

Hands-on GitHub Tutorial

Introduction to Git and GitHub

(06/06/2024)



git



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Why you should use Git

To be kind to yourself

To be kind to your collaborators

To ensure your work is reproducible

Spillover benefits

- 💡 It imposes a certain discipline to your programming.
- 🤓 🔥 You can be braver when you code: if your new feature breaks, you can revert back to a version that worked!
- 💻 💾 Keeps multiple (older and newer) versions of everything (not just source code)

Git and GitHub

Git

- the software that allows us to do version control.
- like the “Track Changes” feature from Microsoft Word, but more rigorous, powerful, and scaled up to multiple files.

GitHub

- hosting service for git projects — essentially Dropbox for git projects.
- You can host **remote** repositories on <https://github.com/>. You edit and work on your content in your **local** repository on your computer, and then you send your changes to the remote.

You can interact with Git using the **Graphical User Interface (GUI)** provided by GitHub Desktop, or through the **Command Line Interface (CLI)**.

In this tutorial, we will use both.

<https://docs.github.com/fr/get-started/using-git/about-git>

Terms

- Directory -> **Folder**
- Terminal or Command Line -> **Interface for Text Commands**
- CLI -> **Command Line Interface**
- cd -> **Change Directory**
- Code Editor -> **Word Processor for Writing Code**
- Repository -> **Project, or the folder/place where your project is kept**
- Github -> **A website to host your repositories online**

Commands

Git and Github introduction

Git: starting a repository

```
$ git init  
$ git status
```

Git: staging files

```
$ git add <file-name>  
$ git add <file-name> <another-file-name> <yet-another-file-name>  
$ git add .  
$ git add --all  
$ git add -A  
$ git rm --cached <file-name>  
$ git reset <file-name>
```

Git: committing to a repository

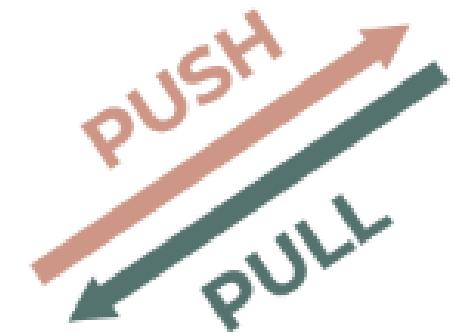
```
$ git commit -m "Add three files"  
$ git reset --soft HEAD^  
$ git commit --amend -m <enter your message>
```

Git: pulling and pushing from and to repositories

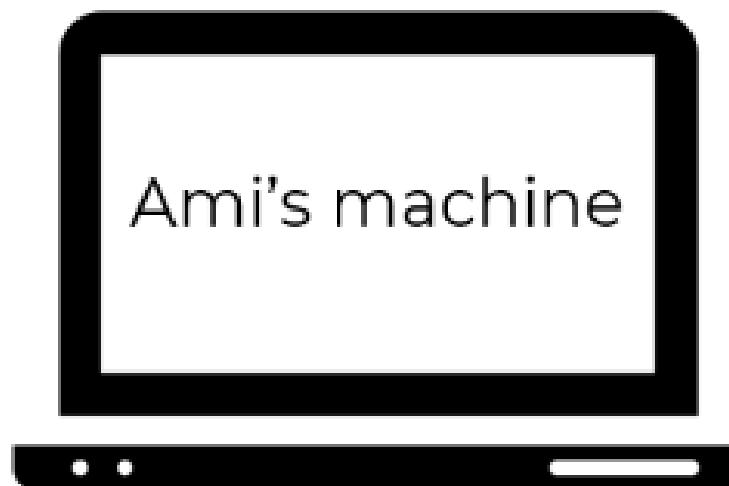
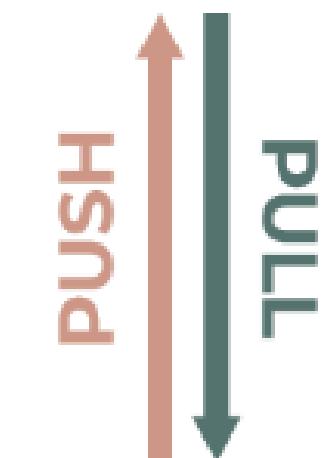
```
$ git remote add origin <link>  
$ git push -u origin master  
$ git clone <clone>  
$ git pull
```



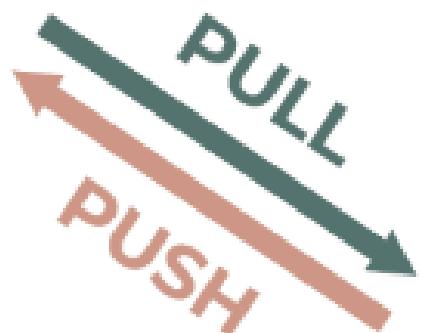
Remote repository on GitHub



Alice's machine



Ami's machine



Sita's machine

Local clone

Local clone

Local clone

Revert back to the last working stage

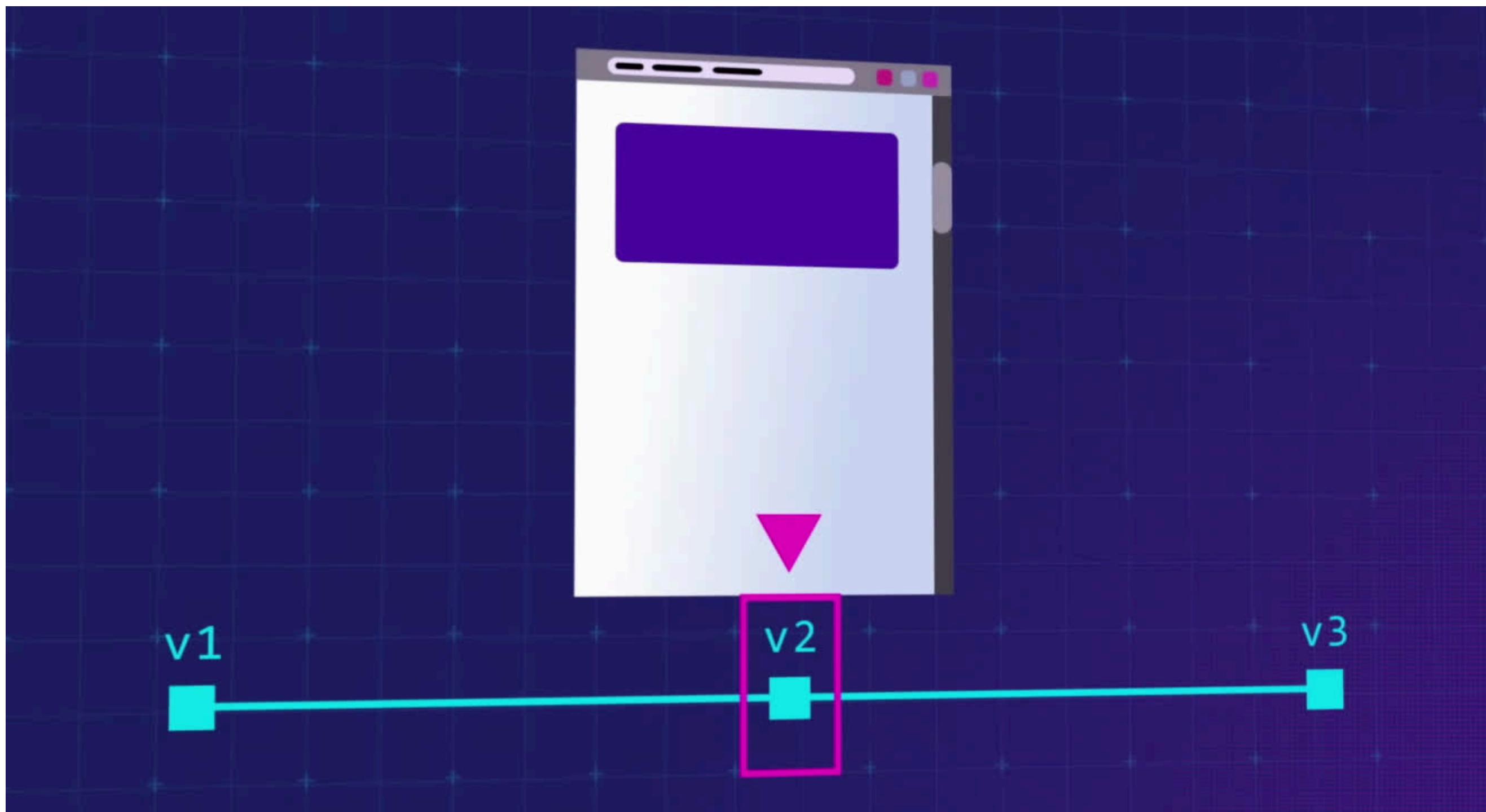


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Github walkthrough

The screenshot shows the GitHub homepage with a dark theme. The main headline is "Let's build from here" in large white font, with the subtitle "The world's leading AI-powered developer platform." Below the headline are two buttons: "Email address" and "Sign up for GitHub". To the right is another button: "Start a free enterprise trial >". On the left, there's a vertical decorative element consisting of three parallel lines of different colors (blue, green, and purple) with small circles at their ends. At the bottom, there's a section titled "Trusted by the world's leading organizations" with logos for 3M, KPMG, Mercedes-Benz, SAP, P&G, and TELUS. The footer includes a productivity icon and the text "MGMA_2024". The background features a dark space-like theme with various glowing, translucent 3D geometric shapes like spheres, cubes, and rings in shades of blue, green, and purple.

Product Solutions Open Source Pricing

Search or jump to... / Sign in Sign up

Let's build from here

The world's leading AI-powered developer platform.

Email address [Sign up for GitHub](#) [Start a free enterprise trial >](#)

Trusted by the world's leading organizations

3M KPMG Mercedes-Benz SAP P&G TELUS

Productivity MGMA_2024

Git installation

Installation (CLI)

Git for Windows

<https://gitforwindows.org/>

MacOS

<https://tinyurl.com/git-mac>

(Alternate: brew install git)



Commands

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```

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$ git add .  
$ git add --all  
$ git add -A  
$ git rm --cached <file-name>  
$ git reset <file-name>
```

Git: committing to a repository

```
$ git commit -m "Add three files"  
$ git reset --soft HEAD^  
$ git commit --amend -m <enter your message>
```

Git: pulling and pushing from and to repositories

```
$ git remote add origin <link>  
$ git push -u origin master  
$ git clone <clone>  
$ git pull
```



Top Repositories



Find a repository...

- UeenHuynh/MGMA_2024
- UeenHuynh/UeenHuynh
- UeenHuynh/Text_project
- UeenHuynh/Yolov8_project
- UeenHuynh/git_learn
- UeenHuynh/Data_crawling
- Iuului/MfML

Show more

Recent activity

When you take actions across GitHub, we'll provide links to that activity here.



Home

Send feedback

Filter 8

Updates to your homepage feed

We've combined the power of the Following feed with the For you feed so there's one place to discover content on GitHub. There's improved filtering so you can customize your feed exactly how you like it, and a shiny new visual design. ✨

[Learn more](#)[Start writing code](#)

Start a new repository for UeenHuynh

A repository contains all of your project's files, revision history, and collaborator discussion.

Repository name *

 name your new repository... Public

Anyone on the internet can see this repository

 Private

You choose who can see and commit to this repository

[Create a new repository](#)[Create](#)

Introduce yourself with a profile README

Share information about yourself by creating a profile README, which appears at the top of your profile page.

UeenHuynh / README.md

- 1 - 🌟 Hi, I'm @UeenHuynh
- 2 - 🌐 I'm interested in ...
- 3 - 🌱 I'm currently learning ...
- 4 - 💬 I'm looking to collaborate on ...
- 5 - 📞 How to reach me ...
- 6 - 😊 Pronouns: ...
- 7 - ⚡ Fun fact: ...
- 8

Use tools of the trade



Simplify your development workflow with a GUI



Install GitHub Desktop to visualize, commit, and push changes without ever touching the command line.

Get AI-based coding suggestions



Try GitHub Copilot free for 30 days, which suggests entire functions in real time, right from your editor.

Get started on GitHub

GitHub Galaxy

Join us virtually to explore our vision for AI-powered development, productivity, and modernization.

[Register now](#)

UNIVERSE24

Convince your boss to send you to GitHub Universe in SF on October 29-30.

Use our ready-to-send template today. Tickets to our global developer event are 35% off — only for a limited time.

[Learn more](#)

Latest changes

- 17 hours ago
Secret scanning validity checks now included the alert timeline
- 2 days ago
Sunset Notice – Tag Protections
- 3 days ago
United States Sales Tax and Exemptions on your GitHub Account

MGMA_2024

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Required fields are marked with an asterisk (*).

Owner *



UeenHuynh

Repository name *

demo_git

⚠ The repository demo_git already exists on this account.

Great repository names are short and memorable. Need inspiration? How about [cuddly-tribble](#) ?

Description (optional)

 Public

Anyone on the internet can see this repository. You choose who can commit.

 Private

You choose who can see and commit to this repository.

Initialize this repository with:

Add a README file

This is where you can write a long description for your project. [Learn more about READMEs.](#)

Add .gitignore

.gitignore template: [None](#) ▾

Choose which files not to track from a list of templates. [Learn more about ignoring files.](#)

Choose a license

License: [None](#) ▾

A license tells others what they can and can't do with your code. [Learn more about licenses.](#)

This will set  main as the default branch. Change the default name in your [settings](#).

 You are creating a public repository in your personal account.

[Create repository](#)

[o_git](#)

Type / to search

requests Actions Projects Wiki Security Insights Settings

 **demo_git** Public

 Pin  Unwatch 1  Fork 0  Star 0

 main ▾  2 Branches  0 Tags  Go to file  Add file ▾  Code ▾  About

 UeenHuynh update demo 0d6ff75 · 3 hours ago  1 Commit

 README update demo 3 hours ago

 readme.md update demo 3 hours ago



git and github demo

No description, website, or topics provided.

 Readme  Activity  0 stars  1 watching  0 forks

Releases
No releases published [Create a new release](#)

Packages
No packages published [Publish your first package](#)



[Pin](#) [Unwatch 1](#) [Fork 0](#) [Star 0](#)

[Go to file](#) [Add file](#) [Code](#)

[Local](#) [Codespaces](#)

[Clone](#) [?](#)

[HTTPS](#) [SSH](#) [GitHub CLI](#)

https://github.com/UeenHuynh/demo_git.git 

Clone using the web URL.

[Open with GitHub Desktop](#)

[Download ZIP](#)

[About](#) [⚙️](#)

No description, website, or topics provided.

[Readme](#)

[Activity](#)

[0 stars](#)

[1 watching](#)

[0 forks](#)

[Releases](#)

No releases published

[Create a new release](#)

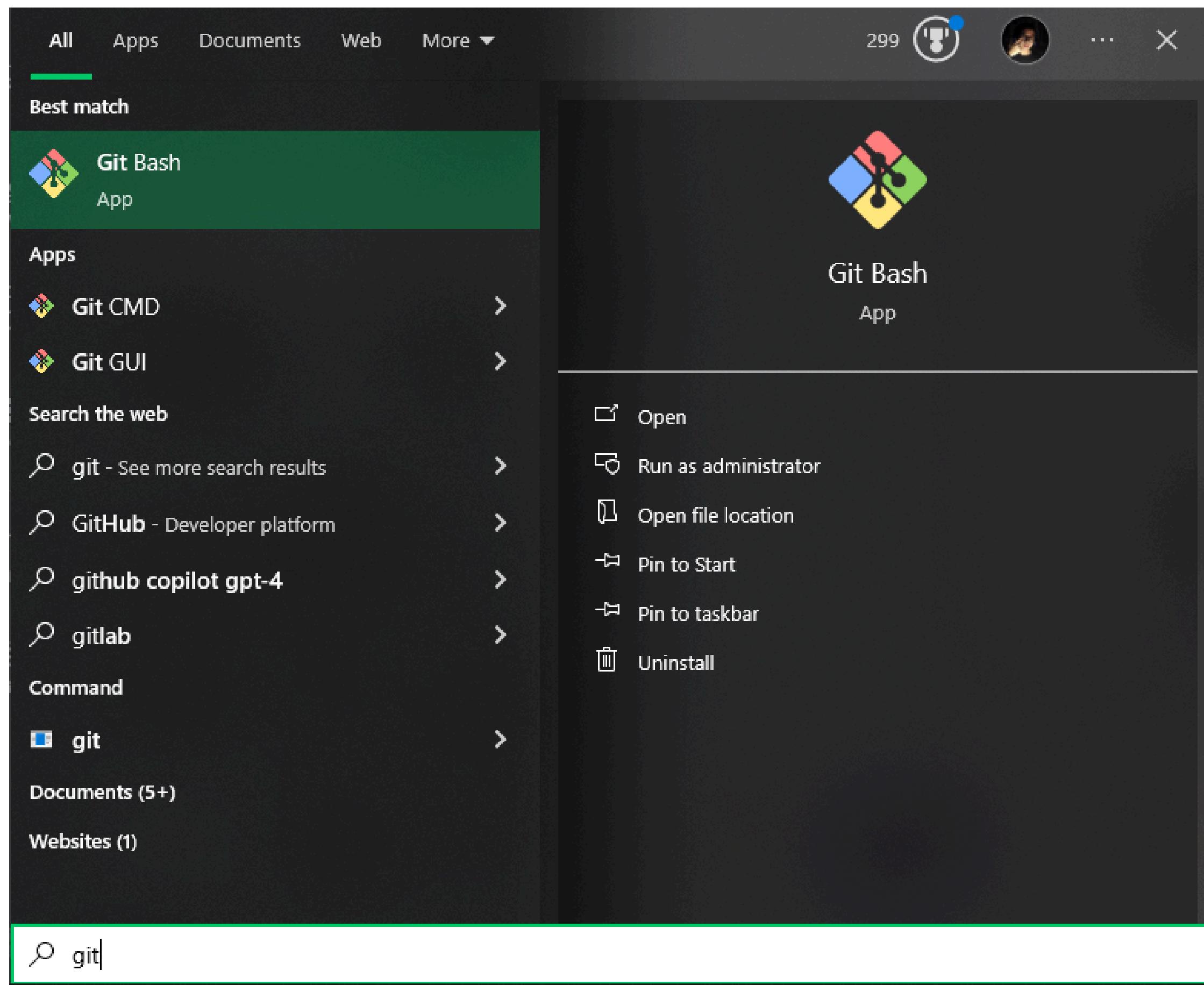
[Packages](#)

No packages published

[Publish your first package](#)



MGMA_2024



Setting up git environment

As a first-time set up, you need to tell Git who you are.

Enter these lines (with appropriate changes):

```
$ git config --global user.name "Huynh Khoi Minh Uyen"  
$ git config --global user.email "uyenhuynhkhoiminh.1.1@gmail.com"
```

- Make sure that you include here the same email you used for signing up on GitHub.

Test if this worked by typing

```
git config --list
```

You only need to do this once.

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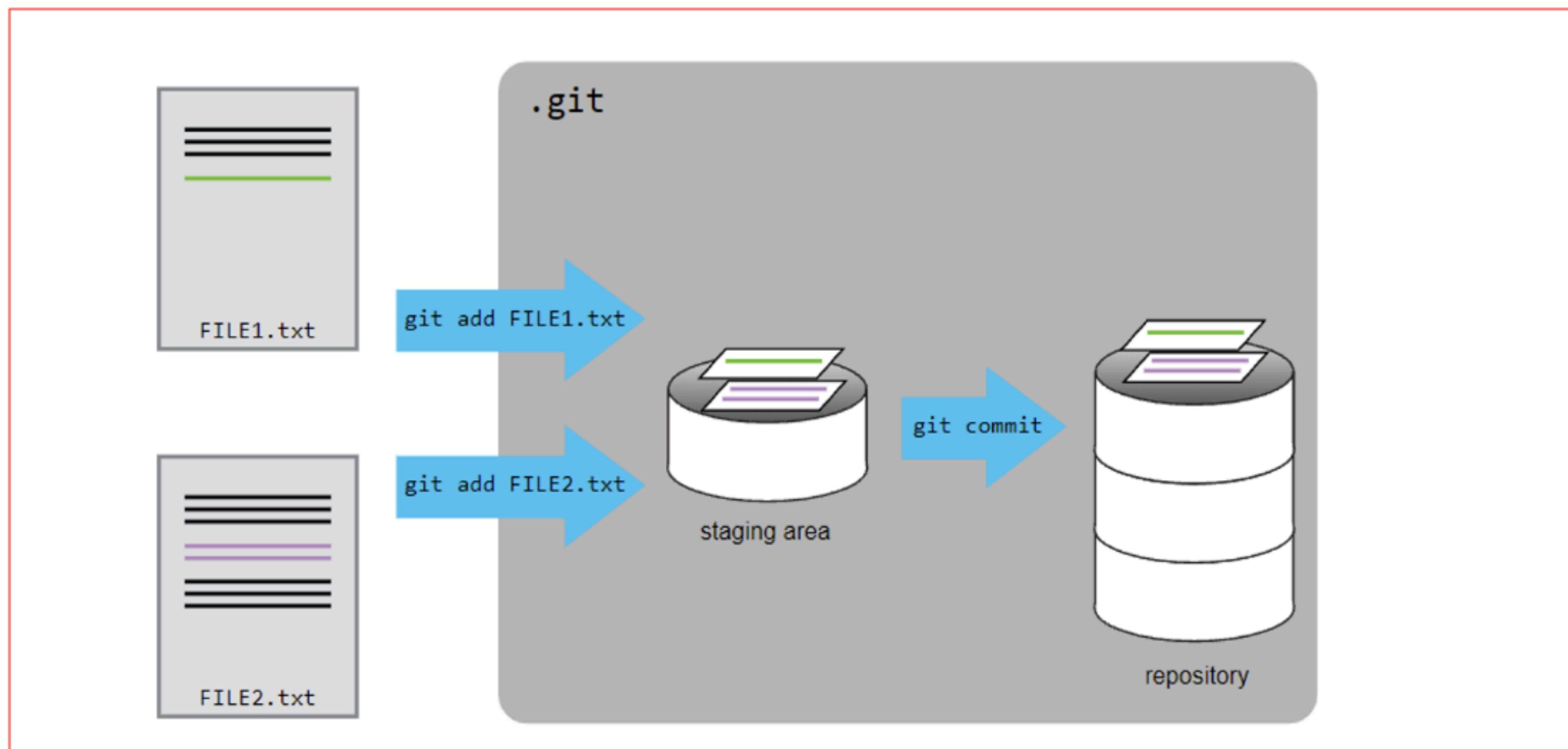
Git and GitHub instalation

Git and VScode

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Adding your files to git repository



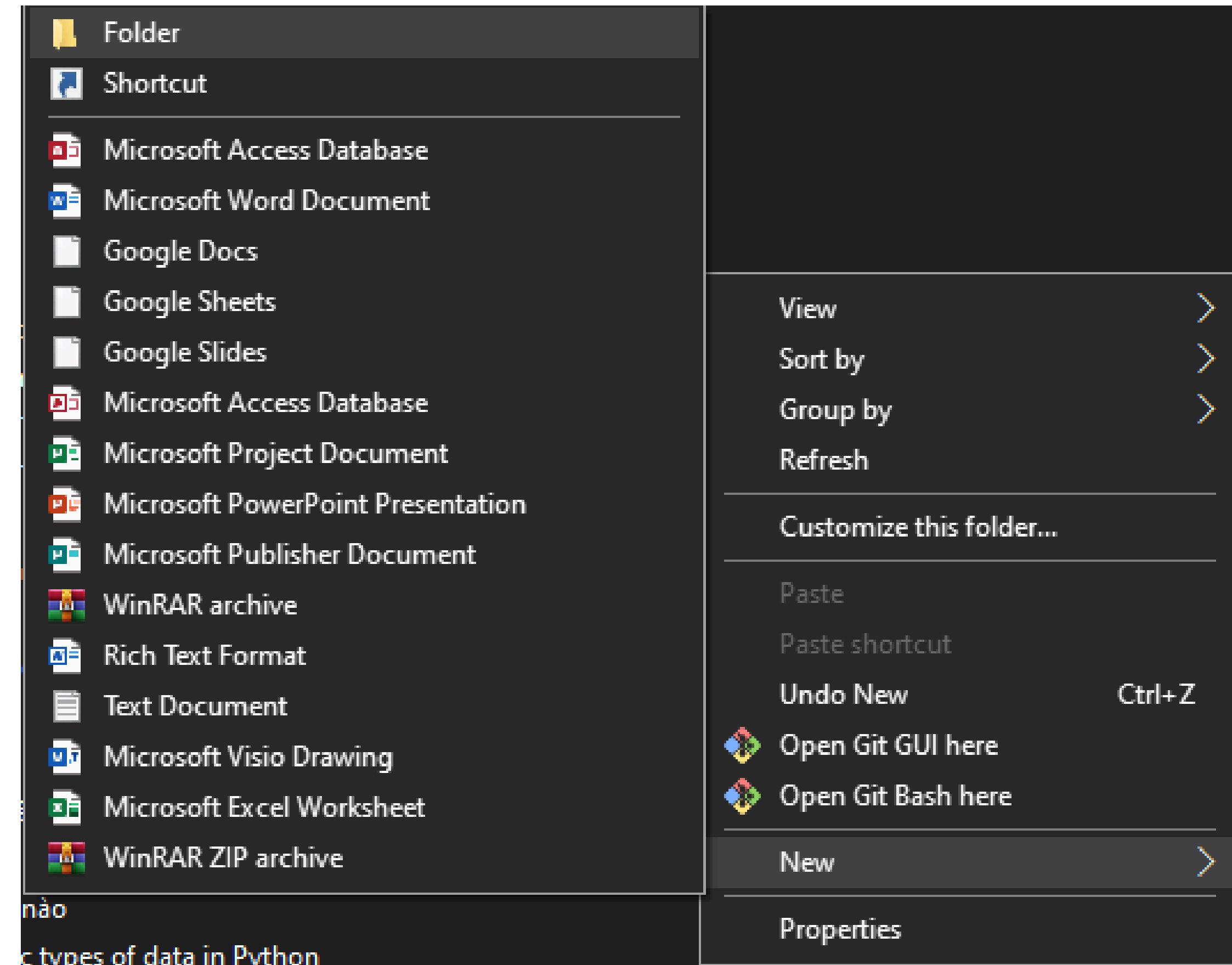
The basic workflow

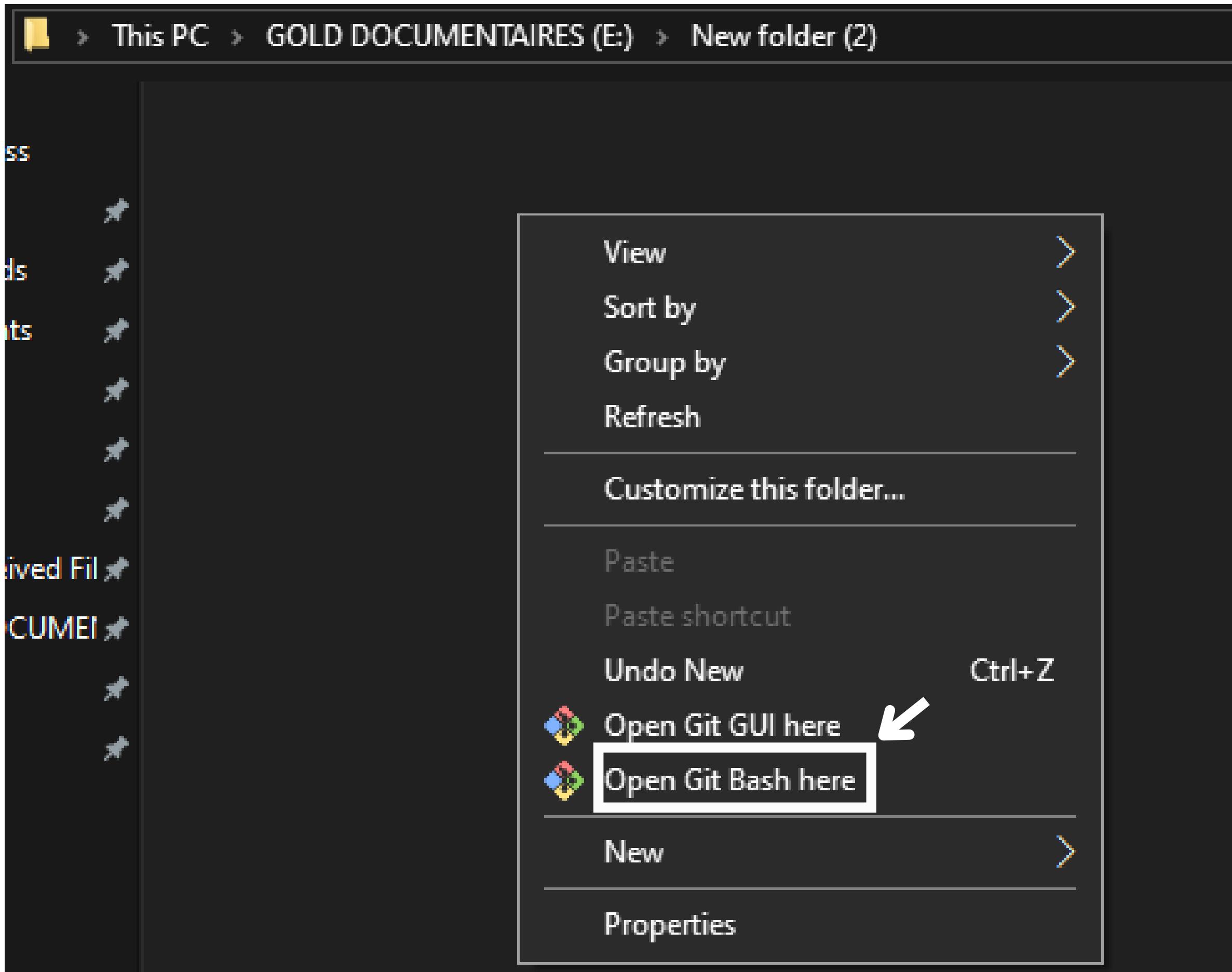
First time

1. **Clone** the repository that you want to work on from GitHub into your local machine
2. Work on the files/scripts
3. Next, you will **commit** your changes and include an informative message, e.g. "Plot distribution of precipitation"
4. Then, you will **push** your changes to the remote repository

Subsequent times

1. **Pull** any changes from the remote repository that your collaborators might have made
2. Repeat steps 2-4 above





```
Admin@Minou-Huynh MINGW64 /e/New folder (2)/demo_git (main)
$ git init
Reinitialized existing Git repository in E:/New folder (2)/demo_git/.git/
```

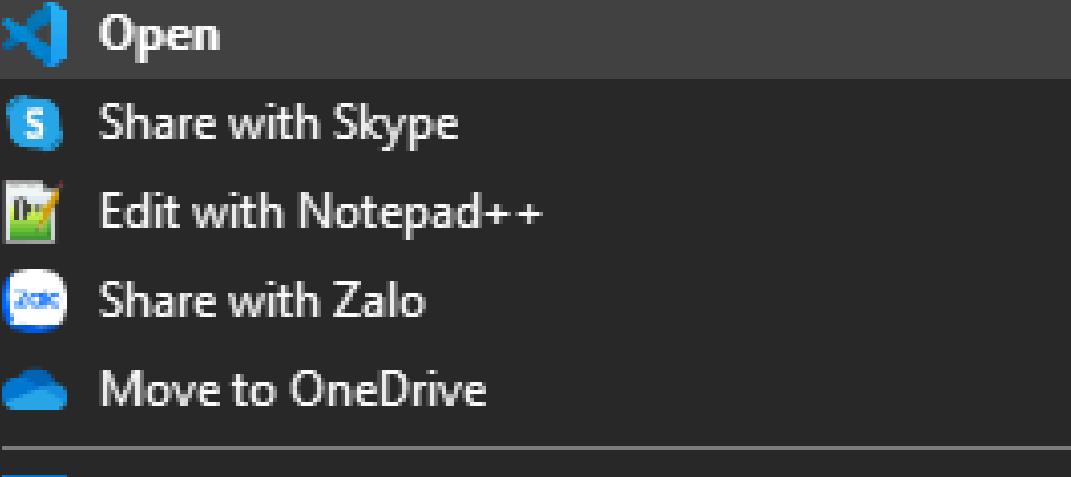
```
Admin@Minou-Huynh MINGW64 /e/New folder (2)/demo_git (main)
$ git clone https://github.com/UeenHuynh/demo_git.git
Cloning into 'demo_git'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 6 (delta 1), reused 5 (delta 0), pack-reused 0
Receiving objects: 100% (6/6), done.
Resolving deltas: 100% (1/1), done.
```

demo_git

File Home Share View

← → ⏪ ⏩ This PC > GOLD DOCUMENTAIRES (E:) > New folder (2) > demo_git >

	Name	Date modified	Type	Size
Quick access	.git	5/31/2024 8:36 PM	File folder	
Desktop	README.md	5/31/2024 8:36 PM	Markdown Source File	1 KB



Git and VScode

Name	Date modified	Type	Size
.git	5/31/2024 8:36 PM	File folder	
readme	5/31/2024 8:38 PM	Markdown Source File	1 KB

```
demo_git
```

The screenshot shows the Visual Studio Code (VSCode) interface. The top bar includes icons for file operations, a search bar containing "demo_git", and a tab bar with two tabs: "readme.md" and "readme.md E:\...\demo_git". The main area displays the content of the "readme.md" file under the "E:\...\demo_git" path. The file contains the following text:

```
1  ### git and github demo
2
3  ## hello world
4  I'm Minh Uyen
5
6  ## Git tutor
7  Watch youtube videos|
```

A red arrow points to the close button (X) of the terminal tab in the tab bar.

```
Admin@Minou-Huynh MINGW64 /e/New folder (2)/demo_git (main)
● $ git status
On branch main
Your branch is up to date with 'origin/main'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
    (use "git restore <file>..." to discard changes in working directory
)
      modified:   readme.md

no changes added to commit (use "git add" and/or "git commit -a")
```

```
Admin@Minou-Huynh MINGW64 /e/New folder (2)/demo_git (main)
```

- \$ git add --all

```
Admin@Minou-Huynh MINGW64 /e/New folder (2)/demo_git (main)
● $ git commit -m 'uyen'
[main 5e4d0fd] uyen
 2 files changed, 7 insertions(+)
 create mode 160000 demo_git
```

```
Admin@Minou-Huynh MINGW64 /e/New folder (2)/demo_git (main)
● $ git push -u origin main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 16 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 374 bytes | 374.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/UeenHuynh/demo_git.git
  0d6ff75..5e4d0fd  main -> main
branch 'main' set up to track 'origin/main'.
```

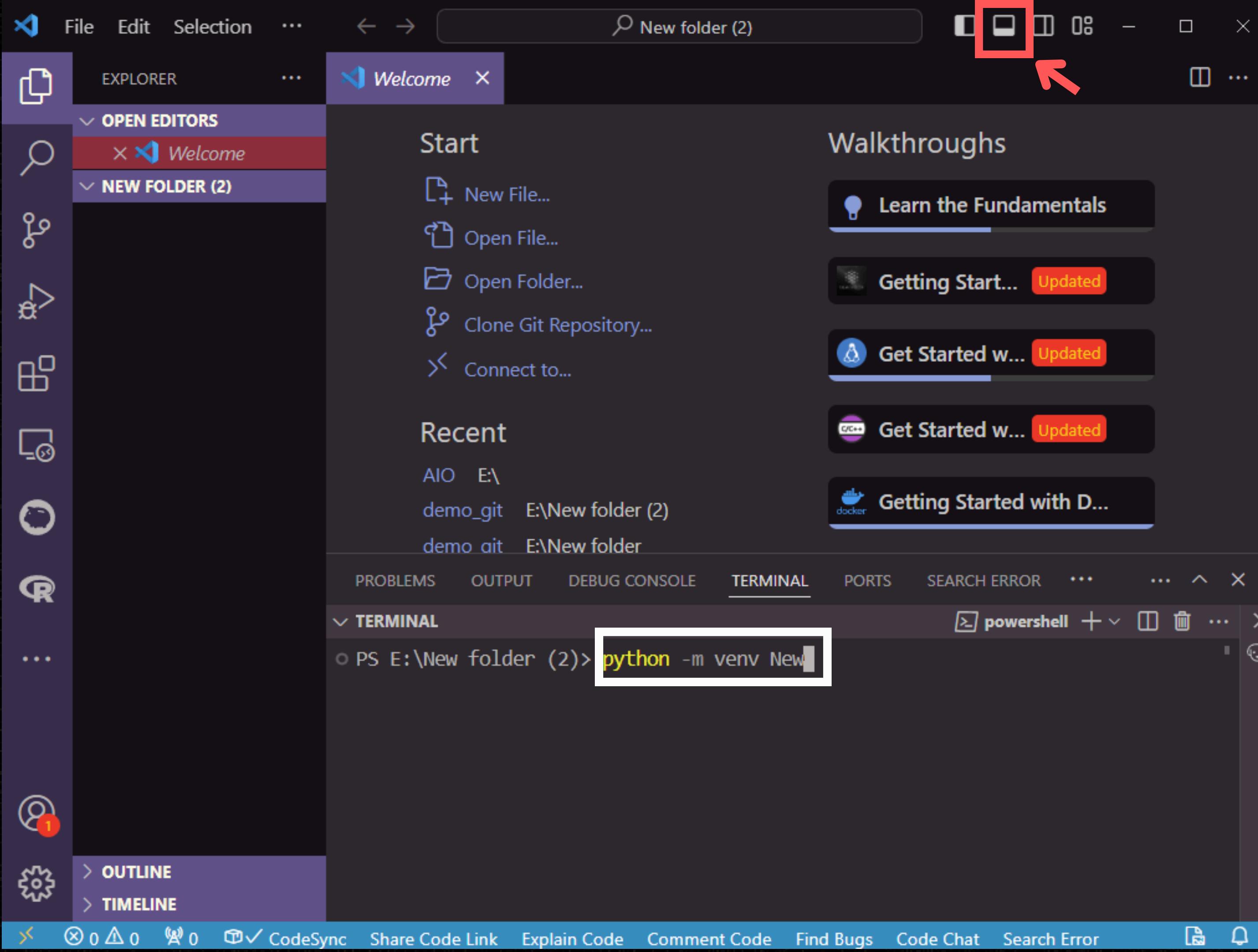


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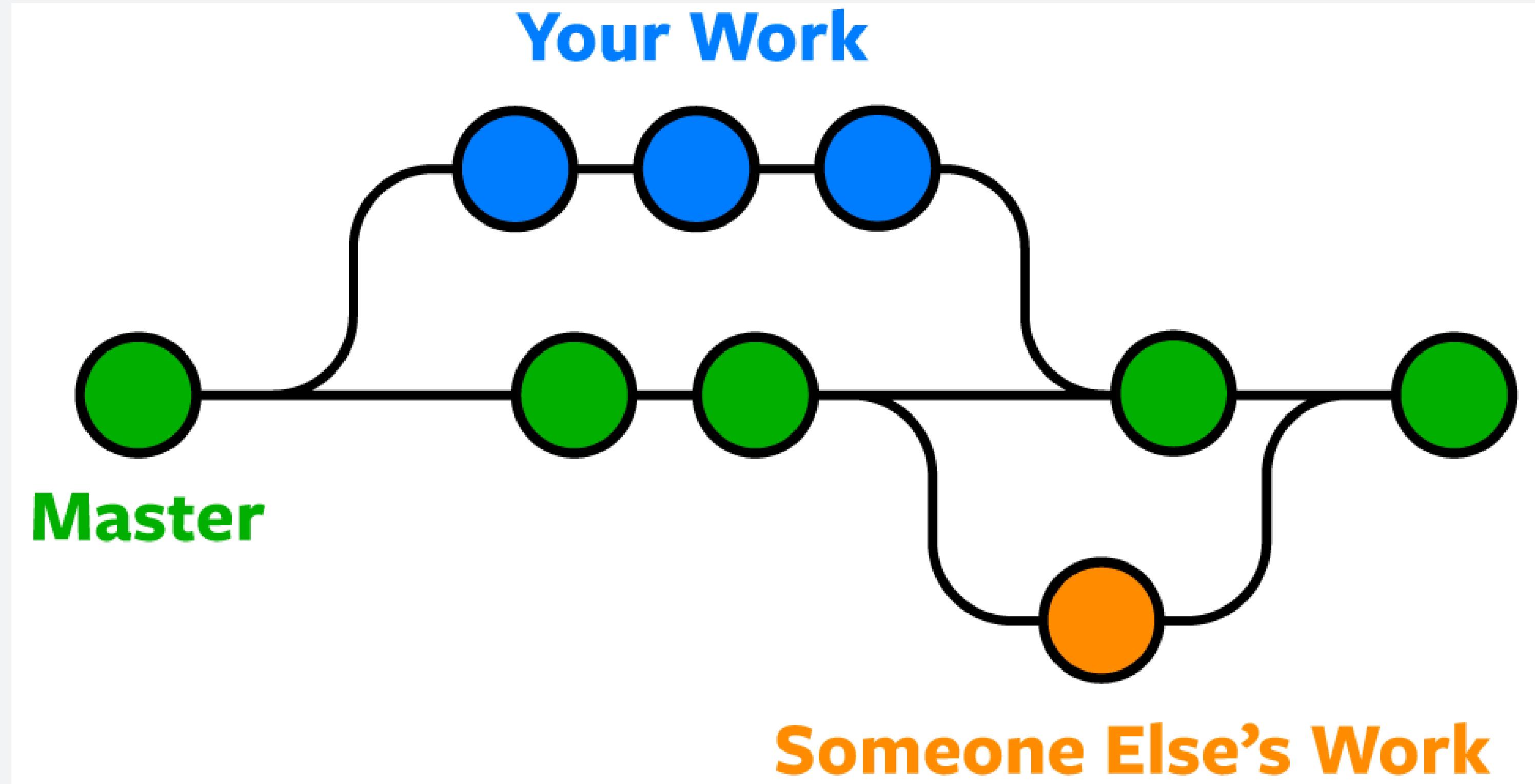
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Git branch command

git checkout -b feature

git checkout main

git diff

git merge

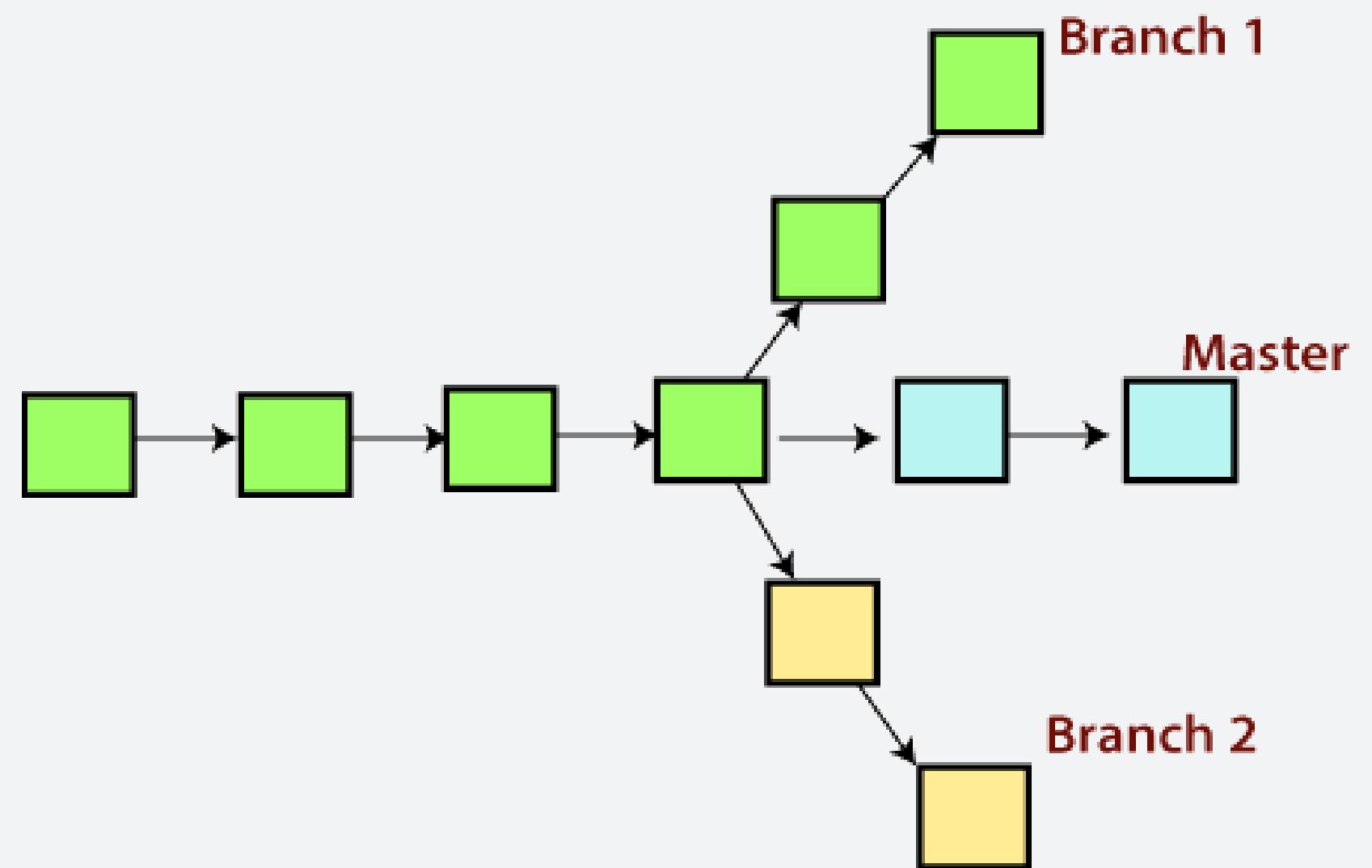


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Yolov10 Yolov10

Search all of GitHub

Search syntax tips

Give feedback

Find a repository...

- UeenHuynh/MGMA_2024
- UeenHuynh/UeenHuynh
- UeenHuynh/Text_project
- UeenHuynh/Yolov8_project
- UeenHuynh/git_learn
- UeenHuynh/Data_crawling
- luuloi/MfML

Show more

Recent activity

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...

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Repository name *

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[Create a new repository](#)

Introduce yourself with a profile README

Share information about yourself by creating a profile README, which appears at the top of your profile page.



Yolov10

Forking

Filter by

<> Code

1.7k

Repository

61

Issues

160

Pull requests

37

Discussions

9

Users

1

More

Languages

Python

Jupyter Notebook

C++

CMake

Kotlin

More languages...

Advanced

Owner

Size

Number of followers

Number of forks

Number of stars

61 results (153 ms)

Sort by: Best match ▾

 [THU-MIG/yolov10](#)
YOLOv10 Python API for Object Detection
Python · ⭐ 6.7k · Updated 1 hour ago

 [SwimmingLiu/YOLOSHOW](#)
YOLO SHOW - YOLOv10 / YOLOv9 / YOLOv8 / YOLOv7 / YOLOv5 / RTDETR GUI based on Pyside6
yologui · yolov5 · yolov7 · yolov8 · rtdeatr
Python · ⭐ 191 · Updated 7 days ago

 [laugh12321/TensorRT-YOLO](#)
TensorRT-YOLO: Support YOLOv3, YOLOv5, YOLOv6, YOLOv7, YOLOv8, YOLOv9, YOLOv10, PP-YOLOE using TensorRT acceleration with EfficientNMS!
detection · cuda · tensorrt · onnx · yolov3
Python · ⭐ 283 · Updated 4 days ago

 [sujanshresstha/YOLOV10_DeepSORT](#)
This repository contains code for object detection and tracking in videos using the YOLOv10 object detection model and the DeepSORT algor...
Python · ⭐ 52 · Updated 4 days ago

 [cqu20160901/yolov10_rknn_Cplusplus](#)
yolov10 瑞芯微 rknn 板端 C++ 部署，使用平台 rk3588。
C++ · ⭐ 19 · Updated 7 days ago

[Code](#) [Issues 49](#) [Pull requests 1](#) [Discussions](#) [Actions](#) [Projects](#) [Security](#) [Insights](#)

yolov10

Public

Watch 37

Fork 458

Star 6.7k

[main](#) ▾

1 Branch

2 Tags

Go to file

Add file

Existing forks

You don't have any forks of this repository.

+ Create a new fork

The End-to-End Object

Detection

[arxiv.org/abs/2405.14458](#)[Readme](#)[AGPL-3.0 license](#)[Activity](#)[Custom properties](#)[6.7k stars](#)[37 watching](#)[458 forks](#)[Report repository](#)

Releases 2

[Update checkpoints with other ...](#)

Latest

last week

+ 1 release

Packages

No packages published

Contributors 15



jameslahm use yolov10 by default in cli

e5f2f03 · 1 hour ago

1,078 Commits

docker

Optimize TFJS export on ARM64 (#8946)

3 months ago

docs

docs: update view-results-in-terminal.md (#66)

last week

examples

Update Discord and Contributing Guide URLs (#9270)

3 months ago

figures

add yolov10

2 weeks ago

logs

add logs

last week

tests

Update pyproject.toml [tool.pytest.ini_options] (#9259)

3 months ago

ultralytics

use yolov10 by default in cli

1 hour ago

.gitignore

ultralytics 8.1.26 LoadImagesAndVideos batched inference (...)

3 months ago

.pre-commit-config.yaml

YAML reformat (#7669)

5 months ago

CONTRIBUTING.md

ultralytics 8.0.224 Counting and Heatmaps updates (#6855)

6 months ago

LICENSE

Update LICENSE to AGPL-3.0 (#2031)

last year

README.md

add support for HuggingFace Hub for cli

13 hours ago

app.py

Added video output support for gradio (#113)

19 hours ago

flops.py

add calculation for flops

yesterday

mkdocs.yml

Add TF SavedModel Docs Integrations Page (#9162)

3 months ago

Create a new fork

A *fork* is a copy of a repository. Forking a repository allows you to freely experiment with changes without affecting the original project. [View existing forks.](#)

Required fields are marked with an asterisk ().*

Owner *



UeenHuynh

Repository name *

yolov10

[yolov10 is available.](#)

By default, forks are named the same as their upstream repository. You can customize the name to distinguish it further.

Description (optional)

YOLOv10: Real-Time End-to-End Object Detection

[Copy the main branch only](#)

Contribute back to THU-MIG/yolov10 by adding your own branch. [Learn more.](#)

You are creating a fork in your personal account.

[Create fork](#)

<https://training.github.com/downloads/github-git-cheat-sheet/>

<https://www.youtube.com/watch?v=RG0j5yH7evk>

<https://javedali99.github.io/git-tutorial/slides.html>

<https://gist.github.com/gwenf/19e5748a5391929e8e938a22c8a4b3f2>

<https://fr.slideshare.net/slideshow/n-mn-hc-ti-tm-hiu-git-v-github/238462540>

<https://github.com/javedali99/git-tutorial?tab=readme-ov-file>