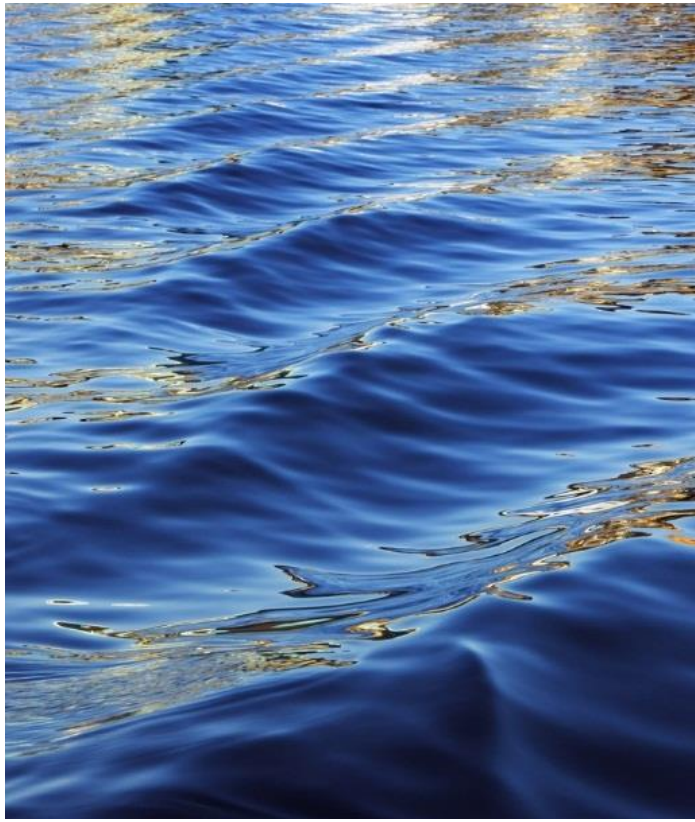
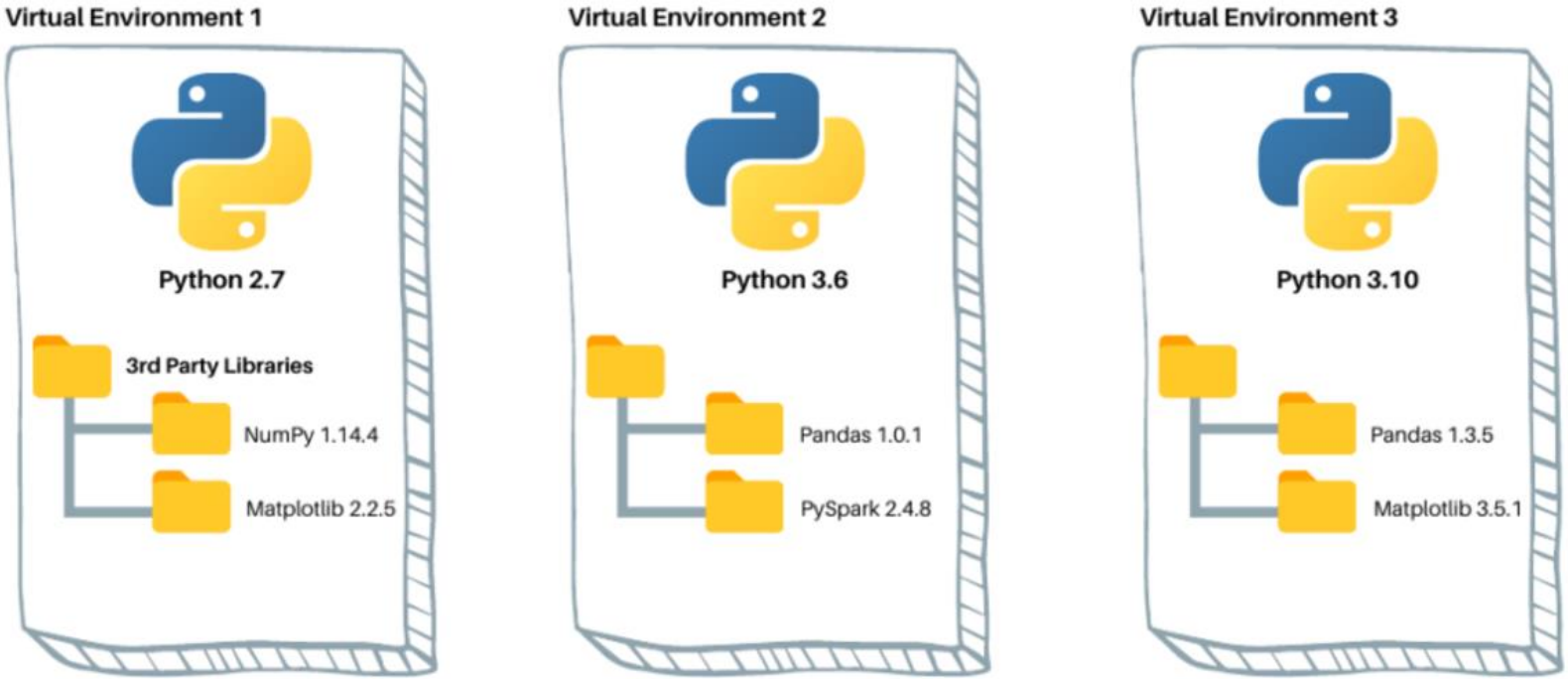
Virtual Environment & Git Hub

Lecture 2



Why you need virtual environments

- ❑ Preventing version conflicts
- ❑ Easy to reproduce and install
- ❑ Works everywhere, even when not administrator (root)



How to create a Python venv

If you are running Python 3.4+, you can use the venv module baked into Python:

```
python -m venv <directory>
```

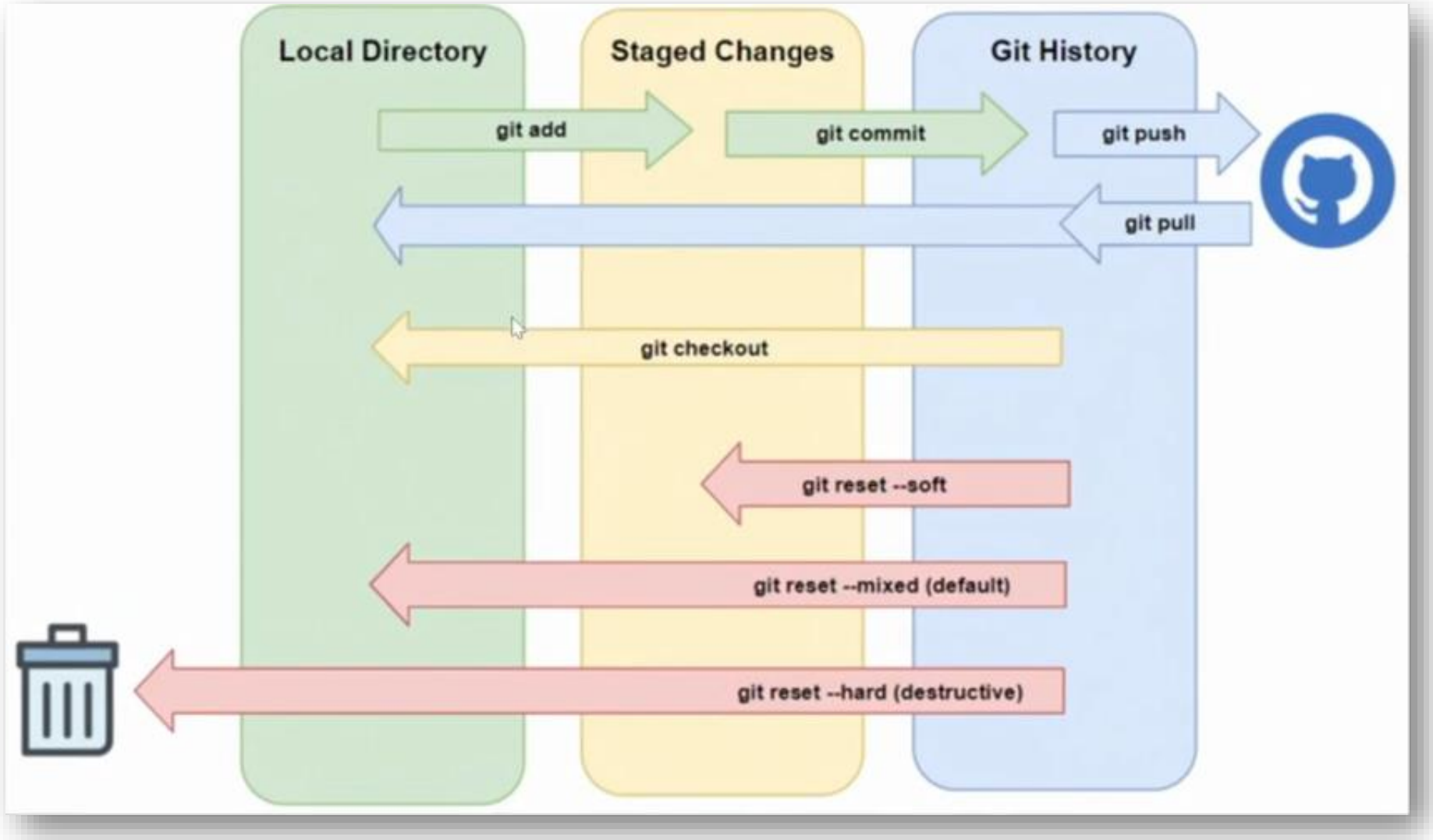
To activate your venv on Windows, you need to run a script that gets installed by venv.

If you created your venv in a directory called myenv, the command would be:

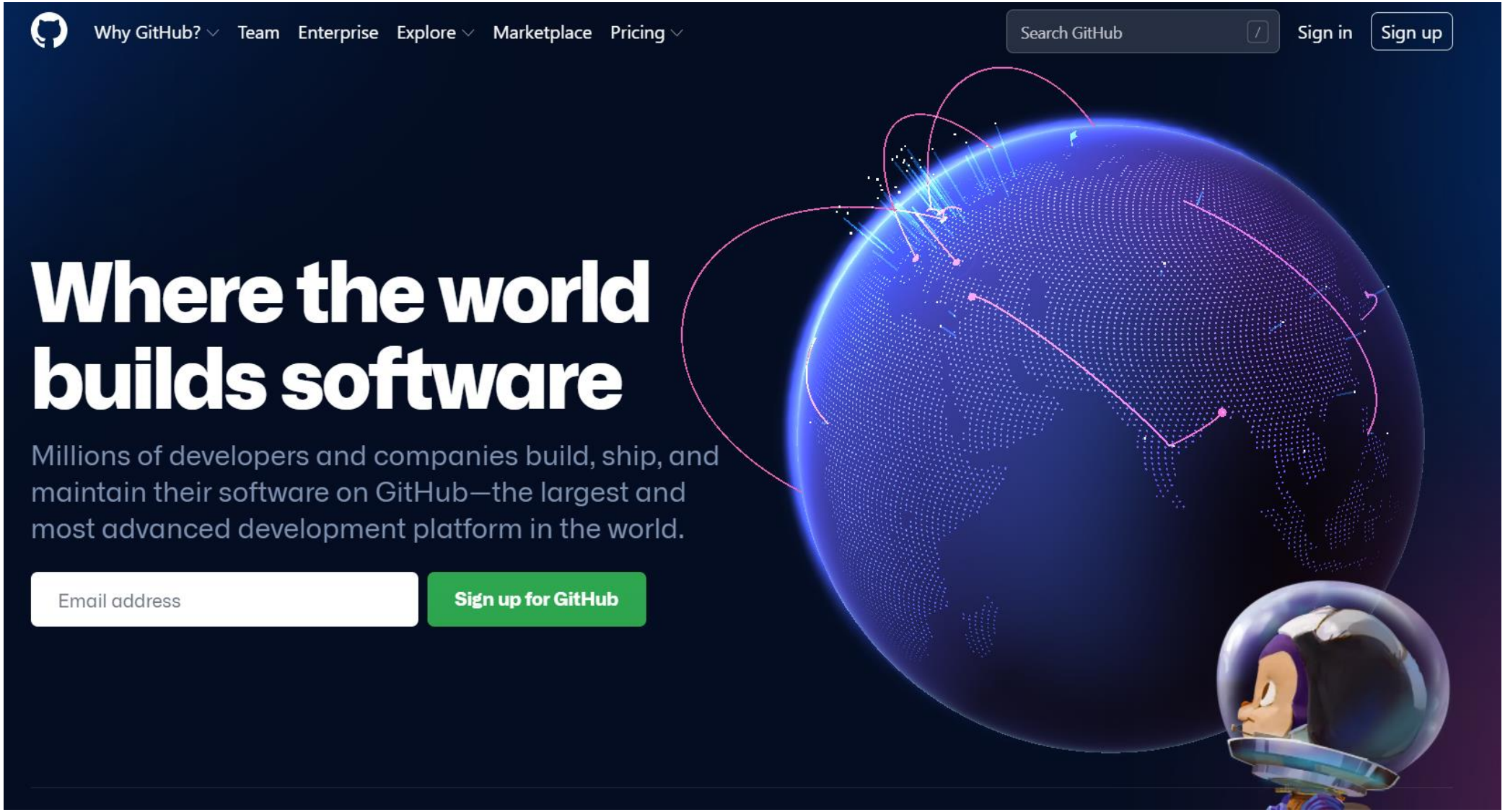
```
# In cmd.exe
venv\Scripts\activate.bat

# In PowerShell
venv\Scripts\Activate.ps1
```

GitHub

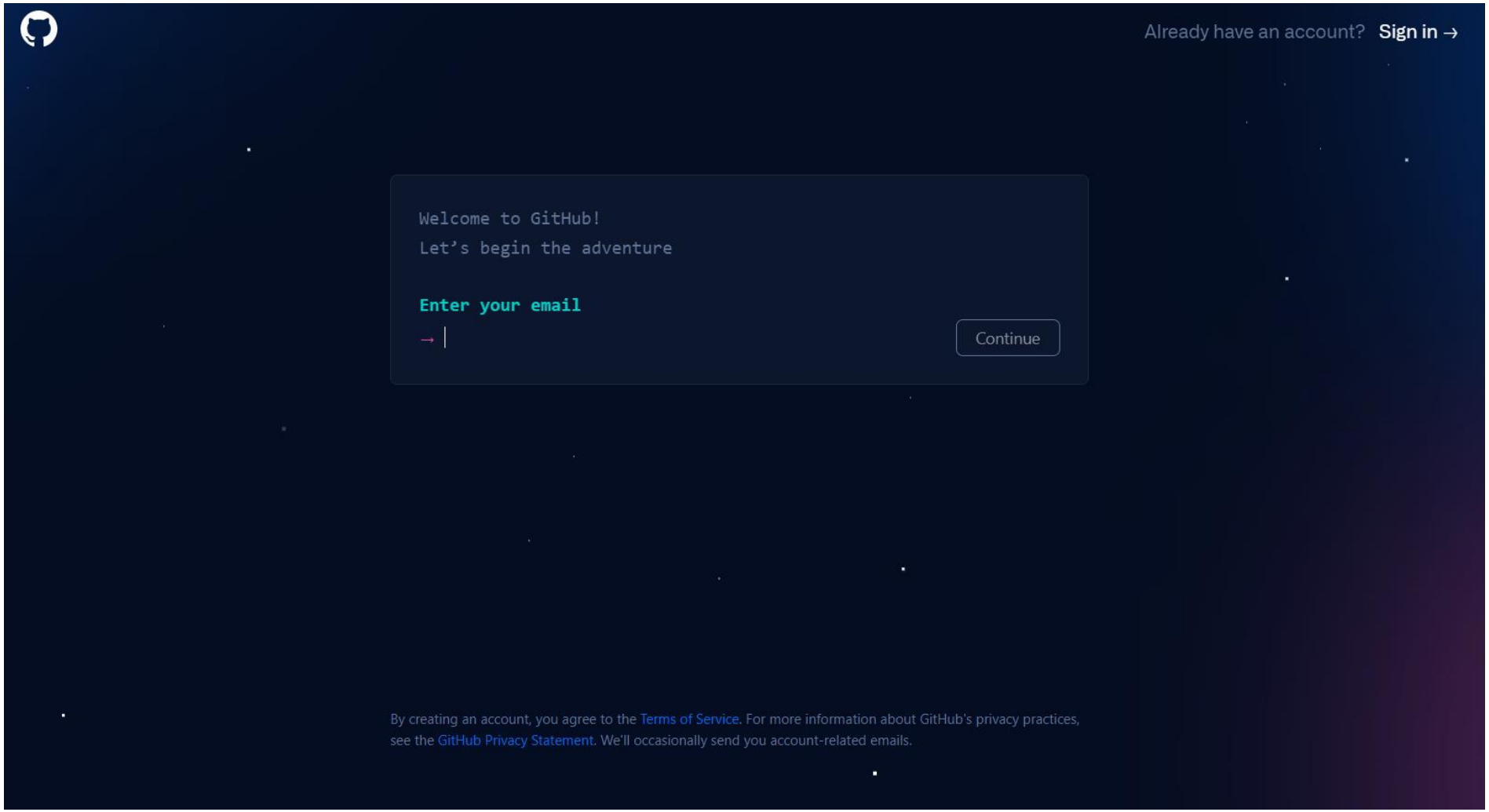

Local Directory
Staged Changes
Git History
git add
git commit
git push
git pull
git checkout
git reset --soft
git reset --mixed (default)
git reset --hard (destructive)

GitHub


Why GitHub?
Team
Enterprise
Explore
Marketplace
Pricing
Search GitHub
/
Sign in
Sign up
Where the world builds software
Millions of developers and companies build, ship, and maintain their software on GitHub—the largest and most advanced development platform in the world.
Email address
Sign up for GitHub

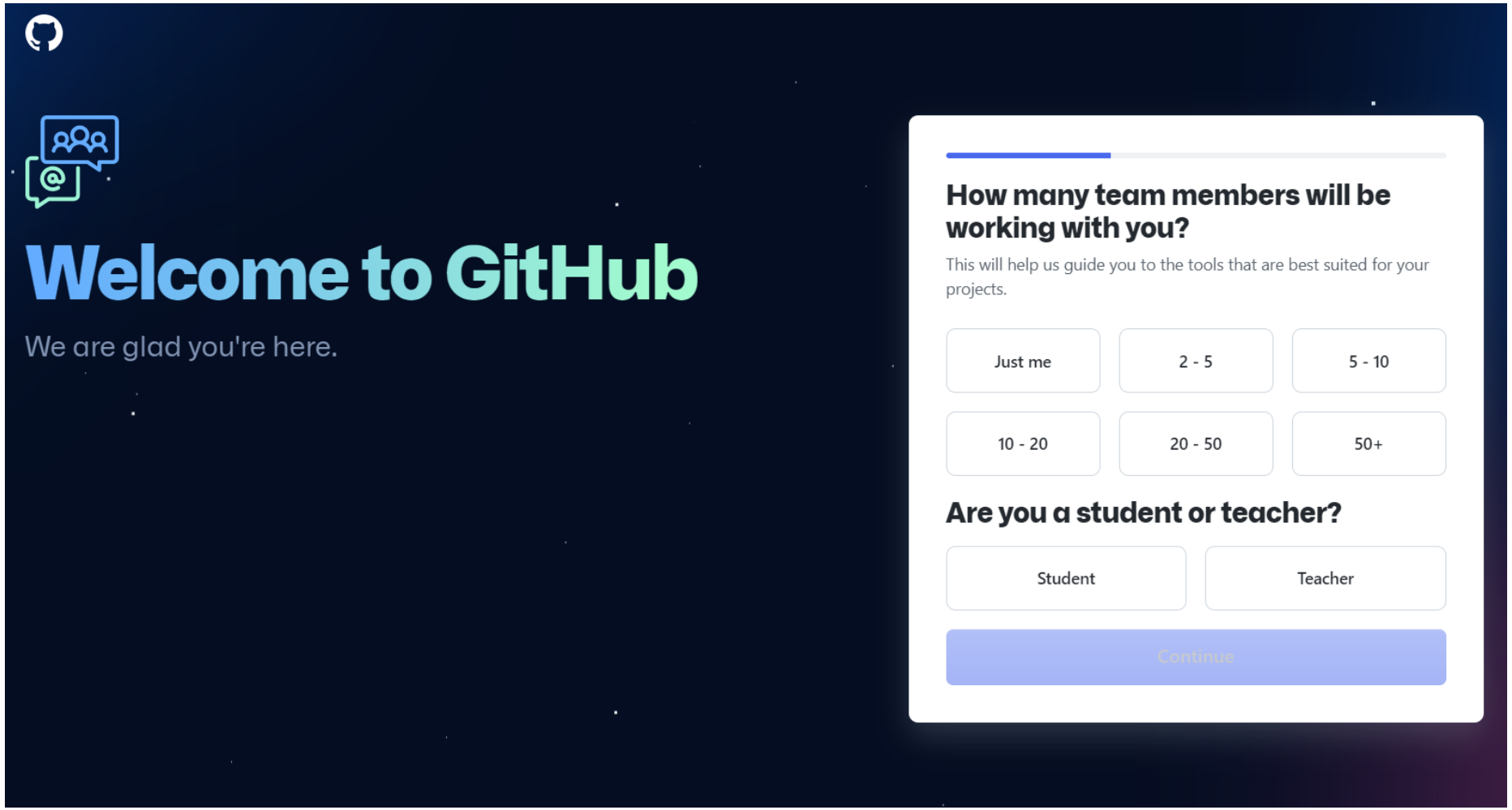
GitHub – Sign up

[1] Enter your email & password for GitHub
[2] Enter a username



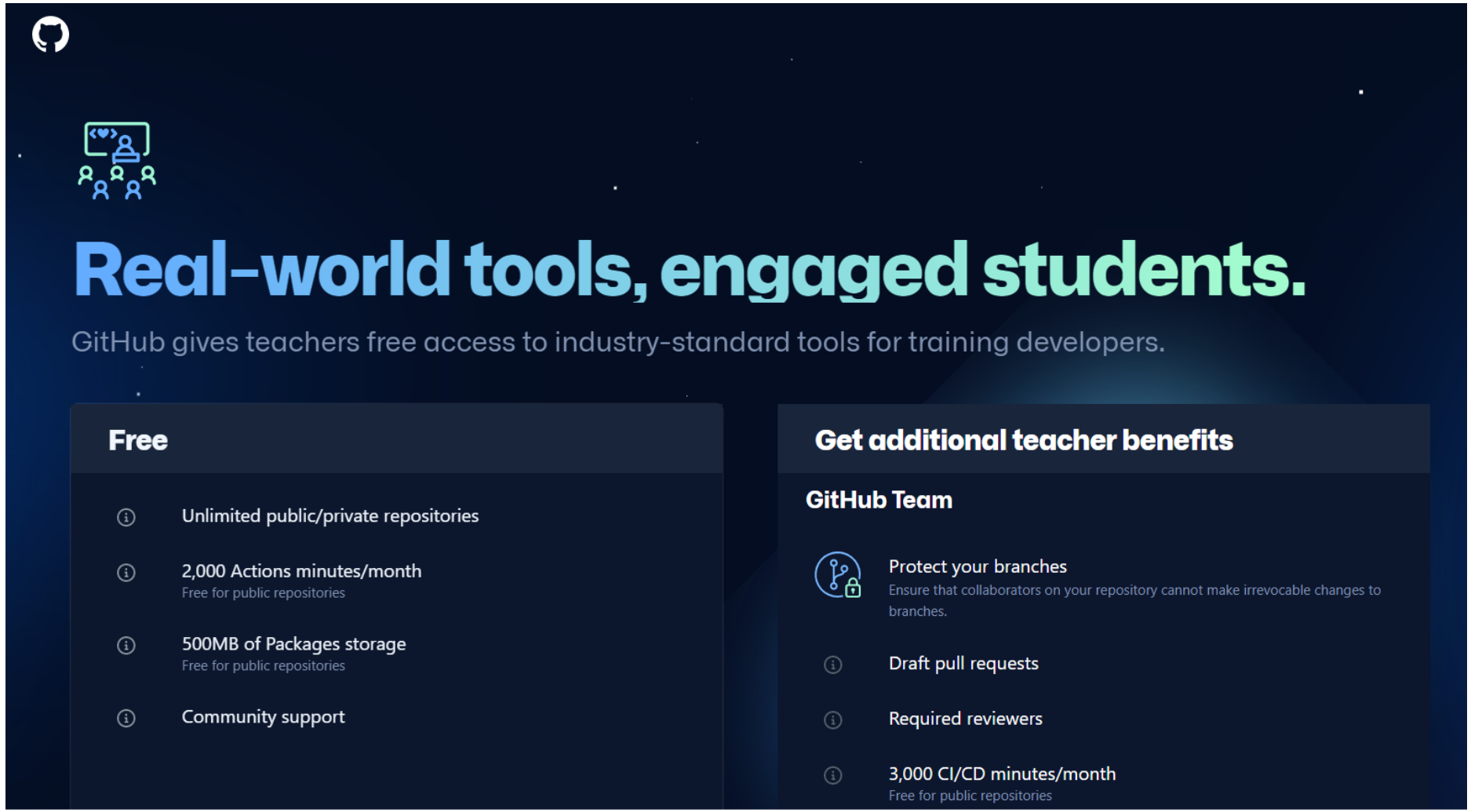
GitHub – Sign up

[3] Keep following the instructions



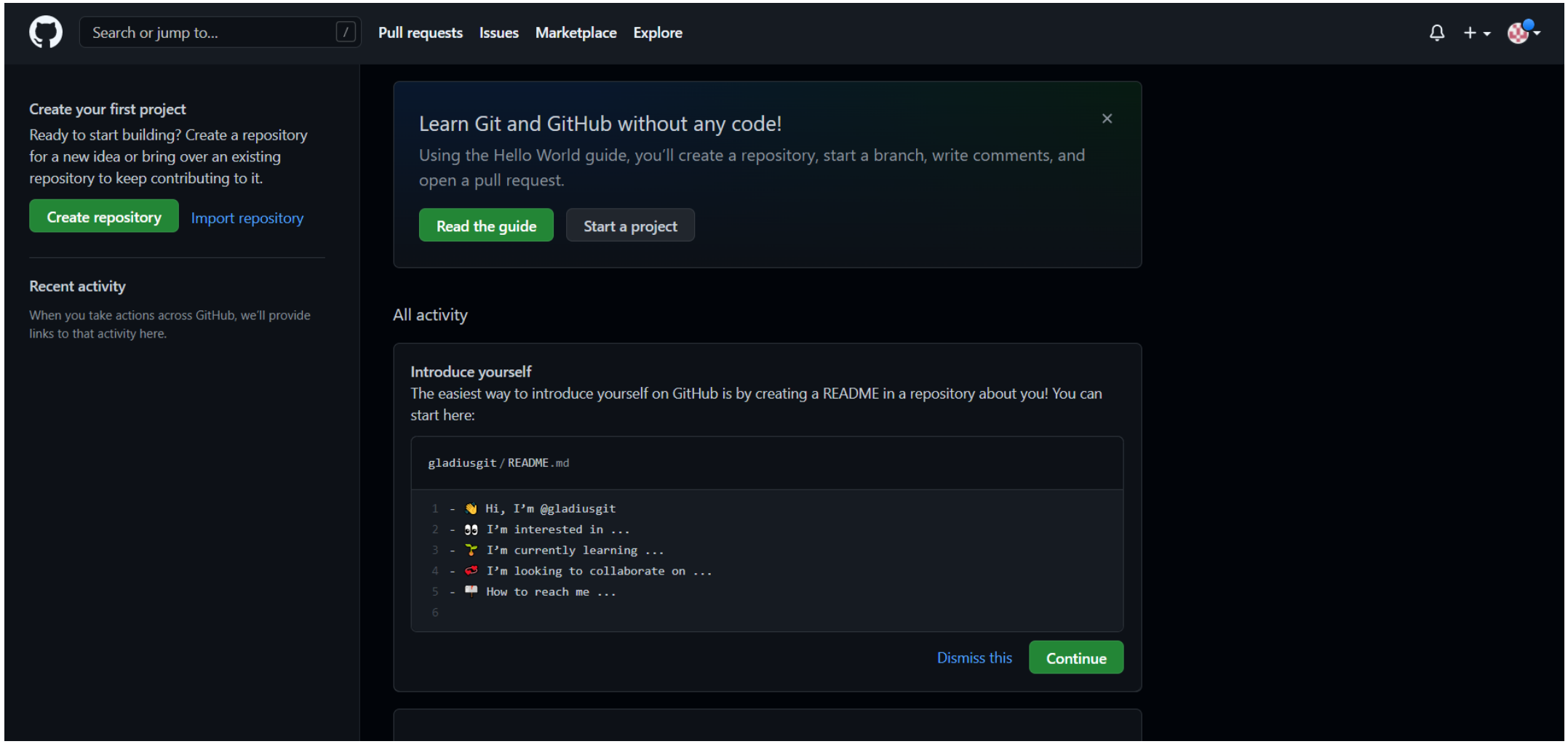
GitHub – Sign up

[4] Select a **Free** plan

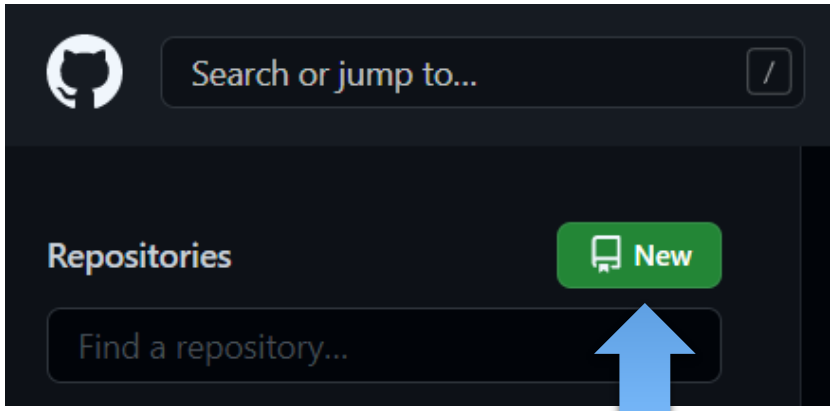


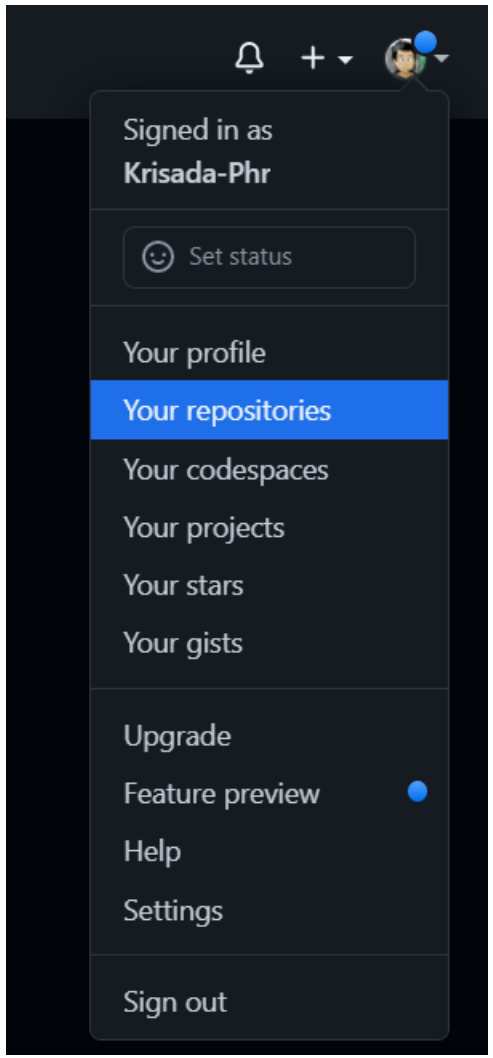
GitHub – Sign up

[5] Registration is complete

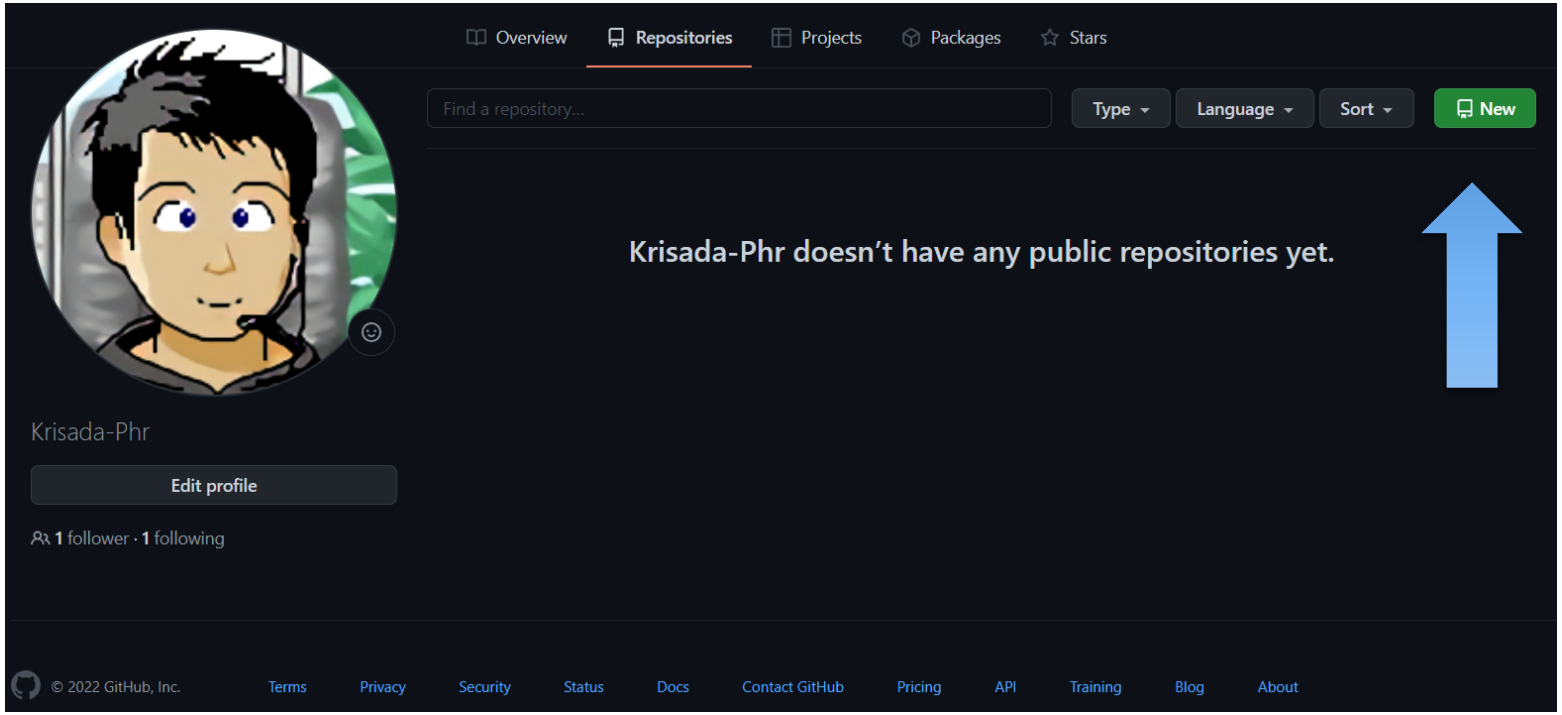


GitHub – Create Repository

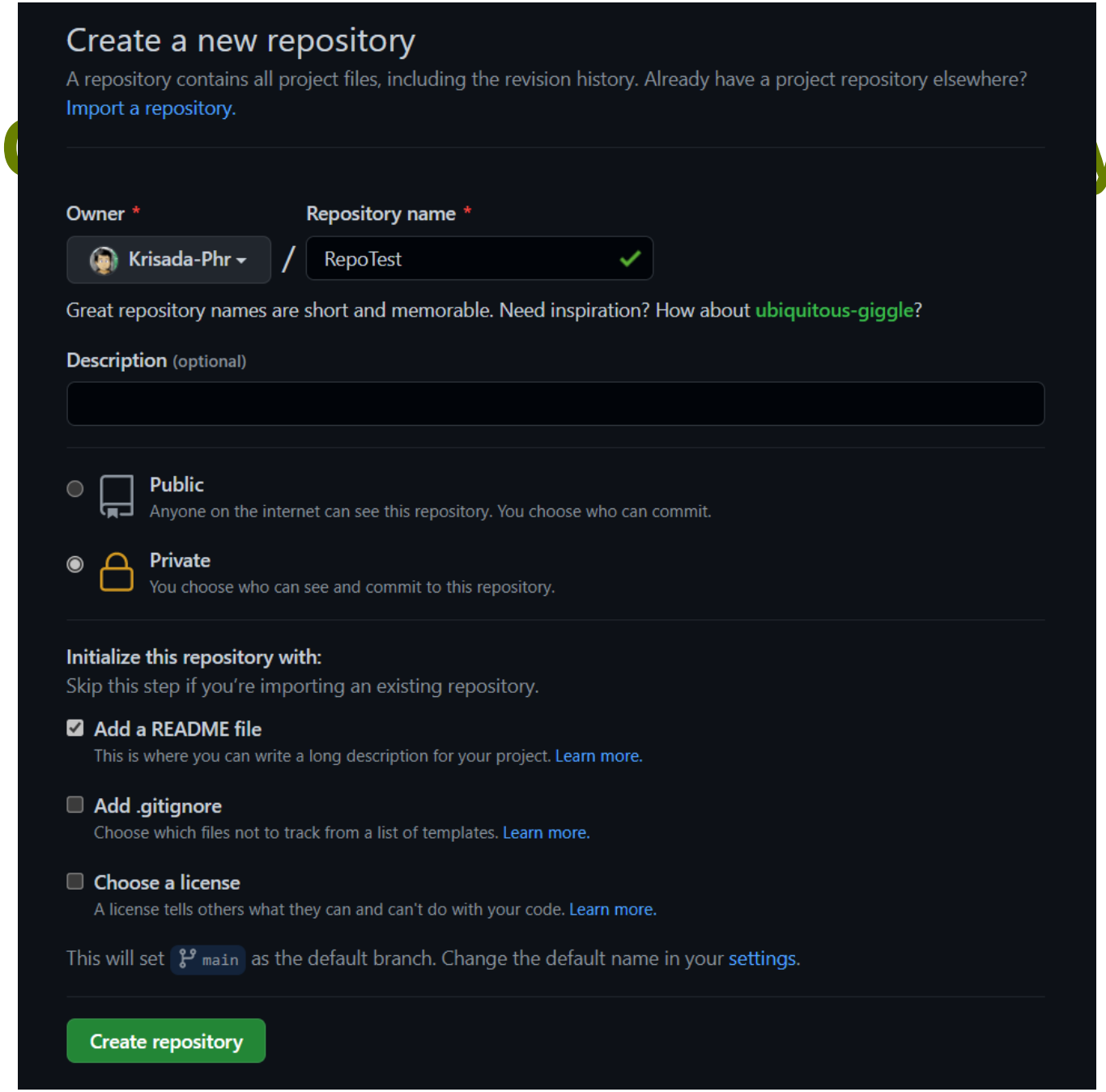




[1] Click new repository

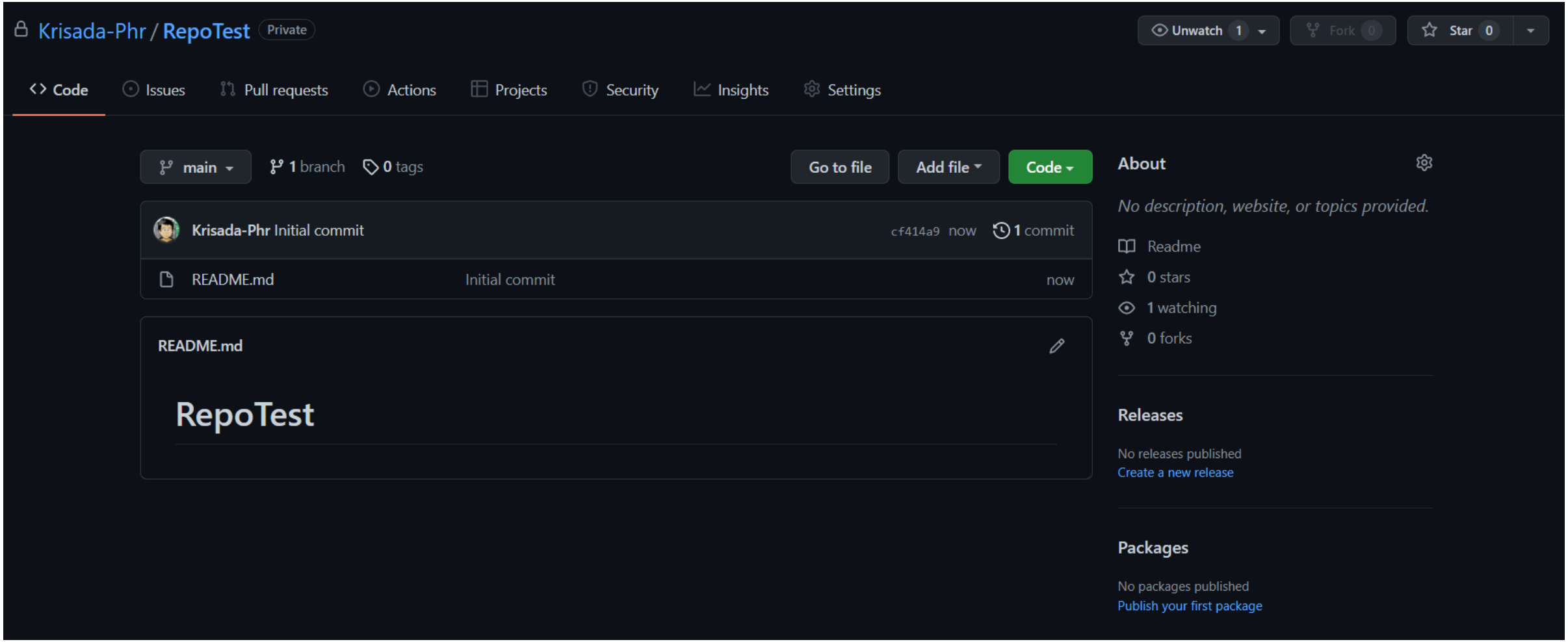


Repository: a place, building, or receptacle where things are or may be stored.



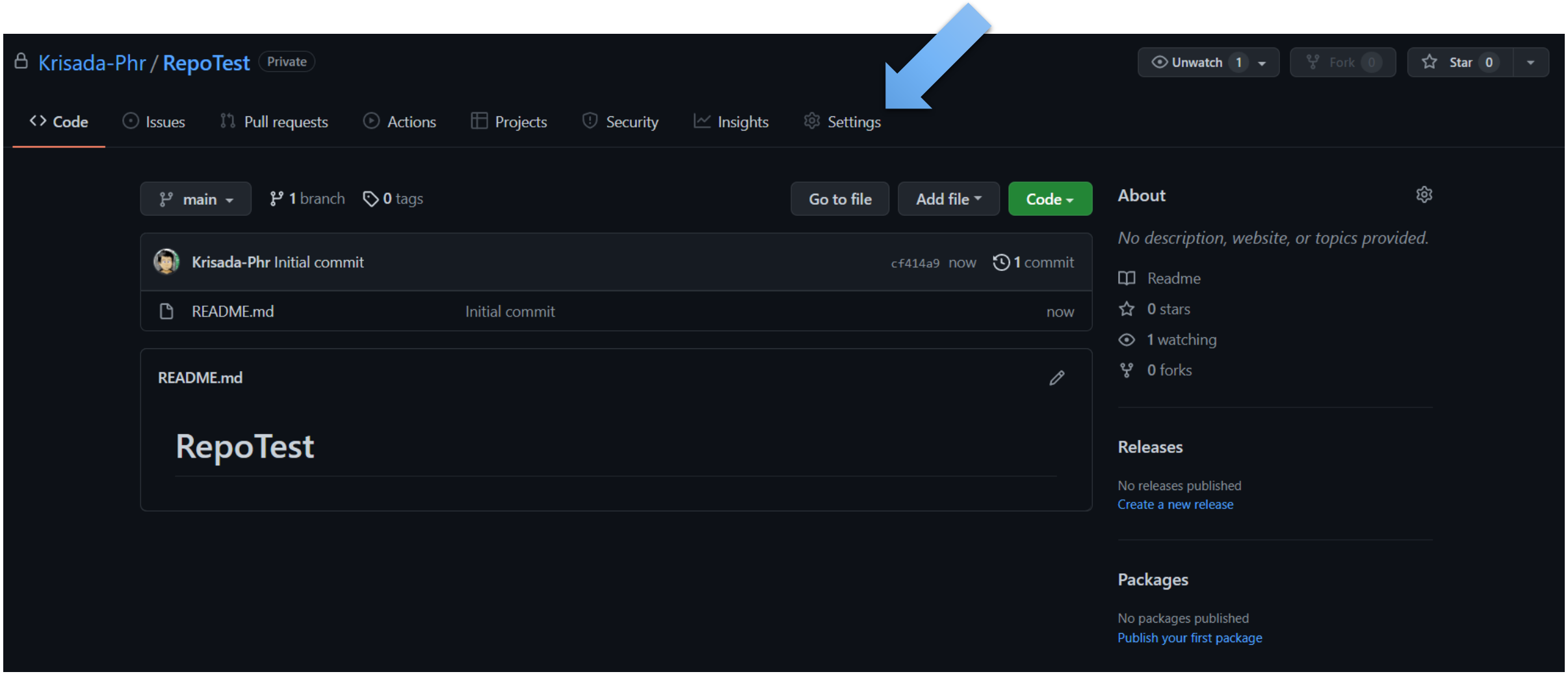
[2] Set repository name

GitHub – Create Repository

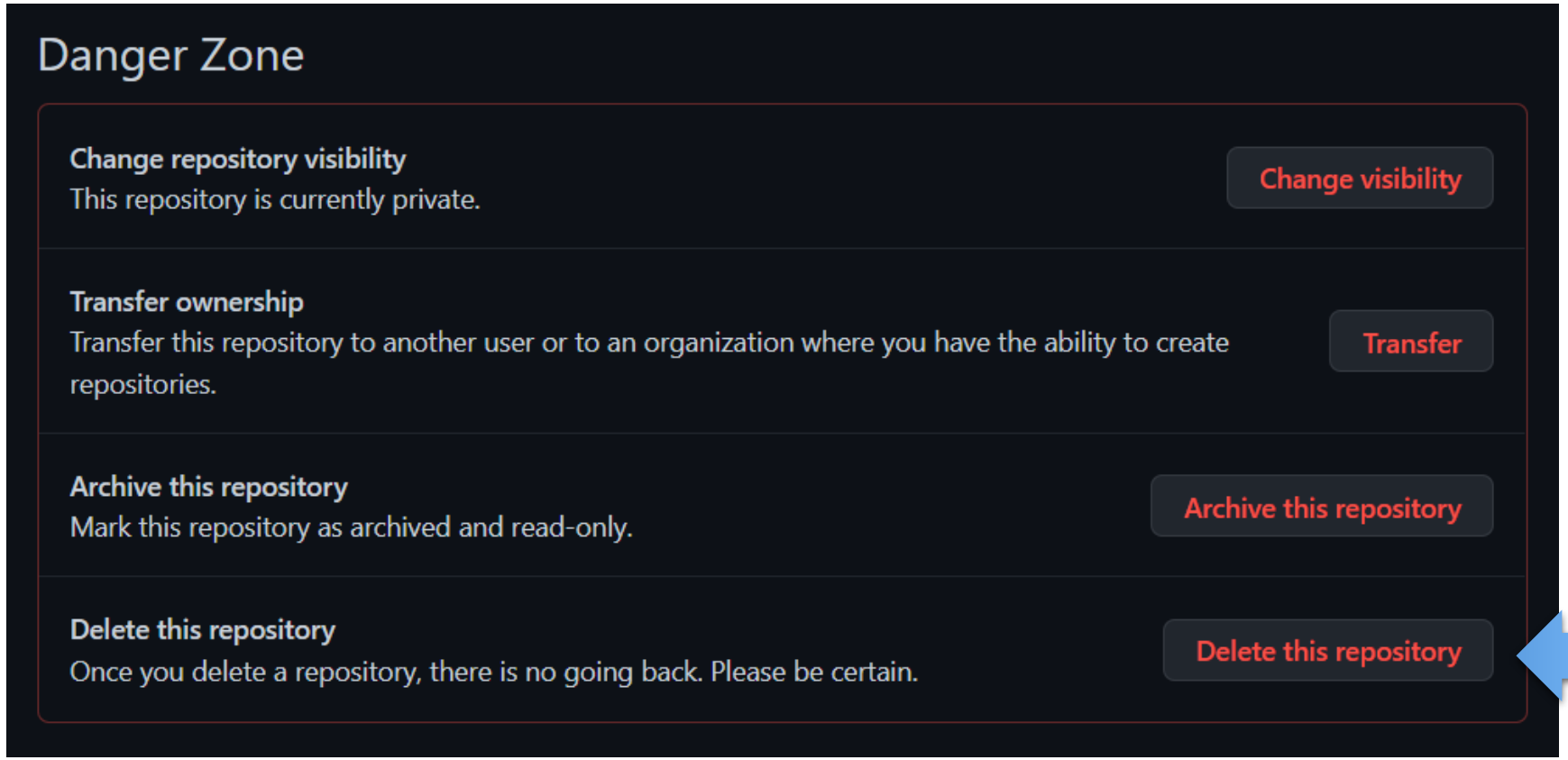


GitHub – Delete Repository

[1] Settings

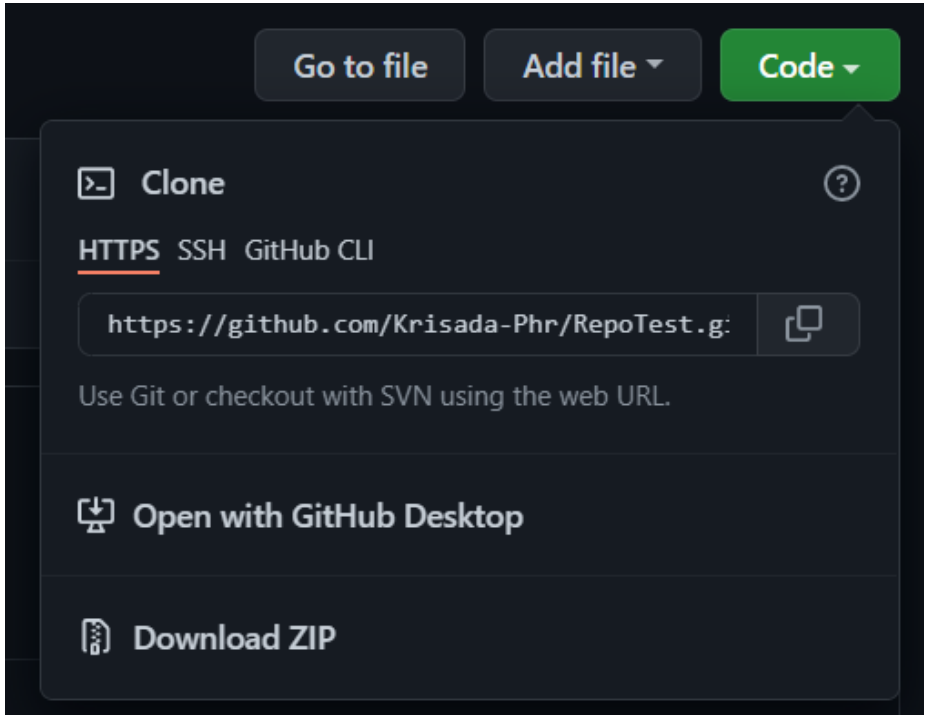


GitHub – Delete Repository

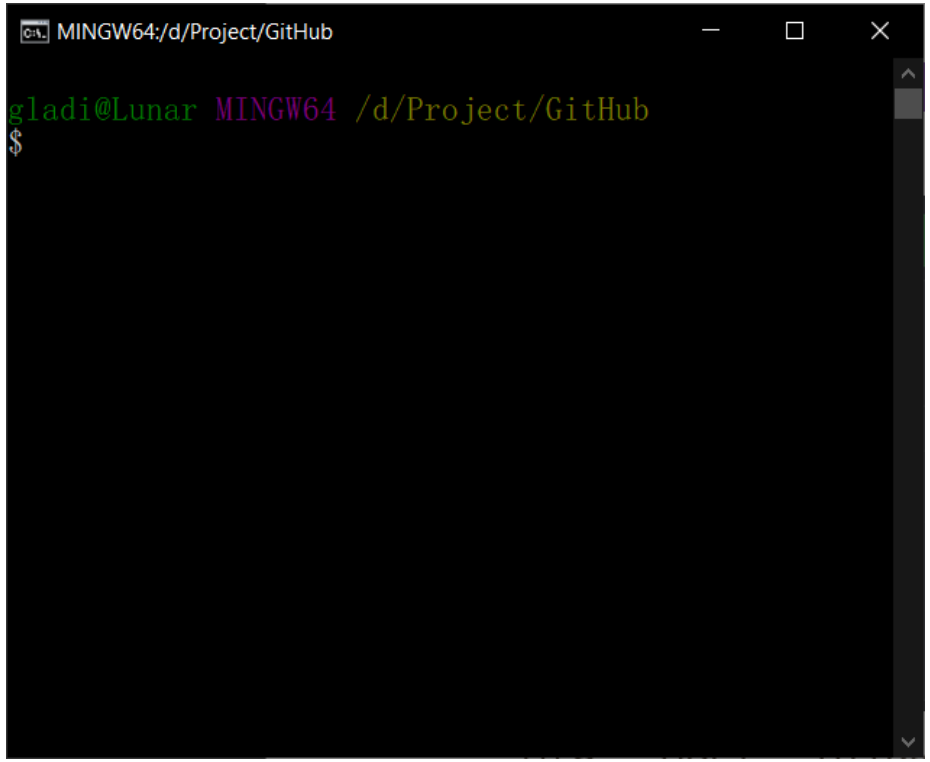


[2] Click & Confirm

GitHub – Clone Repository (with HTTPS)

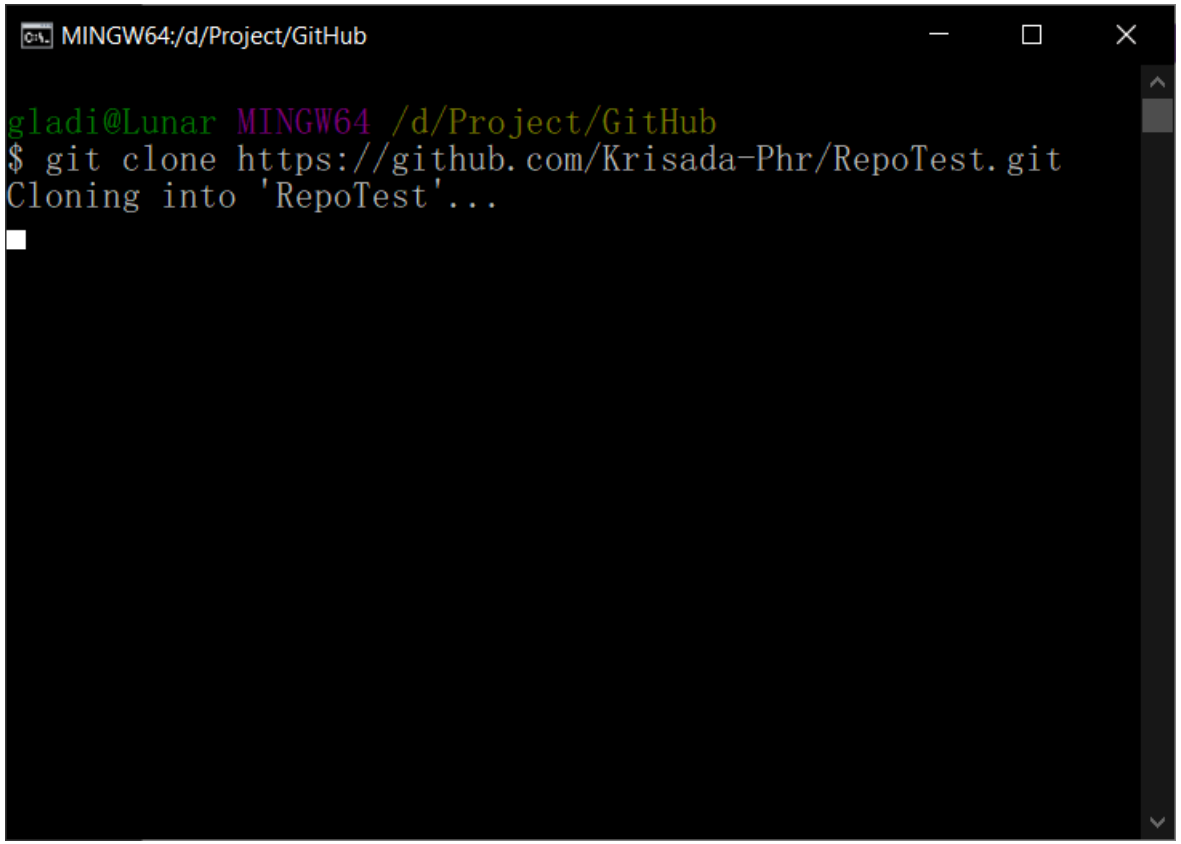


[1] Copy URL from HTTPS

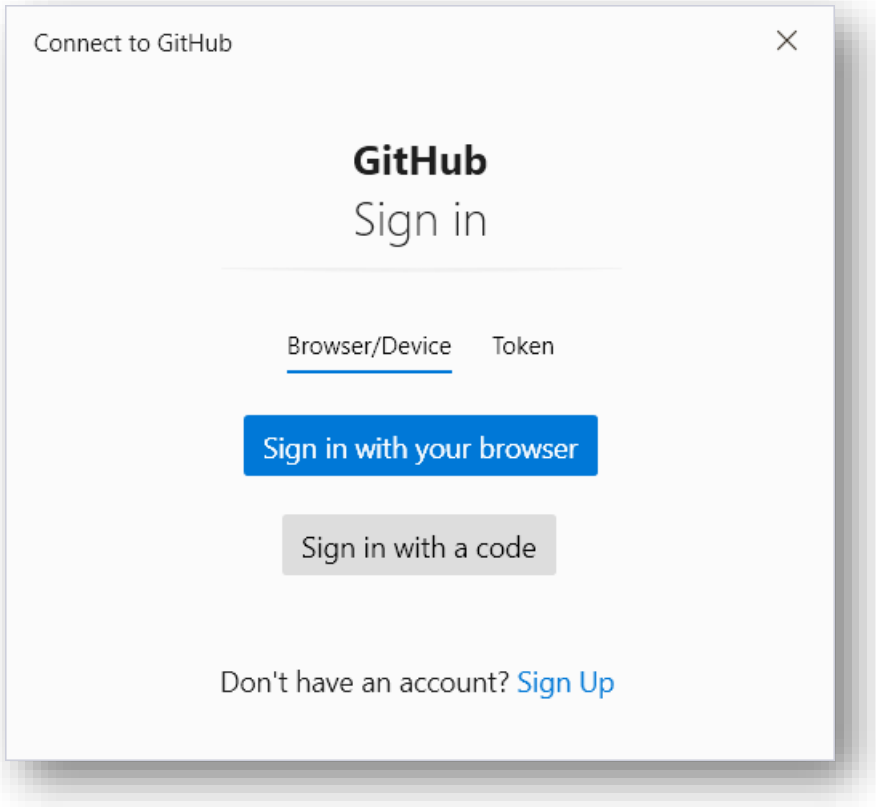


[2] Open Git Bash
[3] Go to directory you want to clone
(for me D:\Project\GitHub)

GitHub – Clone Repository (with HTTPS)

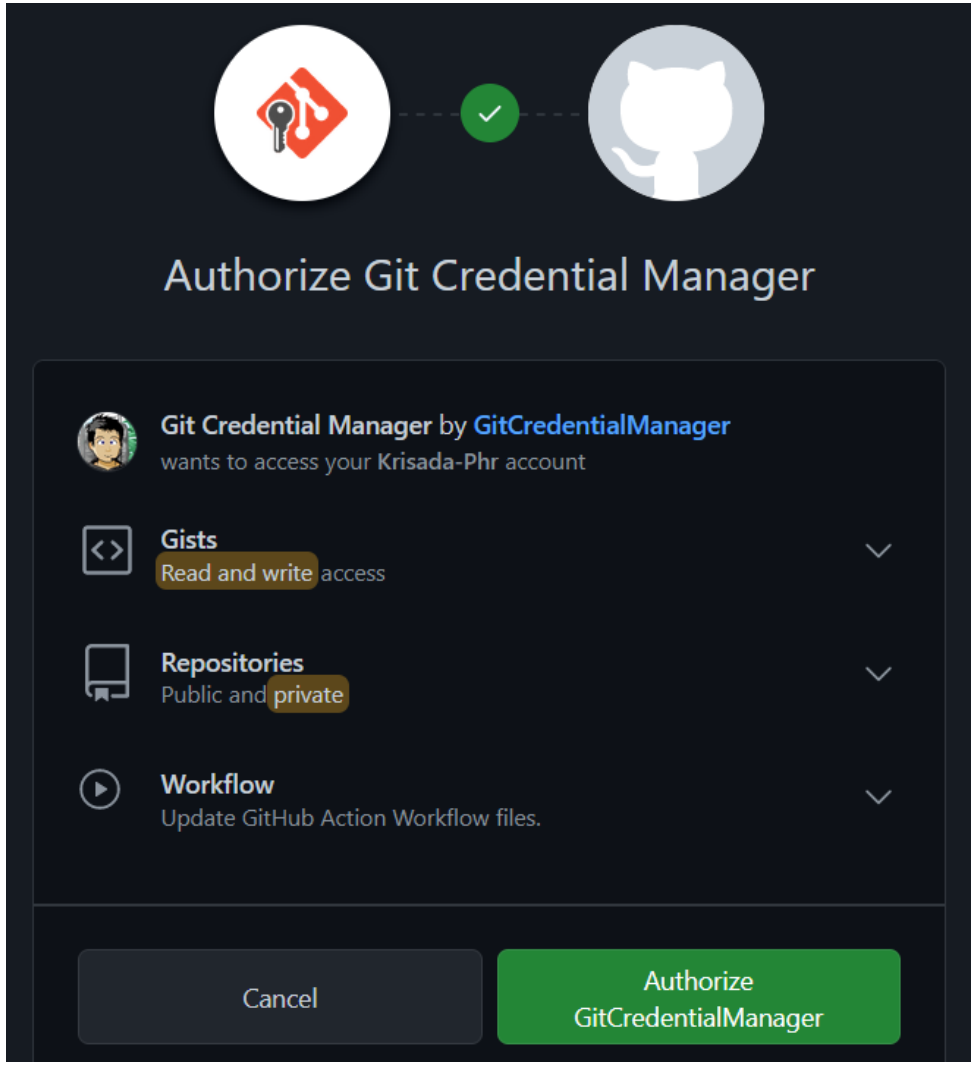


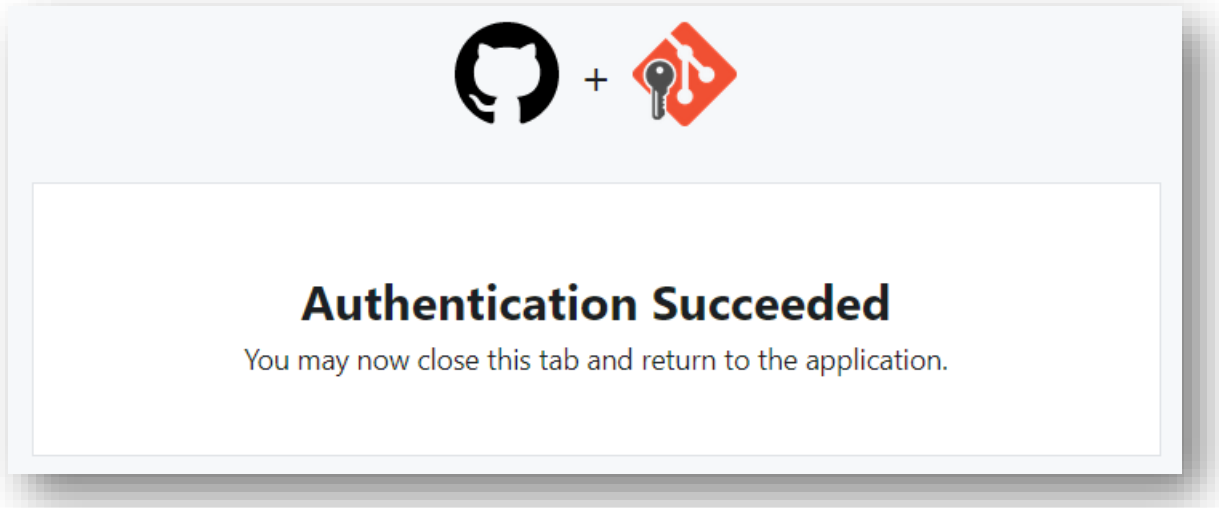
[4] Use command git clone “URL”



[5] This popup will show up
(Log-in with GitHub account)

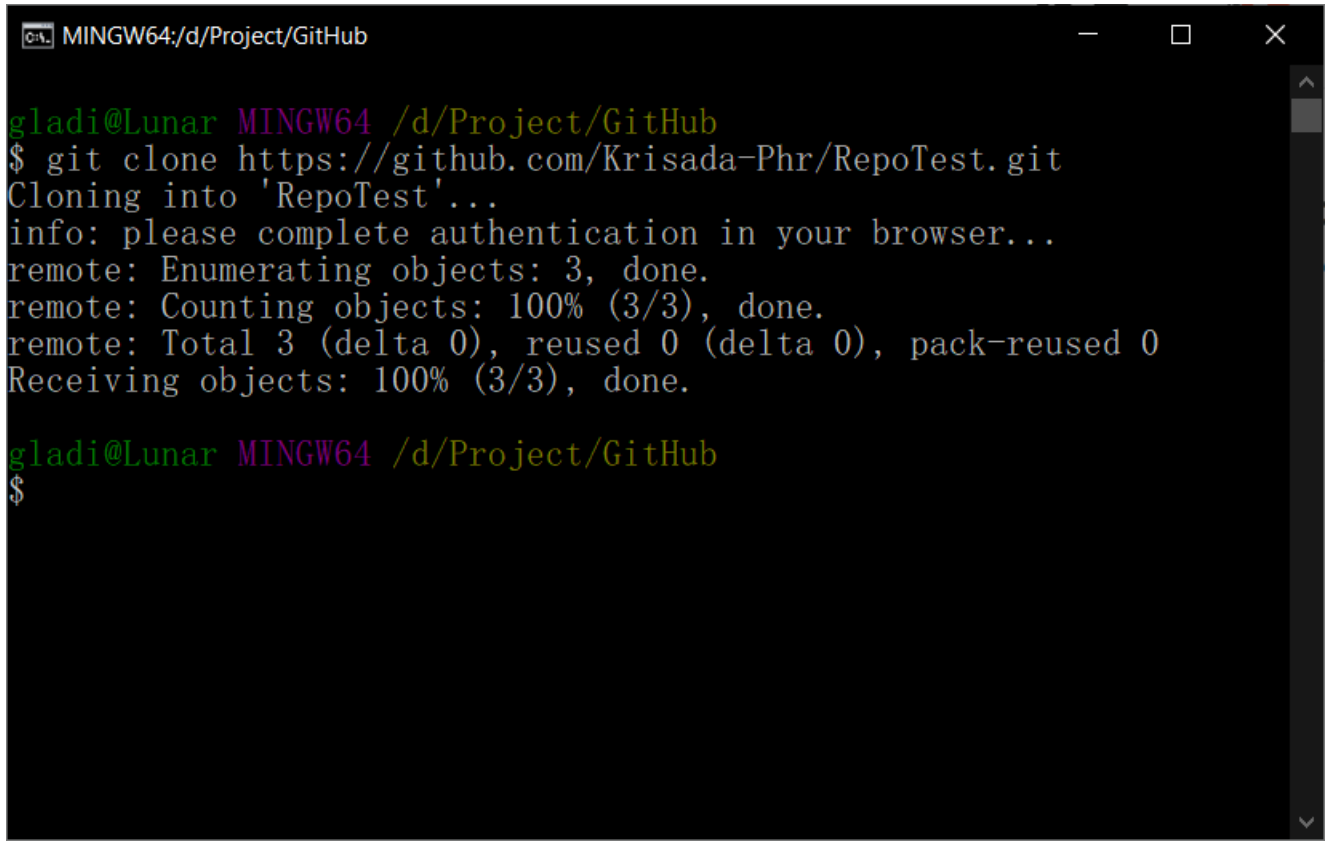
GitHub – Clone Repository (with HTTPS)



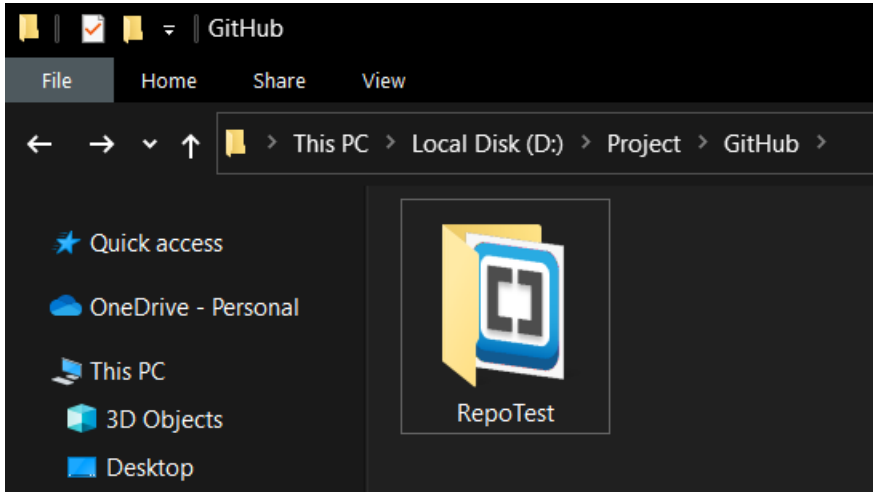


[5] Review information then click [Authorize]

GitHub – Clone Repository (with HTTPS)

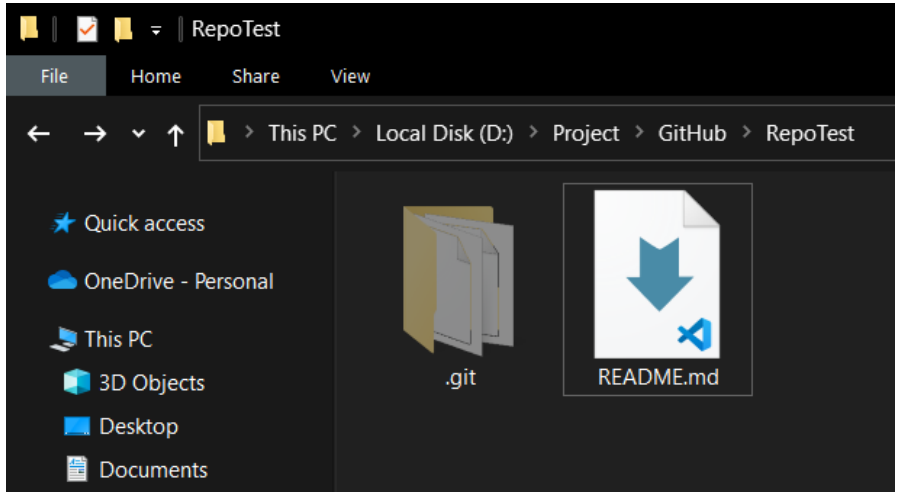


[6] Check the result

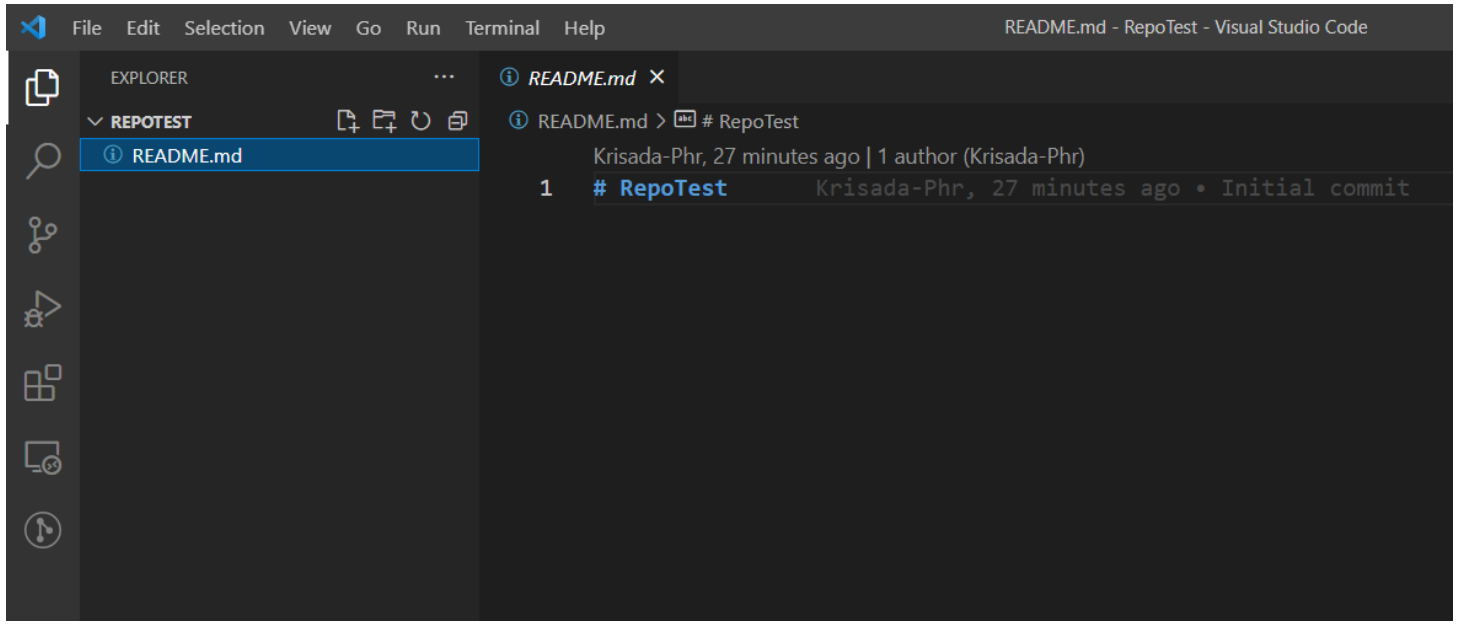


You will see repository folder like this

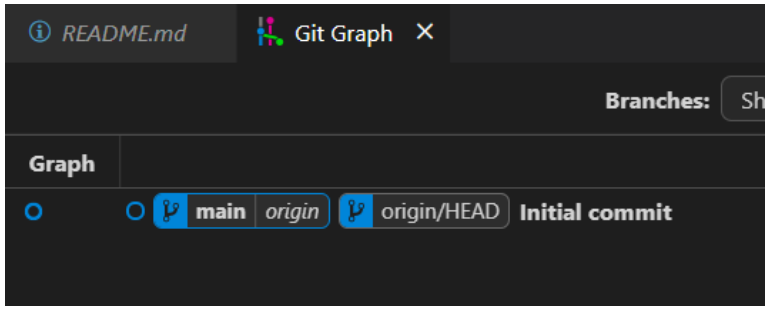
GitHub – Clone Repository (with HTTPS)



In repository folder, you will see [.git] hidden folder (the same thing as you do with Git)

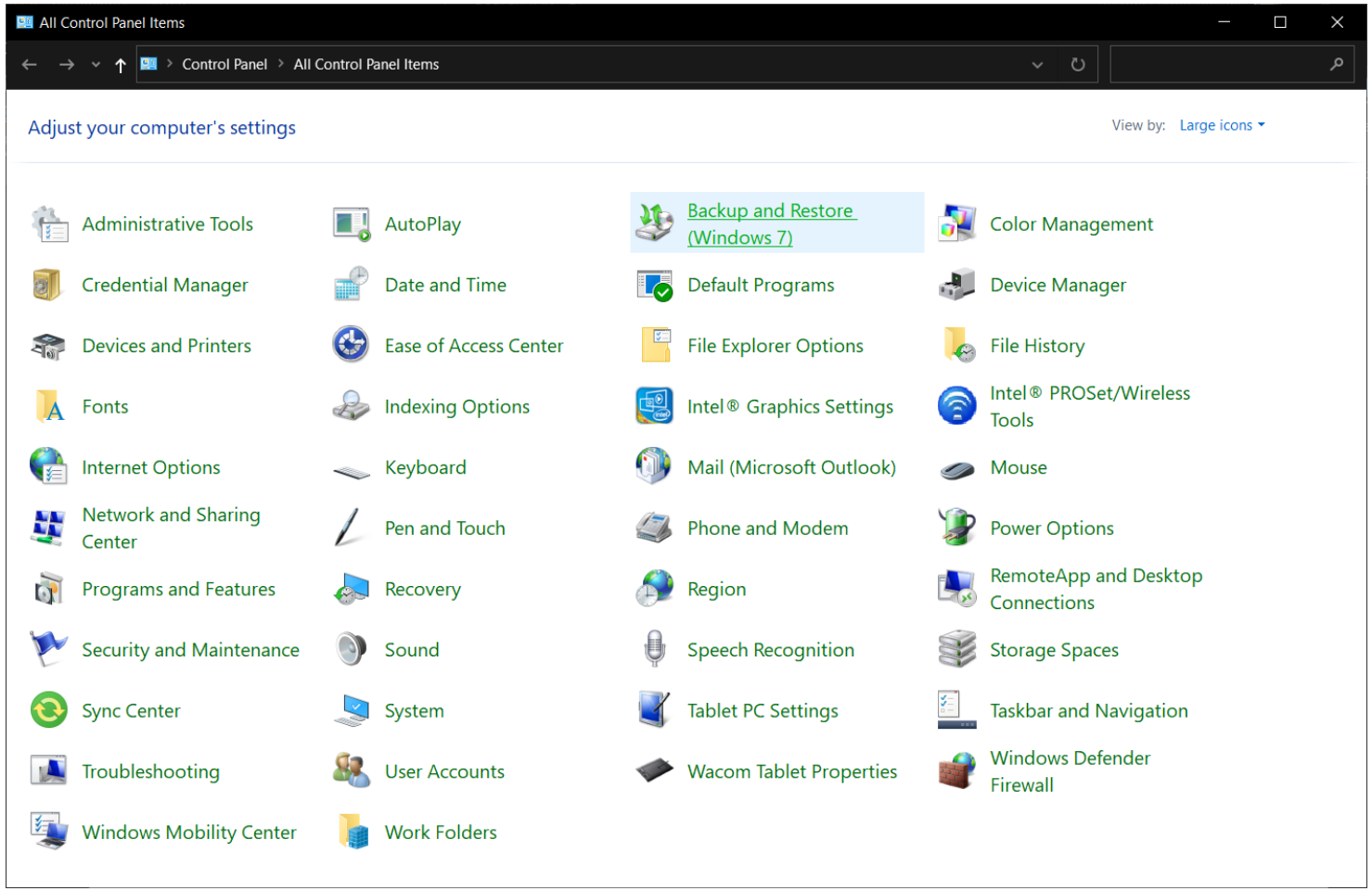


You can open “README.md” file (This is the initial comit)



View Git Graph

GitHub – Clone Repository (with HTTPS)



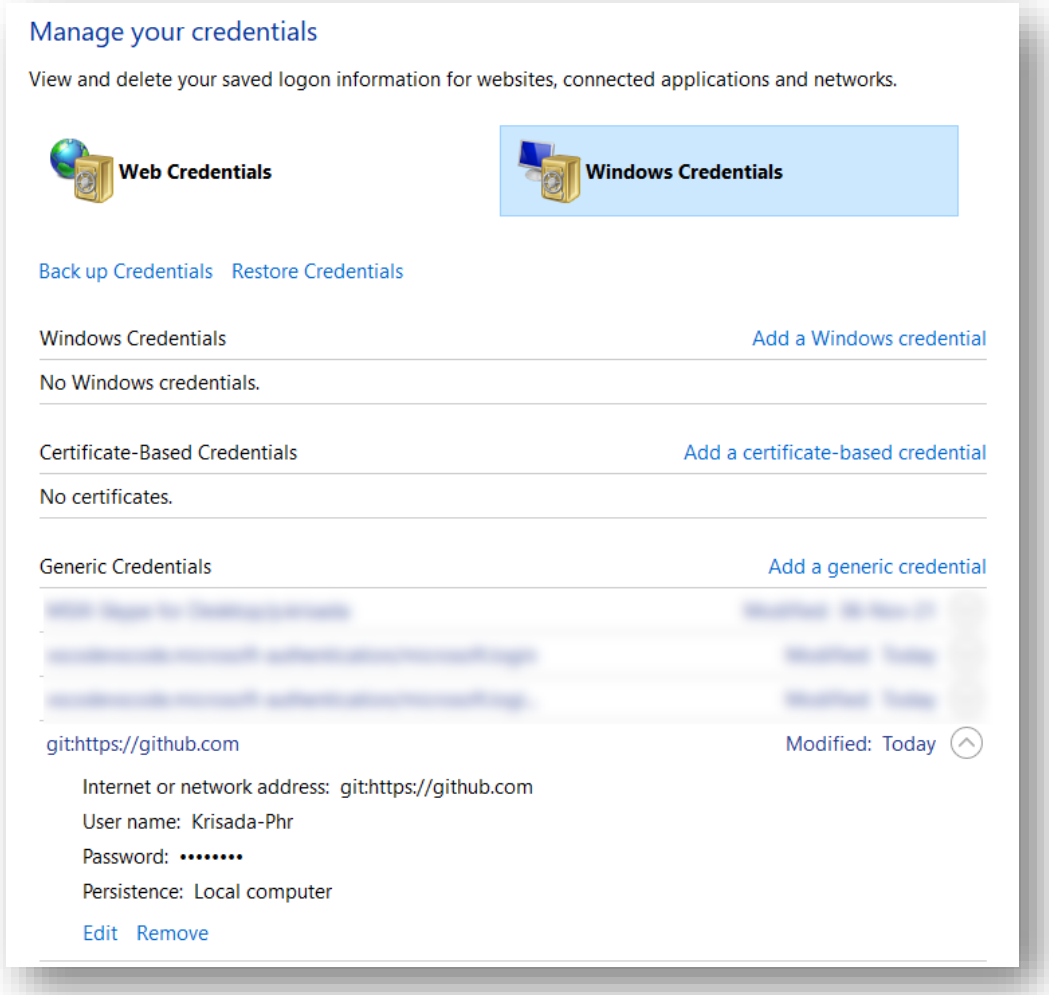
(Optional) We can manage credential by…

[1] Go to Control Panel

[2] Click Credential Manager

Credential : หนังสือรับรอง

GitHub – Clone Repository (with HTTPS)



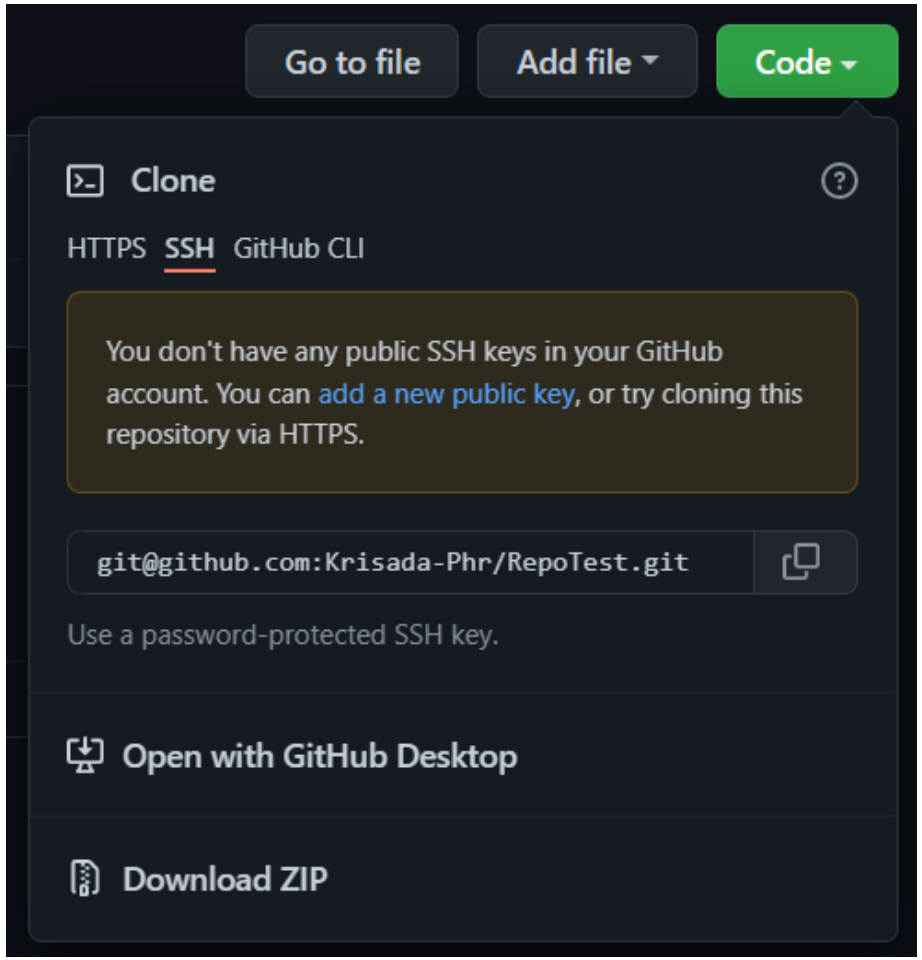
(Optional) We can manage credential by…

[3] Go to Windows Credentials

[4] Find “GitHub”

Now, we can edit / remove credential

GitHub – Clone Repository (with SSH)



The credential might make you feel unhappy

when you work with remote computer

(SSH will use a **Key** for security proposed)

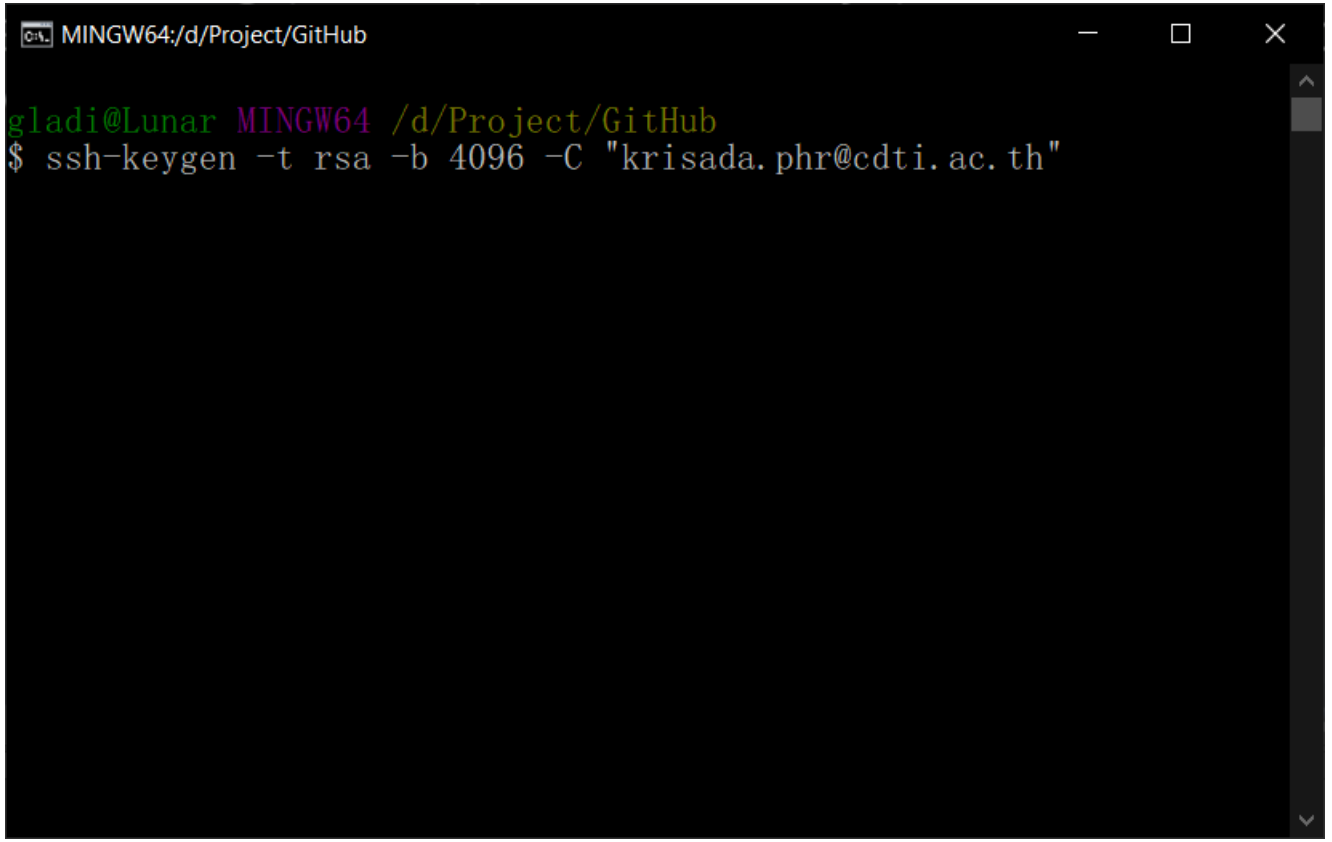
GitHub – Clone Repository (with SSH)

[1] Create authentication key

- **Private key** (we keep this key in Folder)
- **Public key** (upload to GitHub server)

[2] Use the following command to generate

ssh-keygen –t rsa –b 4096 –C “e-mail”



GitHub – Clone Repository (with SSH)

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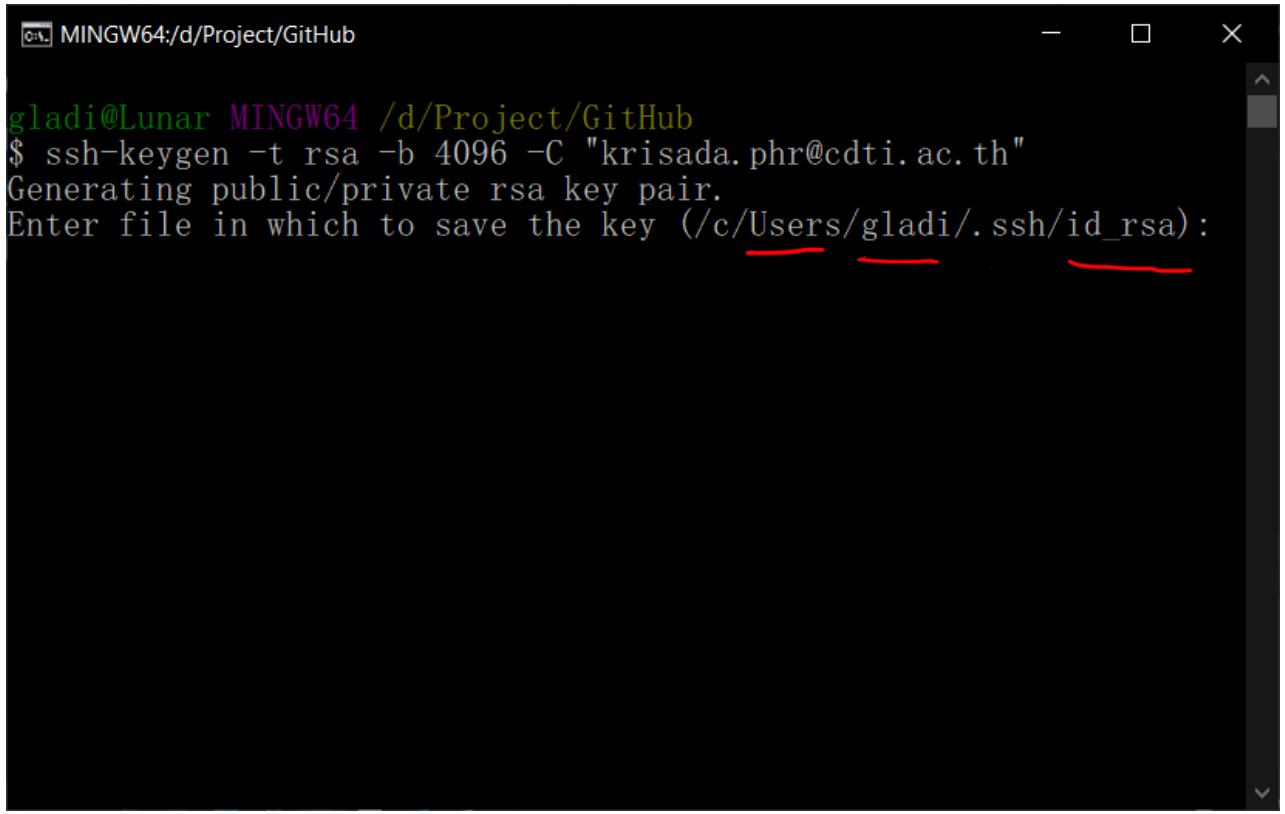
- **Public key** (upload to GitHub server)

[2] Use the following command to generate

ssh-keygen –t rsa –b 4096 –C “e-mail”

[3] Press <enter> to save “key” in default folder

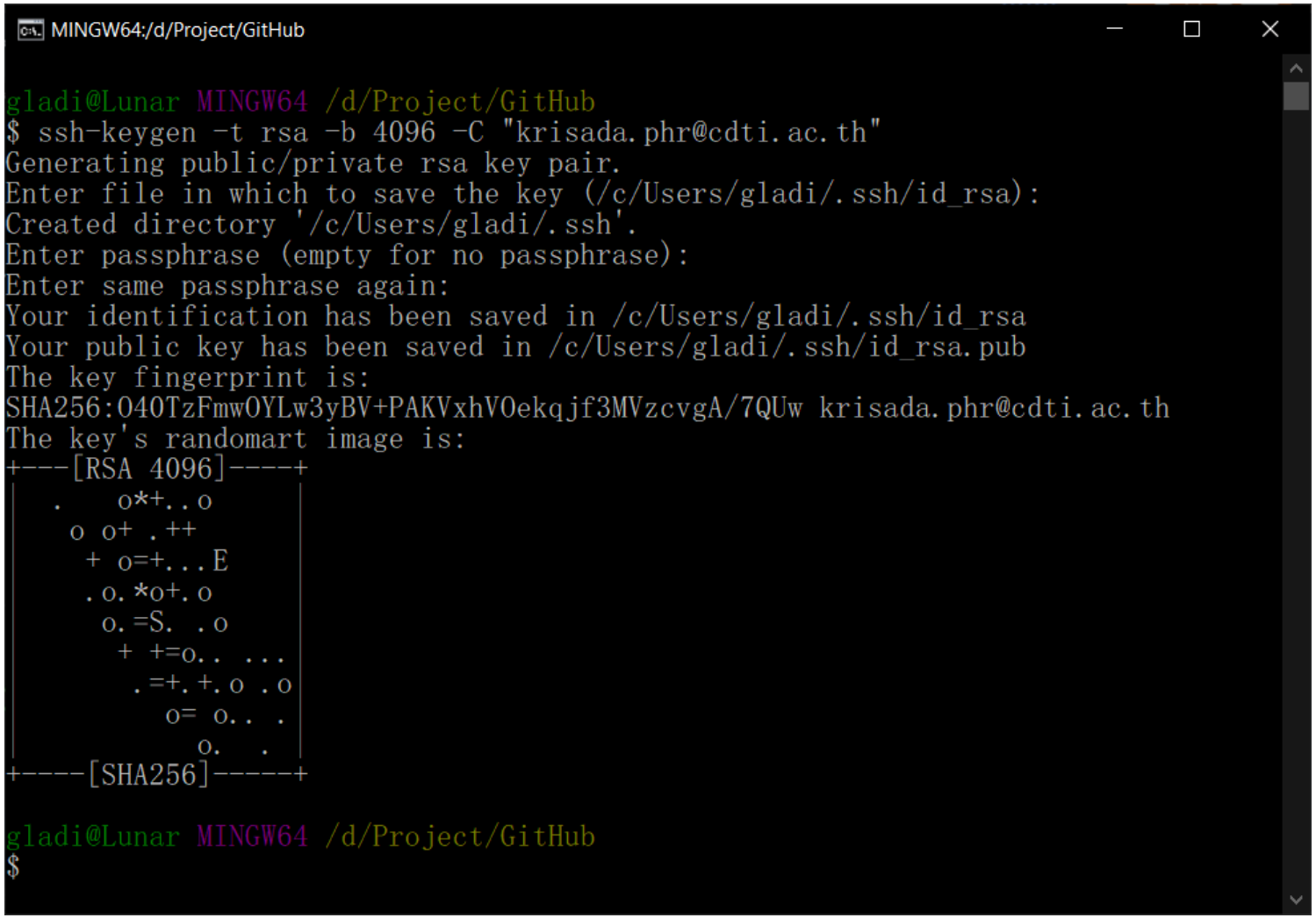


GitHub – Clone Repository (with SSH)

[4] Enter passphrase

[5] Re-enter passphrase

Key will generate like this



GitHub – Clone Repository (with SSH)

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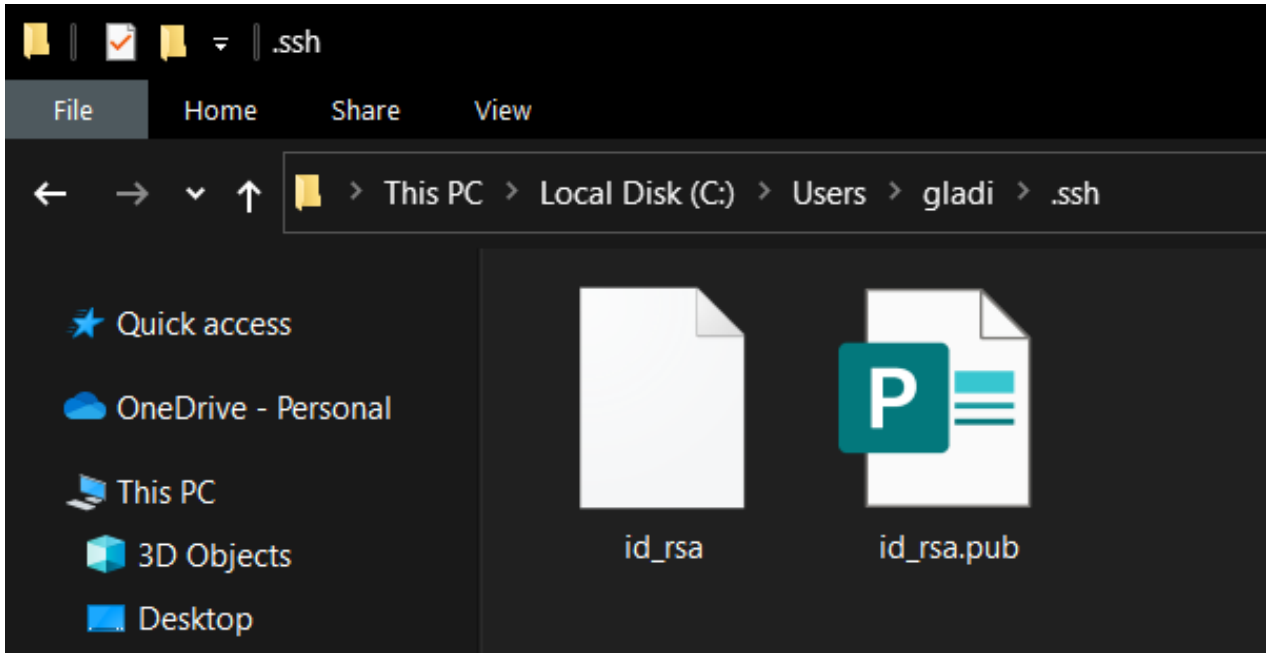
Key will generate like this



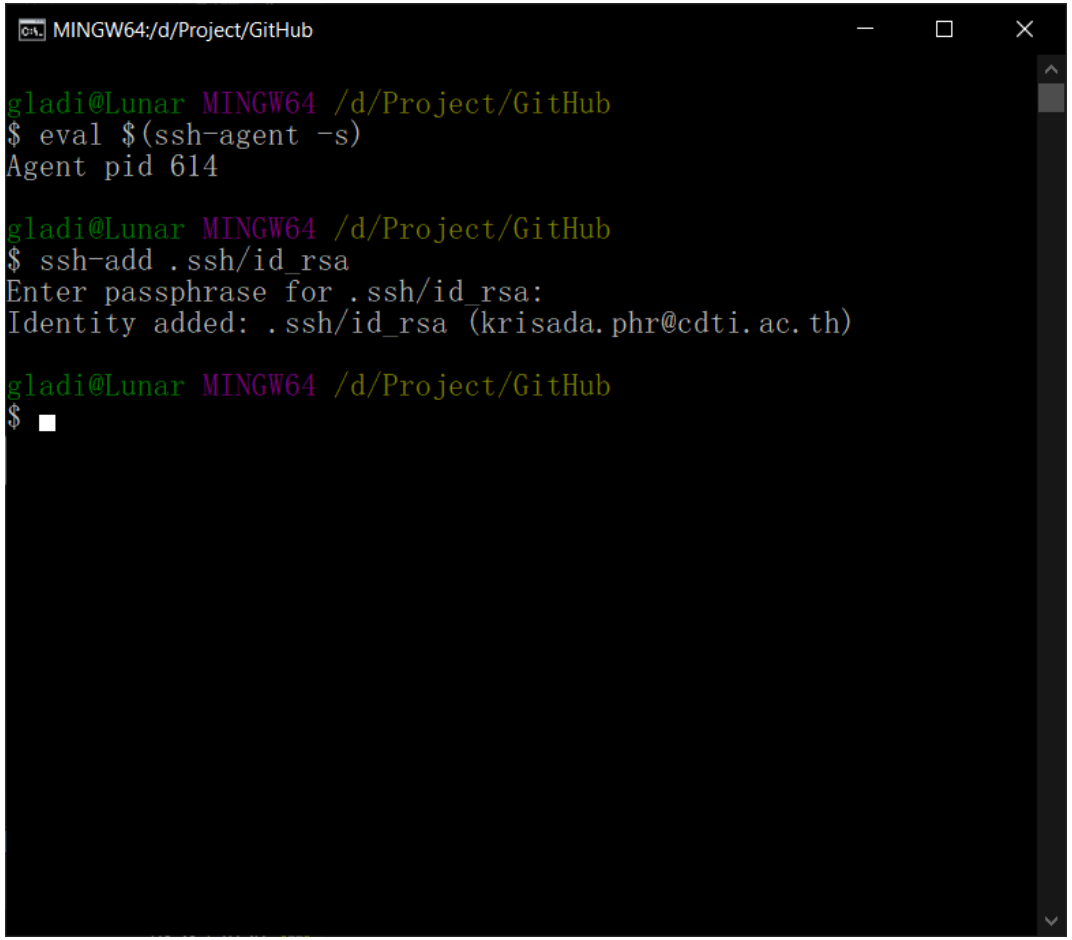
GitHub – Clone Repository (with SSH)

[6] Open ssh agent in Git Bash with the following command

eval $(ssh-agent -s)

[7] Add private key (to local computer)

ssh-add “path of the private key”

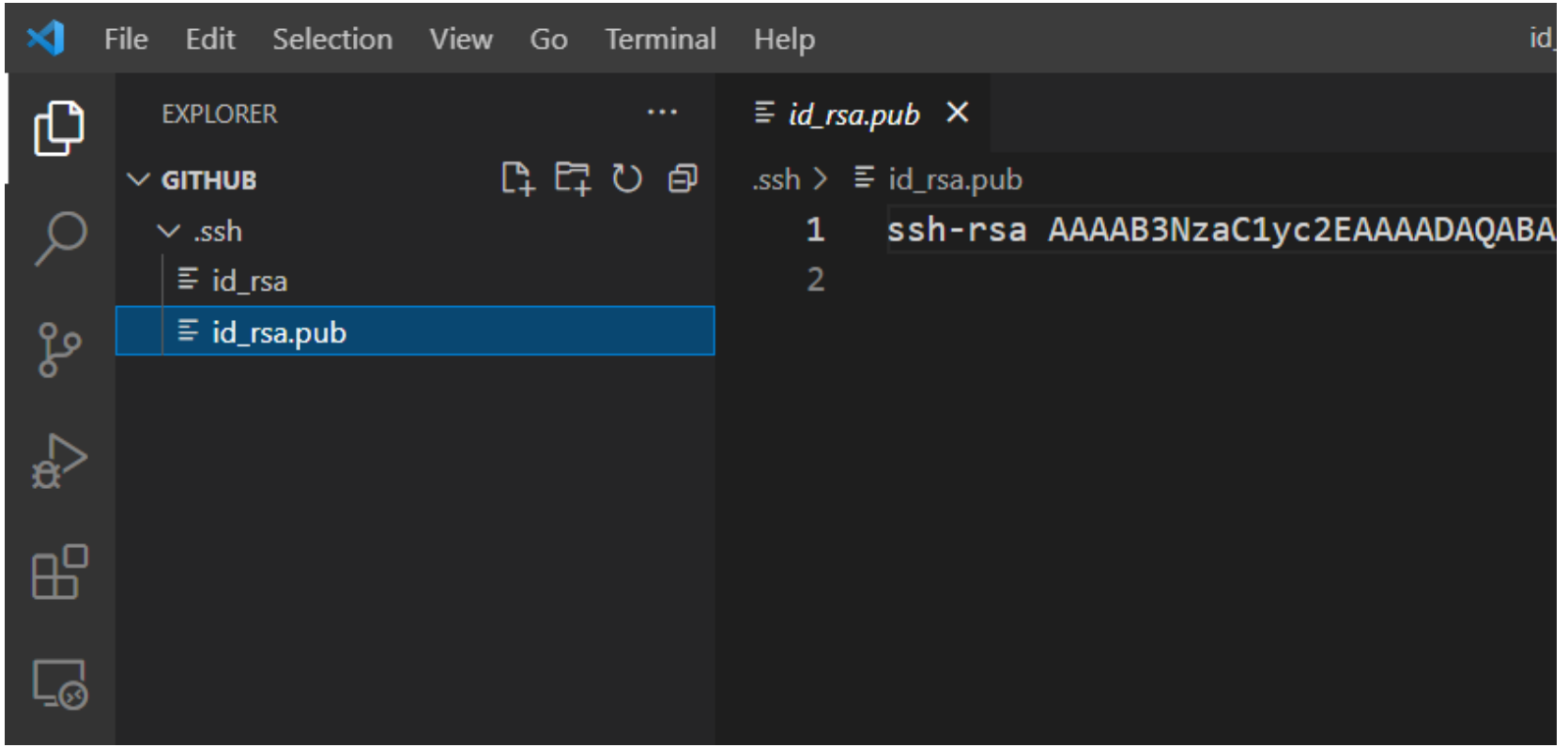


GitHub – Clone Repository (with SSH)

[8] Upload public key to GitHub

Open file [public key] with Text Editor (VS Code)

[9] Copy “key”



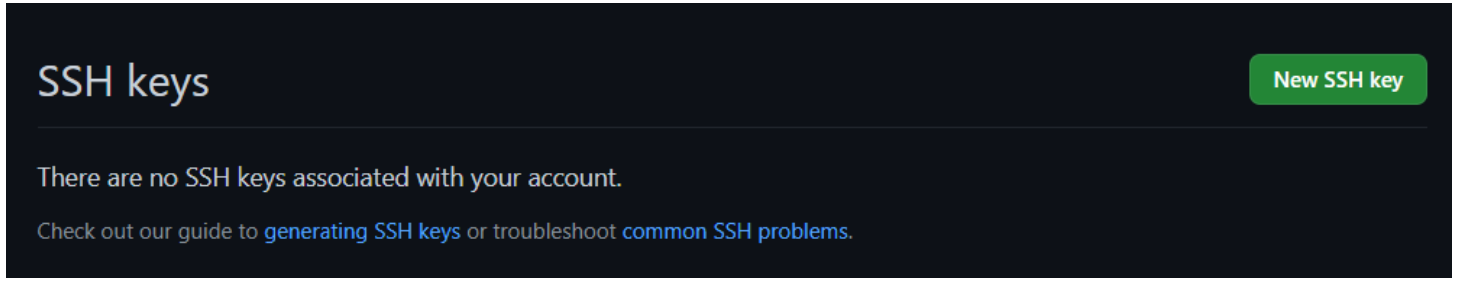
GitHub – Clone Repository (with SSH)

[10] Go to Settings in GitHub

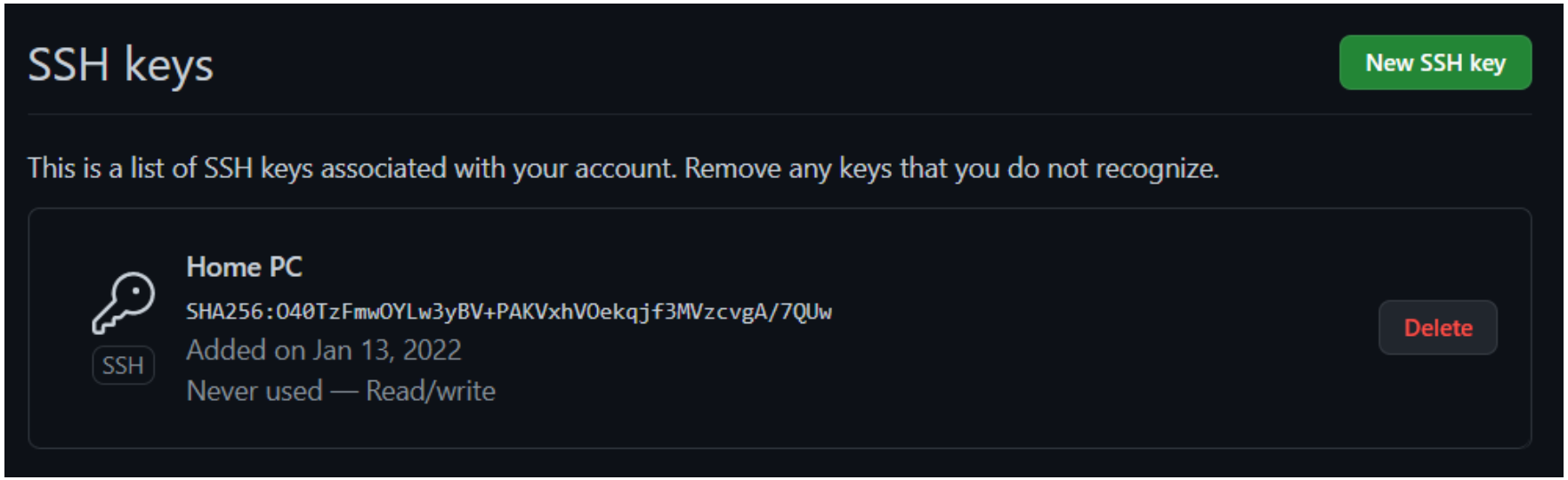
[11] Click “SSH and GPG keys”

[12] New SSH key

[13] Add Title & Key



GitHub – Clone Repository (with SSH)

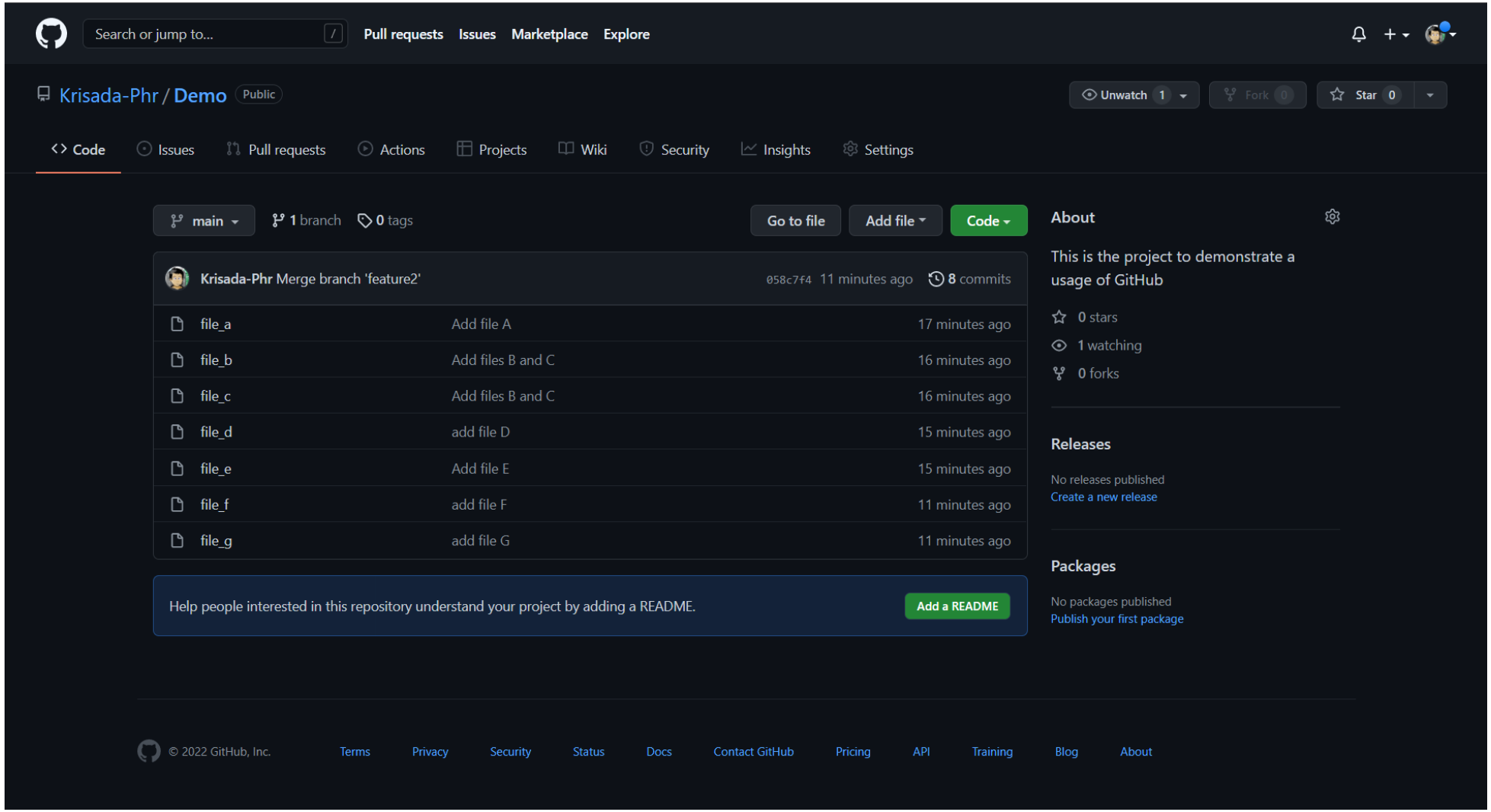


GitHub – Clone Repository (with SSH)

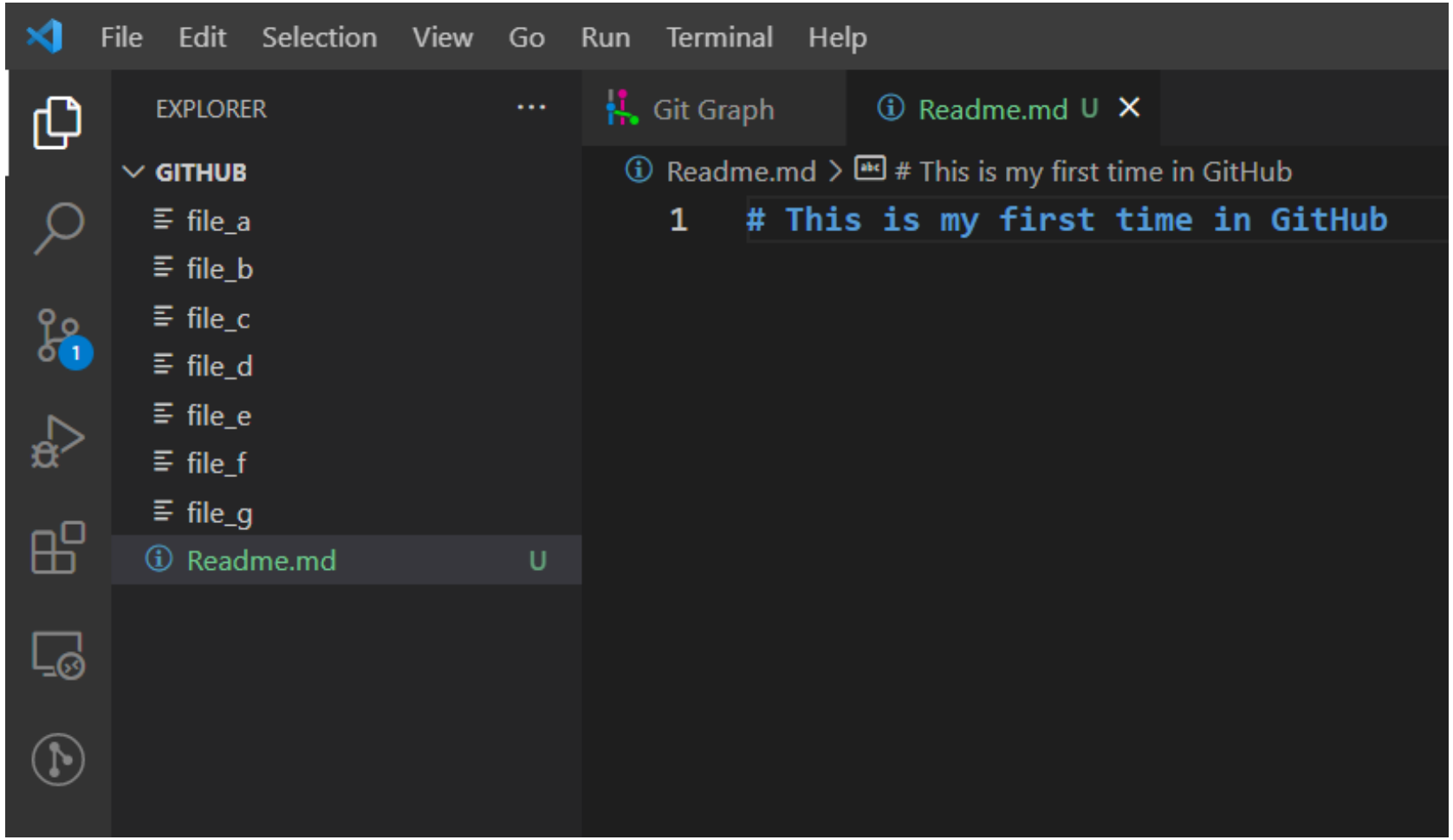
[14] use Git Bash to Clone Repository with SSH

git clone “copy URL from ssh”

GitHub – Upload existing files to New Repository



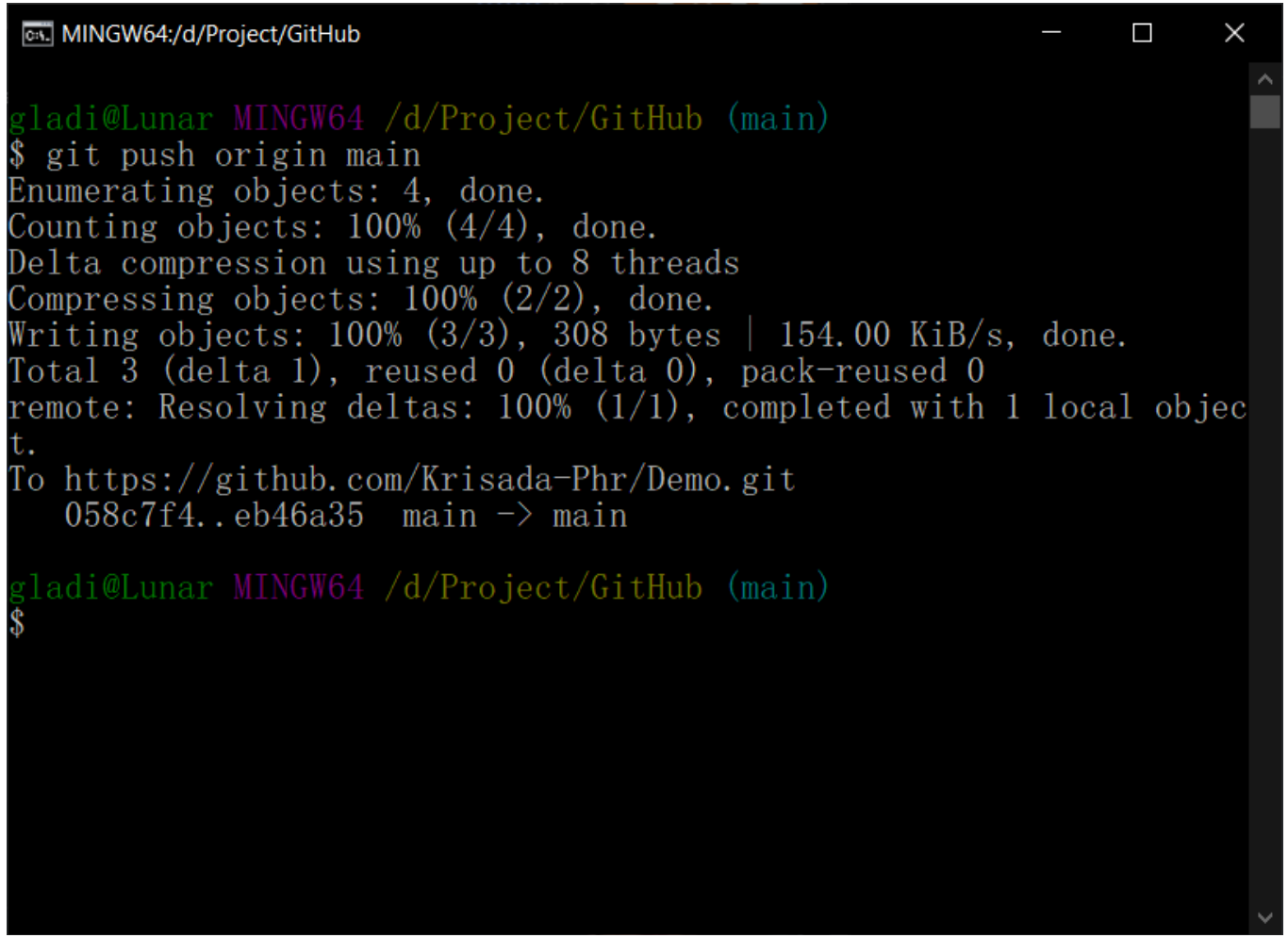
GitHub – Add / Edit then Push to GitHub



[1] Add new file to Project

[2] Commit this file

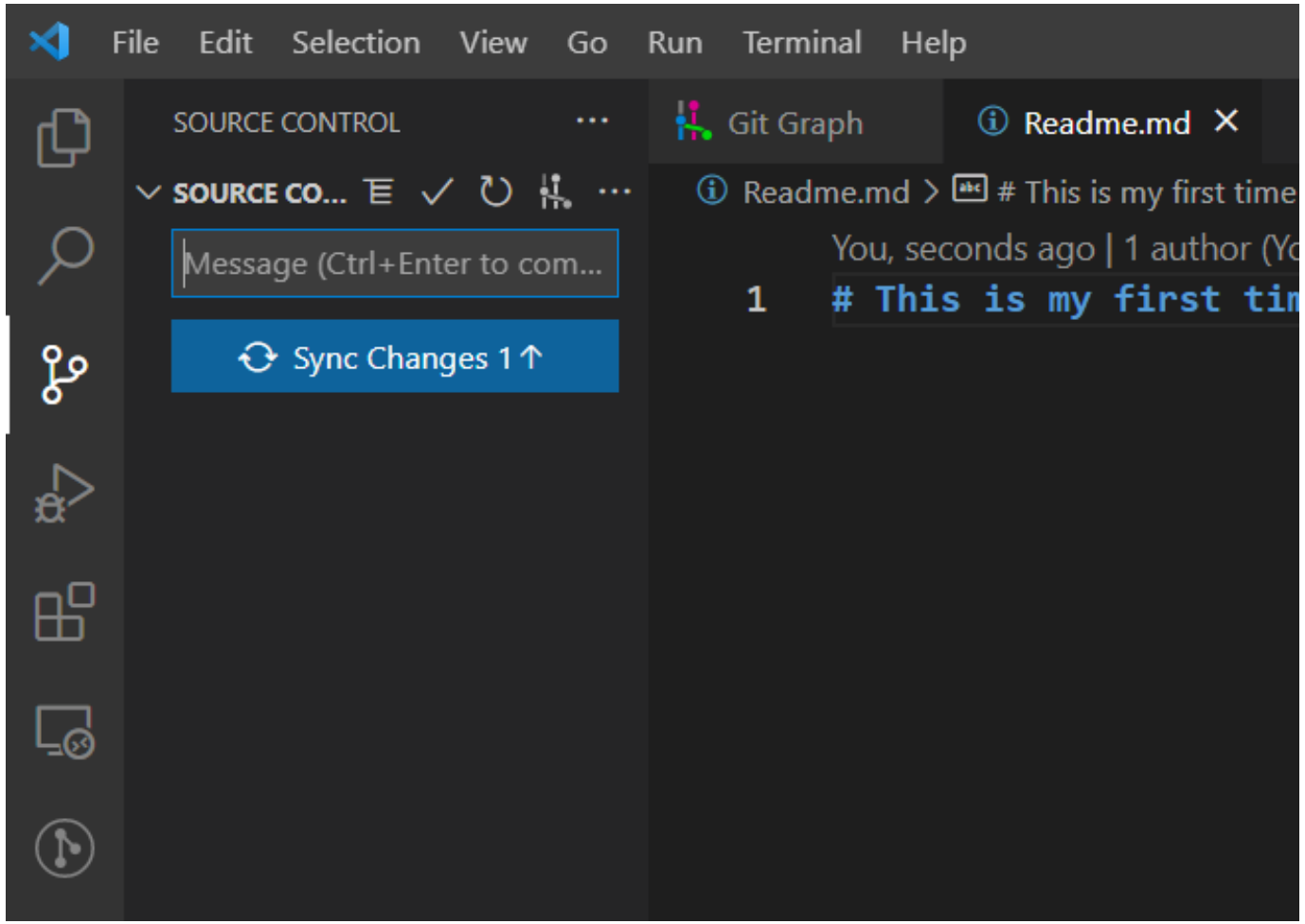
GitHub – Add / Edit then Push to GitHub



[3] Push to GitHub

git push origin main

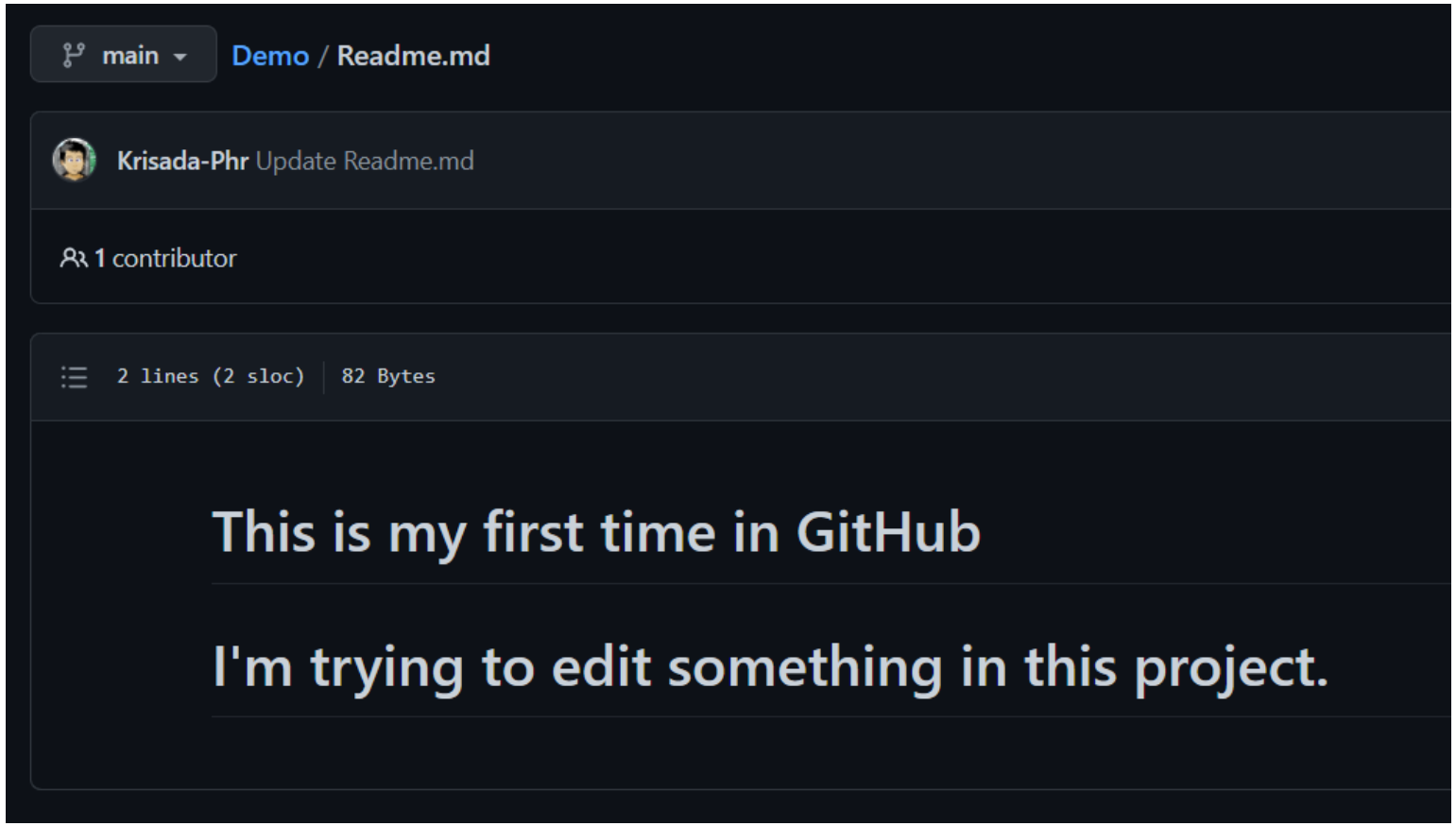
GitHub – Add / Edit then Push to GitHub



Or use Sync Changes in VS Code

GitHub – Pull from GitHub

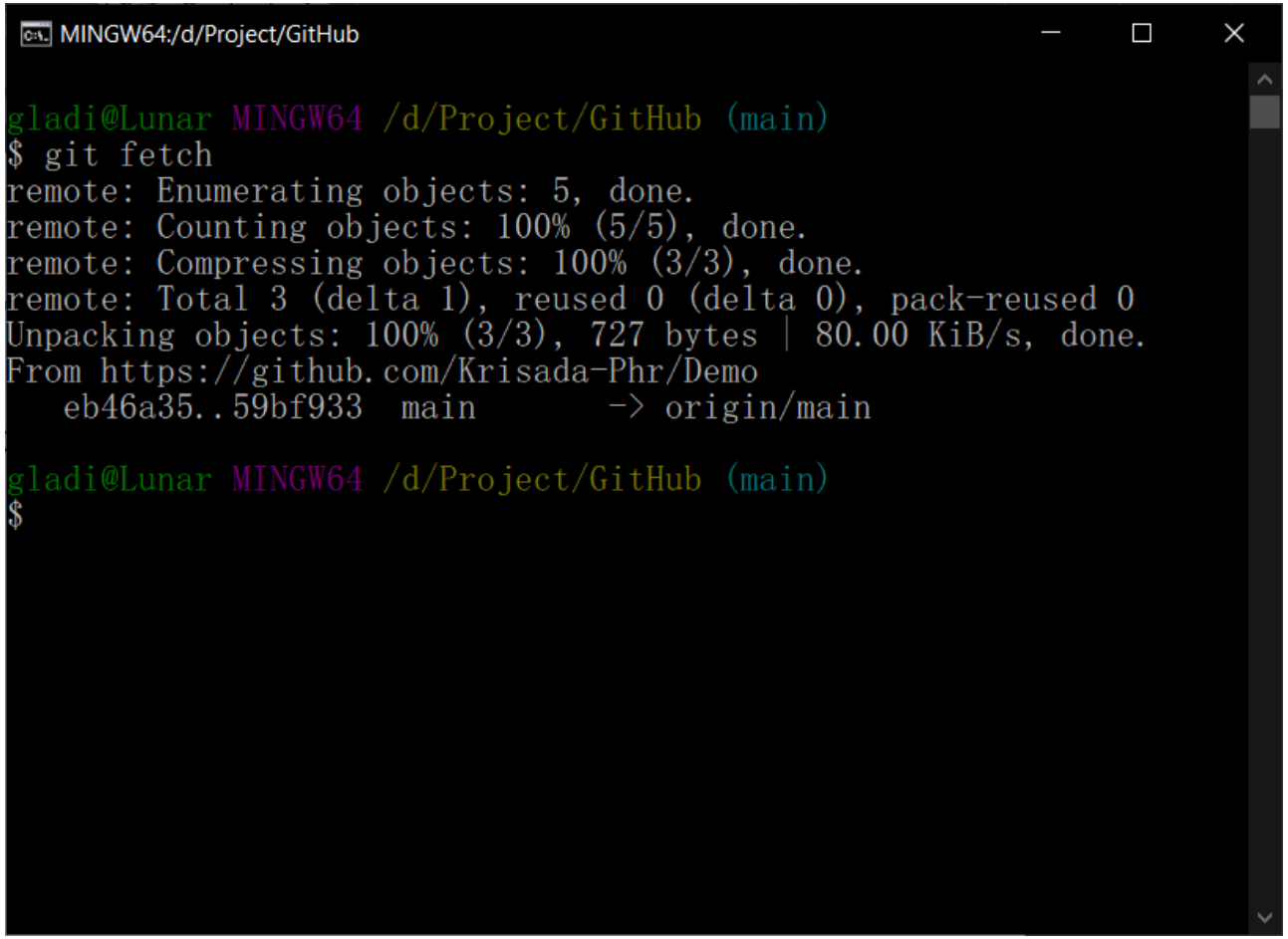
[1] Try to edit file in GitHub (on website)



GitHub – Pull from GitHub

[2] Check from local PC, Is there any change in GitHub

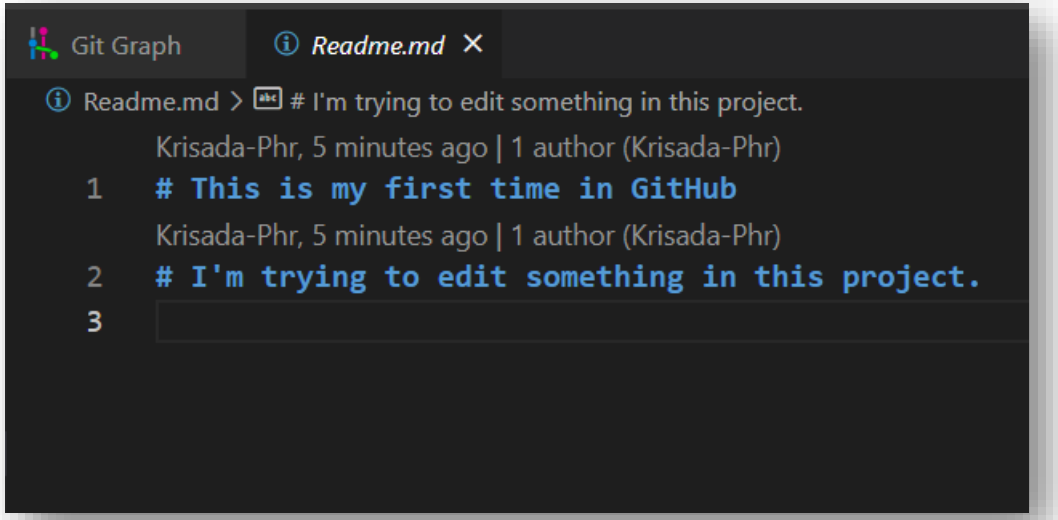
git fetch



GitHub – Pull from GitHub

[3] Pull data from GitHub

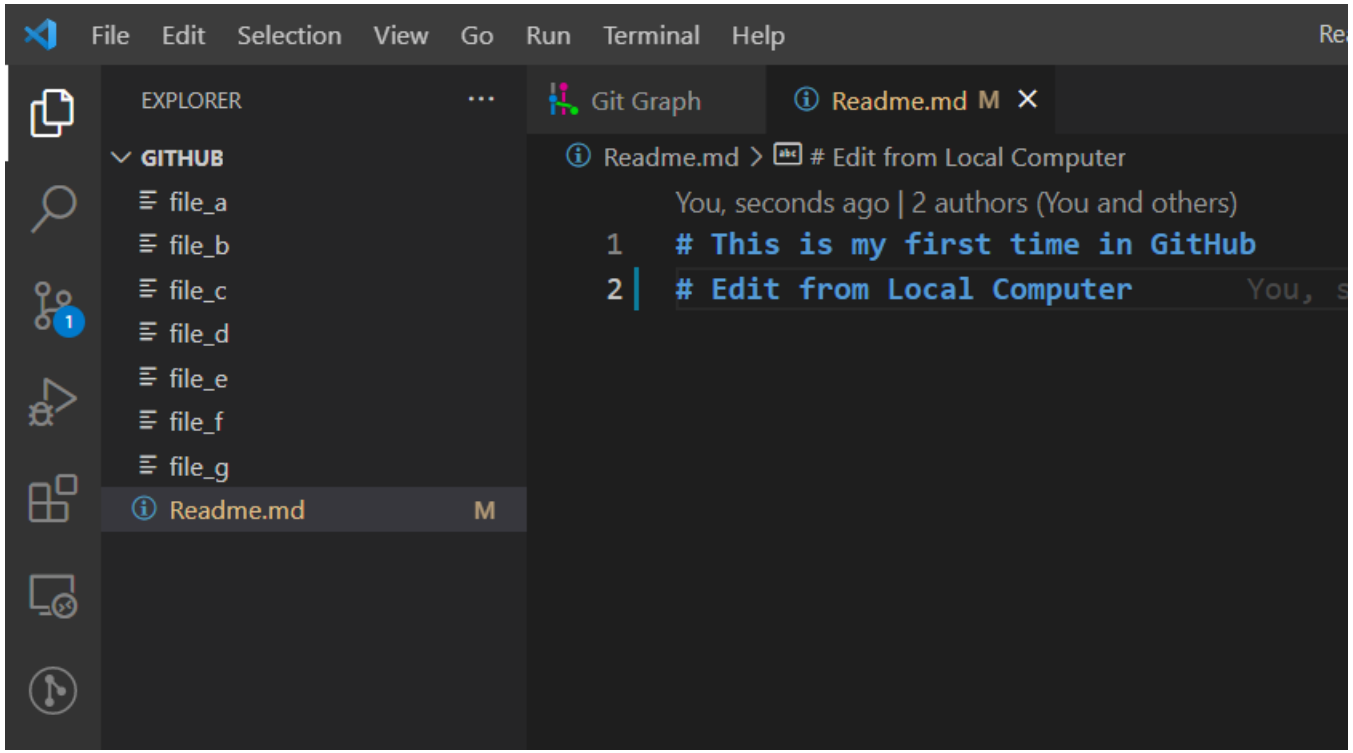
git pull

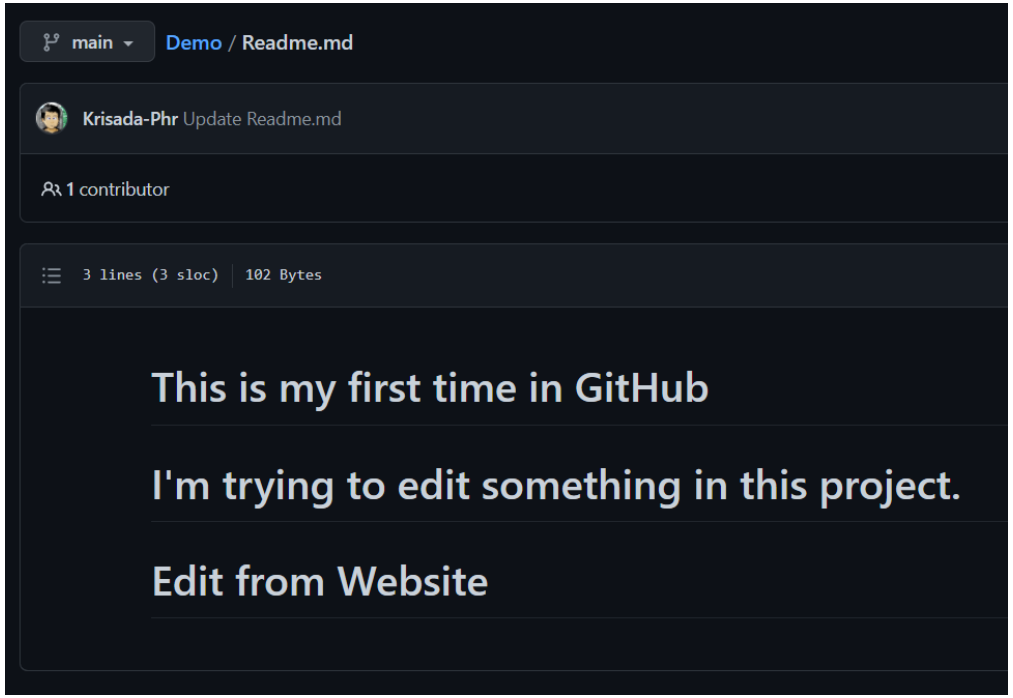


GitHub – Conflict

[1] Edit Code from Local Computer, then commit (Dev. A)

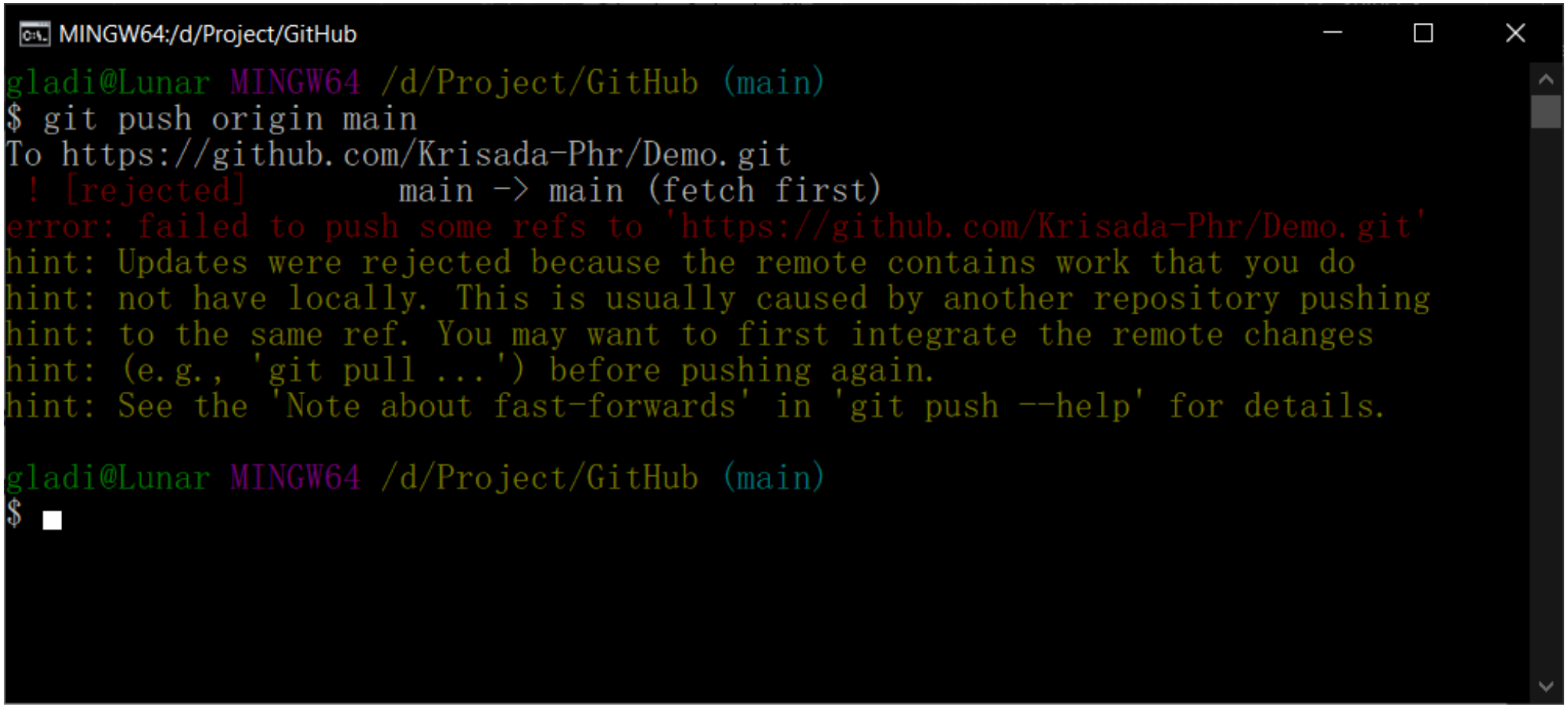
[2] Edit Code from Website, then commit (Dev. B)





GitHub – Conflict

[3] This will happen when try to push to GitHub

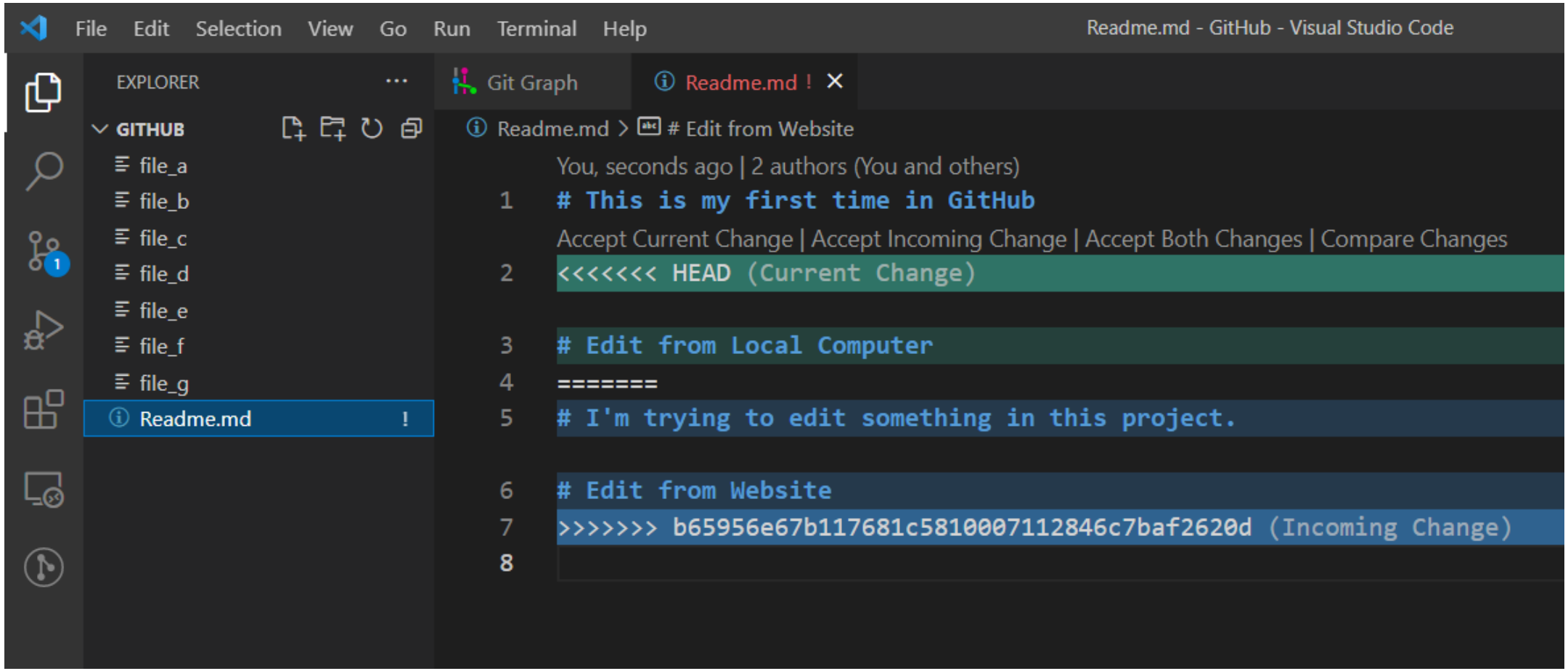


GitHub – Conflict

[4] OK, so we need to Pull before Push to GitHub

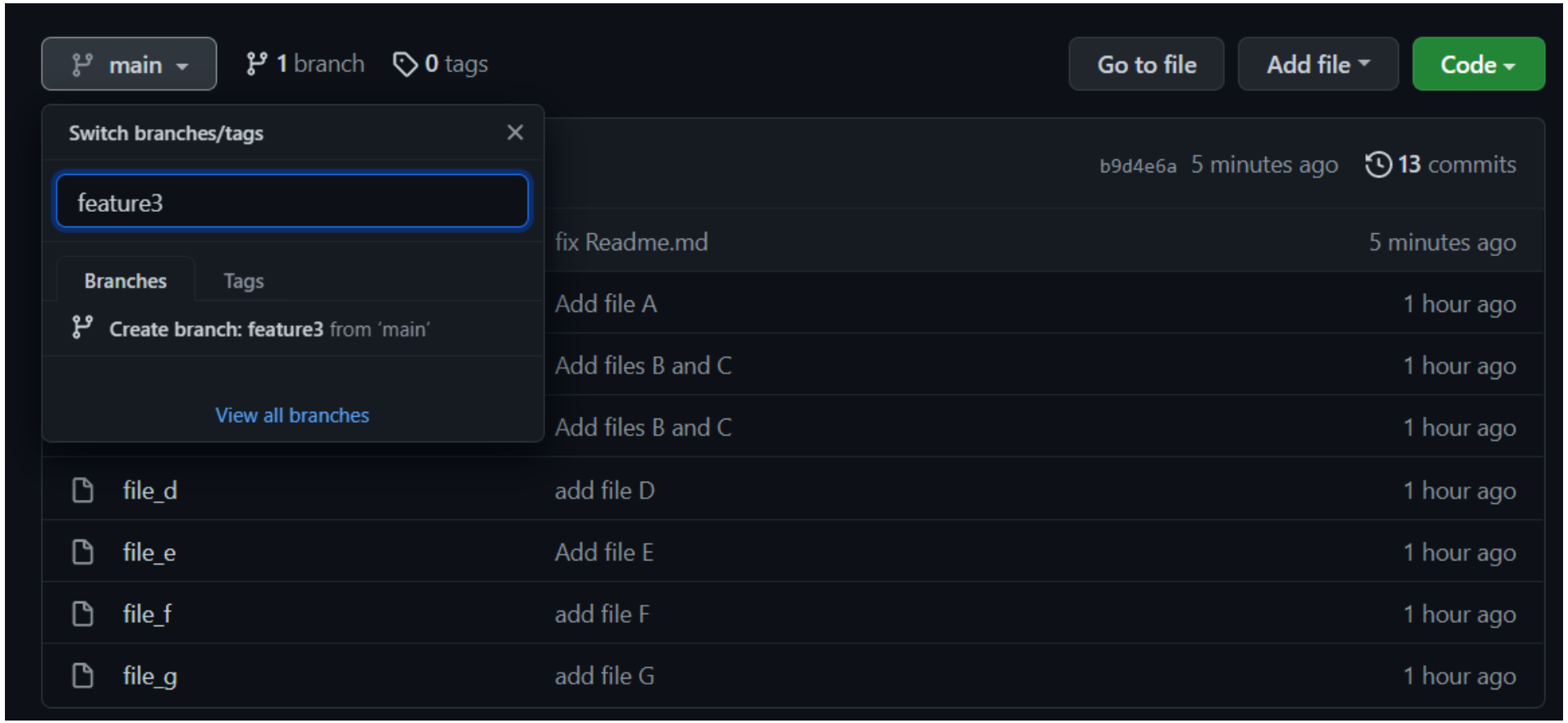
GitHub – Conflict

[5] Open VS Code, fix the conflict, then add / commit / push to GitHub



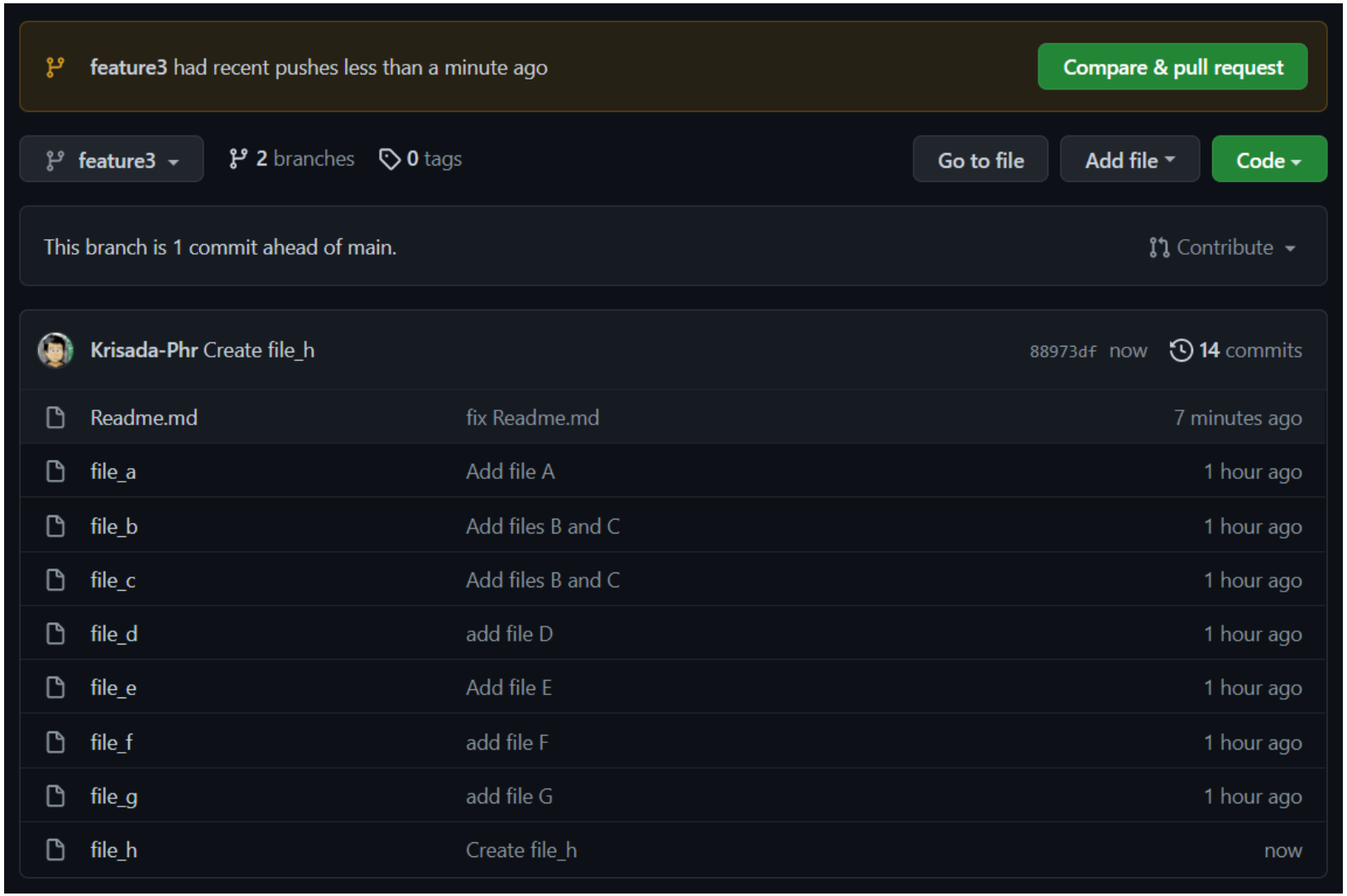
GitHub – Pull Request

[1] Create New branch & add new file (Dev. C)



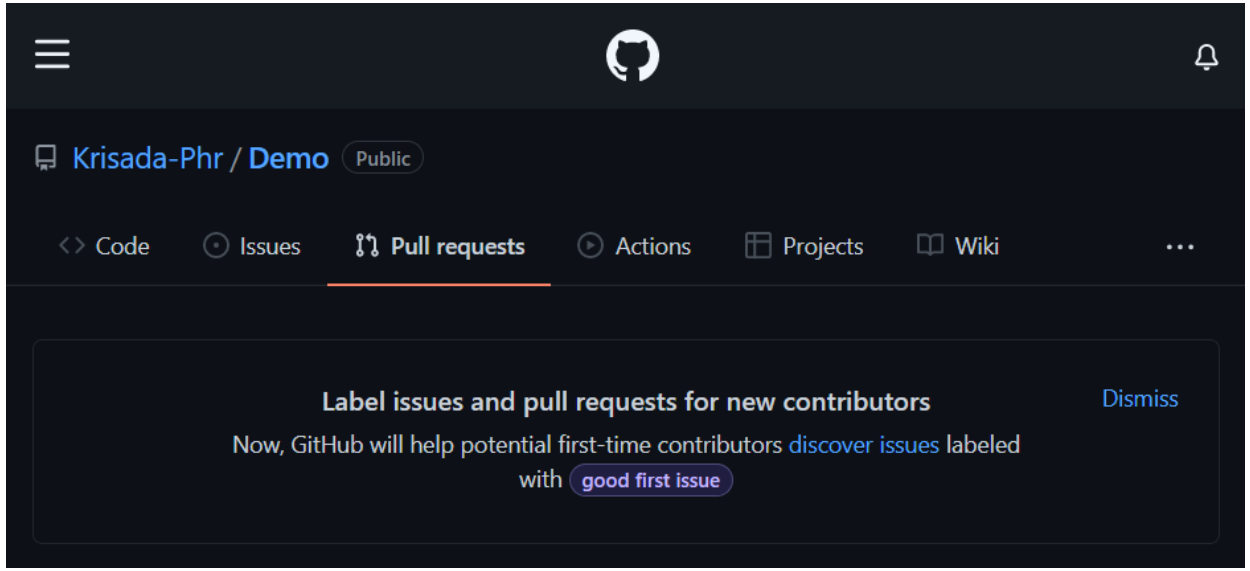
GitHub – Pull Request

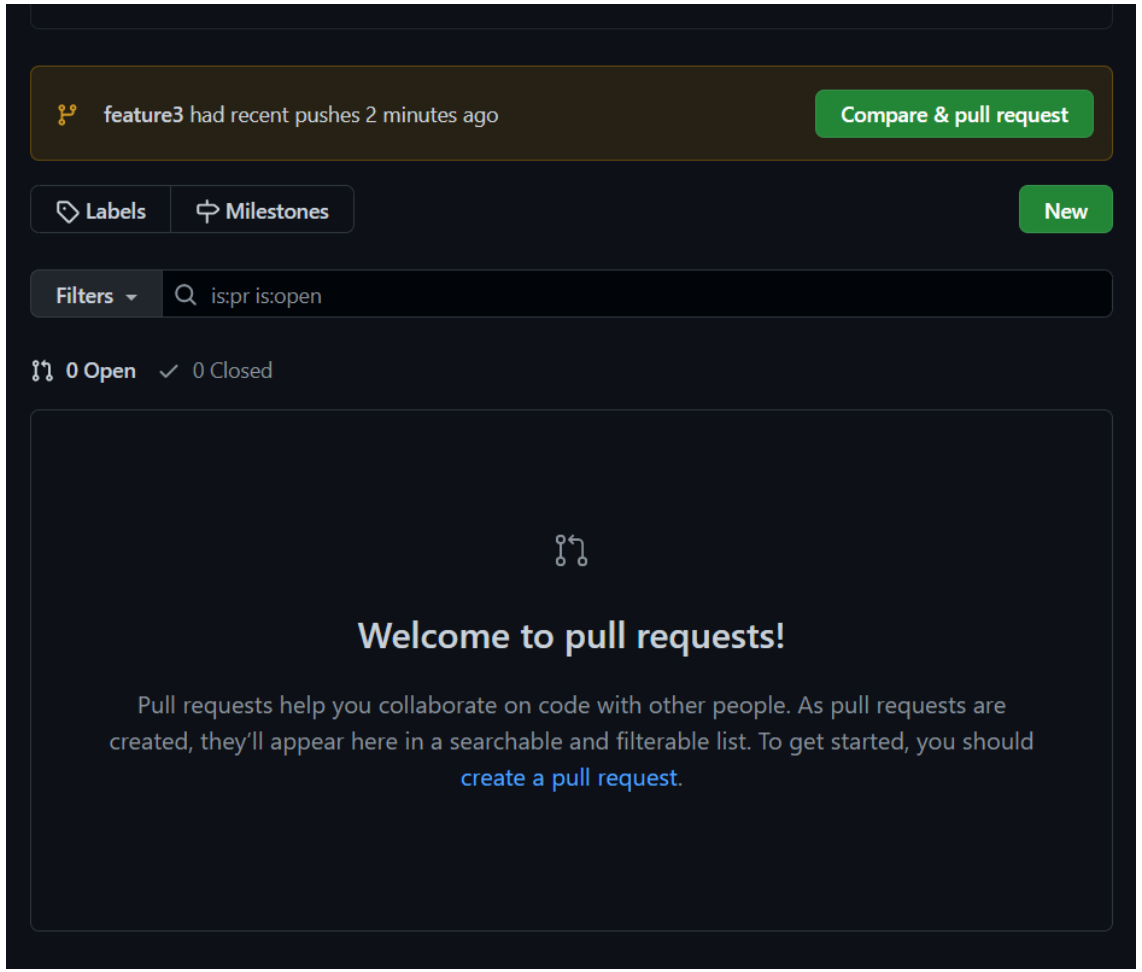
[2] Create file “file_h” (Dev. C)



GitHub – Pull Request

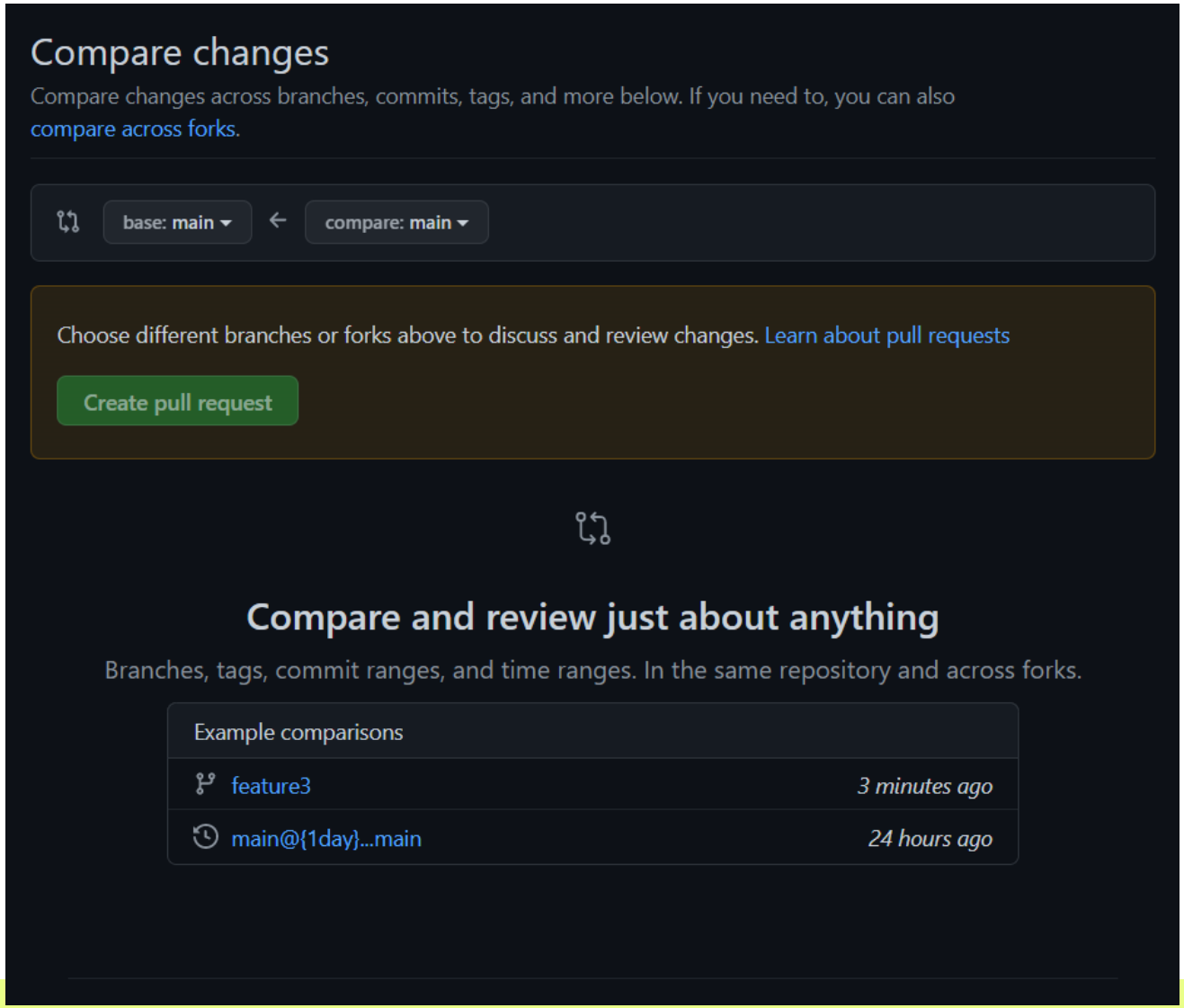
[3] Call pull request (Dev. C), [New]





GitHub – Pull Request

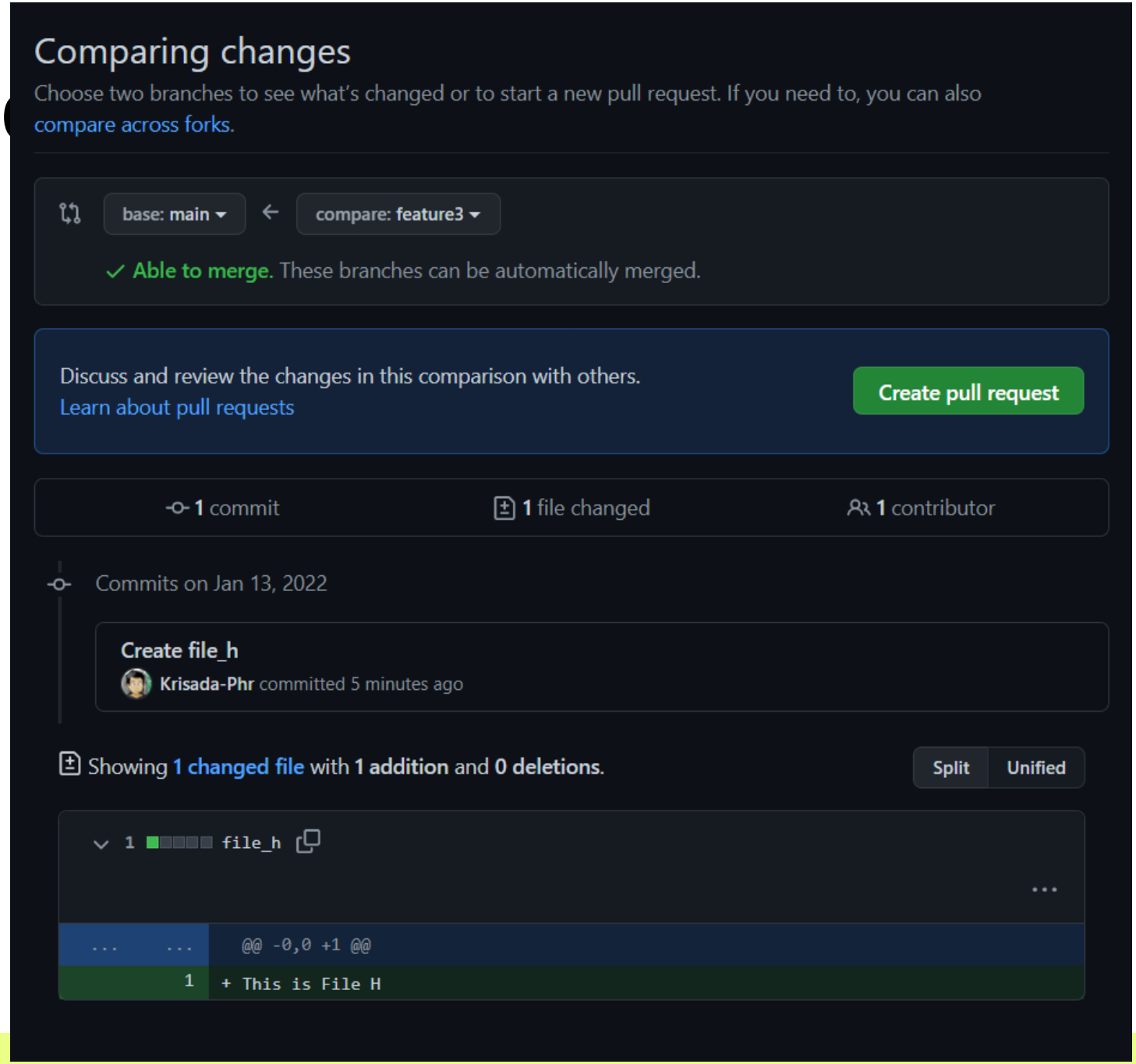
[4] Select branch (Dev. C)

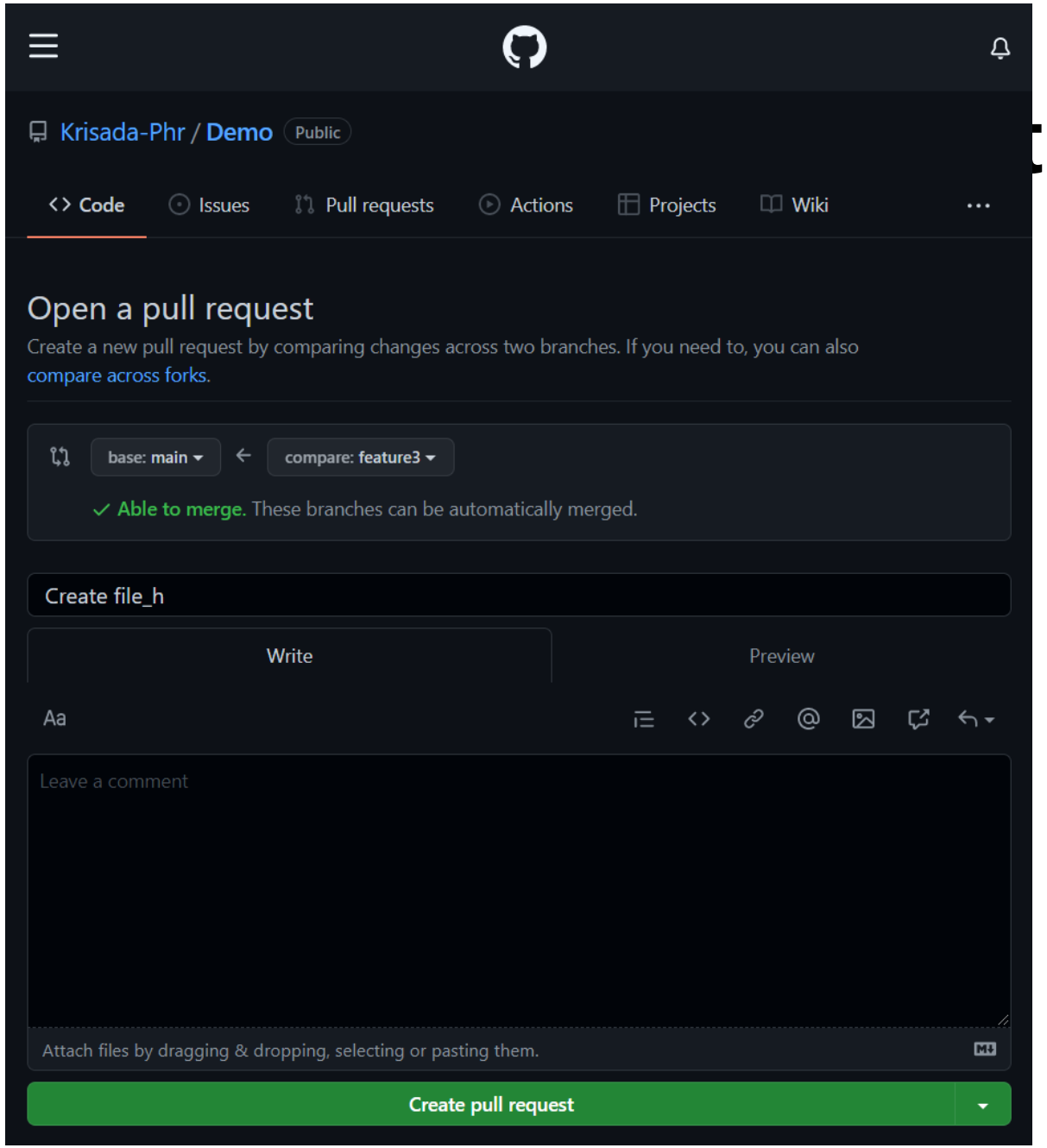


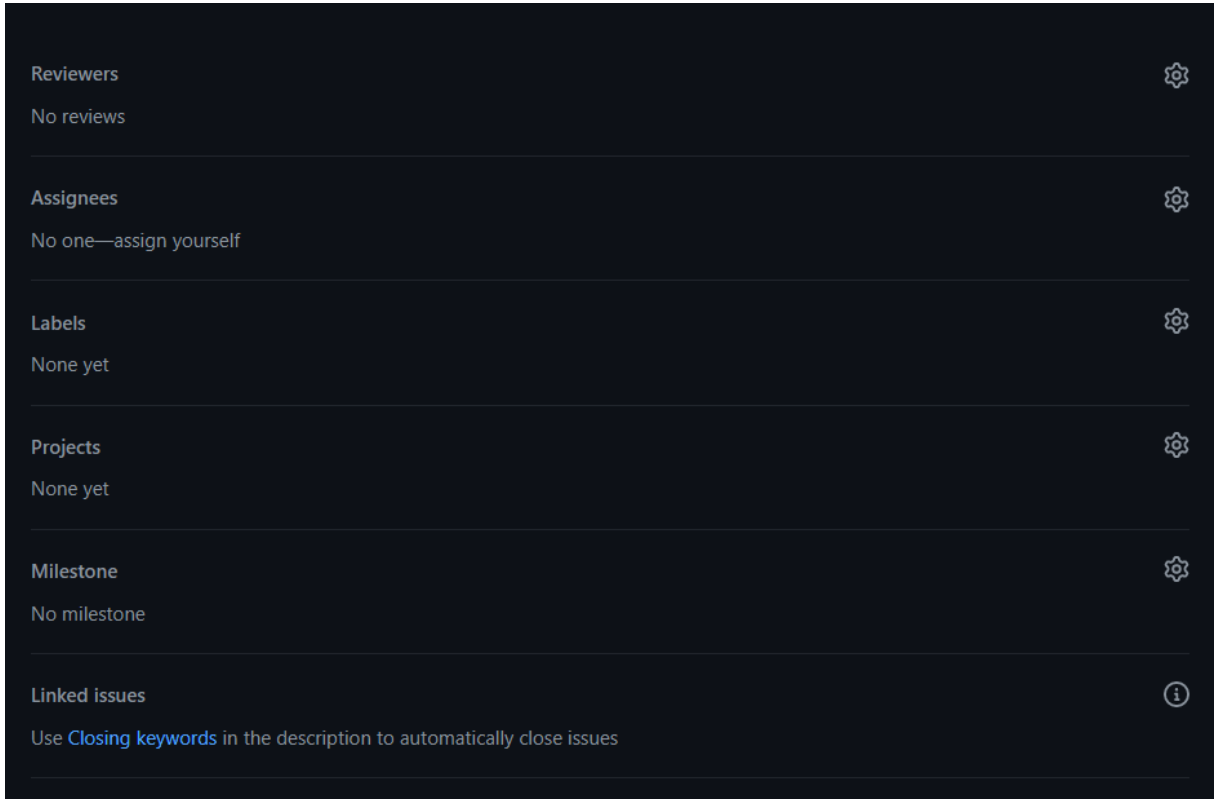
GitHub – Pull Re

[5] Review, create pull request.

Make sure what branches you want to merge

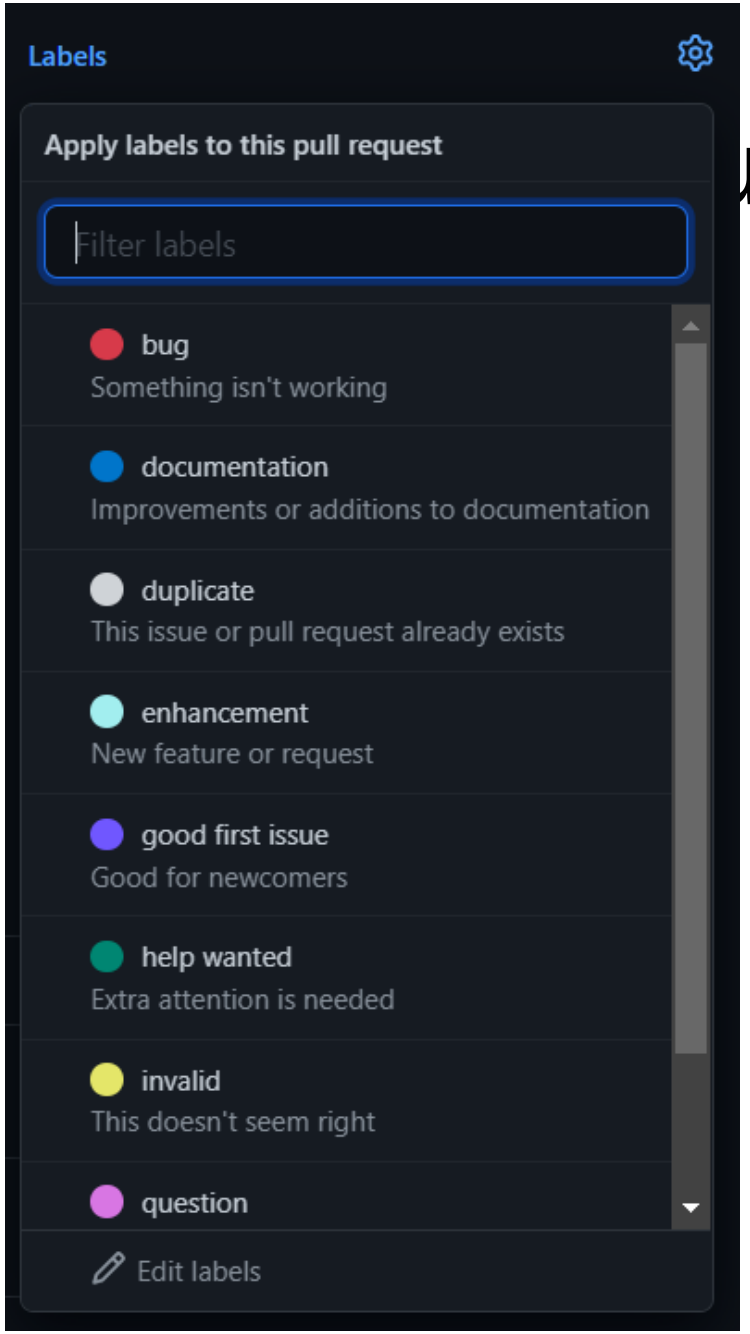


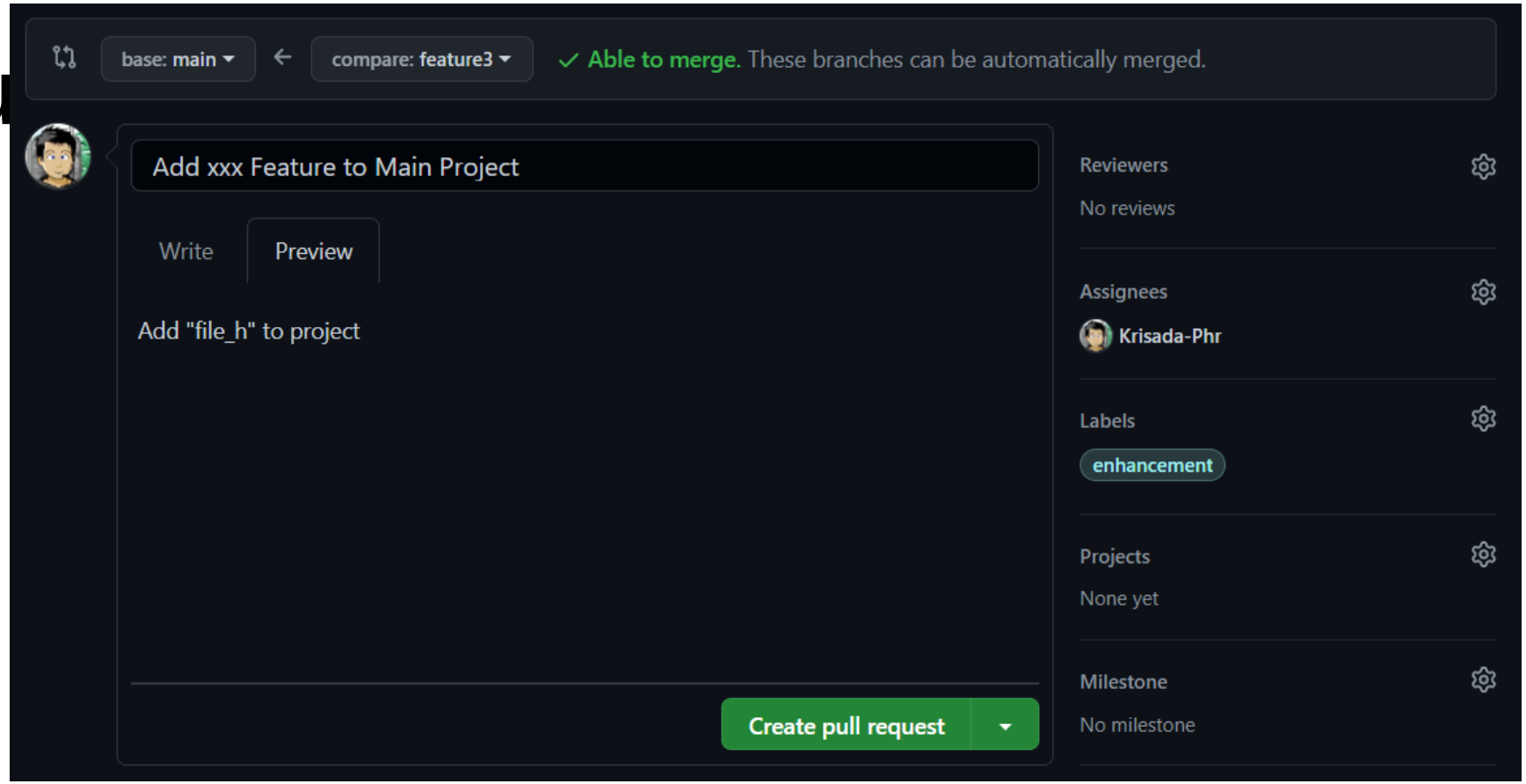




[6] Add details

- ❑ Reviewers
- ❑ Assignees
- ❑ Labels

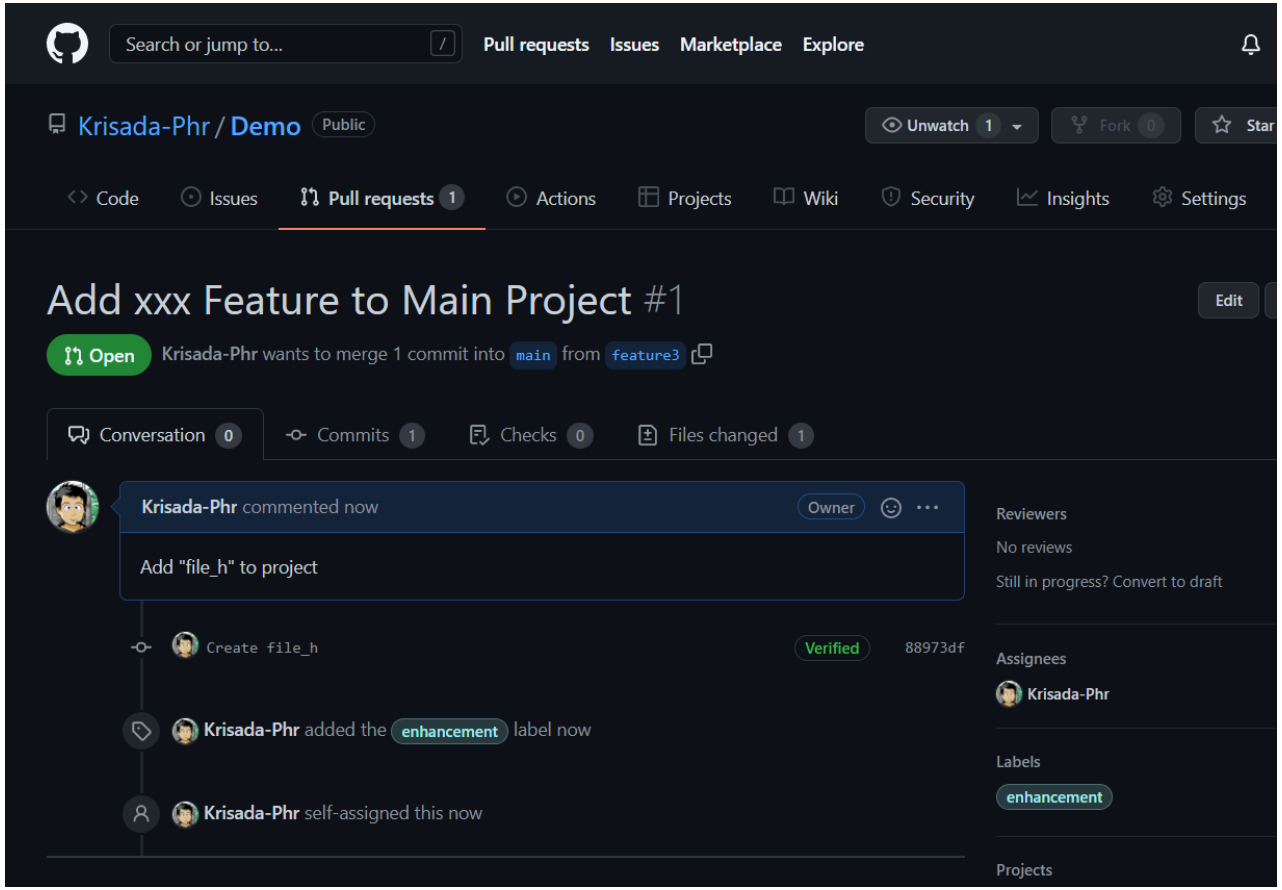


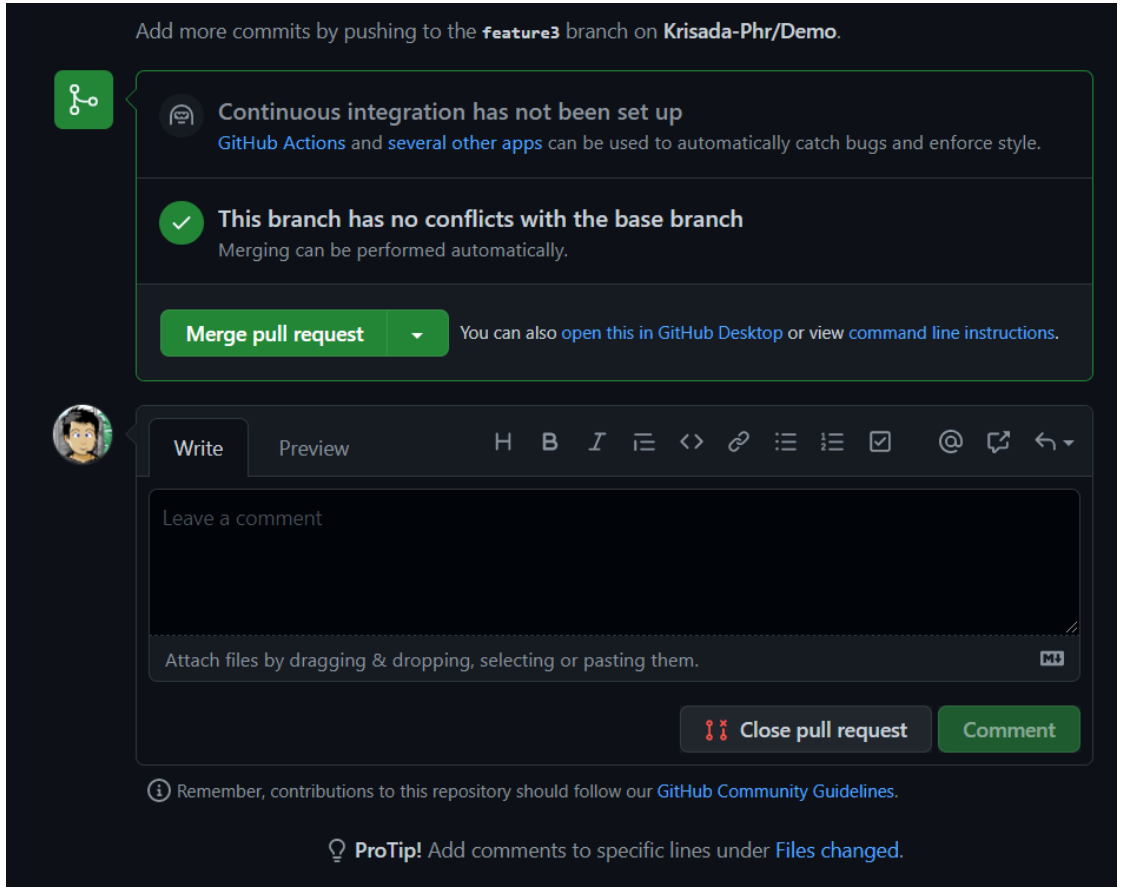


When working as a team, pay attention to paperwork.

GitHub – Pull Request

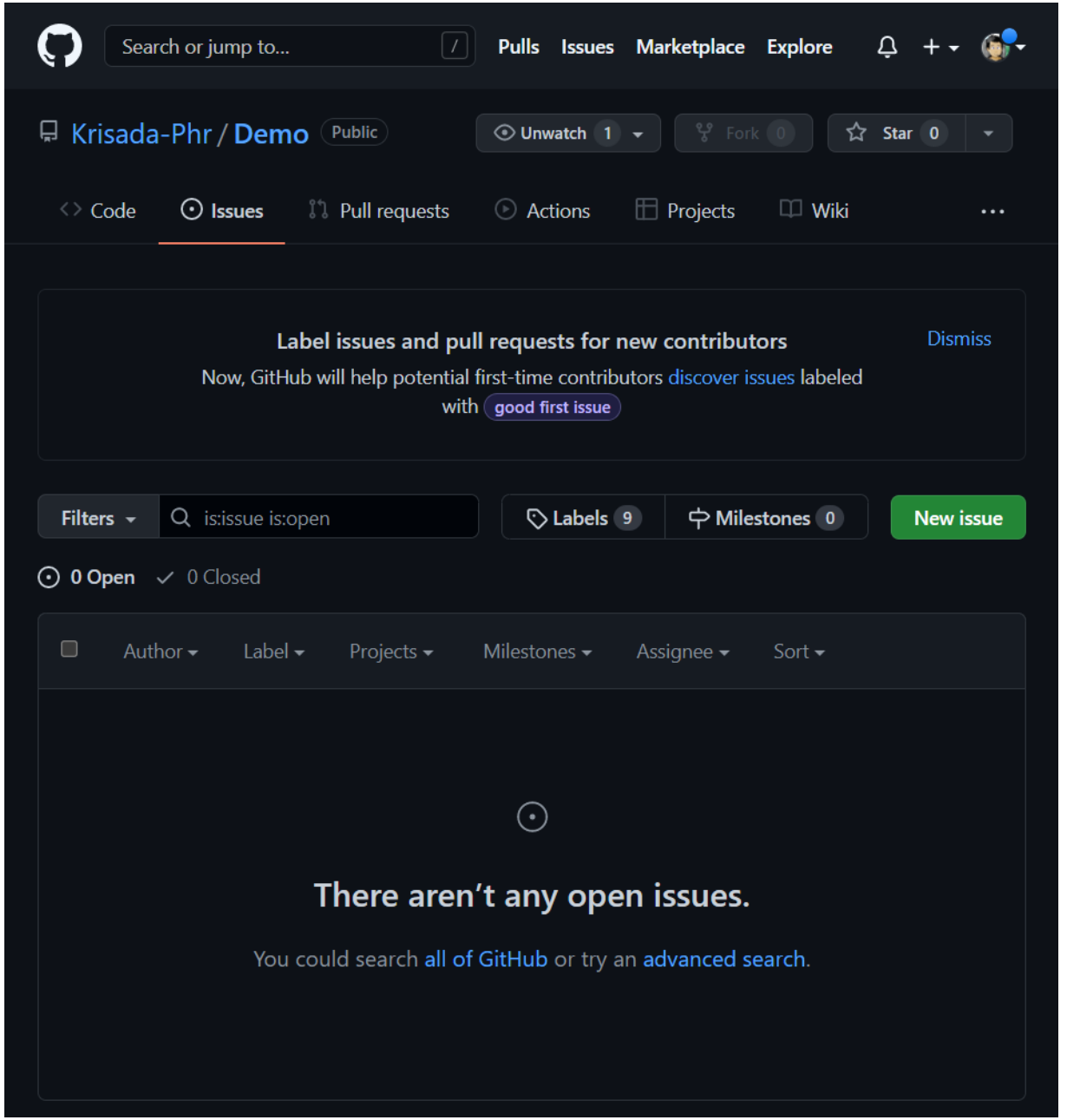
[7] Review, Comment, Merge (Dev. D)





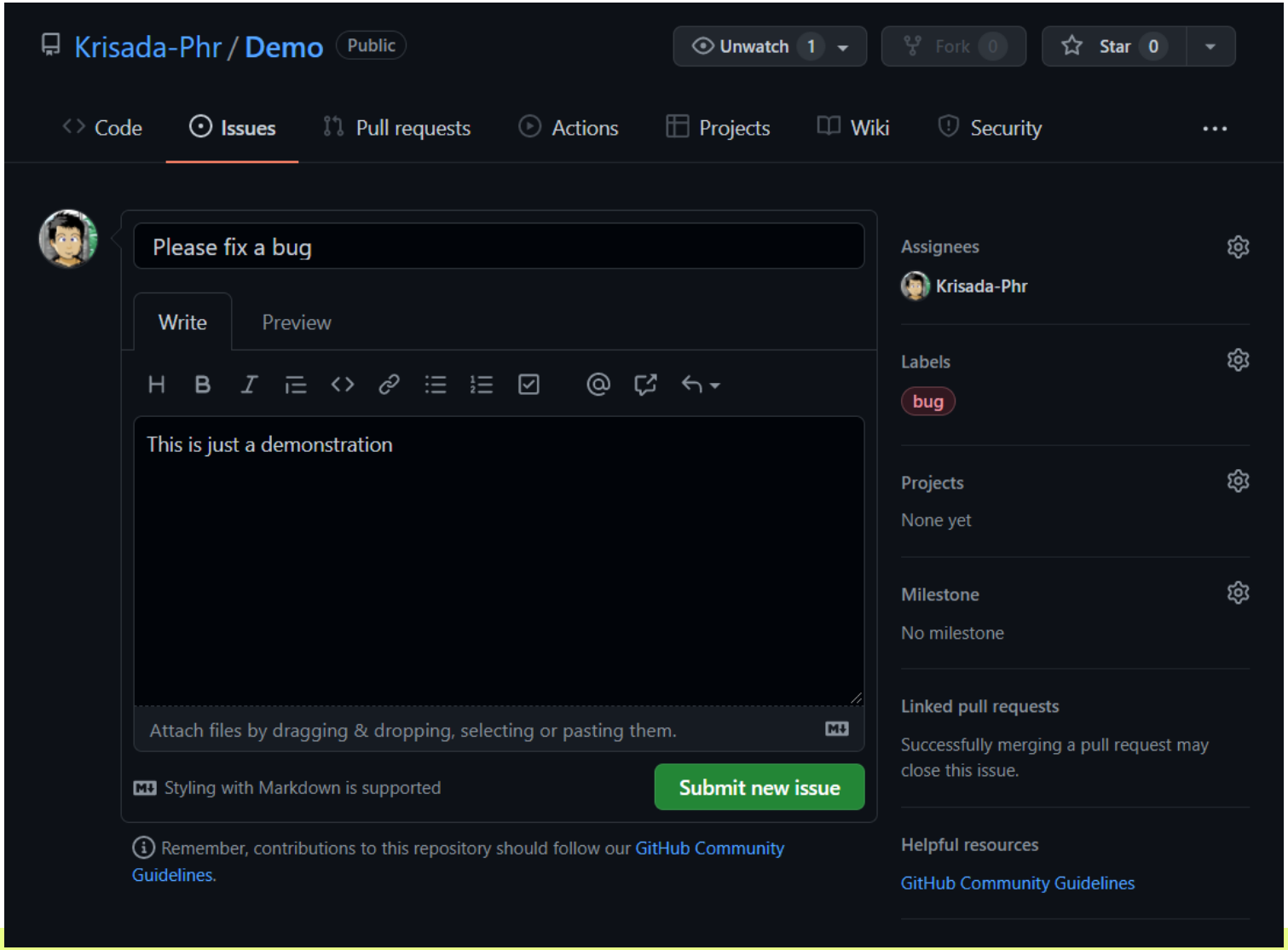
GitHub – Issues

[1] Request what you want.



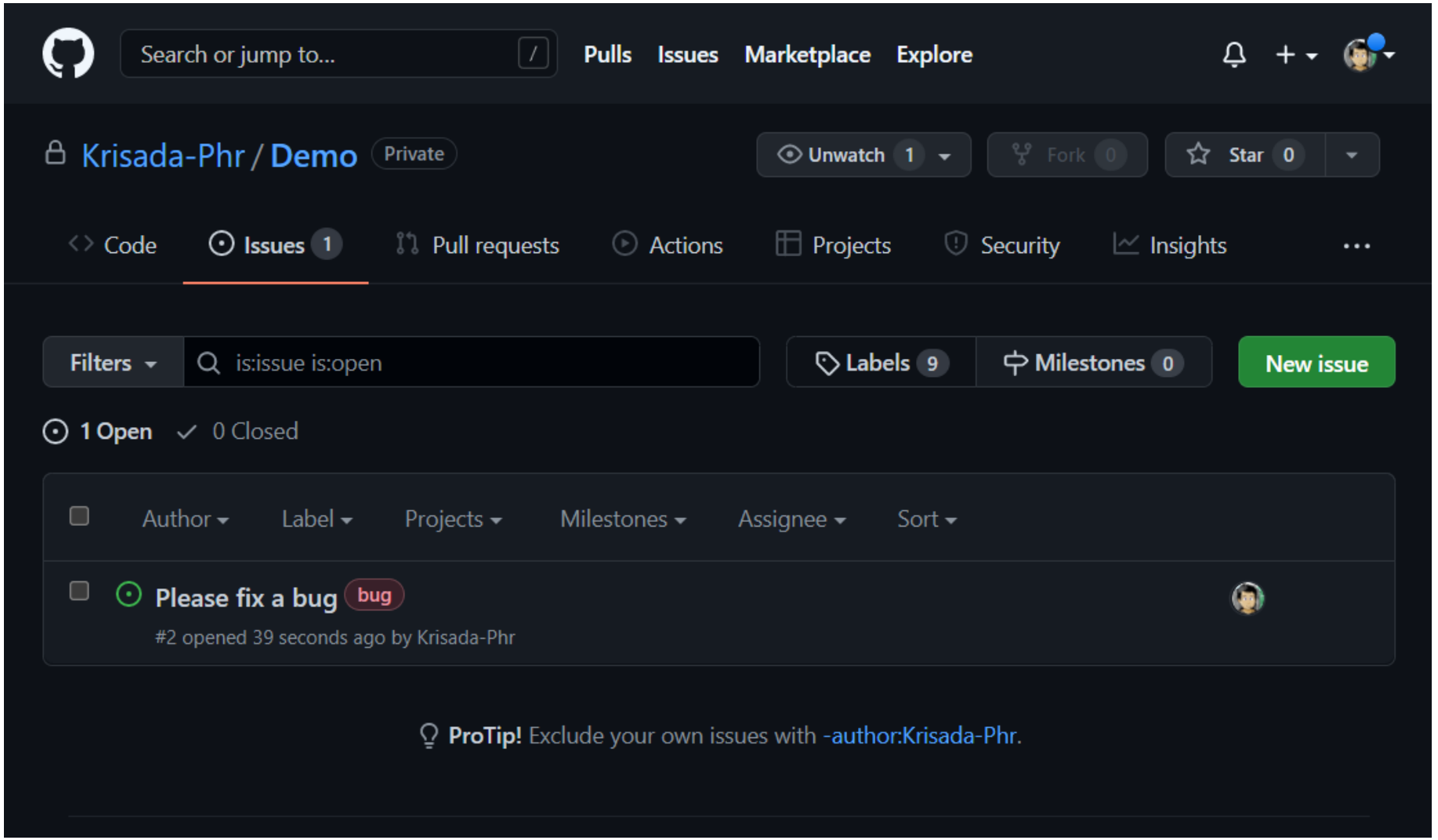
GitHub – Issues

[2] Write a details.



GitHub – Issues

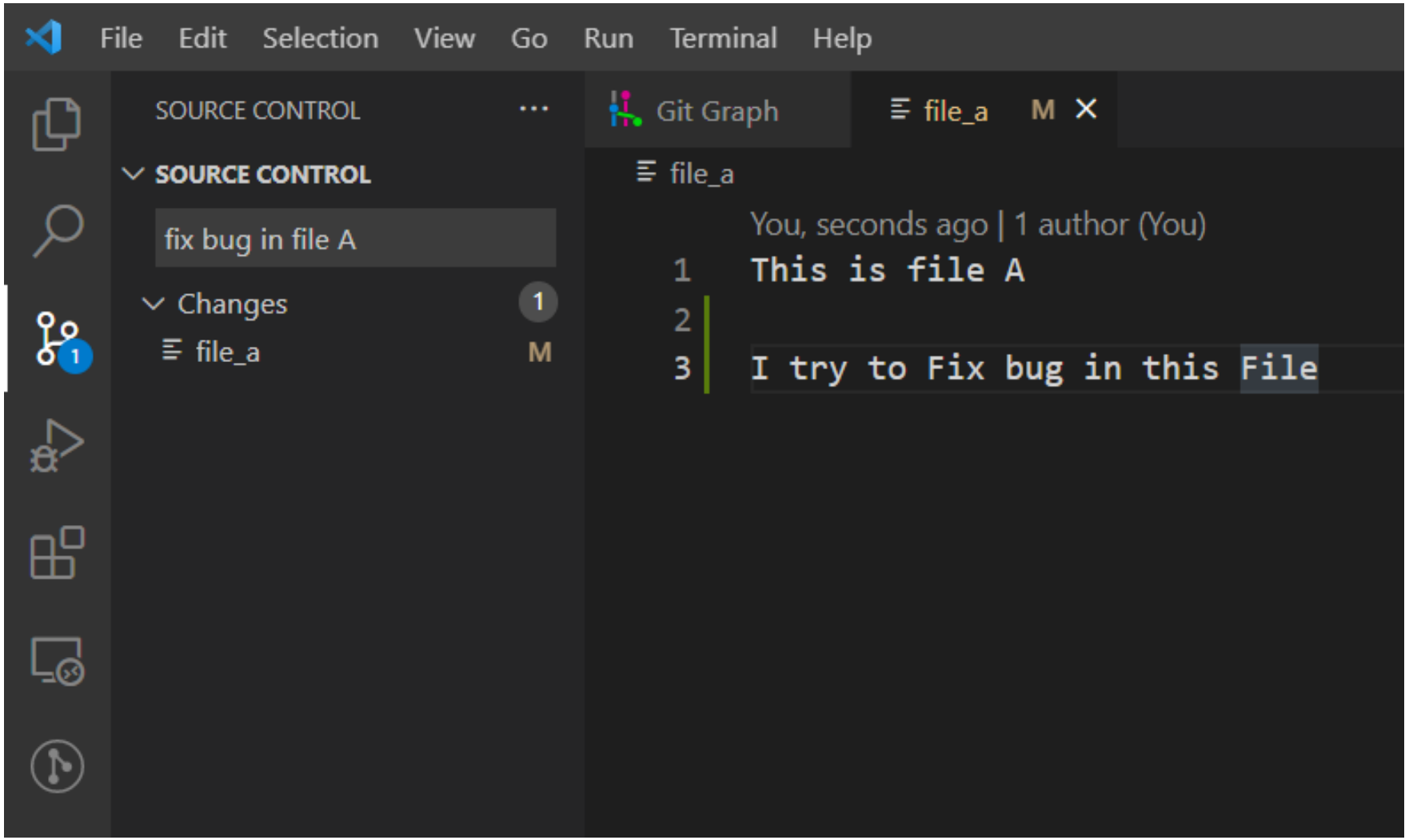
[3] Issues



GitHub – Issues (รับงาน)

[1] Pull, Edit, Commit

Push to GitHub



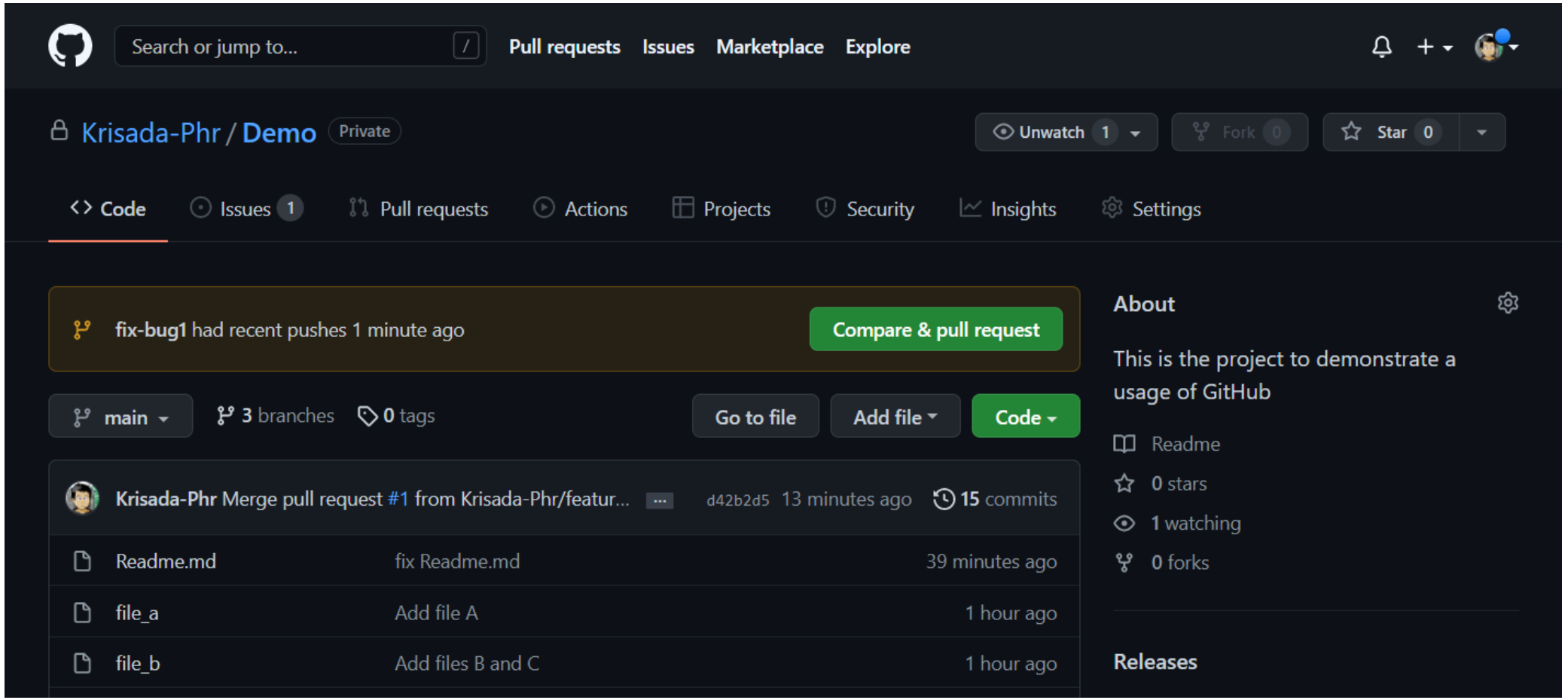
GitHub – Issues (รับงาน)

[1] Pull, Edit, Commit

Push to GitHub

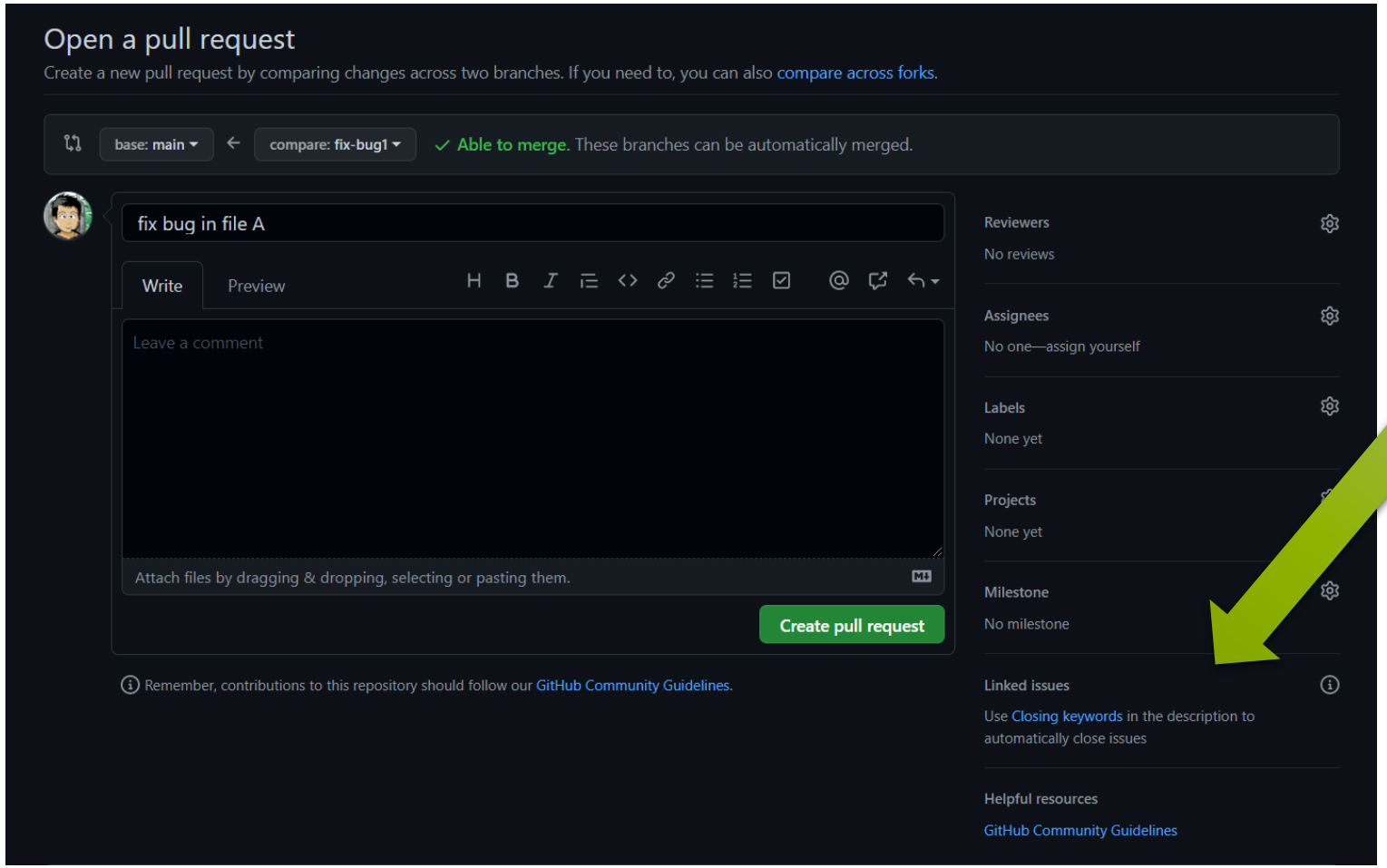
GitHub – Issues (รับงาน)

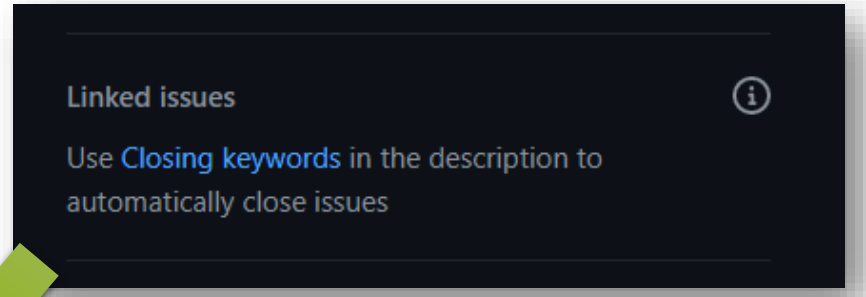
[2] Compare & pull request



GitHub – Issues (รับงาน)

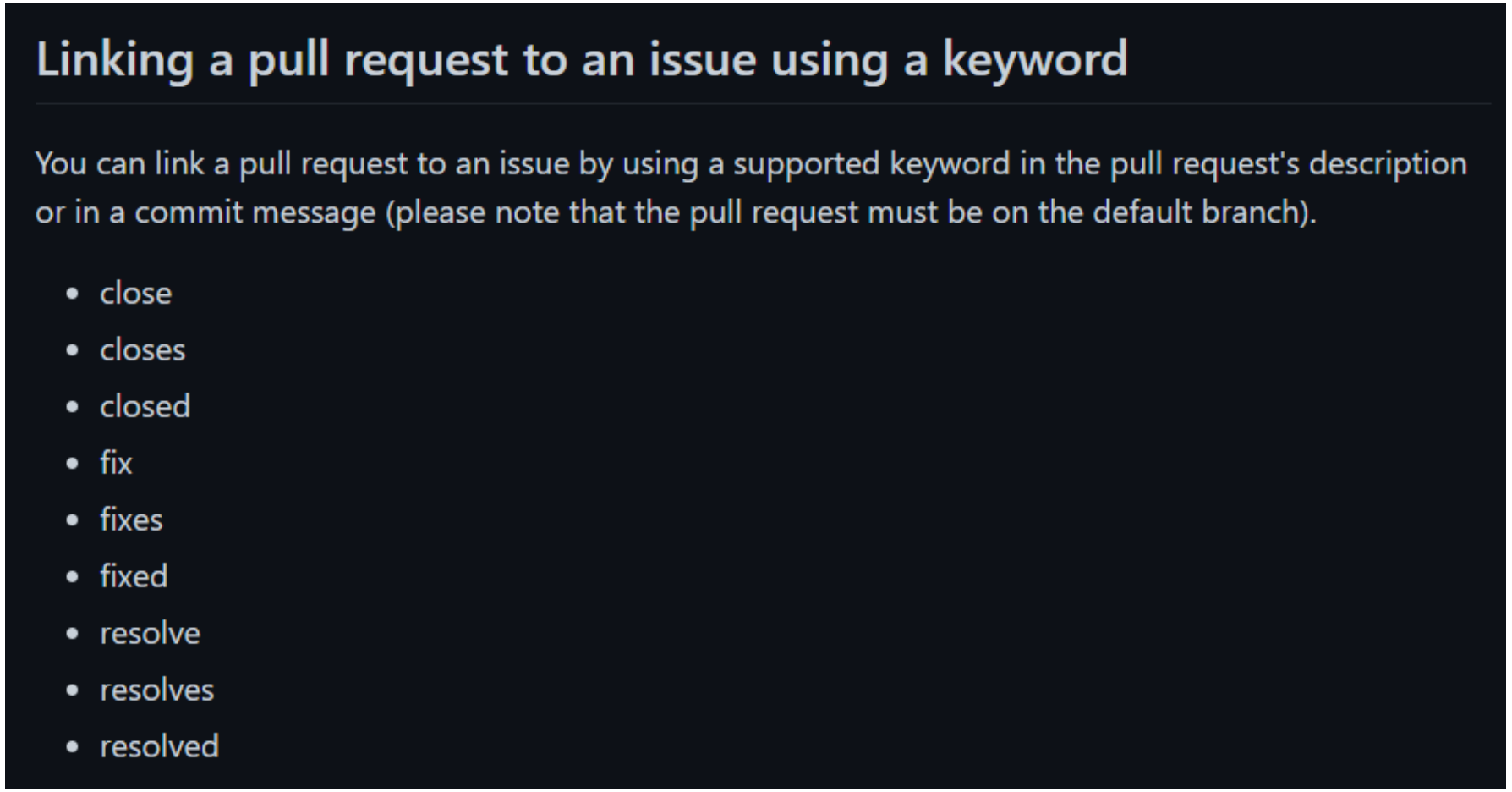
[3] Linked issues





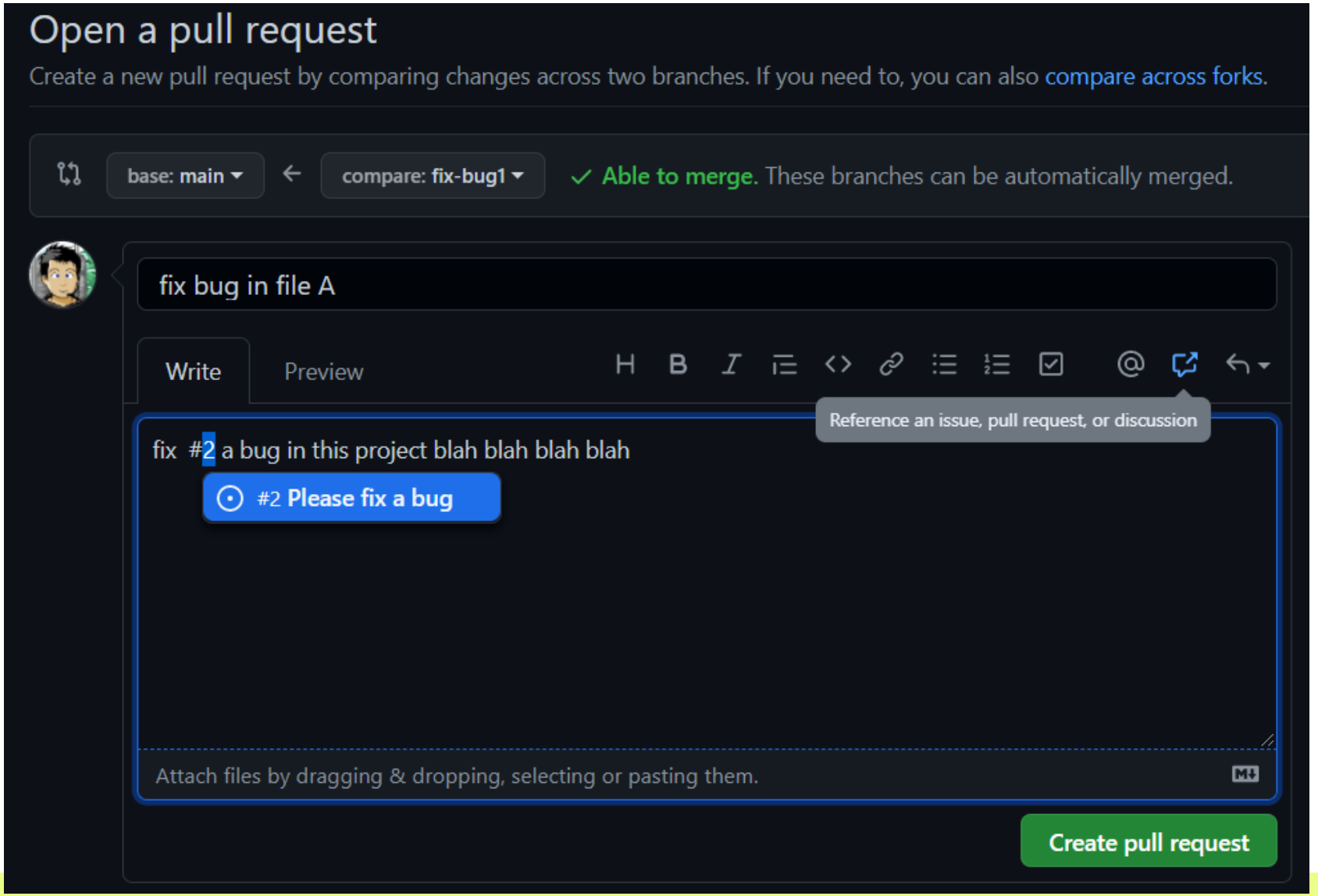
GitHub – Issues (รับงาน)

[3] Linked issues



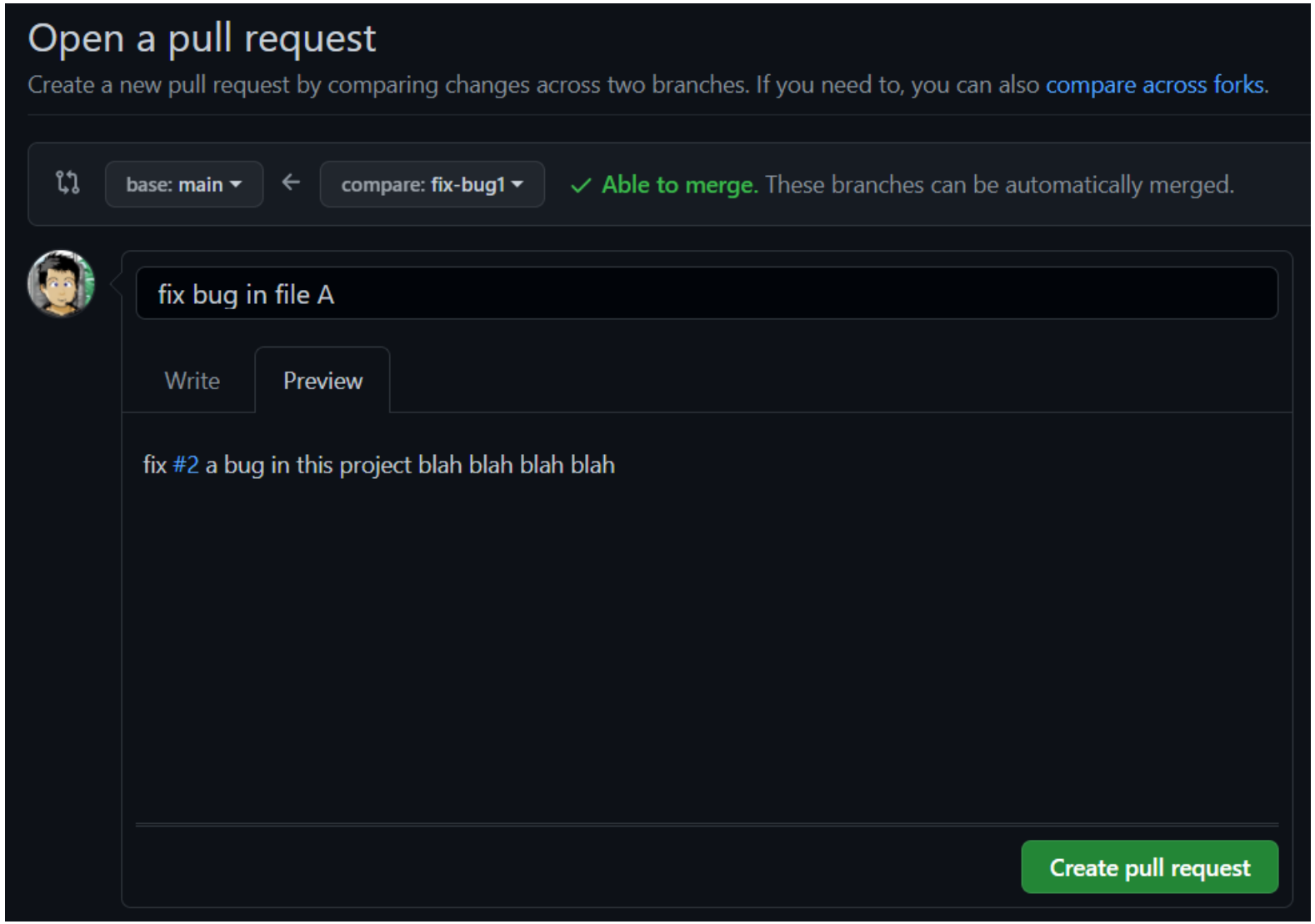
GitHub – Issues (รับงาน)

[3] Linked issues



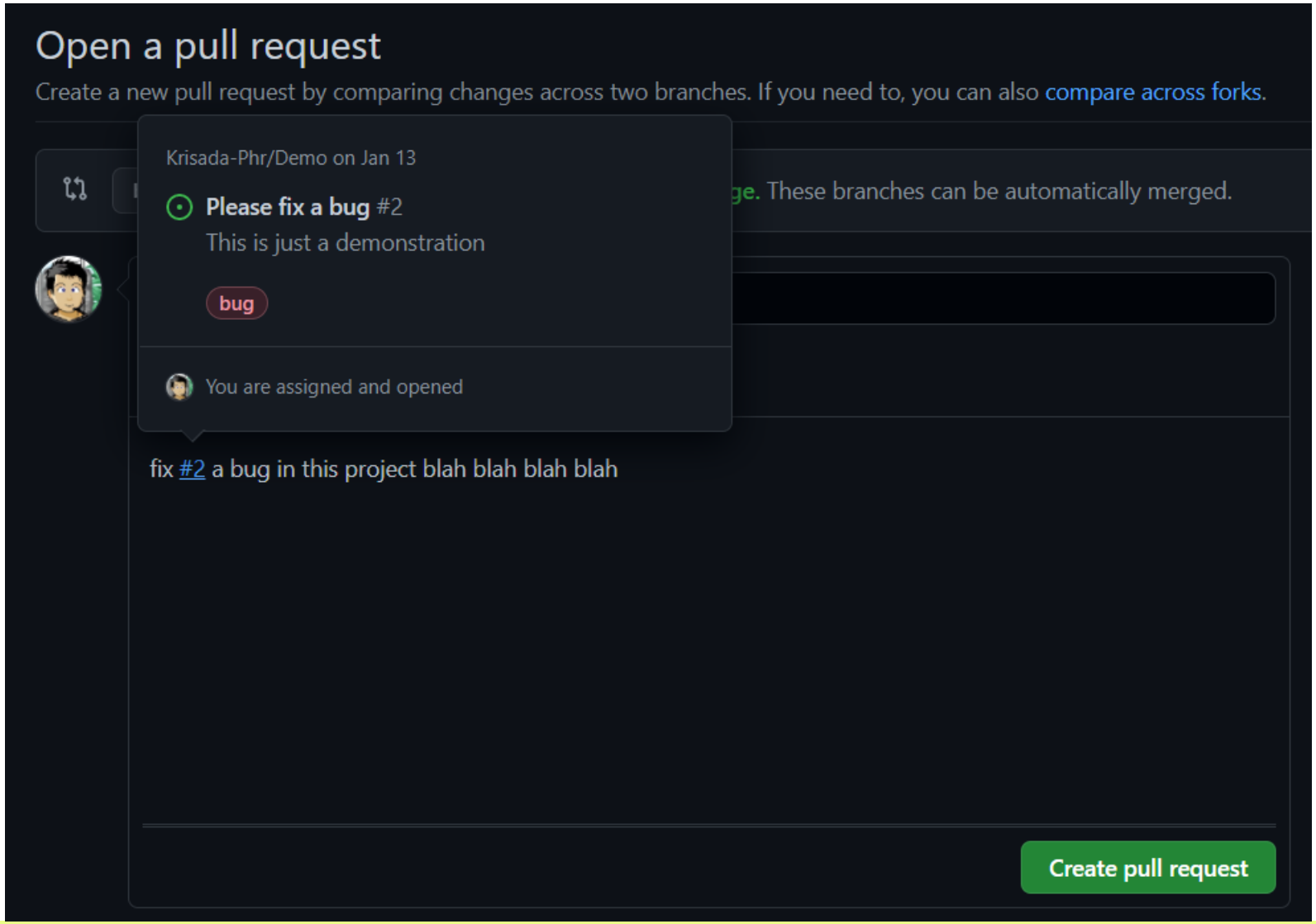
GitHub – Issues (รับงาน)

[3] Linked issues



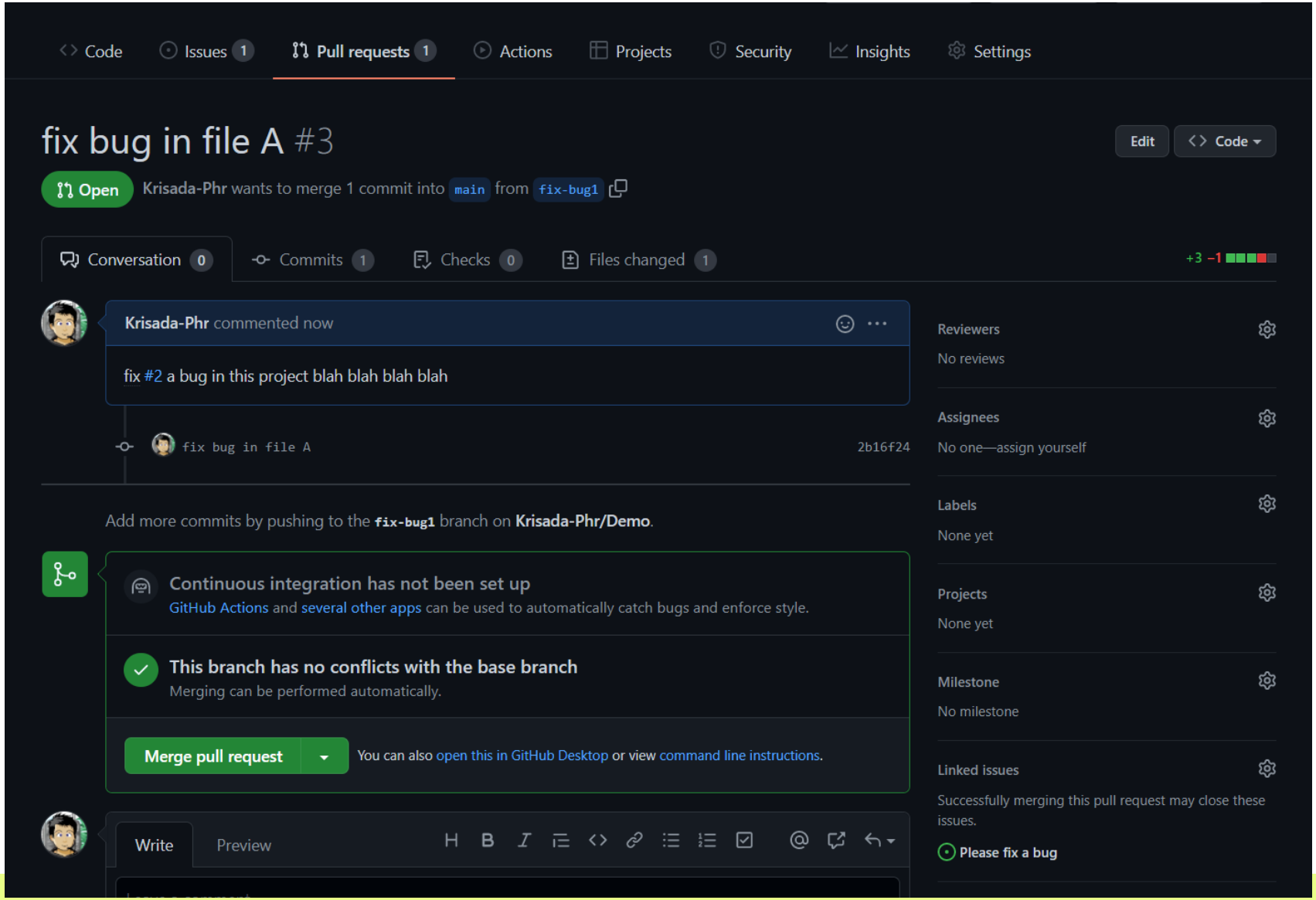
GitHub – Issues (รับงาน)

[3] Linked issues



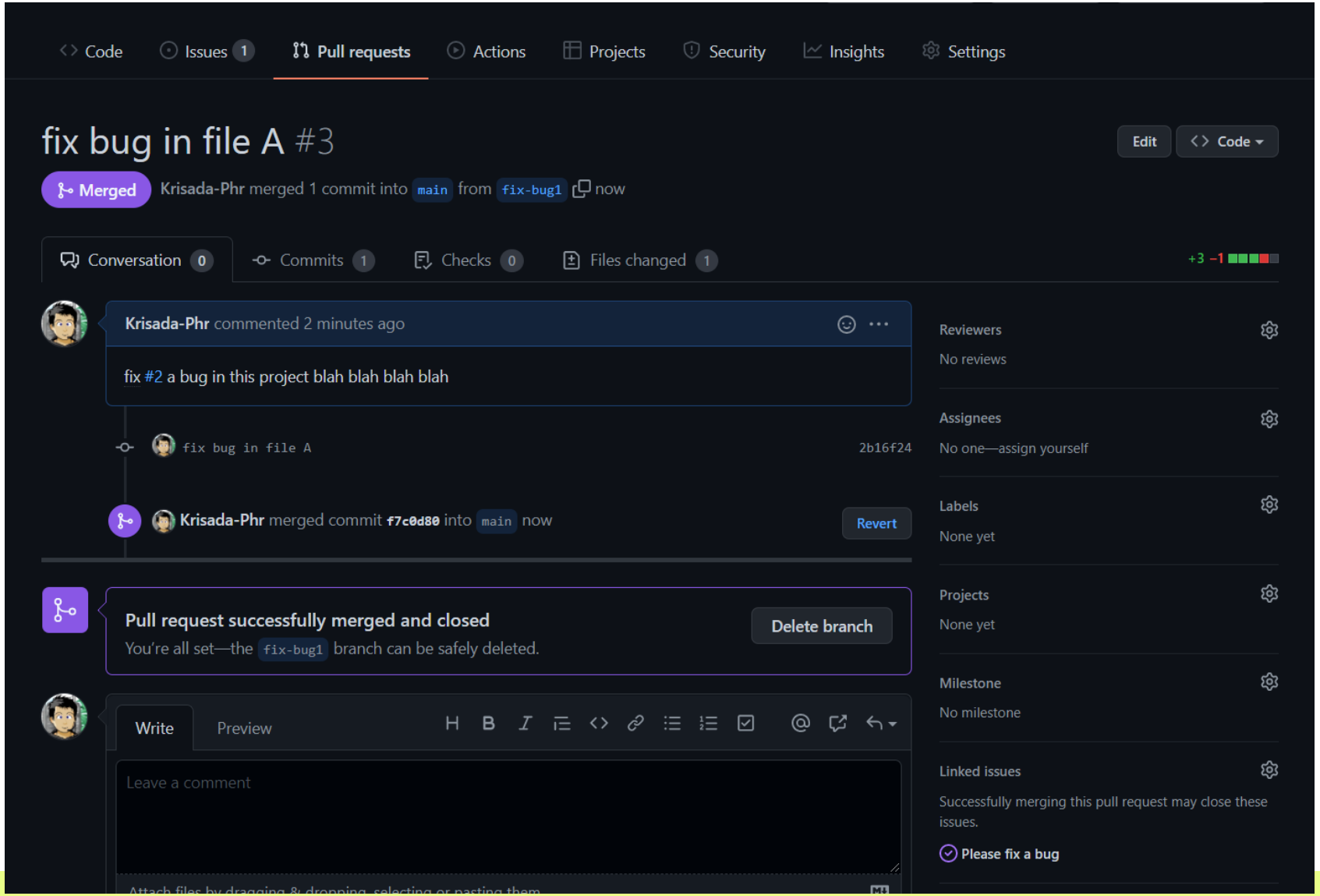
GitHub – Issues (รับงาน)

[4] Review



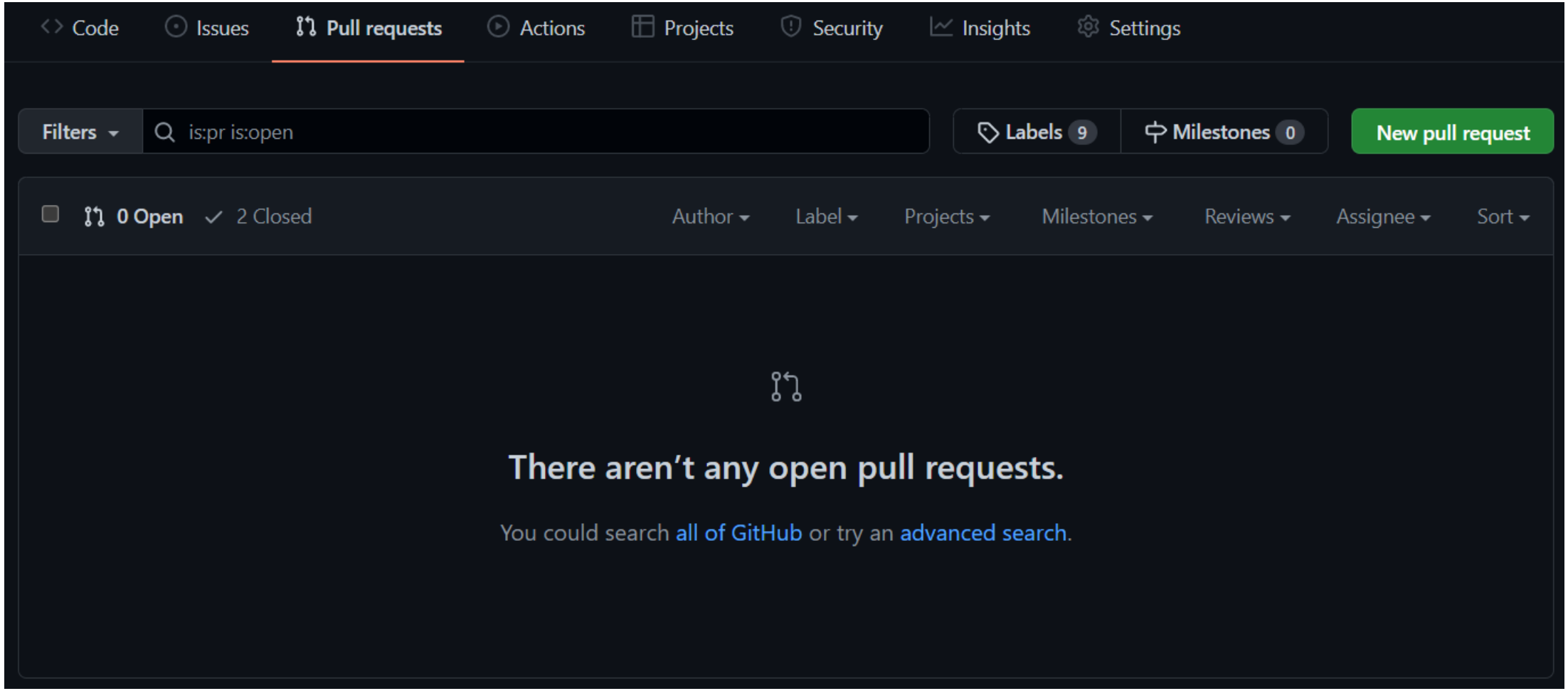
GitHub – Issues (รับงาน)

[4] Review



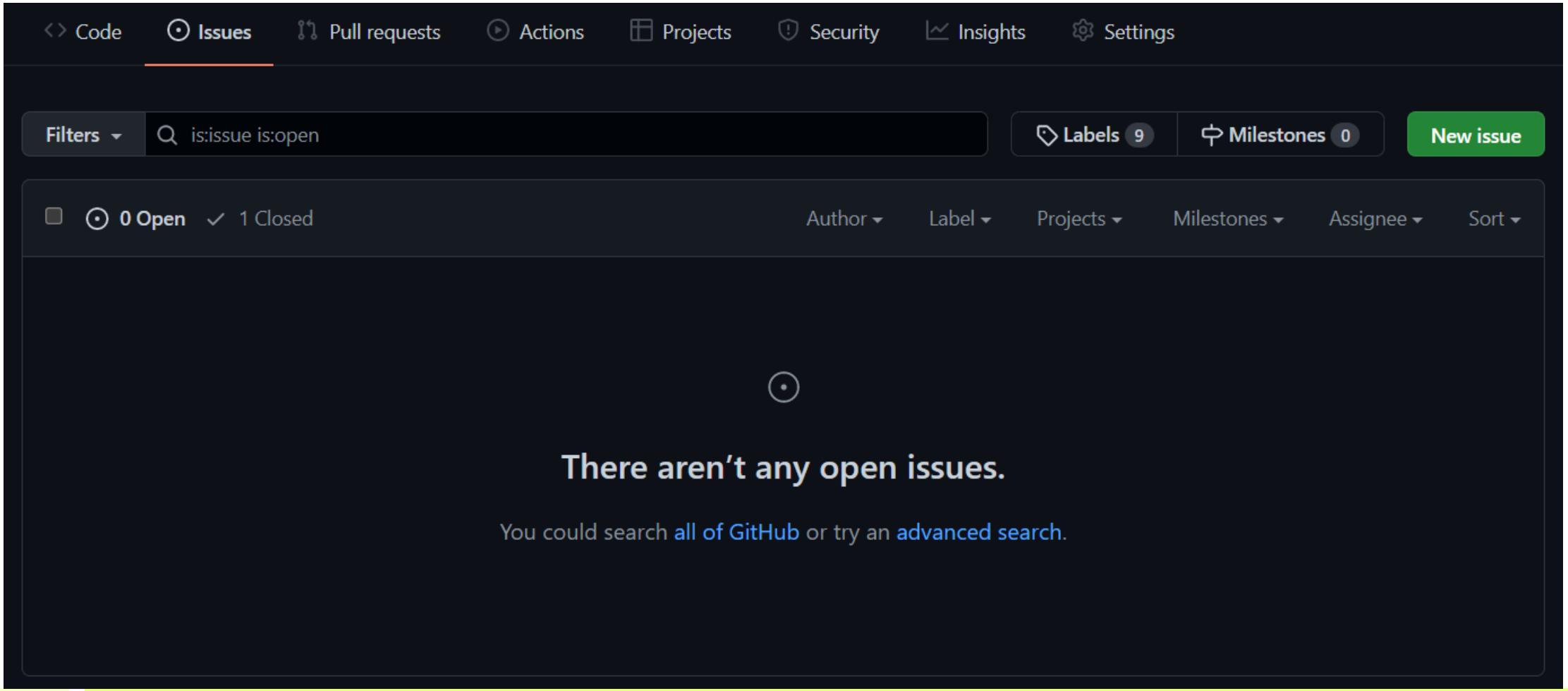
GitHub – Issues (รับงาน)

[4] Review



GitHub – Issues (รับงาน)

[4] Review



Take Home Message

[1] Software version control with GitHub

[2] Clone & Manage repository

[3] Push & Pull your source code from Local PC to GitHub server

[4] Create an Issue

[5] Create a Pull request

Teamwork