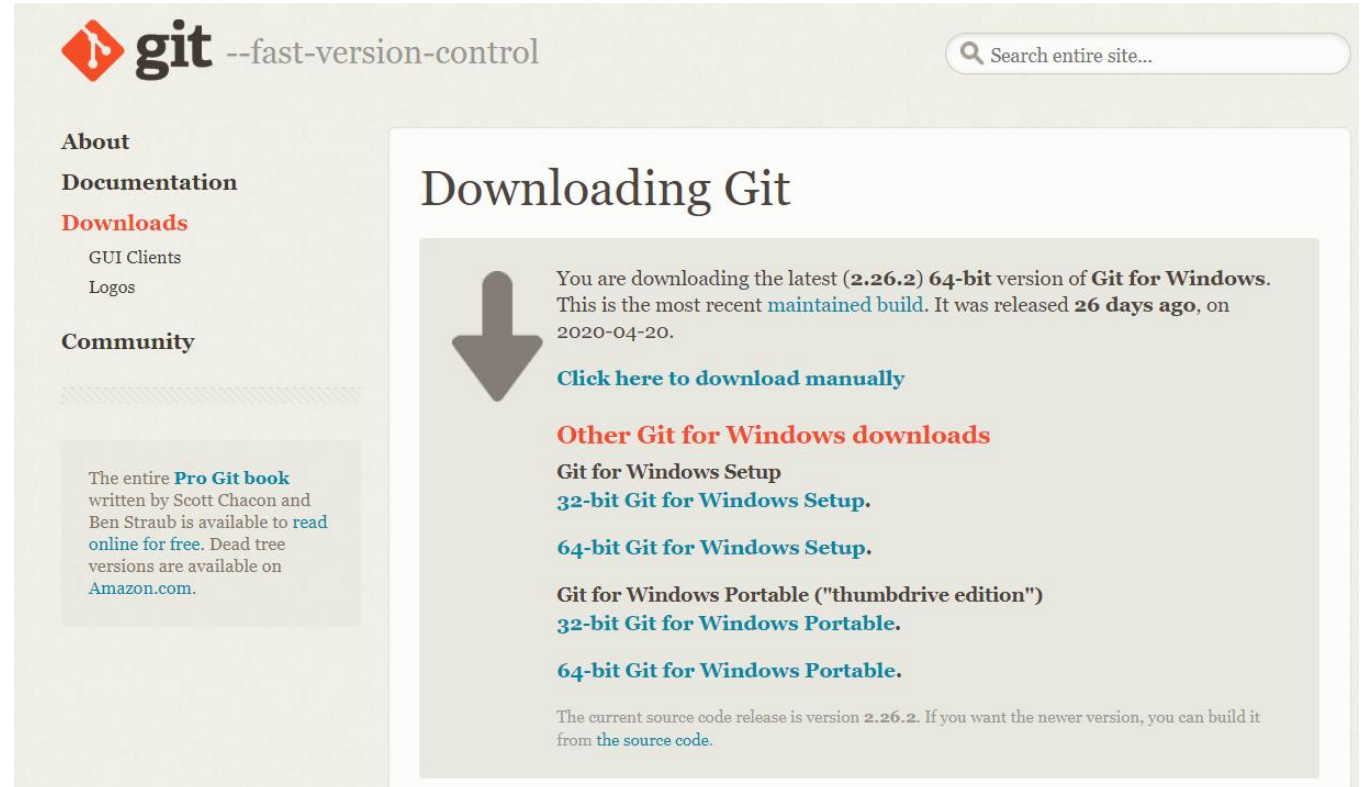
Clone my workshop Repo!!

<https://github.com/wduraes/Workshops>

Let open the whole directory from VS Code

Opening files with VS Code !!

Is this folder tracked by Git?



The screenshot shows the Git website's 'Downloading Git' page. The header includes the Git logo and the tagline '--fast-version-control'. A search bar is located in the top right corner. The left sidebar contains links for 'About', 'Documentation', 'Downloads' (highlighted in red), 'GUI Clients', 'Logos', and 'Community'. The main content area is titled 'Downloading Git' and features a large downward arrow icon. The text states: 'You are downloading the latest (2.26.2) 64-bit version of Git for Windows. This is the most recent maintained build. It was released 26 days ago, on 2020-04-20.' Below this, there is a link to 'Click here to download manually'. A section titled 'Other Git for Windows downloads' lists several options: 'Git for Windows Setup', '32-bit Git for Windows Setup.', '64-bit Git for Windows Setup.', 'Git for Windows Portable ("thumbdrive edition")', '32-bit Git for Windows Portable.', and '64-bit Git for Windows Portable.'. At the bottom, a note mentions the current source code release is version 2.26.2 and provides a link to the source code.

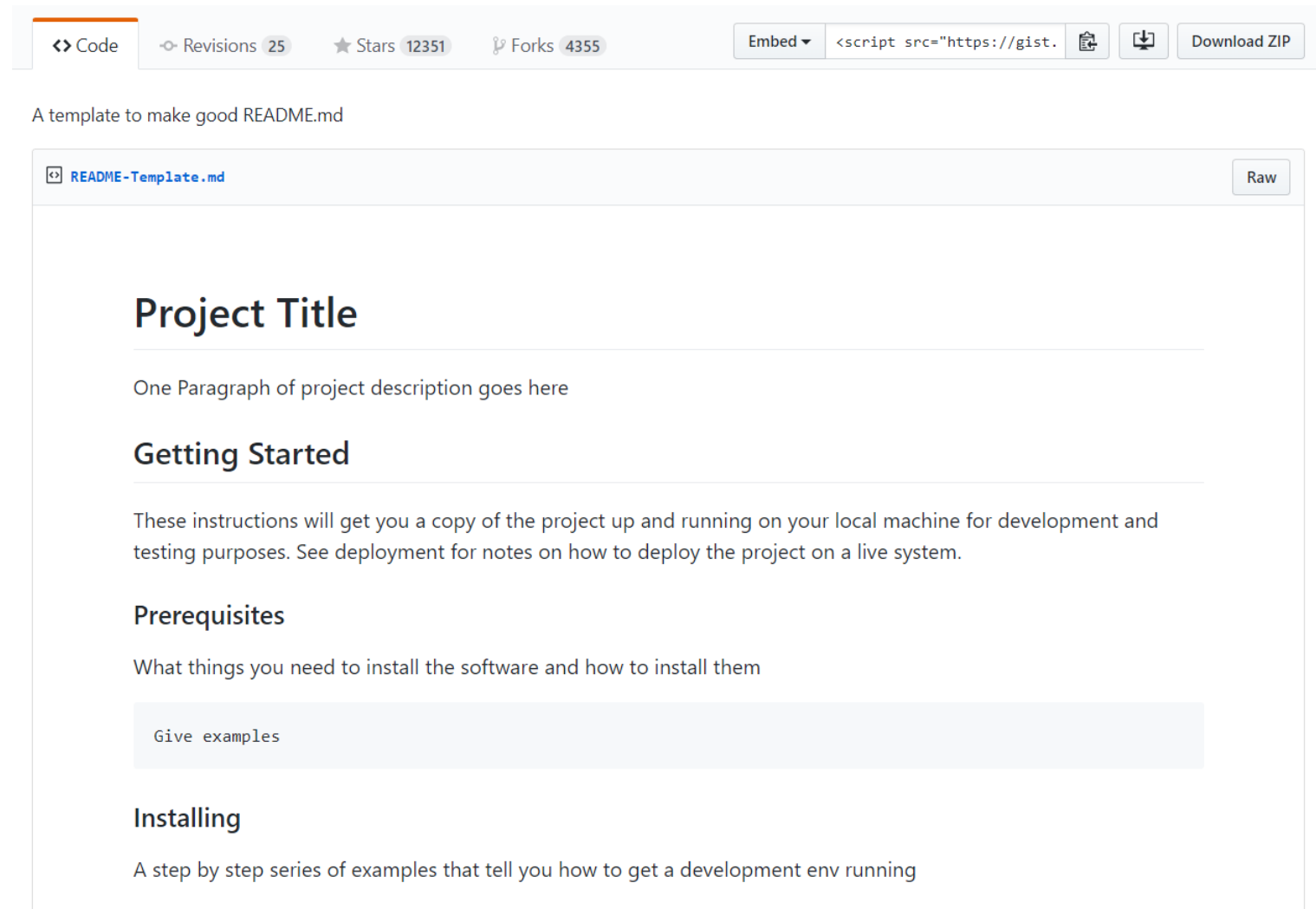
# Sharing your projects

Authoring a nice MD file: using markdown shortcuts

Don't be afraid to copy and paste!

Open preview to watch live your MD file

Right click to find tons of options



The screenshot shows a GitHub repository page for a README template. The repository name is "README-Template.md" and it has 25 revisions, 12351 stars, and 4355 forks. The description is "A template to make good README.md". The repository is in the "Code" view, showing a preview of the README file. The preview includes sections for "Project Title", "Getting Started", "Prerequisites", and "Installing".

<> Code   Revisions 25   Stars 12351   Forks 4355   Embed <script src="https://gist."   Download ZIP

A template to make good README.md

README-Template.md   Raw

## Project Title

One Paragraph of project description goes here

## Getting Started

These instructions will get you a copy of the project up and running on your local machine for development and testing purposes. See deployment for notes on how to deploy the project on a live system.

## Prerequisites

What things you need to install the software and how to install them

Give examples

## Installing

A step by step series of examples that tell you how to get a development env running