BIG DATA ANALYSIS

TA class III

TA : Lee Chi-Hsuan

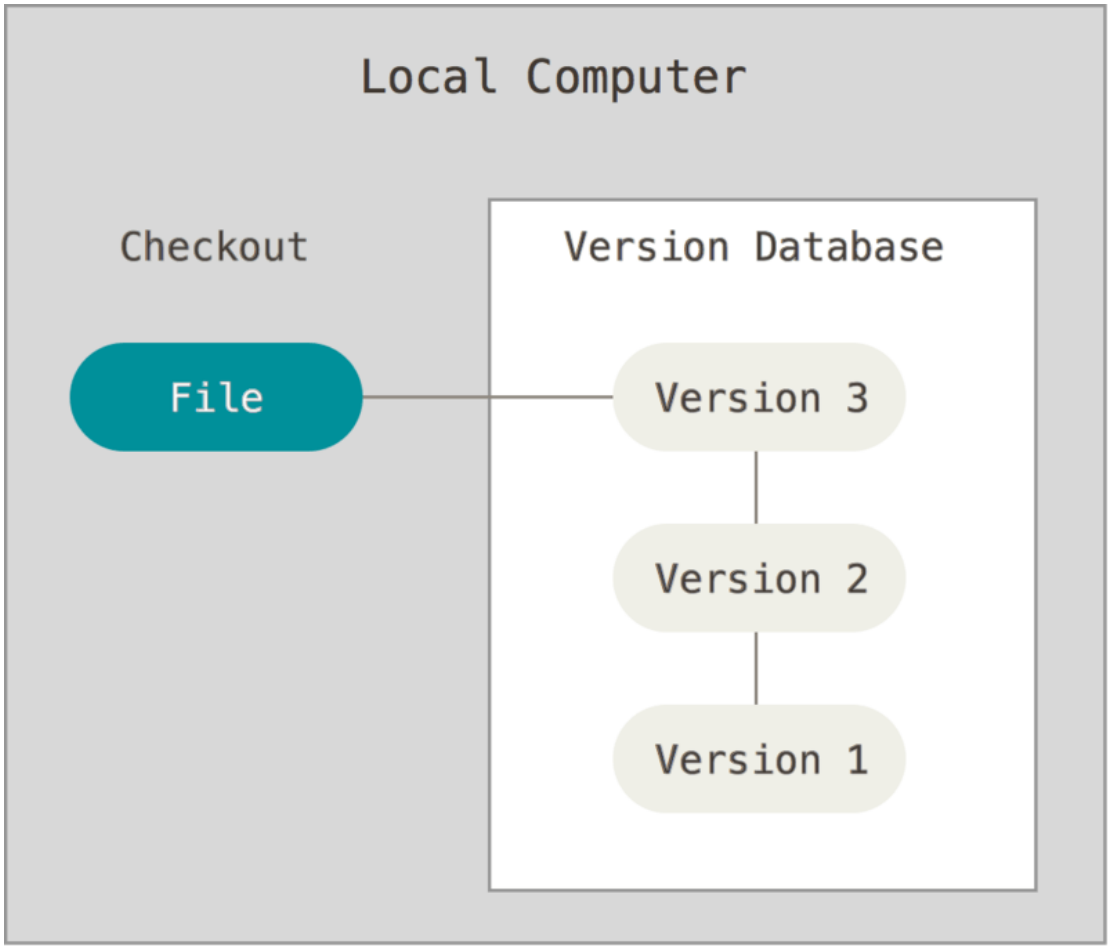
Git & GitHub

VCS

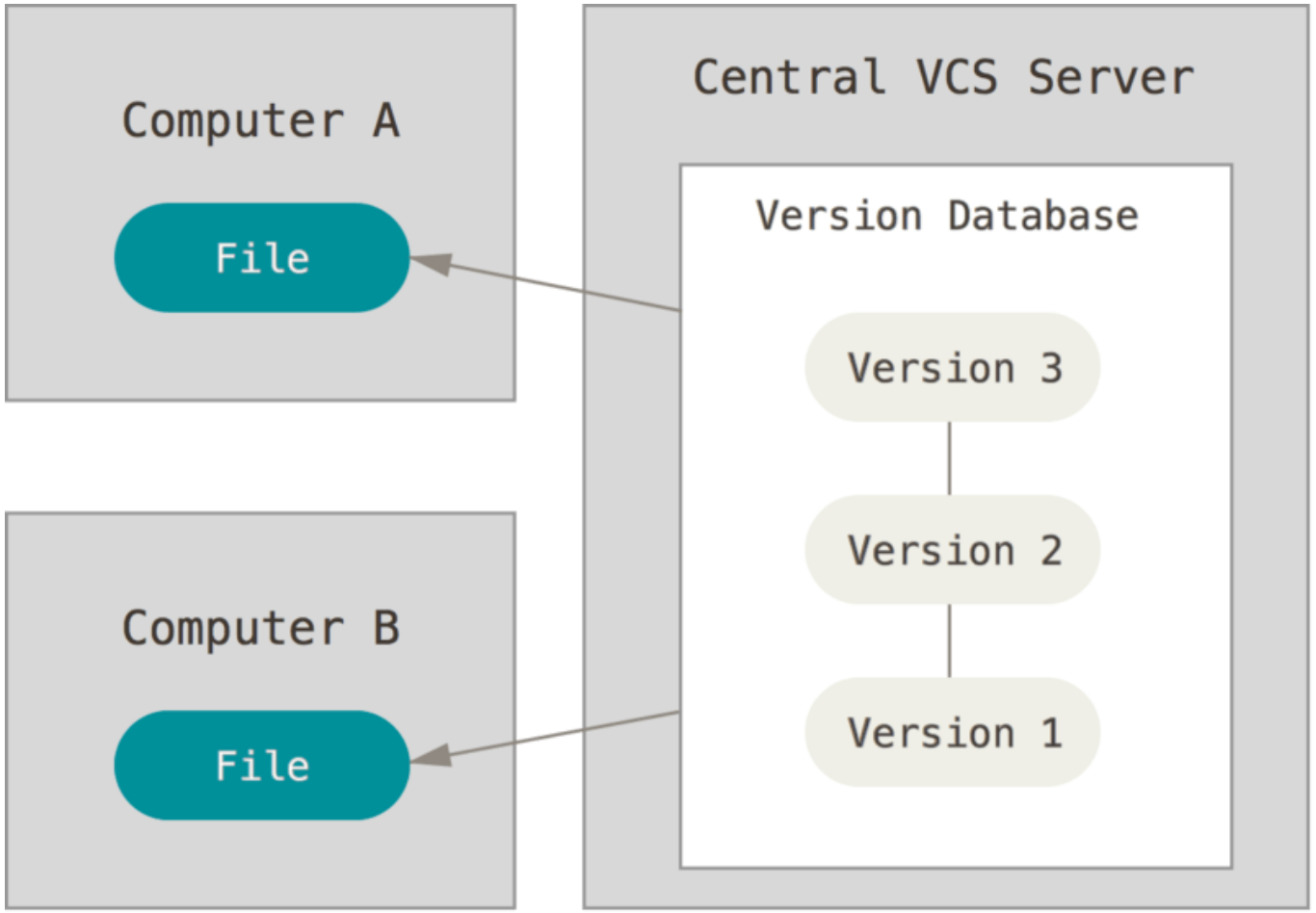
Version Control System

A system that records changes to files over time so that you can recall specific versions later.

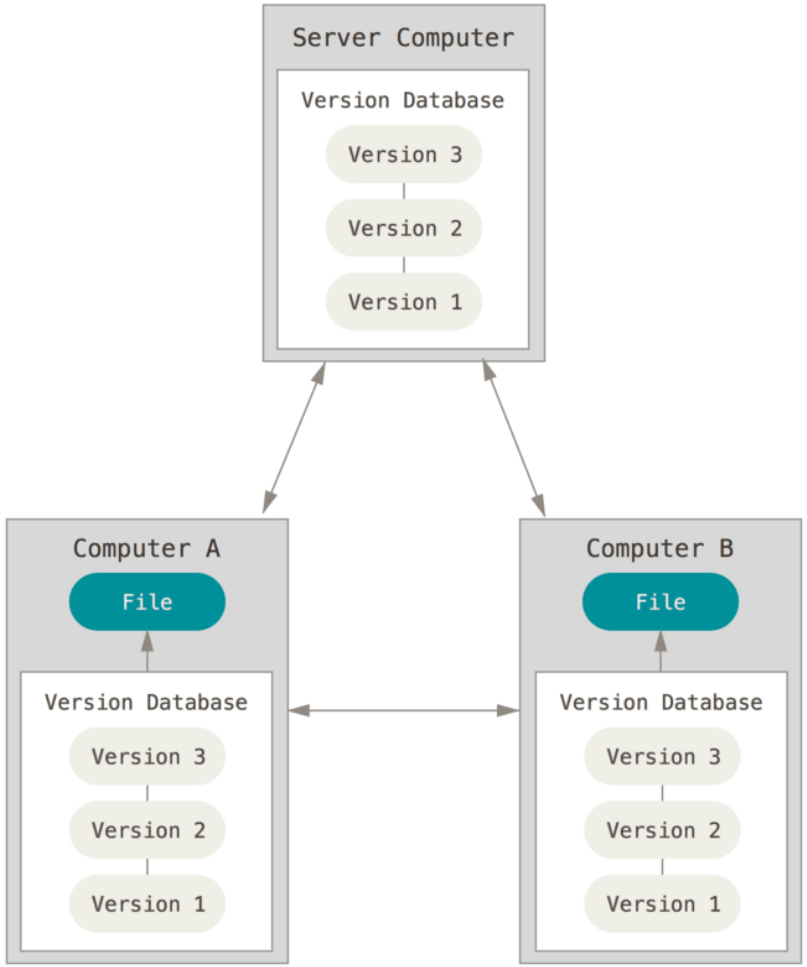
Local VCS


Local Computer
Checkout
Version Database
File
Version 3
Version 2
Version 1

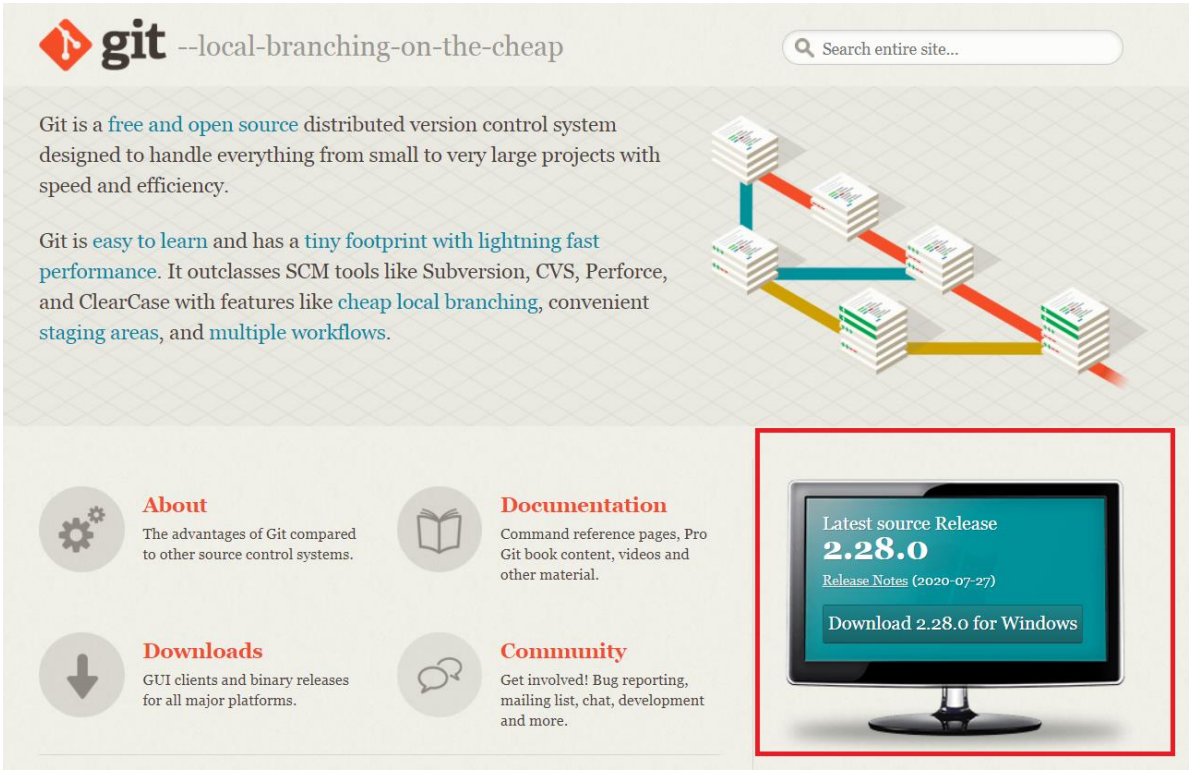
Centralized VCS



Distributed Version VCS

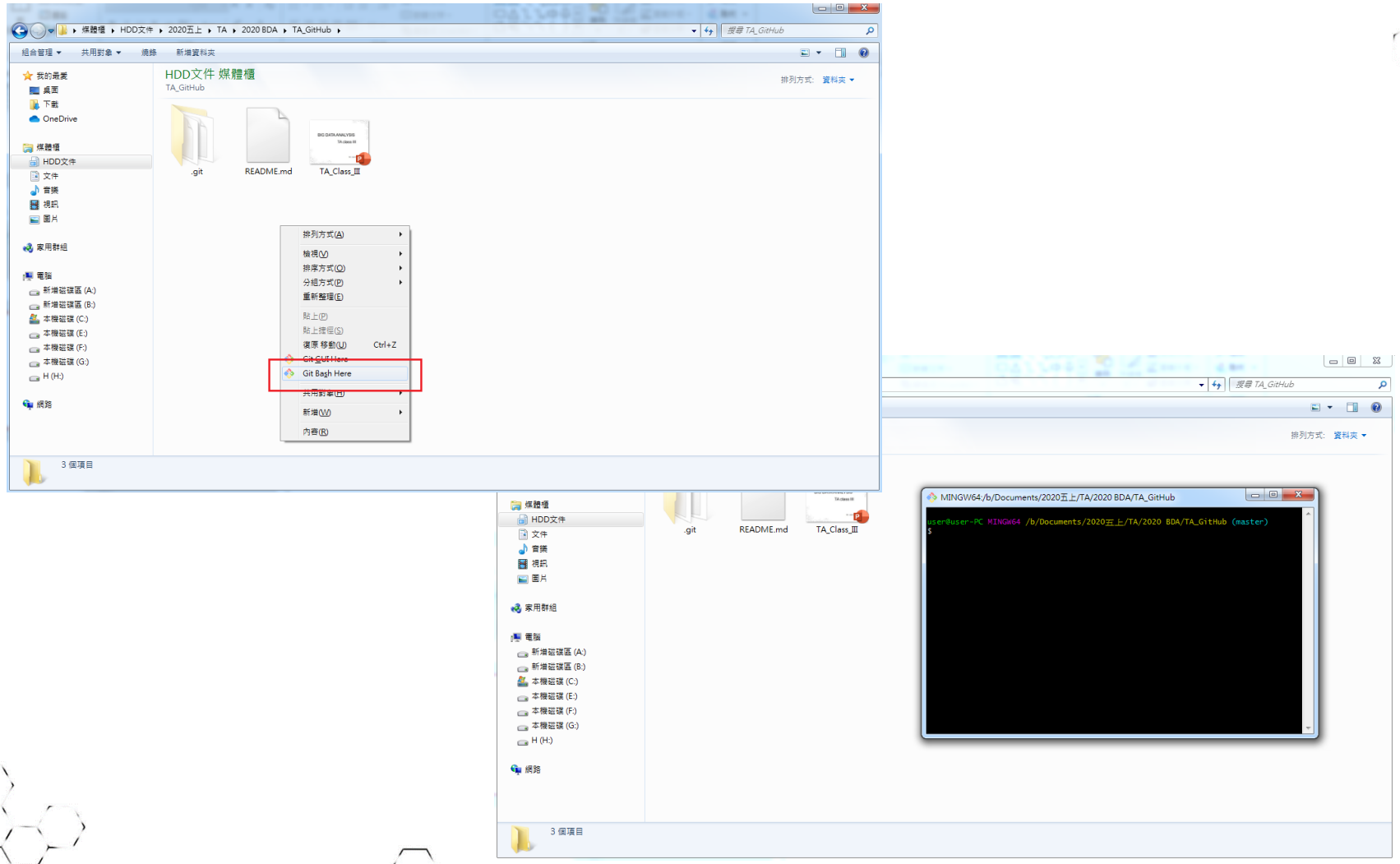


Git


git --local-branching-on-the-cheap
Search entire site...
Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.
Git is easy to learn and has a tiny footprint with lightning fast performance. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like cheap local branching, convenient staging areas, and multiple workflows.
About
The advantages of Git compared to other source control systems.
Documentation
Command reference pages, Pro Git book content, videos and other material.
Downloads
GUI clients and binary releases for all major platforms.
Community
Get involved! Bug reporting, mailing list, chat, development and more.
Latest source Release
2.28.0
Release Notes (2020-07-27)
Download 2.28.0 for Windows

TRIVIAL

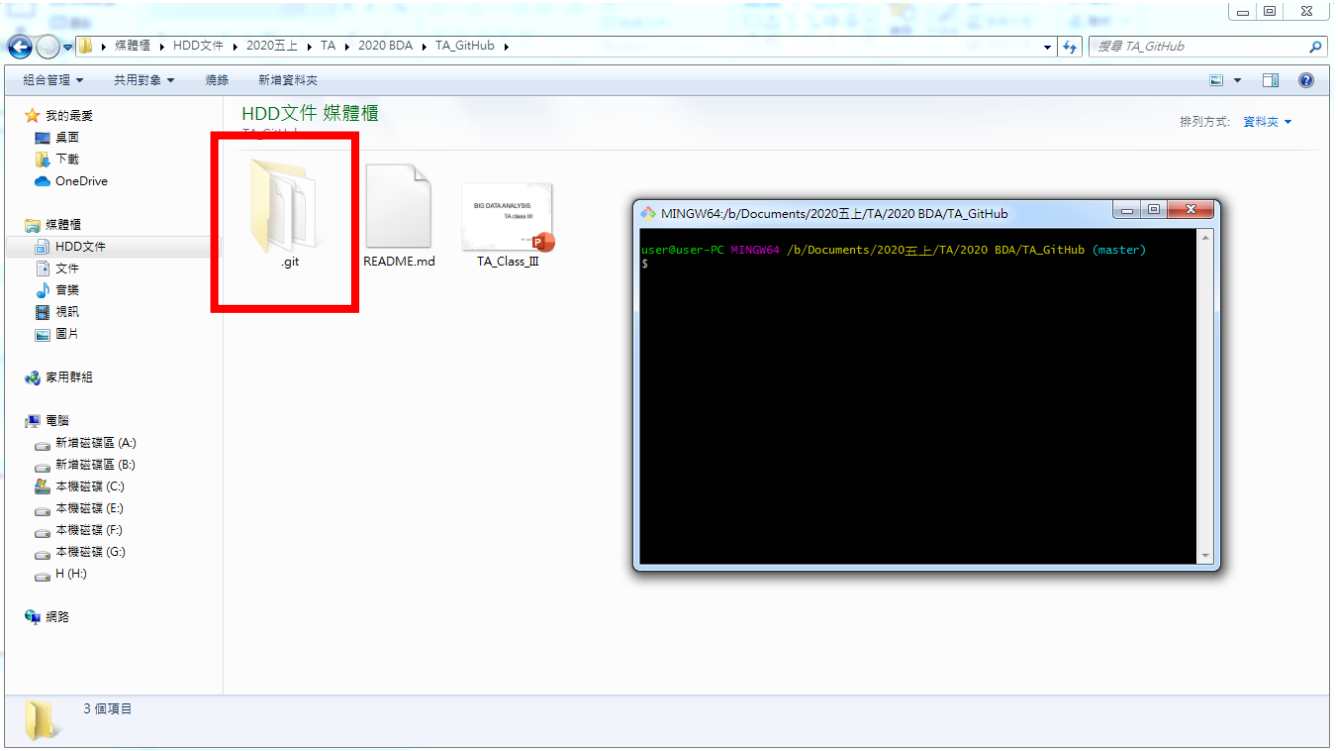
First Steps with Git



Your Identity

- git config --global user.email "your_email_account.gmail.com"
- git config --global user.name "your name"

- git init


媒體櫃 ▸ HDD文件 ▸ 2020五上 ▸ TA ▸ 2020 BDA ▸ TA_GitHub ▸
搜尋 TA_GitHub
組合管理
共用對象
燒錄
新增資料夾
我的最愛
桌面
下載
OneDrive
媒體櫃
HDD文件
文件
音樂
視訊
圖片
家用群組
電腦
新增磁碟區 (A:)
新增磁碟區 (B:)
本機磁碟 (C:)
本機磁碟 (E:)
本機磁碟 (F:)
本機磁碟 (G:)
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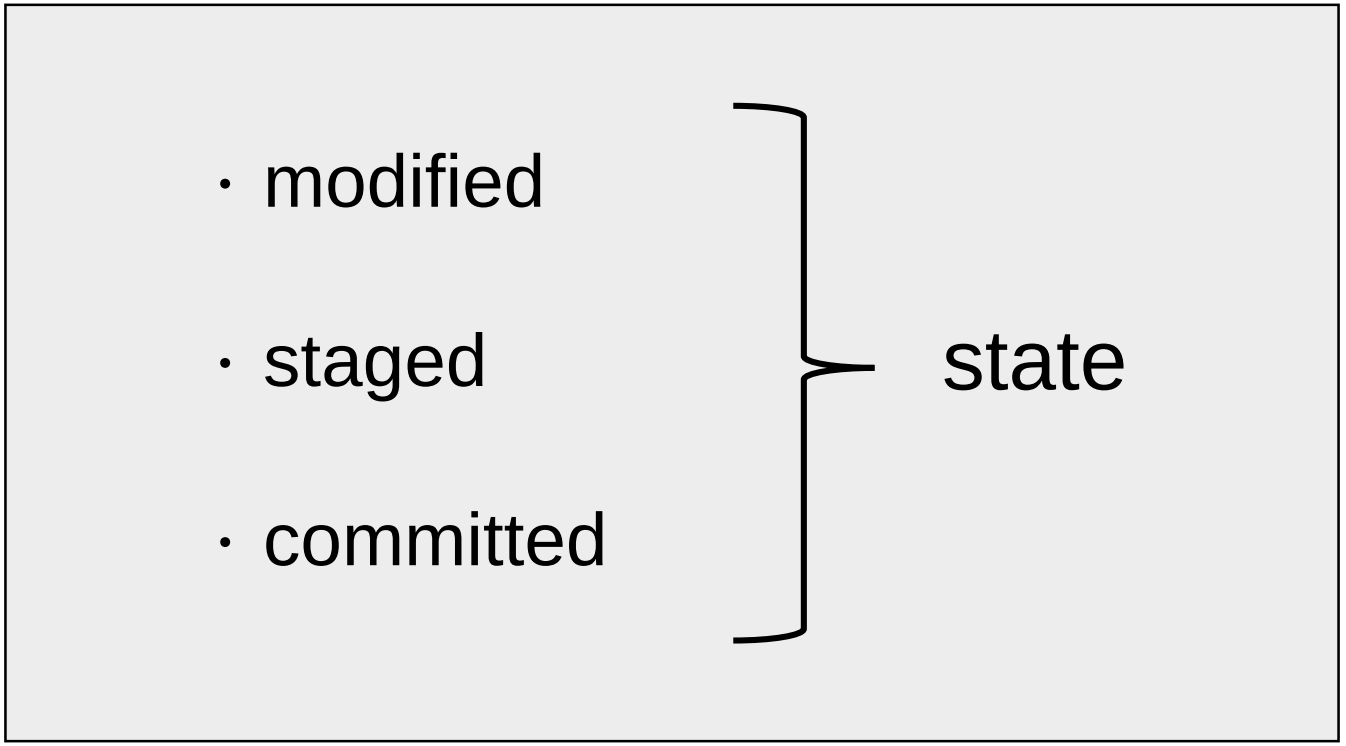
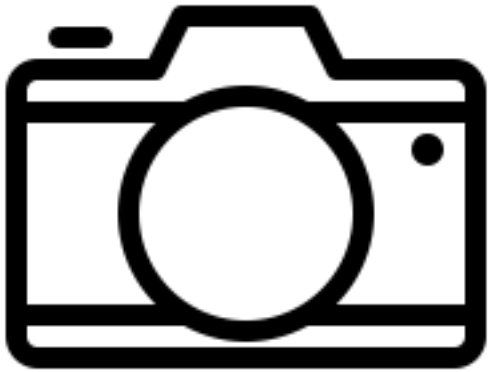
網路
HDD文件 媒體櫃
排列方式: 資料夾
.git
README.md
TA_Class_III
MINGW64:/b/Documents/2020五上/TA/2020 BDA/TA_GitHub
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$
3 個項目

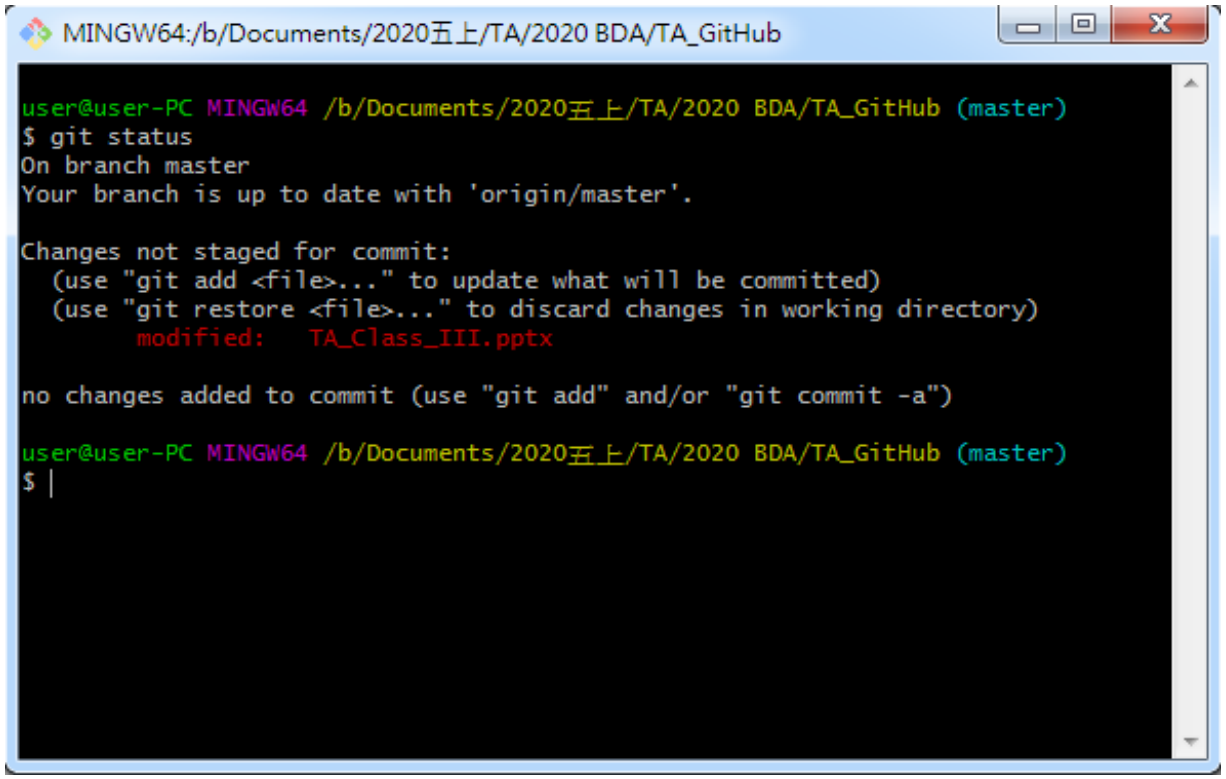
Three state of tracking files :



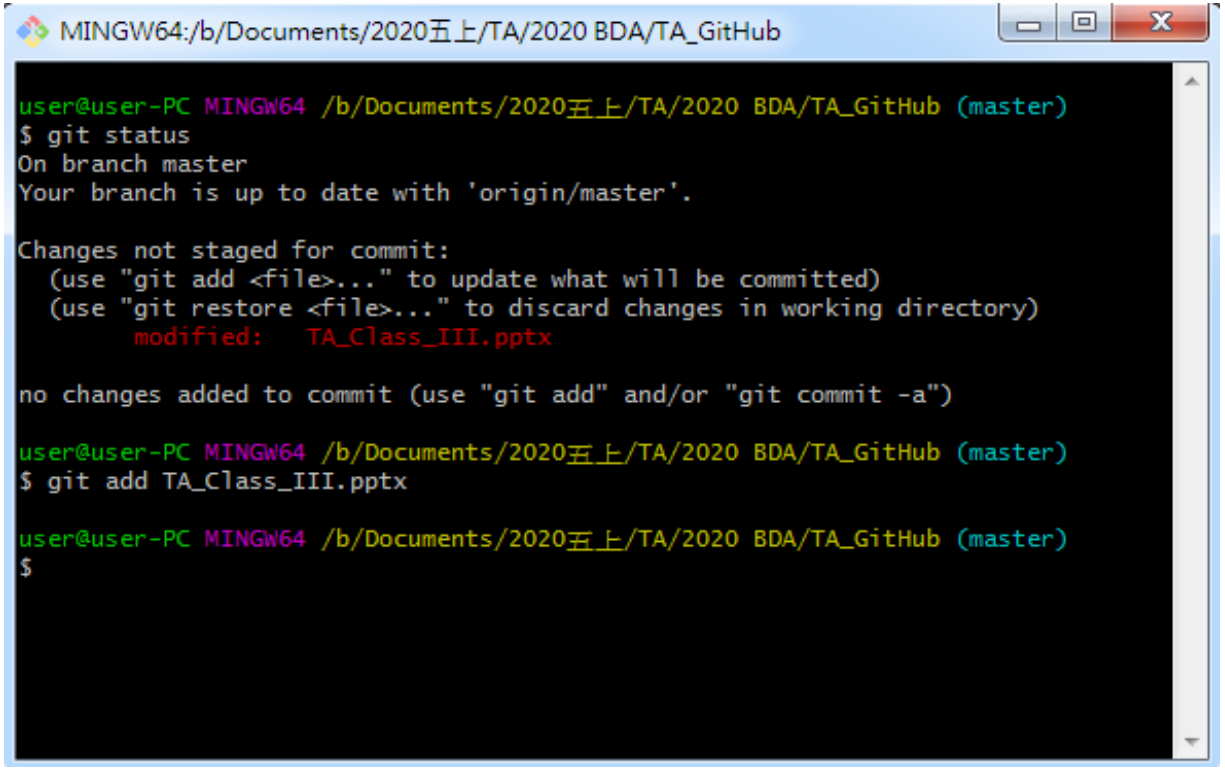


- Snapshotting your repository

- git status


MINGW64:/b/Documents/2020五上/TA/2020 BDA/TA_GitHub
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.
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: TA_Class_III.pptx
no changes added to commit (use "git add" and/or "git commit -a")
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$

- git add


MINGW64:/b/Documents/2020五上/TA/2020 BDA/TA_GitHub
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
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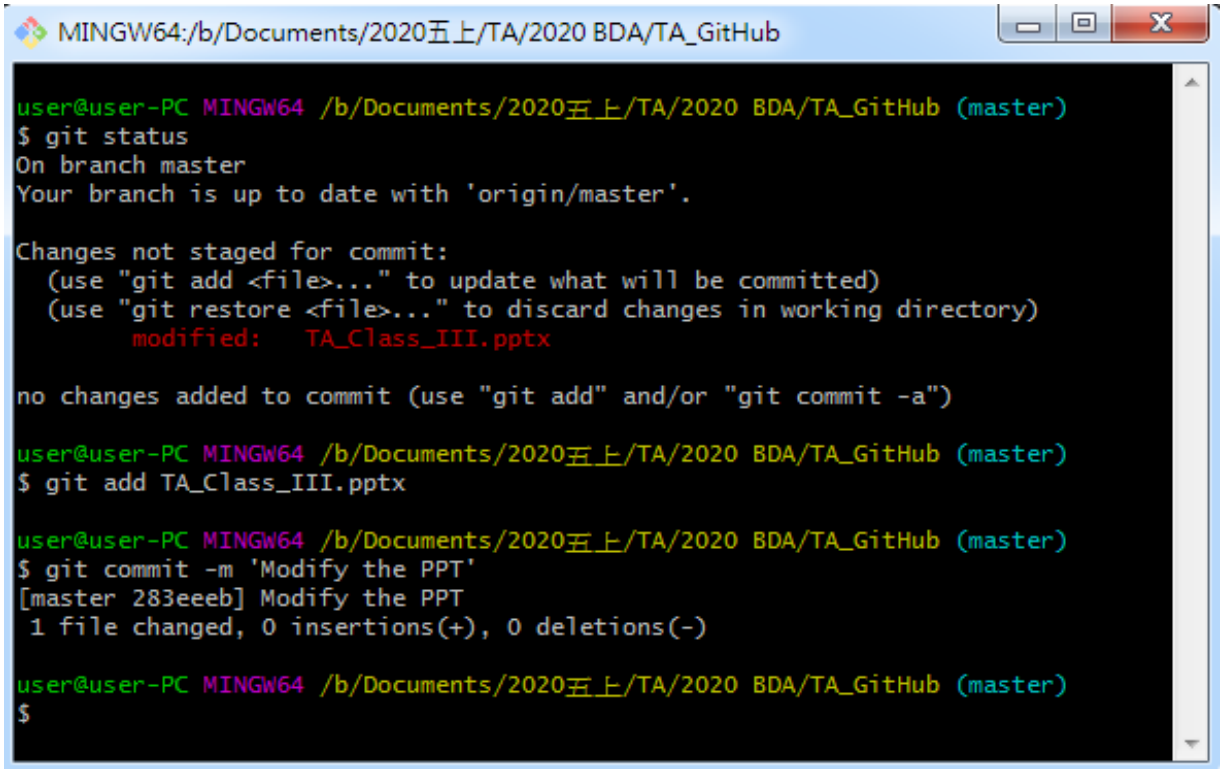
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ git add TA_Class_III.pptx
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$

- git commit –m ‘…’


MINGW64:/b/Documents/2020五上/TA/2020 BDA/TA_GitHub
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
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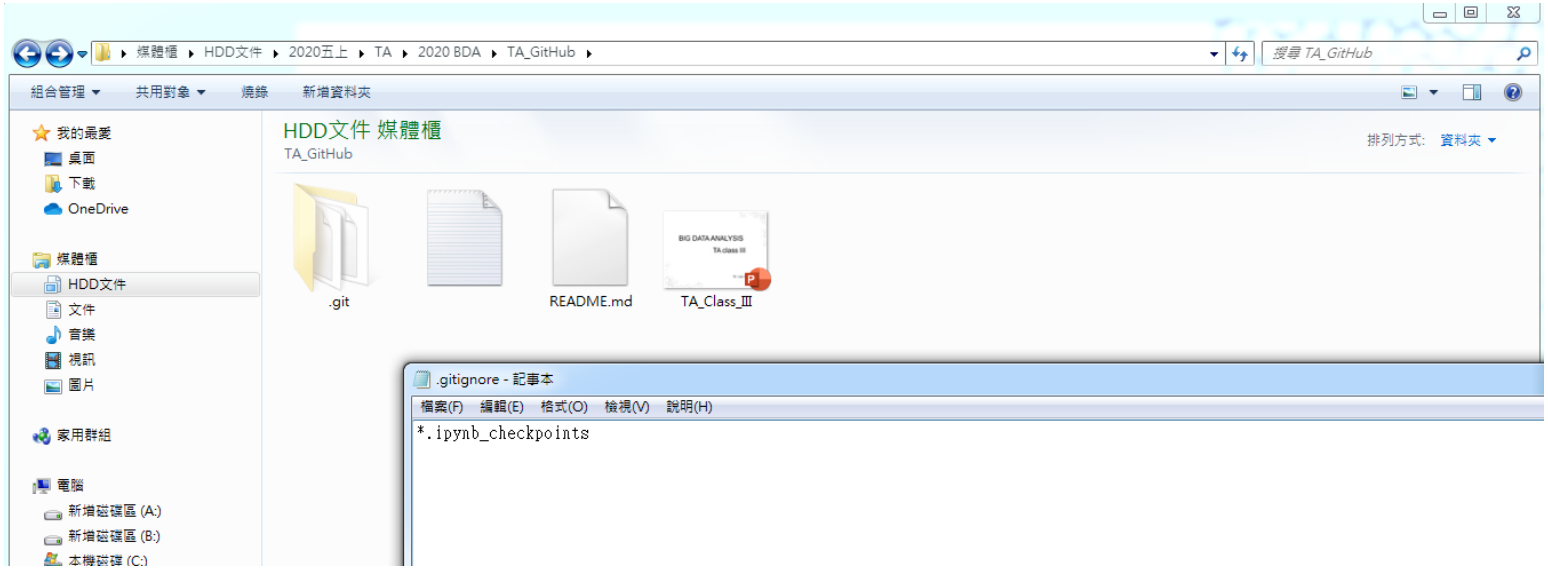
modified: TA_Class_III.pptx
no changes added to commit (use "git add" and/or "git commit -a")
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ git add TA_Class_III.pptx
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ git commit -m 'Modify the PPT'
[master 283eeeb] Modify the PPT
1 file changed, 0 insertions(+), 0 deletions(-)
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$

.gitignor


媒體櫃 ▸ HDD文件 ▸ 2020五上 ▸ TA ▸ 2020 BDA ▸ TA_GitHub ▸
搜尋 TA_GitHub
組合管理
共用對象
燒錄
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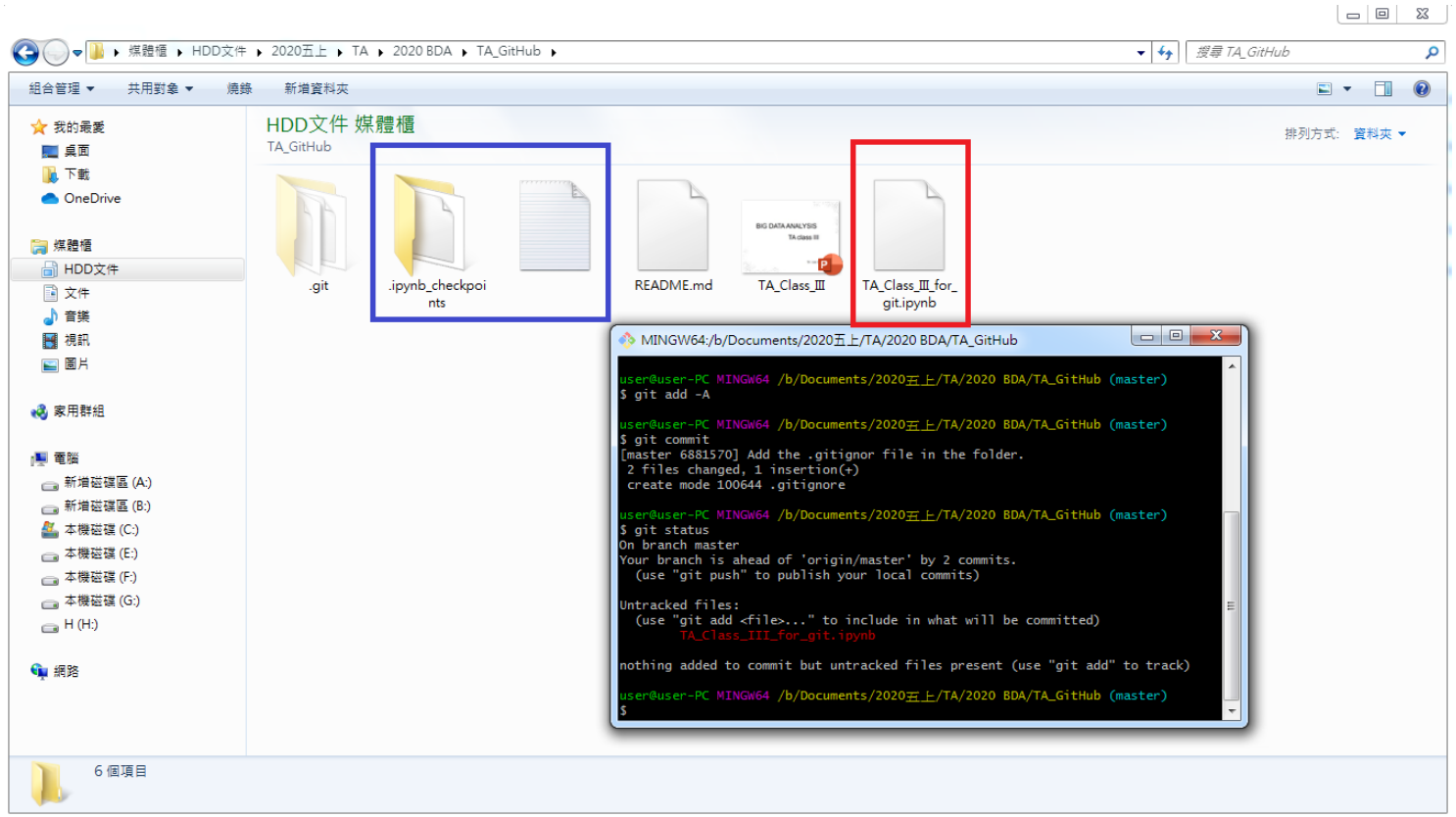
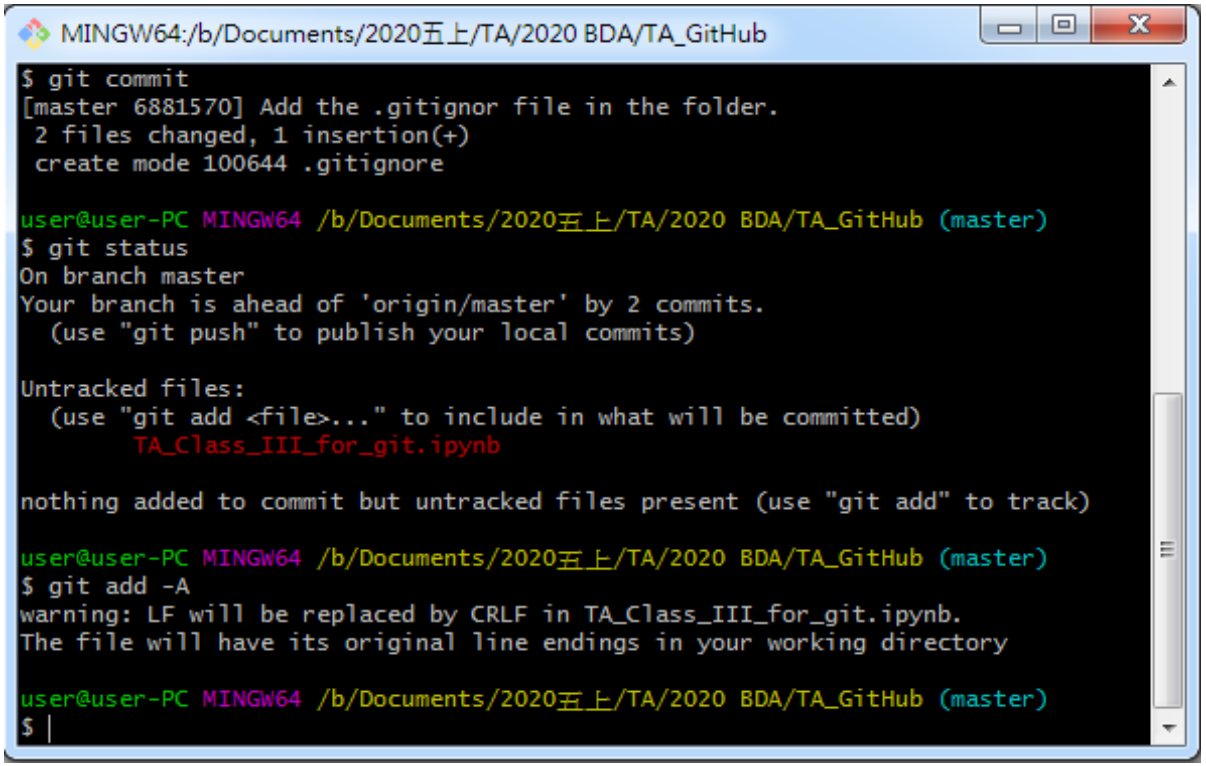
文件
音樂
視訊
圖片
家用群組
電腦
新增磁碟區 (A:)
新增磁碟區 (B:)
HDD文件 媒體櫃
TA_GitHub
排列方式: 資料夾
.git
README.md
TA_Class_III
.gitignore - 記事本
檔案(F) 編輯(E) 格式(O) 檢視(V) 說明(H)
*.ipynb_checkpoints

…after adding an ipynb file

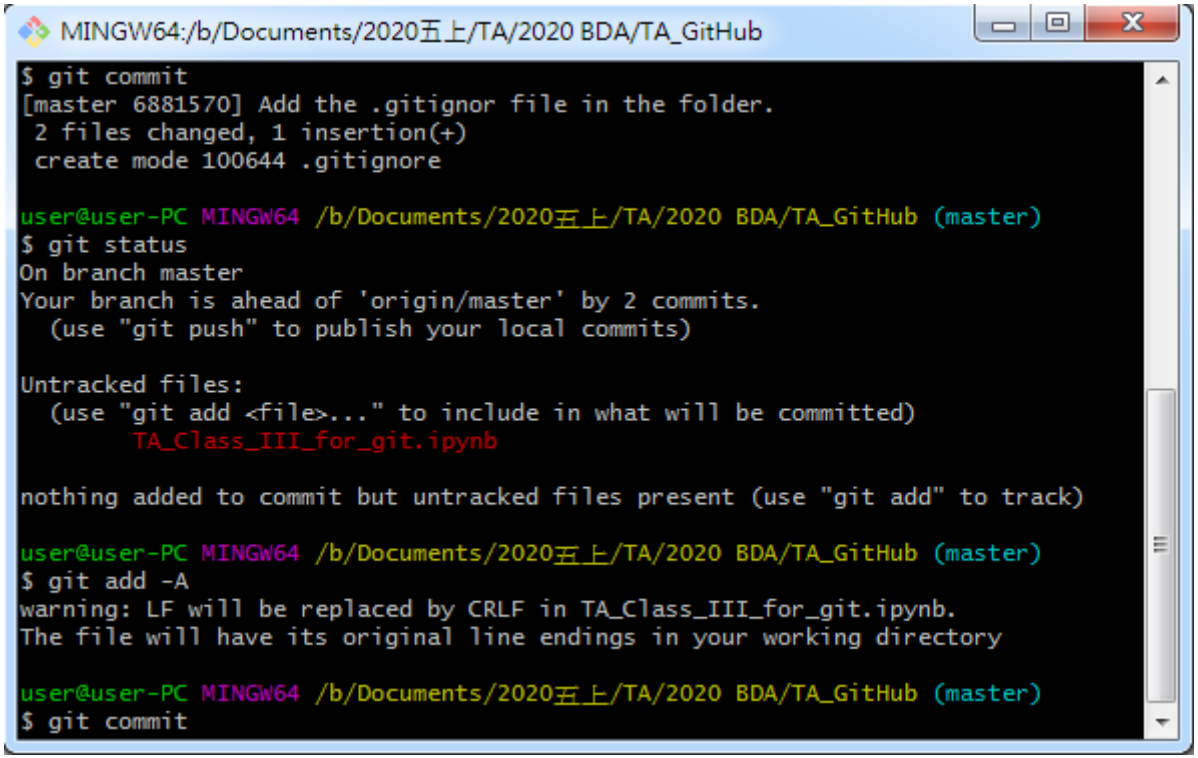
(the ipynb_checkpoints is ignored)



- git add -A


MINGW64:/b/Documents/2020五上/TA/2020 BDA/TA_GitHub
$ git commit
[master 6881570] Add the .gitignor file in the folder.
 2 files changed, 1 insertion(+)
 create mode 100644 .gitignore
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ git status
On branch master
Your branch is ahead of 'origin/master' by 2 commits.
  (use "git push" to publish your local commits)
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        TA_Class_III_for_git.ipynb
nothing added to commit but untracked files present (use "git add" to track)
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ git add -A
warning: LF will be replaced by CRLF in TA_Class_III_for_git.ipynb.
The file will have its original line endings in your working directory
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$

- git commit


MINGW64:/b/Documents/2020五上/TA/2020 BDA/TA_GitHub
$ git commit
[master 6881570] Add the .gitignor file in the folder.
 2 files changed, 1 insertion(+)
 create mode 100644 .gitignore
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
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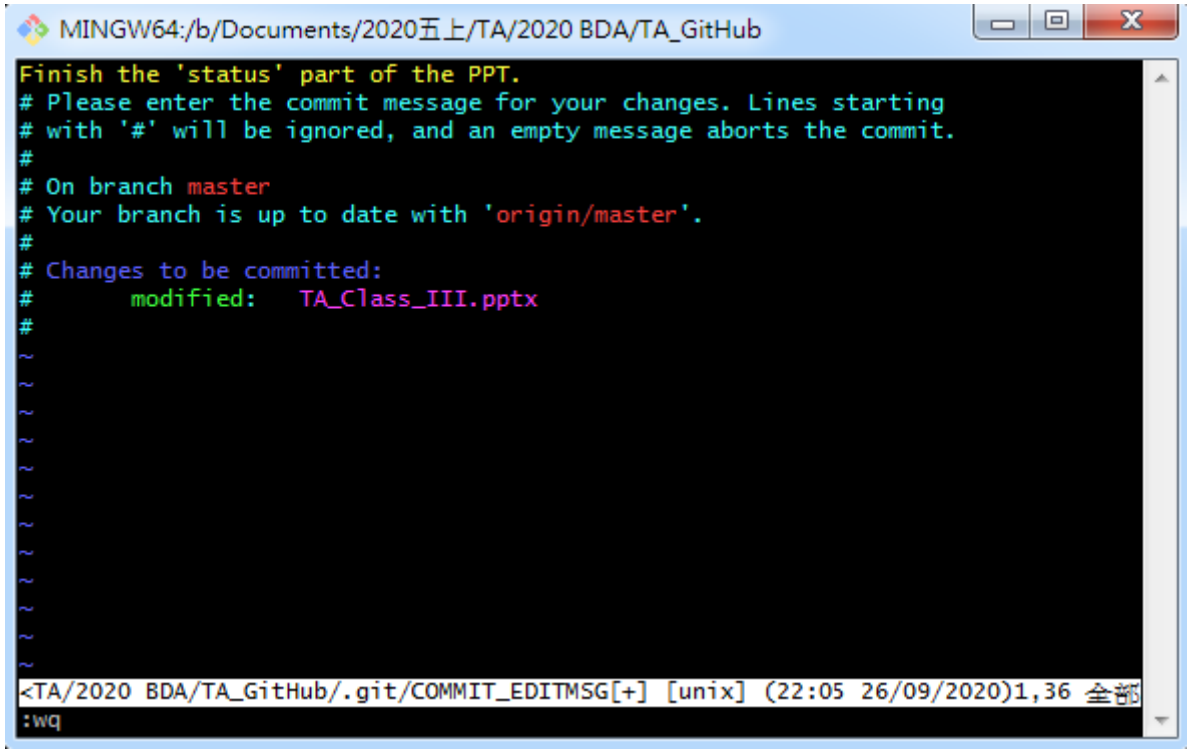
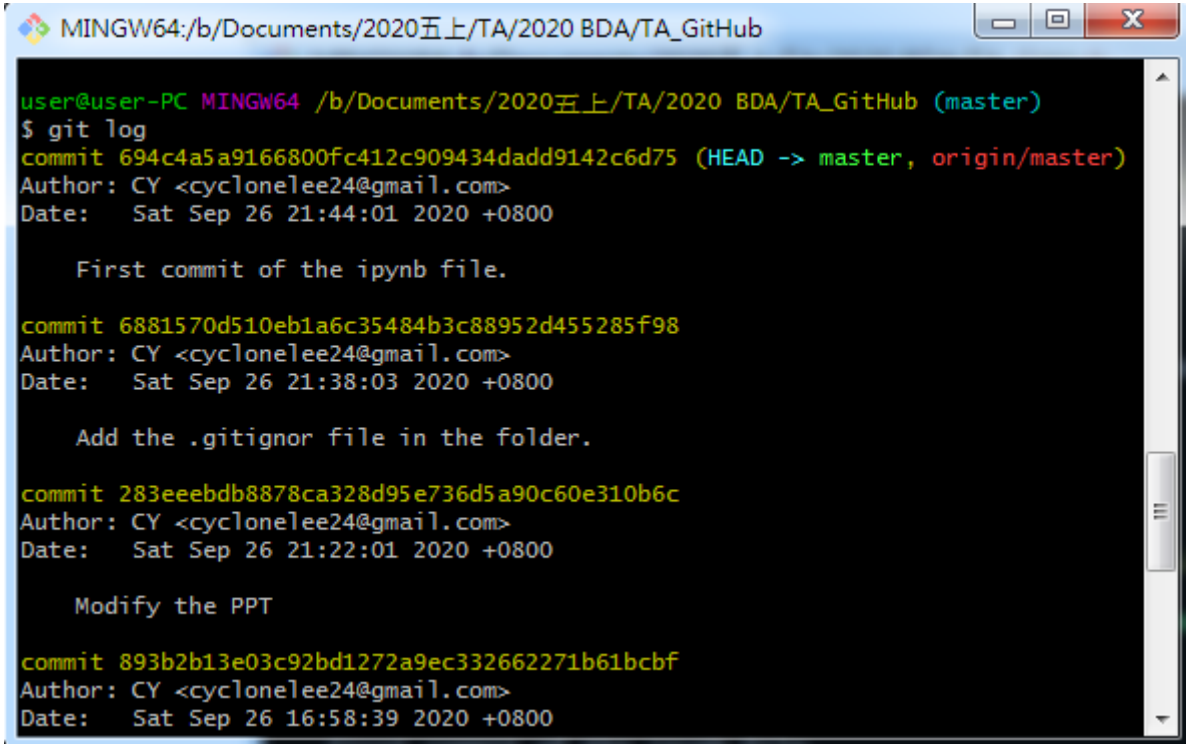
warning: LF will be replaced by CRLF in TA_Class_III_for_git.ipynb.
The file will have its original line endings in your working directory
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ git commit

- vim

- press ‘i’
- write your commit message
- press ‘Esc’
- type ‘:wq’


MINGW64:/b/Documents/2020五上/TA/2020 BDA/TA_GitHub
Finish the 'status' part of the PPT.
Please enter the commit message for your changes. Lines starting
with '#' will be ignored, and an empty message aborts the commit.
#
On branch master
Your branch is up to date with 'origin/master'.
#
Changes to be committed:
#	modified: TA_Class_III.pptx
#
<TA/2020 BDA/TA_GitHub/.git/COMMIT_EDITMSG[+] [unix] (22:05 26/09/2020)1,36 全部
:wq

- git log


MINGW64:/b/Documents/2020五上/TA/2020 BDA/TA_GitHub
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ git log
commit 694c4a5a9166800fc412c909434dadd9142c6d75 (HEAD -> master, origin/master)
Author: CY <cyclonelee24@gmail.com>
Date: Sat Sep 26 21:44:01 2020 +0800
First commit of the ipynb file.
commit 6881570d510eb1a6c35484b3c88952d455285f98
Author: CY <cyclonelee24@gmail.com>
Date: Sat Sep 26 21:38:03 2020 +0800
Add the .gitignor file in the folder.
commit 283eeebdb8878ca328d95e736d5a90c60e310b6c
Author: CY <cyclonelee24@gmail.com>
Date: Sat Sep 26 21:22:01 2020 +0800
Modify the PPT
commit 893b2b13e03c92bd1272a9ec332662271b61bcbf
Author: CY <cyclonelee24@gmail.com>
Date: Sat Sep 26 16:58:39 2020 +0800

- git checkout <sha1>

  to check out a particular commit

  (detached HEAD !)

- git revert <sha1>

  to revert a particular commit

<sha1>

```
commit 6881570d510eb1a6c35484b3c88952d455285f98
Author: CY <cyclonelee34@gmail.com>
Date:   Sat Sep 26 21:38:03 2020 +0800

    Add the .gitignor file in the folder.
```

branch

The default branch git create for you when a new git repo is initialized is called “master”.

Branches enable changes to be worked on without disruption the most current working state,

- git branch branch_name

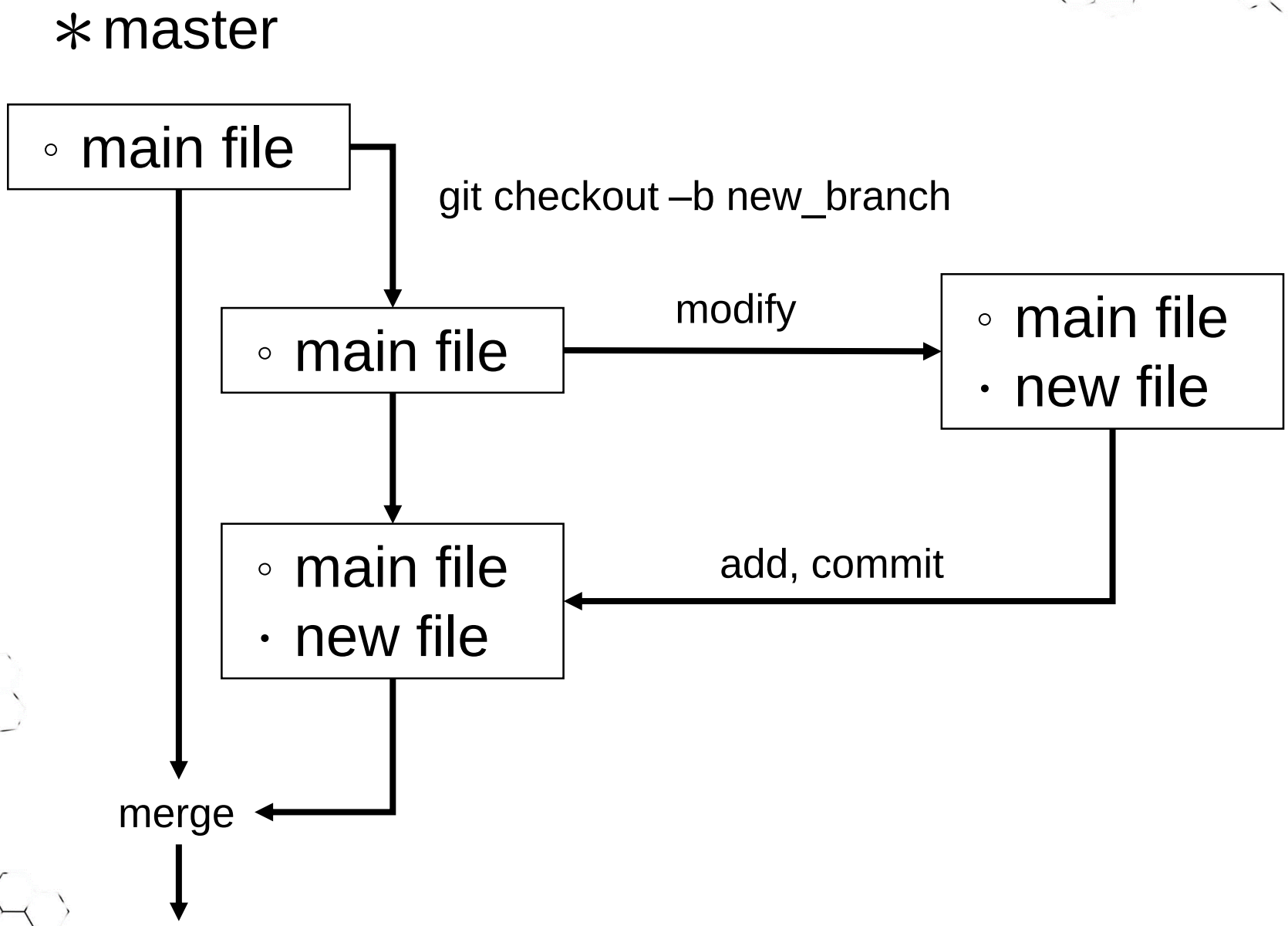
```
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ git branch working_on_py
```

- git branch

```
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ git branch
* master
  working_on_py

user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ git checkout working_on_py
Switched to branch 'working_on_py'

user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (working_on_py)
$ git branch
  master
* working_on_py
```


∗master
◦ main file
git checkout –b new_branch
◦ main file
modify
◦ main file
・new file
◦ main file
・new file
add, commit
merge

- history of diff. branches are diff.
- git branch –d branch_name
- git merge branch_name
- fast-forward merge (when no diverge)
- three-way merge (diverge but no conflict)
- conflict ? Fix it, add, and commit

GitHub

- A web-based Git repository hosting service.

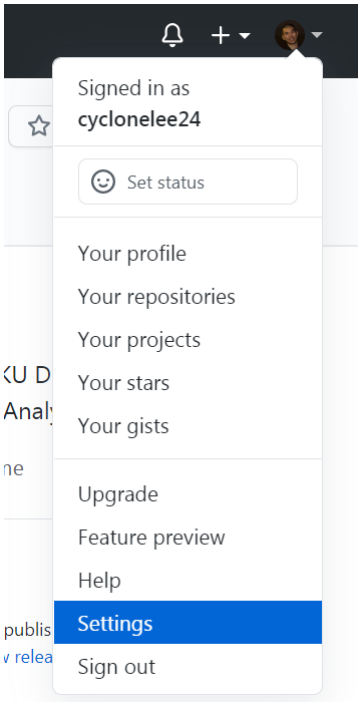
- On top of Git’s functions, it includes extra features.

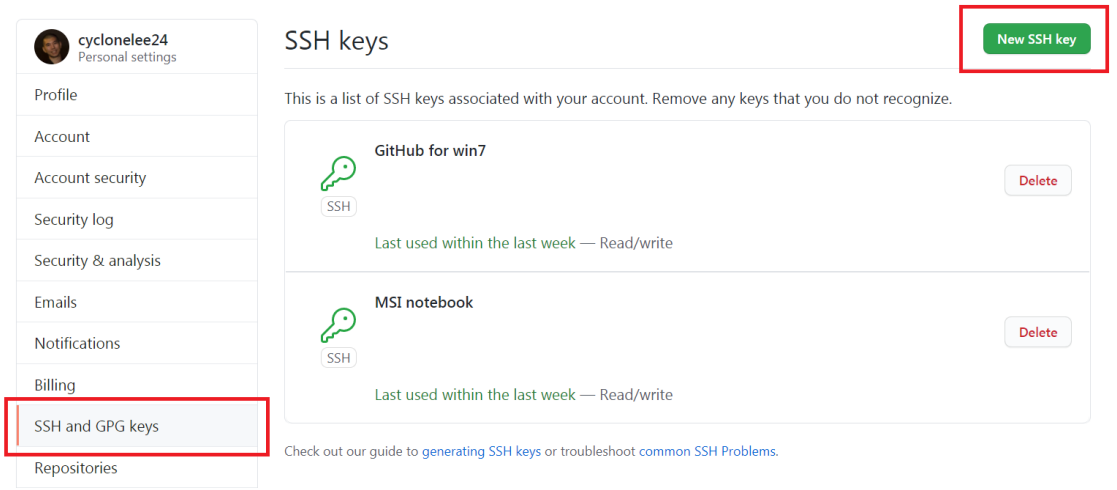
- ssh-key：let GitHub know your identity
- $ ssh-keygen
- you can skip entering the passphrase
- $ cat /directory of your key/id_rsa.pub

```
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ cat C:/Users/user/.ssh/id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAACAQDJyLE34zC+gdEpnde1JE1pWztHoPEP+QzmkxkZMnLY
36uFXtF9nmUe+ymzKj+bTvh/qZgQDrOtoiuFYNHb8uxxoKhtgqFUO9BV6nr+eNWfHvLZdEI6fd4iJ1Yo
HRzYPdzmUgOONmGsLJdBUnuxhbxow/Rm1hQZWYhV3iPUPVuzCdZq4L6ohHz4M75z/5/ODf+MgO8cXg3/
NJ5ViqD4ID82BiioFOmICppvPdypHxLkH5KkjYFRdx1IK8qLwXOVkIBUuFZnJSsLXgvxDBDIAOTu6Ekx
6/bXrNZp6zqeTzu9pJW3YGTkCEK5nP14fH9B2PcomSn6RYOt/7Q+K/26ueSaefYkFOZ8YCi1BEAShdvE
LWKn1zmHWOgyVyZSkznbdCbTCNZkRN3URLVUGWvh+RkUqDbTA/KhTi4TVqPXwApyaCHSM2rpCHsxMbJw
Az7vlRsLQIVFP6xxd9lFNgcC14eS7T2wYcdhKtoDEkK2vRPrA1DdsXmRmnY1+L6CnsPmElVvVU6ESXMc
ygEweYSSpjouCNwS4G7N7p5vPt3MaUNKdweio/kSM6RzE14Ay9d7DJzkl/hDgqA5O6aMfGrzcoh24NOx
WbBHKyfO6k6pH+Hx7wY5fcHWPzwlDh/mlRC9cwEKxMavRUaorvBkJzbKkEKBOAPOH7HXR2xghFedNnTQ
9Q== cyclonelee24@gmail.com
```

- copy from ssh-rsa… to …@gmail.com

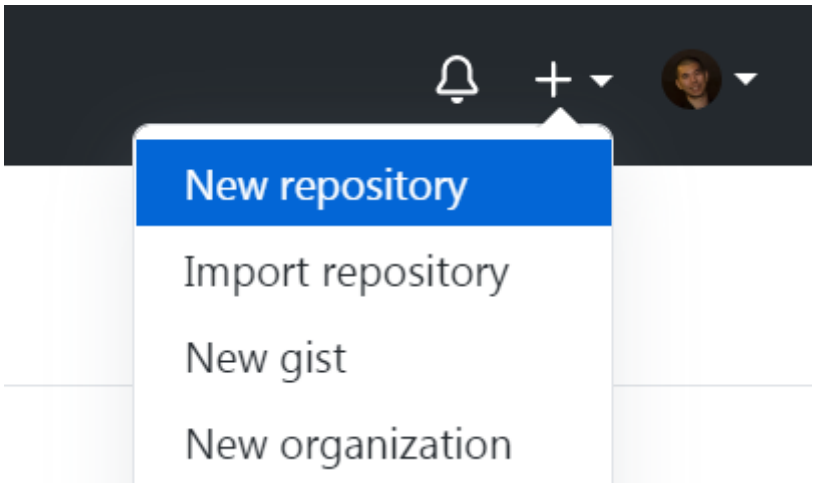
  (or to …@pc-name)





- Identify yourself with id_rsa.pub to GitHub

- push your repository to GitHub



Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? Import a repository.

Owner * Repository name *

cyclonelee24 /

Great repository names are short and memorable. Need inspiration? How about **fluffy-spork**?

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:
Skip this step if you're importing an existing repository.

Add a README file
This is where you can write a long description for your project. Learn more.

Add .gitignore
Choose which files not to track from a list of templates. Learn more.

Choose a license
A license tells others what they can and can't do with your code. Learn more.

Create repository

Quick setup — if you've done this kind of thing before

Set up in Desktop or HTTPS SSH git@github.com:cyclonelee24/test.git

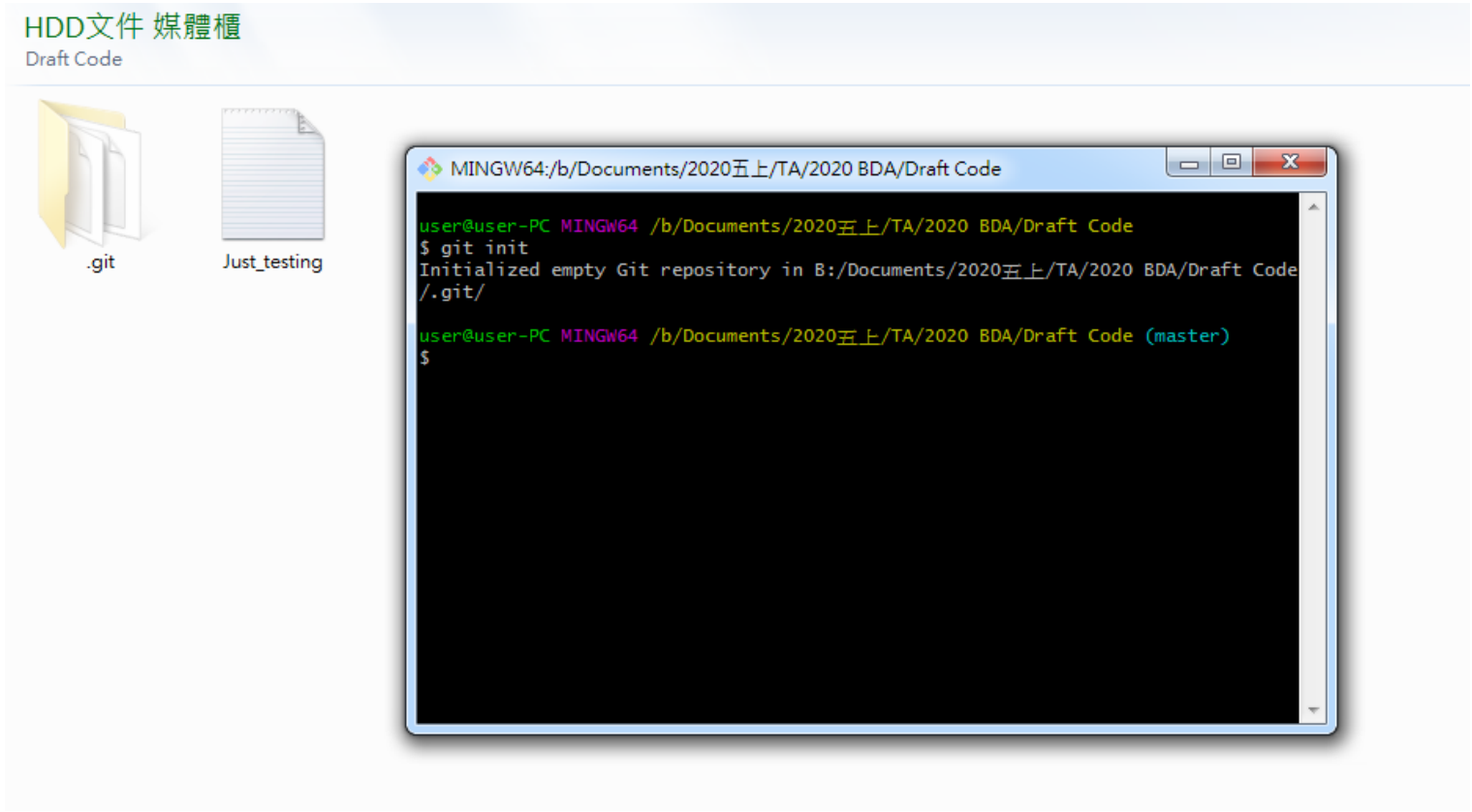
Get started by creating a new file or uploading an existing file. We recommend every repository include a README, LICENSE, and .gitignore.

...or create a new repository on the command line

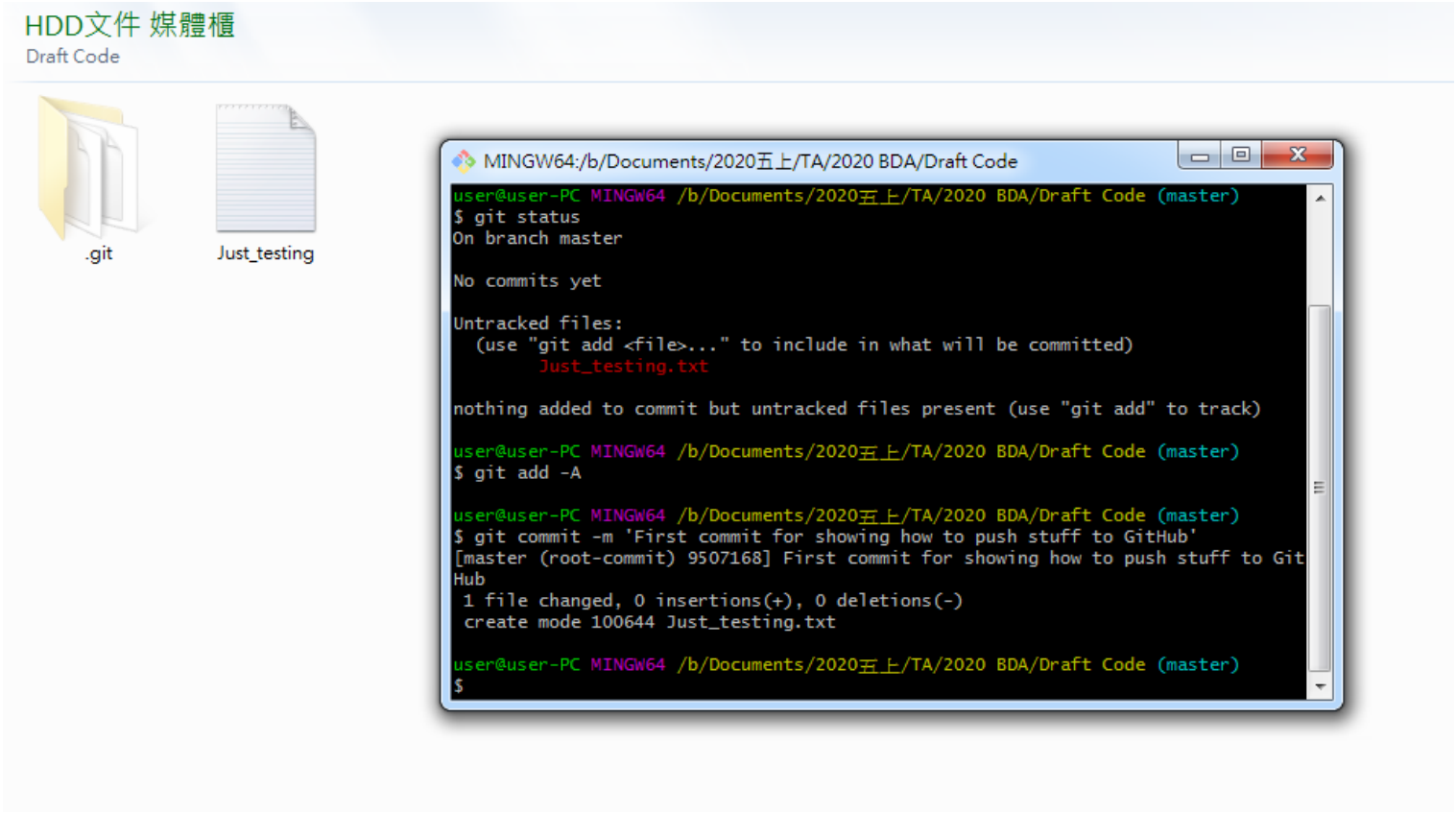
```
echo "# test" >> README.md
git init
git add README.md
git commit -m "first commit"
git branch -M master
git remote add origin git@github.com:cyclonelee24/test.git
git push -u origin master
```

...or push an existing repository from the command line

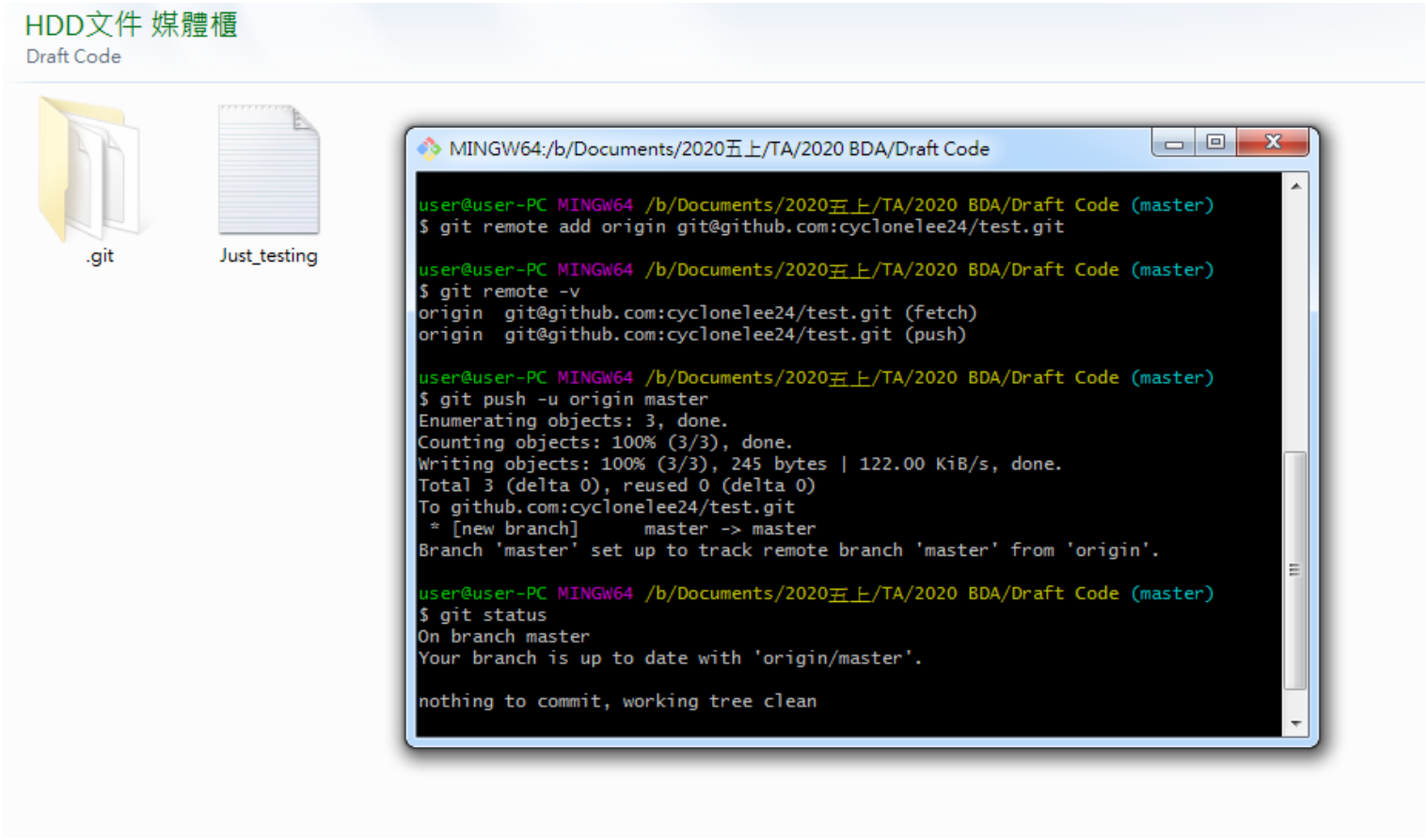
```
git remote add origin git@github.com:cyclonelee24/test.git
git branch -M master
git push -u origin master
```


HDD文件 媒體櫃
Draft Code
.git
Just_testing
MINGW64:/b/Documents/2020五上/TA/2020 BDA/Draft Code
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code
$ git init
Initialized empty Git repository in B:/Documents/2020五上/TA/2020 BDA/Draft Code
/.git/
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$

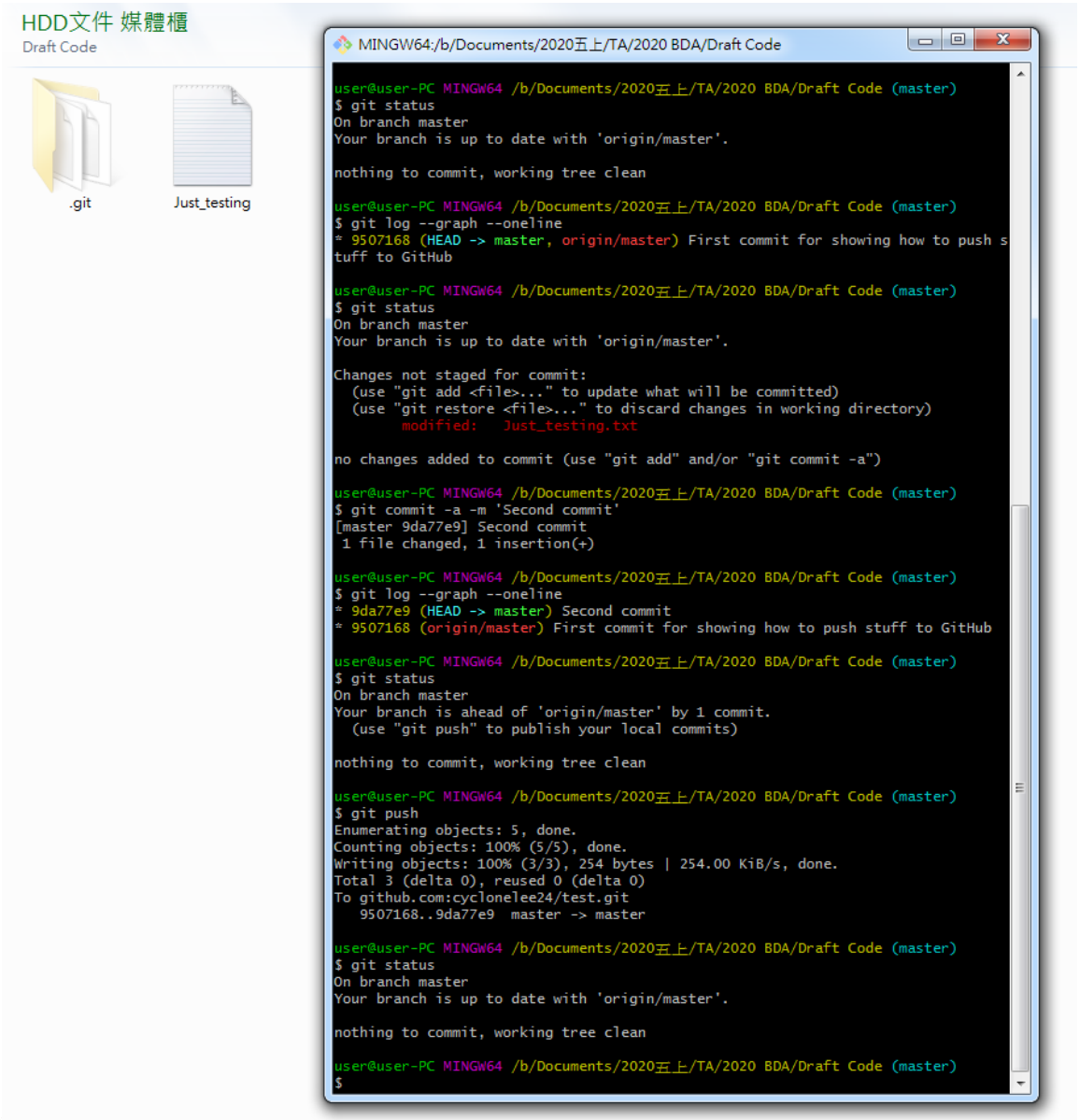
- local

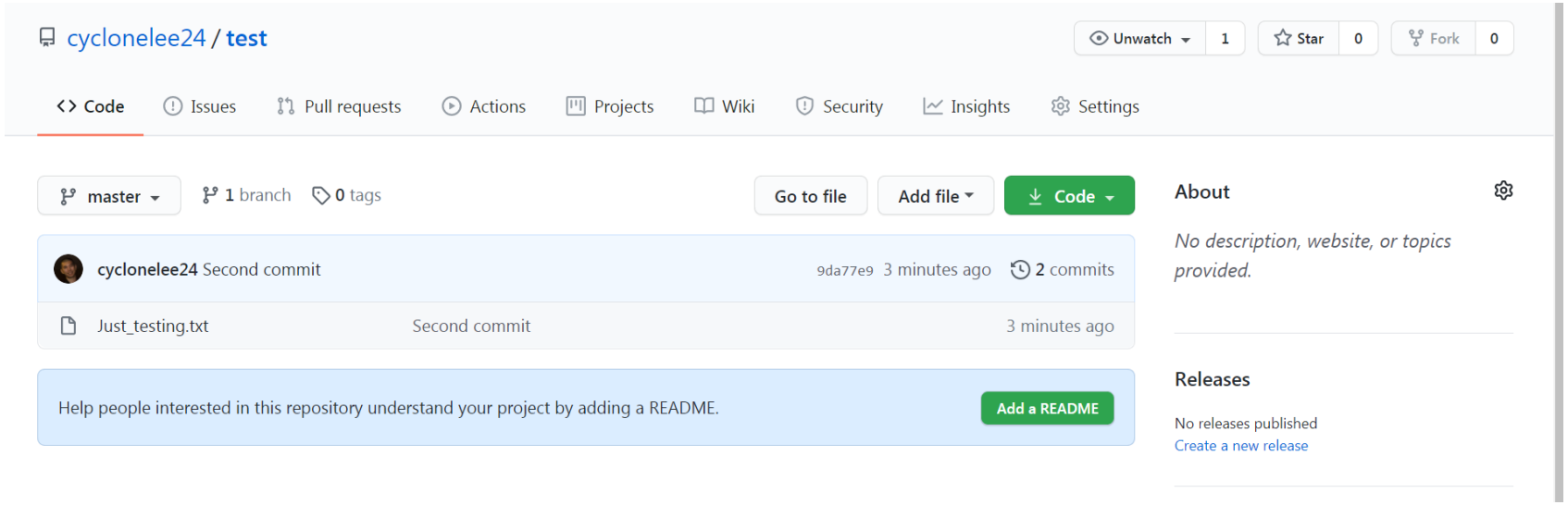

HDD文件 媒體櫃
Draft Code
.git
Just_testing
MINGW64:/b/Documents/2020五上/TA/2020 BDA/Draft Code
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git status
On branch master
No commits yet
Untracked files:
(use "git add <file>..." to include in what will be committed)
Just_testing.txt
nothing added to commit but untracked files present (use "git add" to track)
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git add -A
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git commit -m 'First commit for showing how to push stuff to GitHub'
[master (root-commit) 9507168] First commit for showing how to push stuff to GitHub
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 Just_testing.txt
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$

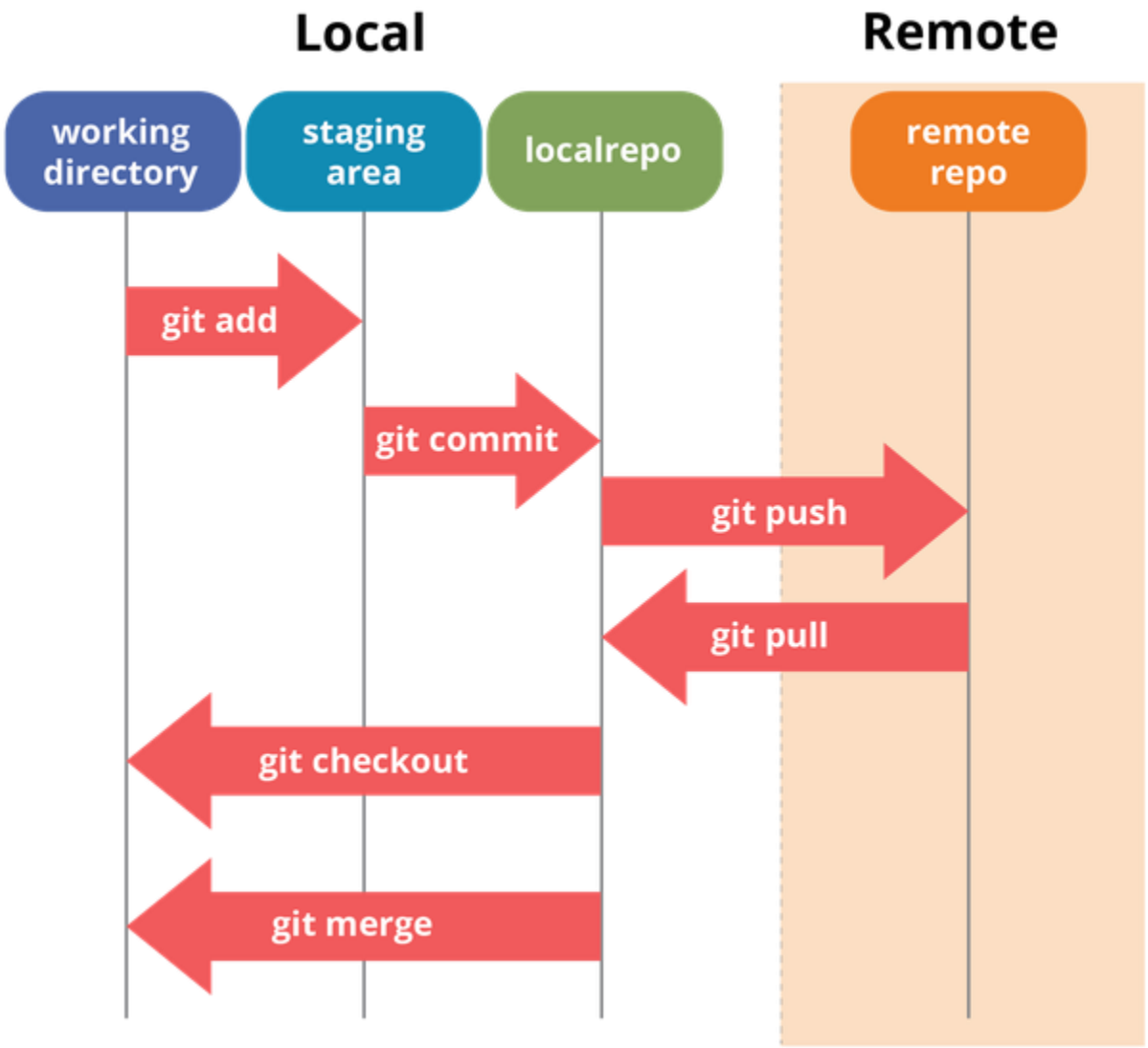
- remote


HDD文件 媒體櫃
Draft Code
.git
Just_testing
MINGW64:/b/Documents/2020五上/TA/2020 BDA/Draft Code
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git remote add origin git@github.com:cyclonelee24/test.git
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git remote -v
origin git@github.com:cyclonelee24/test.git (fetch)
origin git@github.com:cyclonelee24/test.git (push)
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git push -u origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 245 bytes | 122.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To github.com:cyclonelee24/test.git
* [new branch] master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.
nothing to commit, working tree clean

- push


HDD文件 媒體櫃
Draft Code
.git
Just_testing
MINGW64:/b/Documents/2020五上/TA/2020 BDA/Draft Code
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.
nothing to commit, working tree clean
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git log --graph --oneline
* 9507168 (HEAD -> master, origin/master) First commit for showing how to push stuff to GitHub
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.
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: Just_testing.txt
no changes added to commit (use "git add" and/or "git commit -a")
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git commit -a -m 'Second commit'
[master 9da77e9] Second commit
1 file changed, 1 insertion(+)
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git log --graph --oneline
* 9da77e9 (HEAD -> master) Second commit
* 9507168 (origin/master) First commit for showing how to push stuff to GitHub
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
(use "git push" to publish your local commits)
nothing to commit, working tree clean
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git push
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Writing objects: 100% (3/3), 254 bytes | 254.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To github.com:cyclonelee24/test.git
9507168..9da77e9 master -> master
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.
nothing to commit, working tree clean
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/Draft Code (master)
$


cyclonelee24 / test
Unwatch 1
Star 0
Fork 0
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
master
1 branch
0 tags
Go to file
Add file
Code
cyclonelee24 Second commit
9da77e9 3 minutes ago
2 commits
Just_testing.txt
Second commit
3 minutes ago
Help people interested in this repository understand your project by adding a README.
Add a README
About
No description, website, or topics provided.
Releases
No releases published
Create a new release


Local
Remote
working directory
staging area
localrepo
remote repo
git add
git commit
git push
git pull
git checkout
git merge

- git fetch：copy the commit done with the remote repository to your branch
- git merge
- git pull = git fetch + git merge
- case：if origin/master is ahead

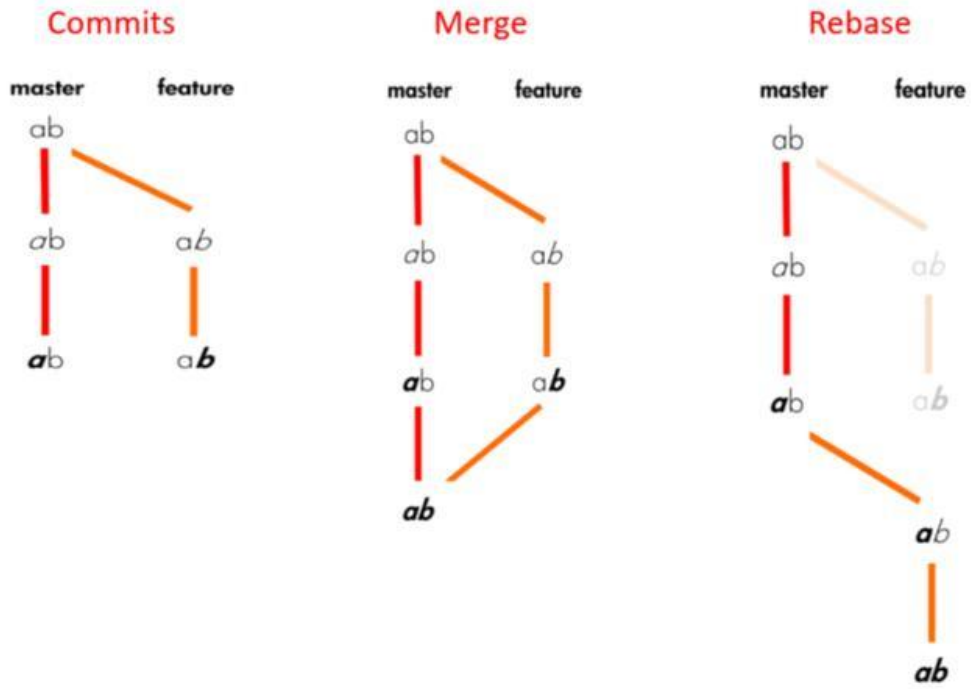
  → git merge origin/master

- if remote repository has changes local repository does not have：

  cannot push (can’t fast-forward merge)

  → sync your local repository first

- git rebase：move current branch on top of the rebased branch



- rebase keep the history linear
- use it when the changes are minor
- be careful when using rebase
- rebase = rewrite the history of commits

Some remarks

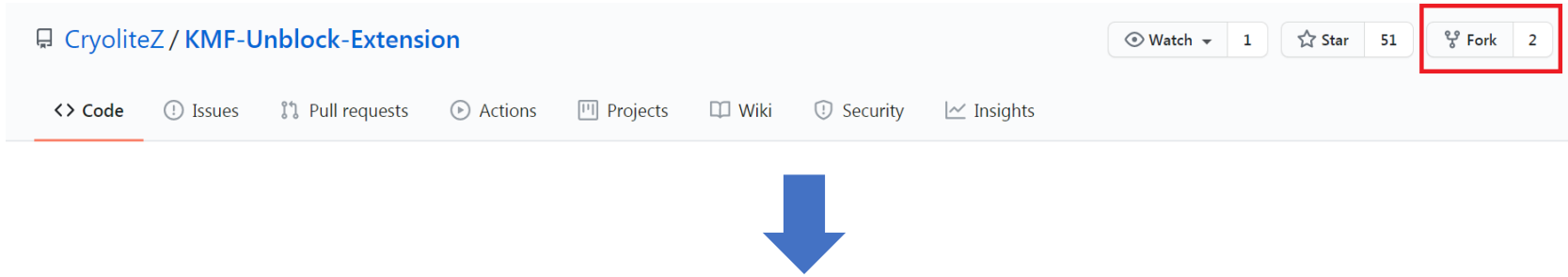
- Use remote repository to incorporate with others.
- Always synchronize your branch before starting any work on you own.
- Avoid large change that modify a lot of different things.

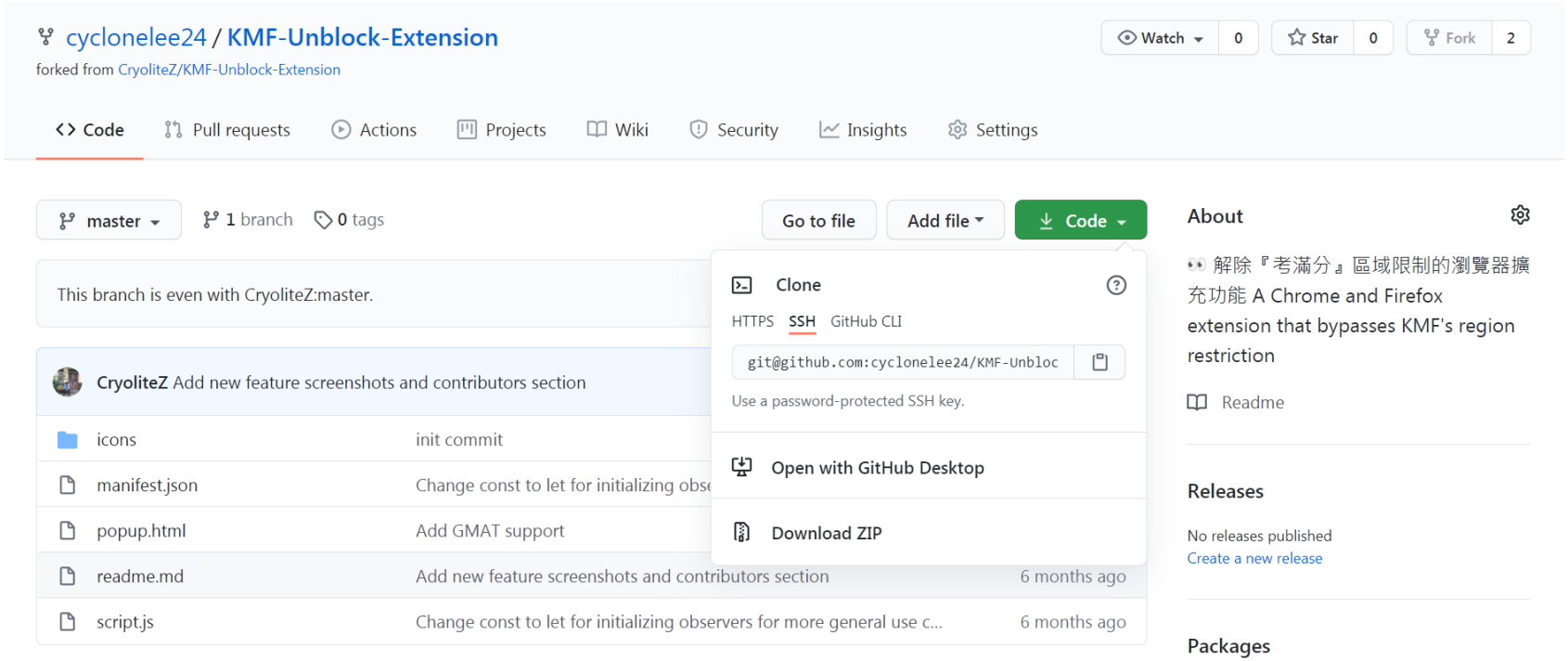
- push/pull often to reduce conflict.
- Regularly merge changes made on the master branch back to your branch.
- Should not rebase changes that have been pushed to remote repository.

- Forking：A way of creating a copy of the given repository so that this copy belongs to you.
- you can push changes to your forks
- pull request：commit(s) that you send to the owner of the original repository so that they incorporate it into their tree

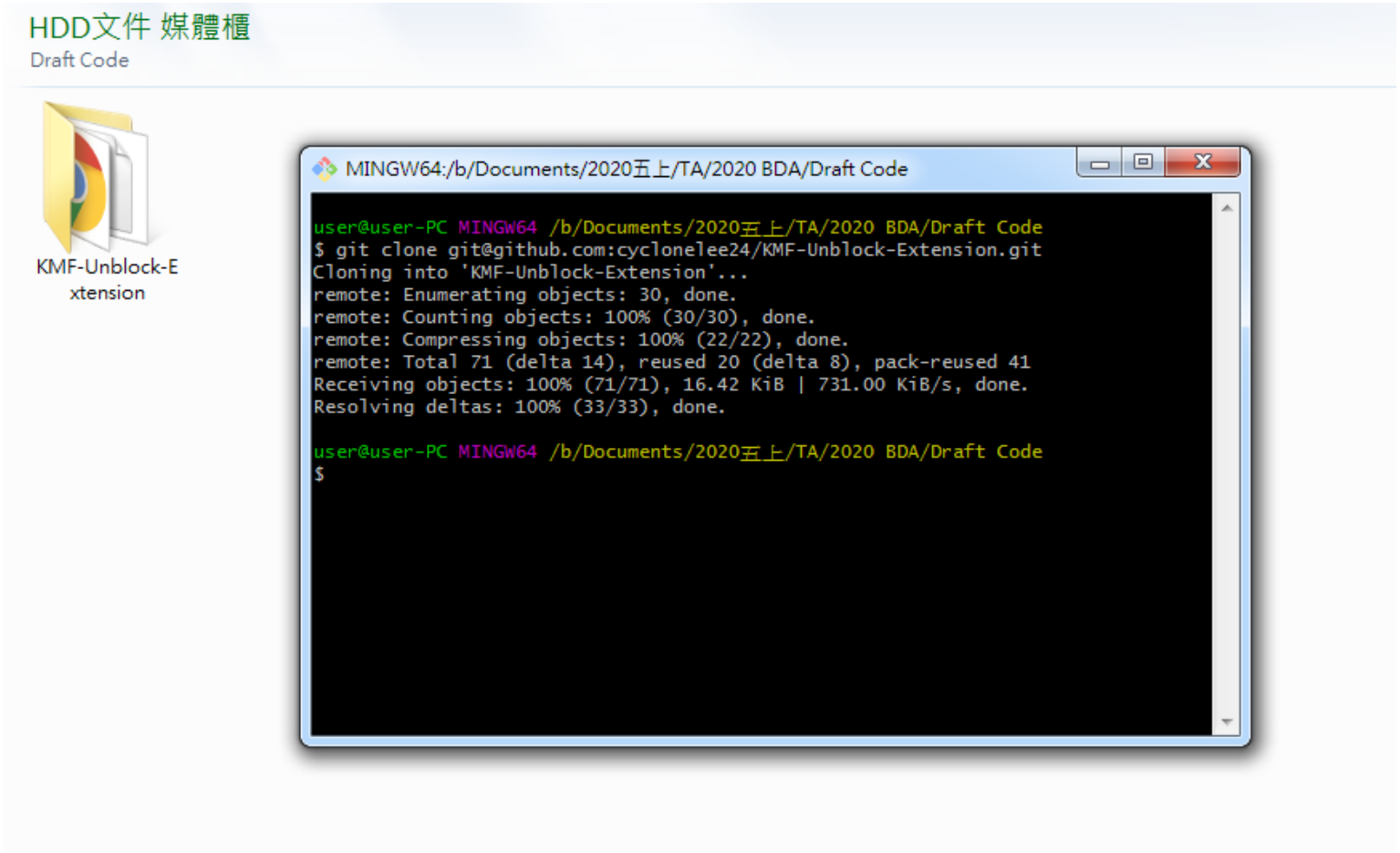
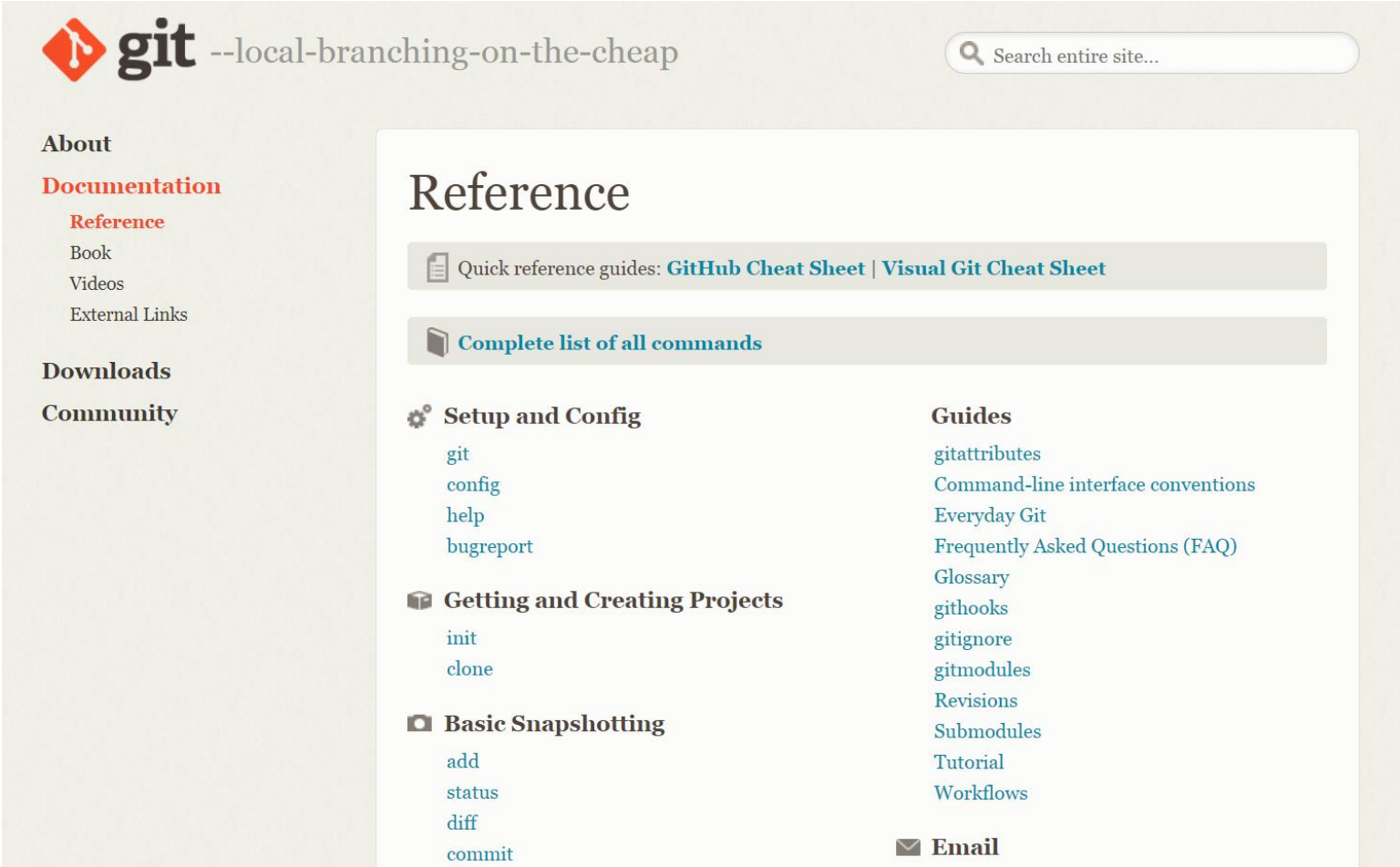
- proposed file change：commit on your fork → then create pull request
- same branch → same pull request

  different branch → different pull request
- different projects may have different pull request guidelines


CryoliteZ / KMF-Unblock-Extension
Watch 1
Star 51
Fork 2
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights


cyclonelee24 / KMF-Unblock-Extension
forked from CryoliteZ/KMF-Unblock-Extension
Watch 0
Star 0
Fork 2
Code
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
master
1 branch
0 tags
Go to file
Add file
Code
This branch is even with CryoliteZ:master.
Clone
HTTPS
SSH
GitHub CLI
git@github.com:cyclonelee24/KMF-Unbloc
Use a password-protected SSH key.
Open with GitHub Desktop
Download ZIP
CryoliteZ Add new feature screenshots and contributors section
icons
init commit
manifest.json
Change const to let for initializing obse
popup.html
Add GMAT support
readme.md
Add new feature screenshots and contributors section
6 months ago
script.js
Change const to let for initializing observers for more general use c...
6 months ago
About
👀 解除『考滿分』區域限制的瀏覽器擴充功能 A Chrome and Firefox extension that bypasses KMF's region restriction
Readme
Releases
No releases published
Create a new release
Packages

- fork vs. clone ?



More questions ?