



INTRODUCTION TO DATA SCIENCE

TA class I

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.


Git

 **git** --local-branching-on-the-cheap

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

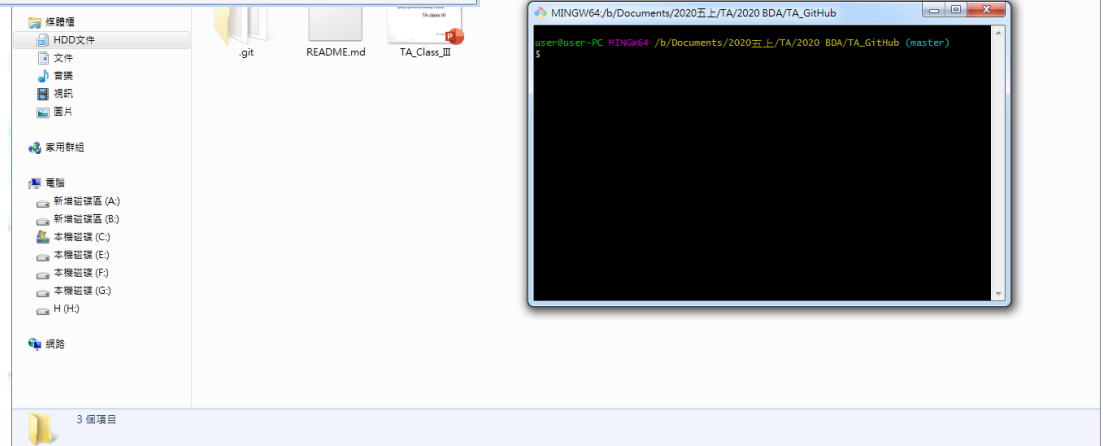
Get involved! Bug reporting, mailing list, chat, development and more.



TRIVIAL



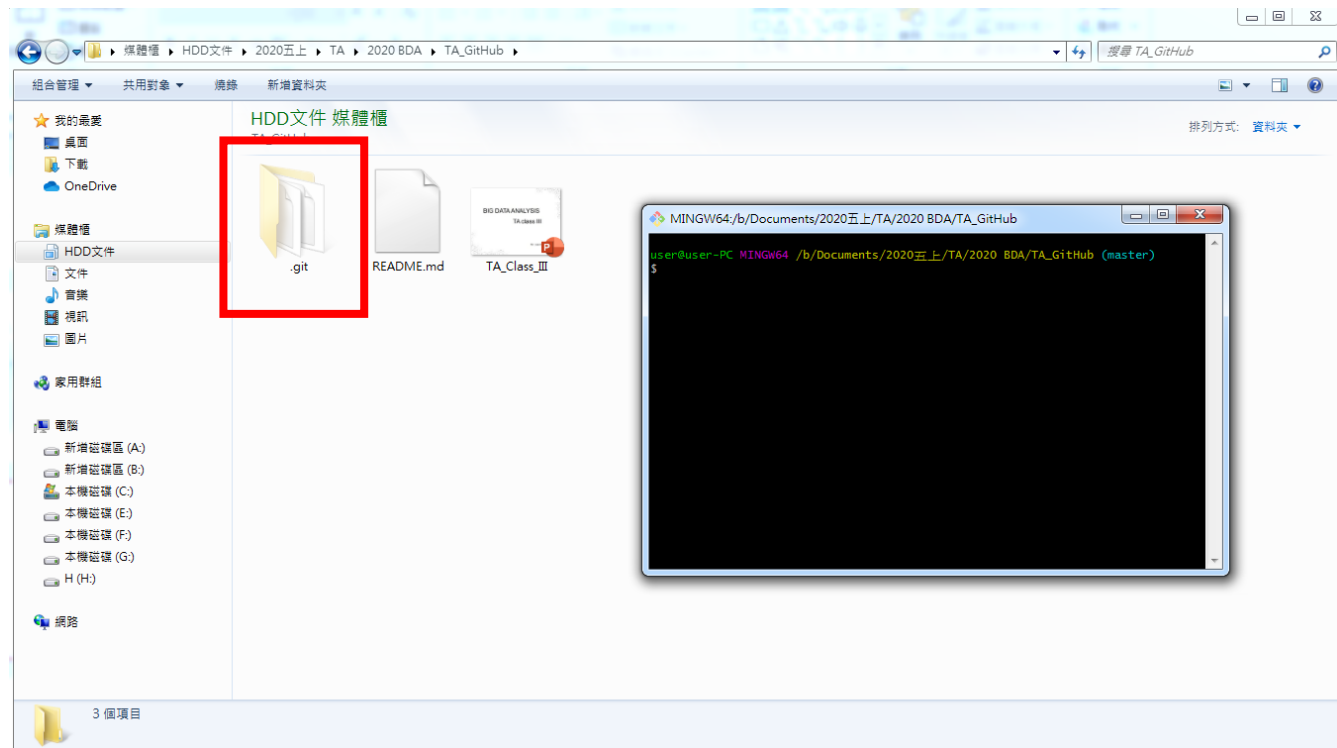
First Steps with Git



Your Identity

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

- git init



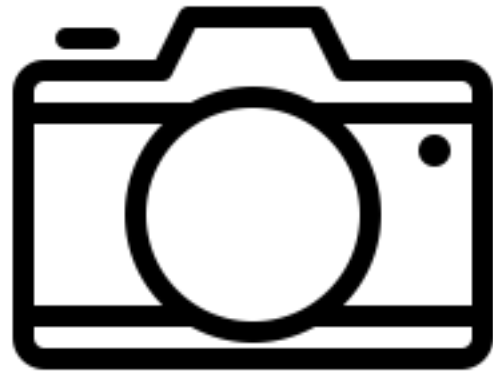
Three state of tracking files :

- modified

- staged

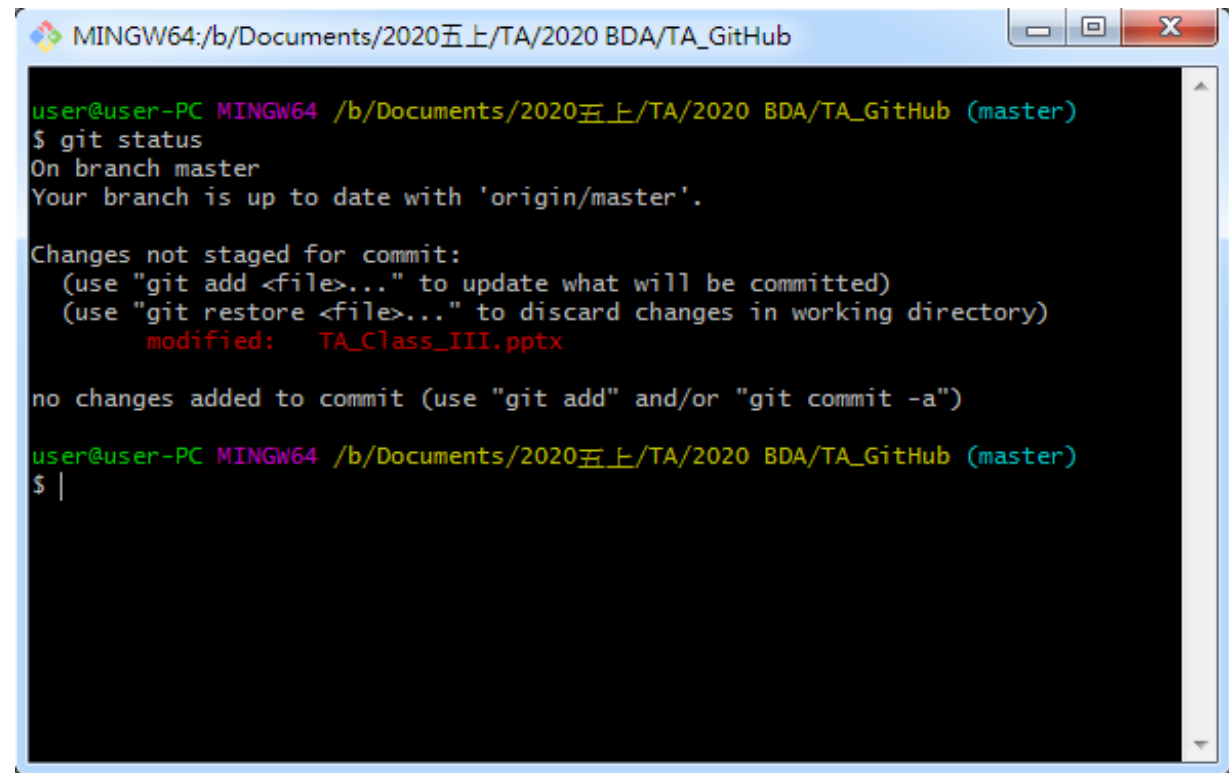
- committed

state



- Snapshotting your repository

- git status



```
MINGW64:/b/Documents/2020五上/TA/2020 BDA/TA_GitHub

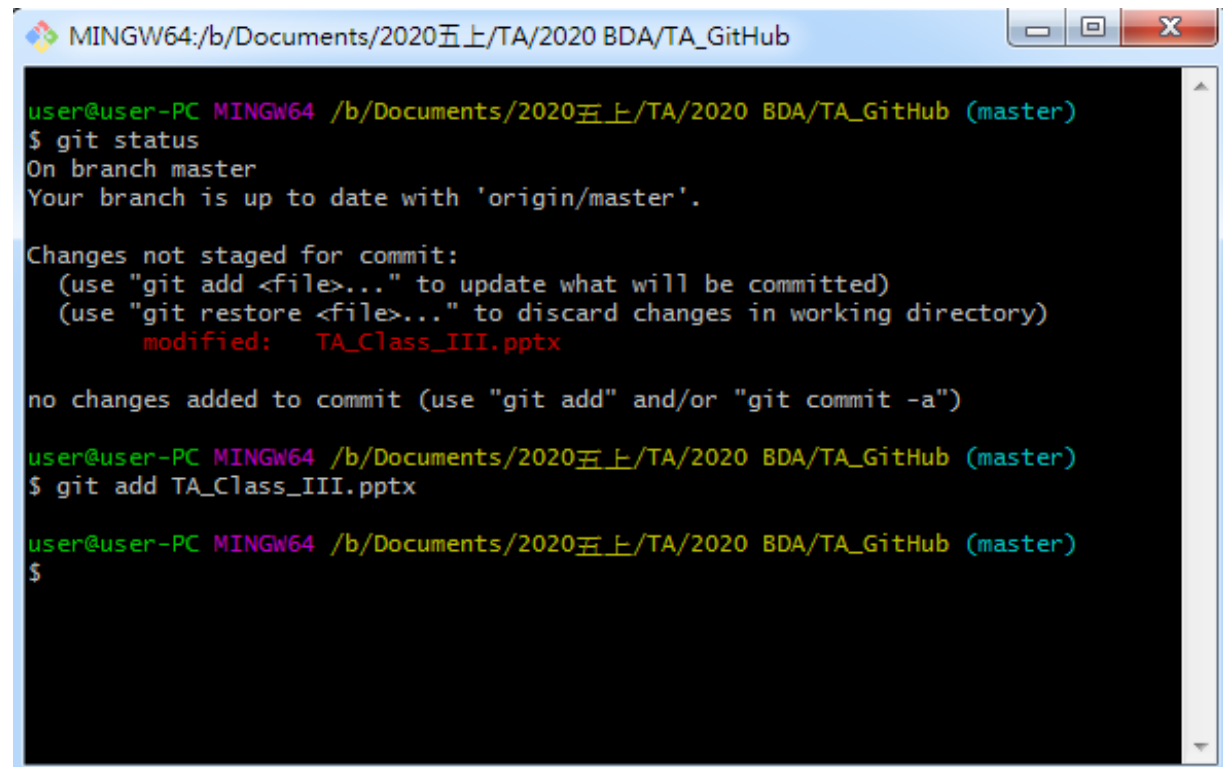
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.

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)
$ 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 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)
$ 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

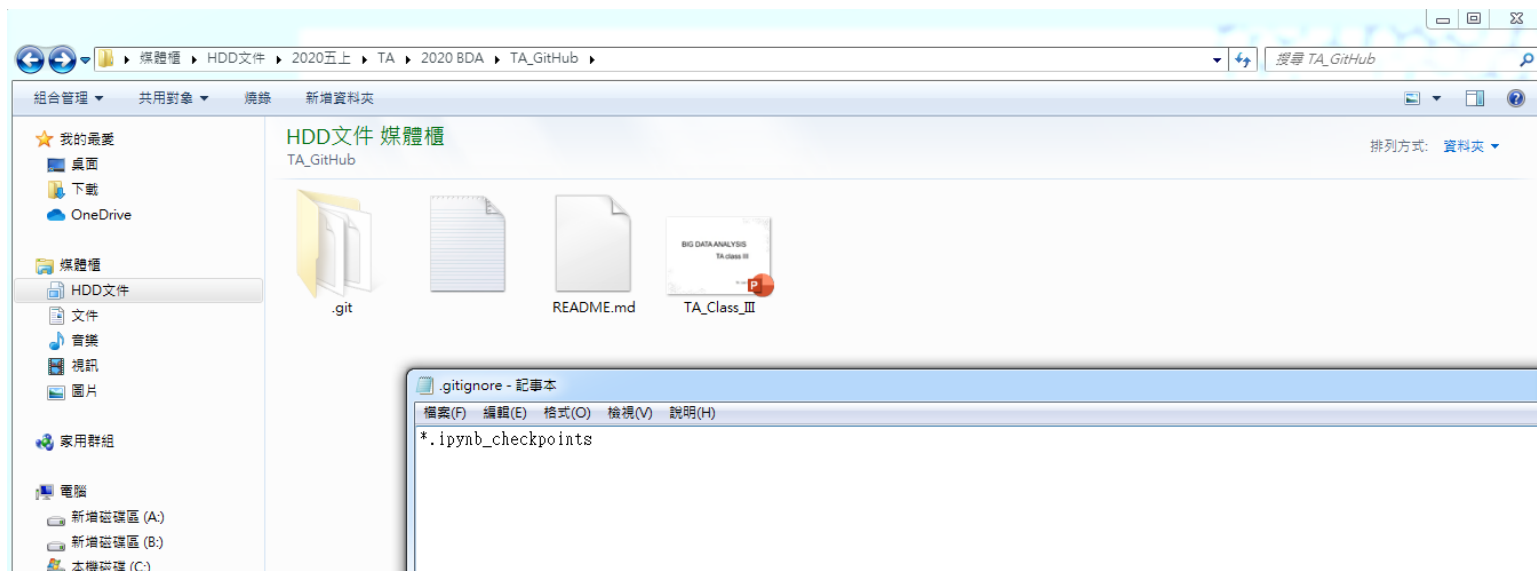
no changes added to commit (use "git add" and/or "git commit -a")

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

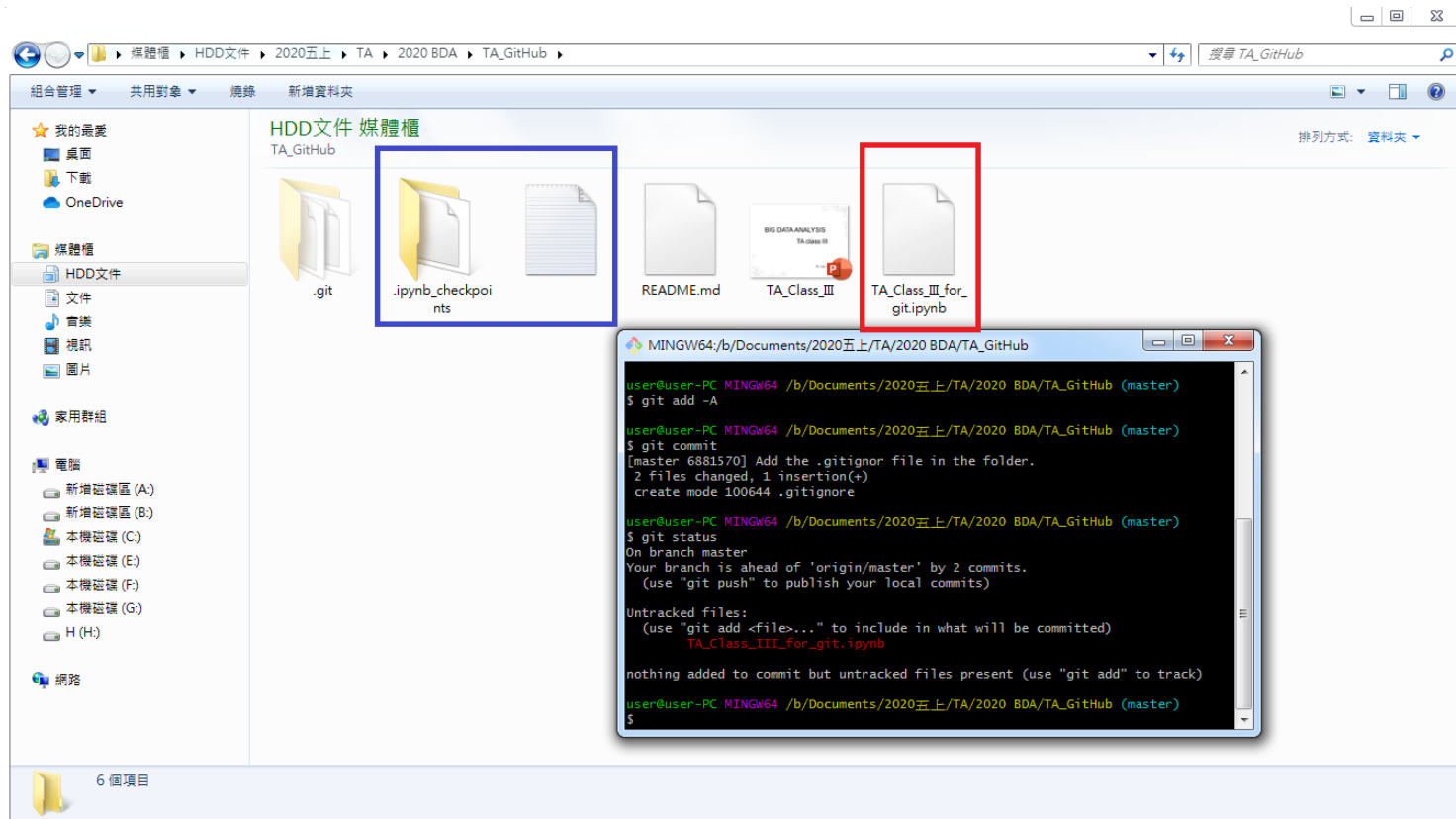
user@user-PC MINGW64 /b/Documents/2020五上/TA/2020 BDA/TA_GitHub (master)
$ git commit -m 'Modify the PPT'
[master 283eeeb] Modify the PPT
 1 file changed, 0 insertions(+), 0 deletions(-)

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

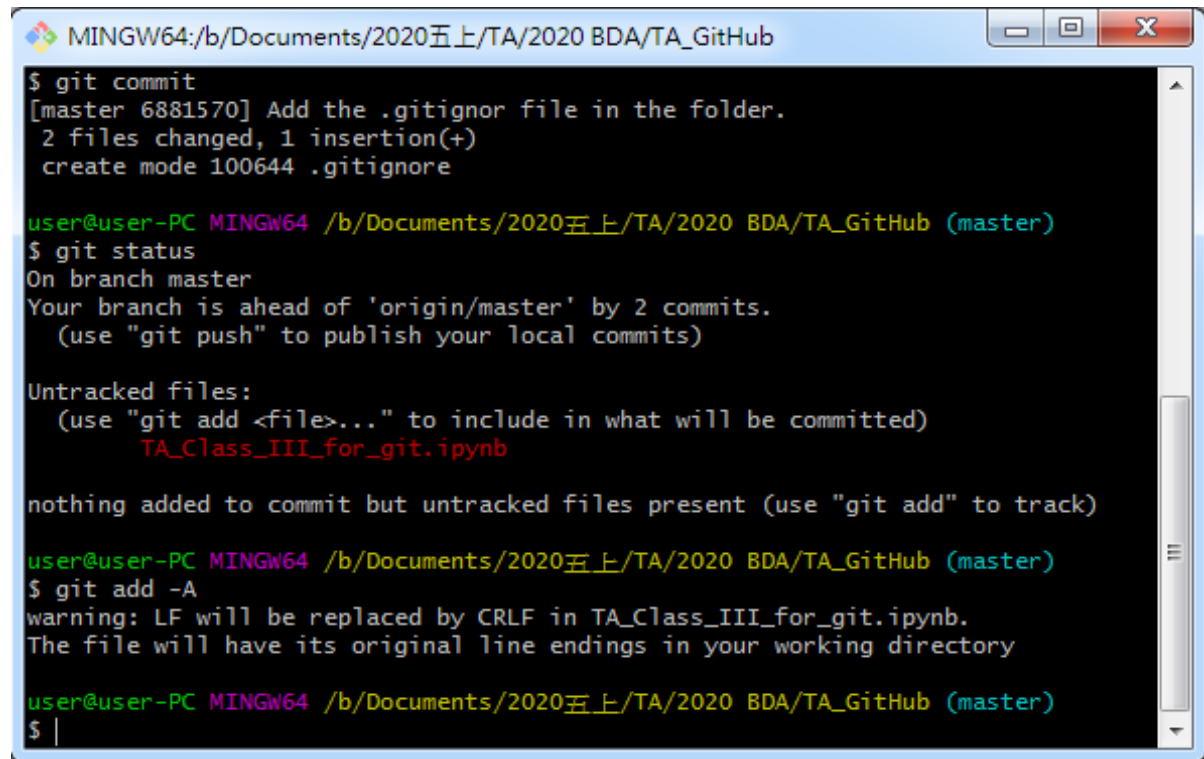
.gitignor



...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)

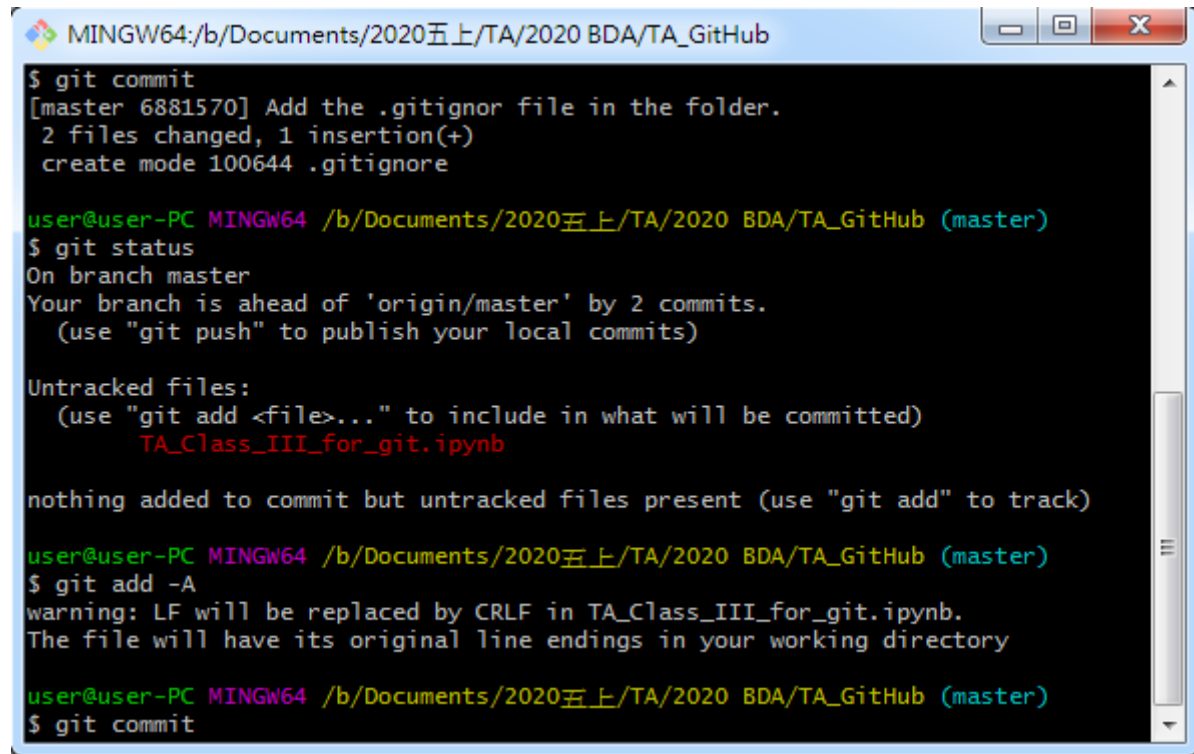
Untracked files:
  (use "git add <file>..." to include in what will be committed)
      TA_Class_III_for_git.ipynb

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 .gitignore 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
```

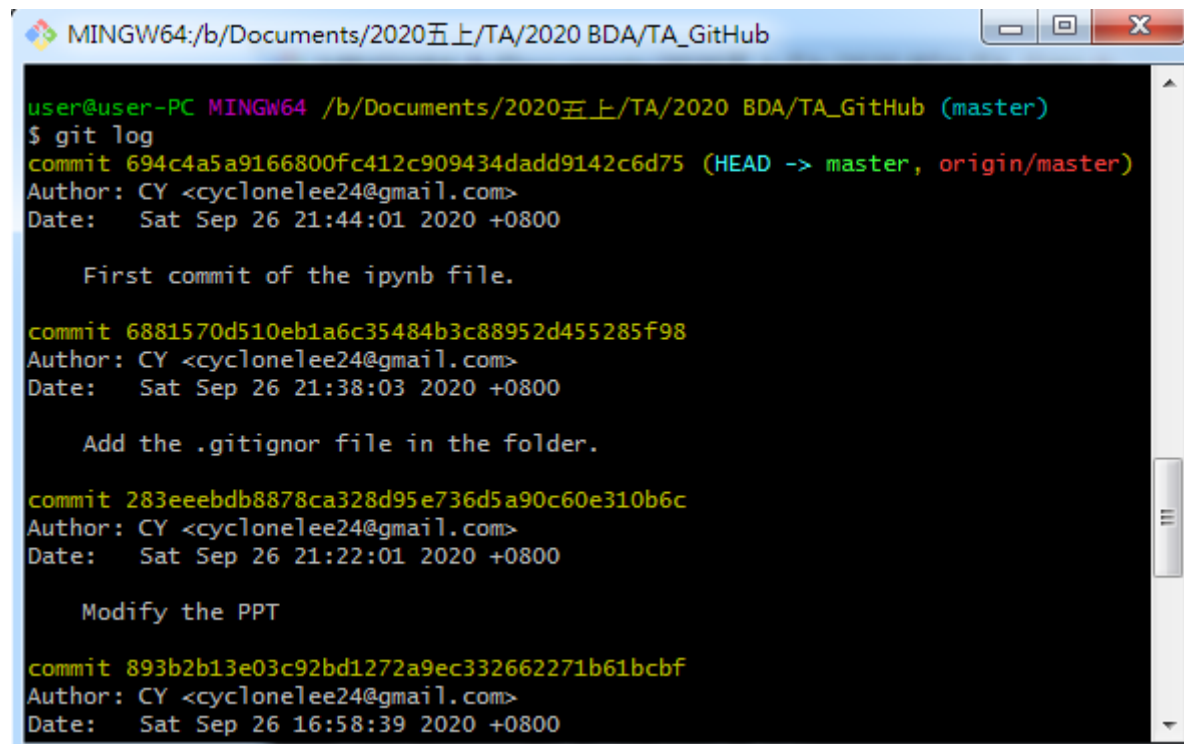



- vim

- press 'i'
- write your commit message
- press 'Esc'
- type ':wq'

[illegible]

- 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

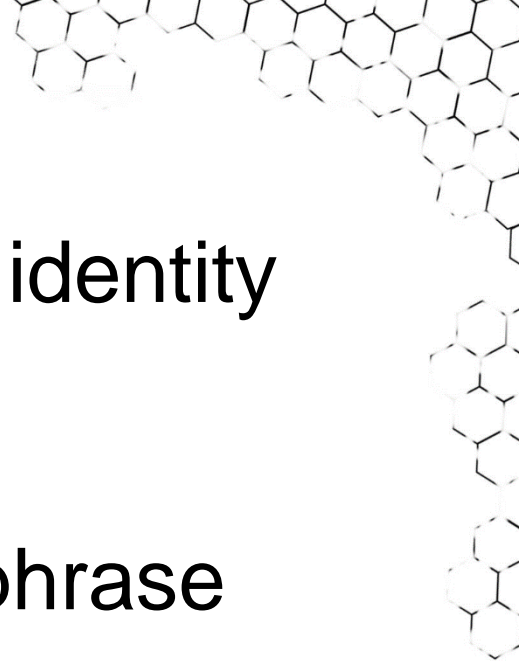
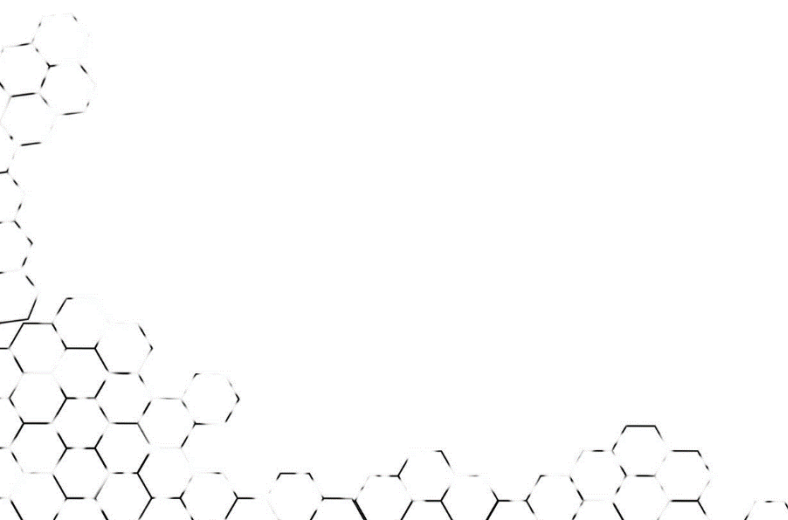
commit 893b2b13e03c92bd1272a9ec332662271b61bcbf
Author: CY <cyclonelee24@gmail.com>
Date: Sat Sep 26 16:58:39 2020 +0800
```

GitHub

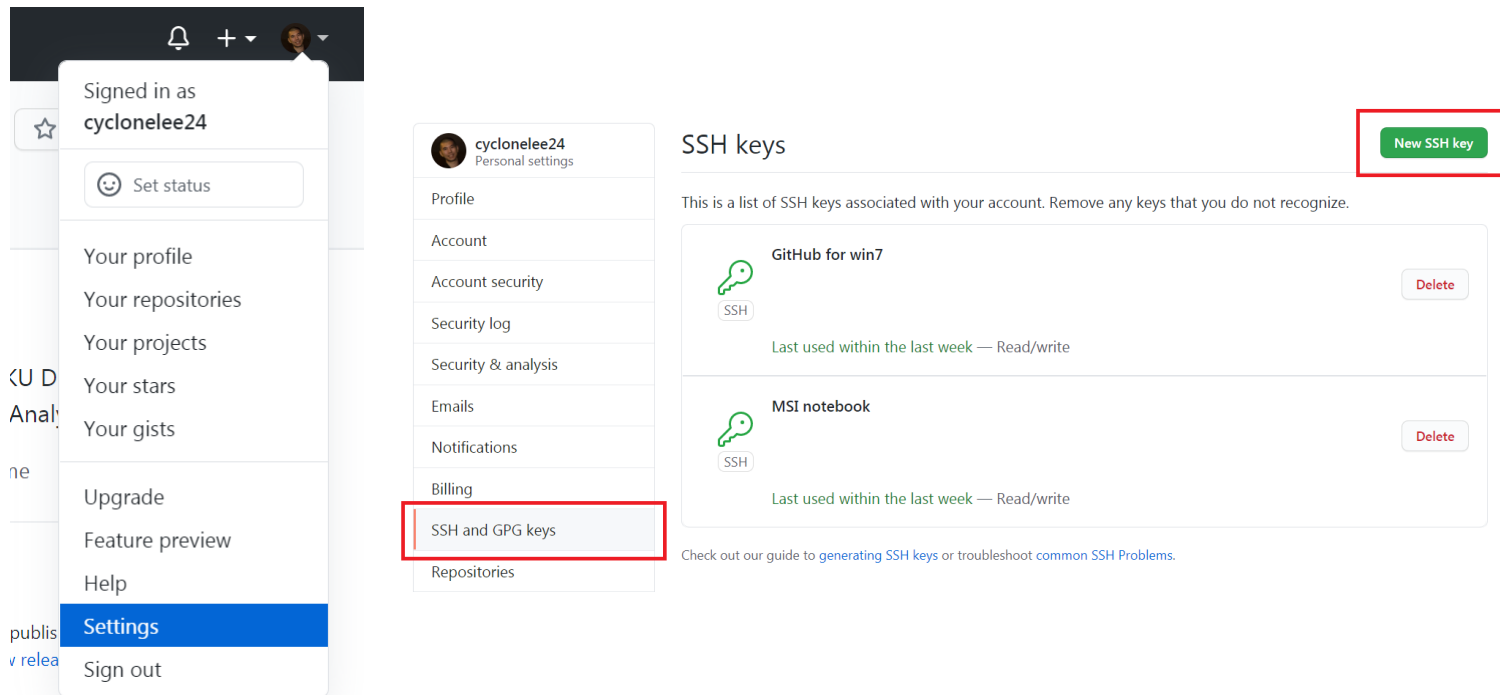


- A web-based Git repository hosting service.
- On top of Git's functions, it includes extra features.



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

- copy from ssh-rsa... to ...@gmail.com
(or to ...@pc-name)



- Identify yourself with id_rsa.pub to GitHub

[SSH keys](#) / Add new

Title

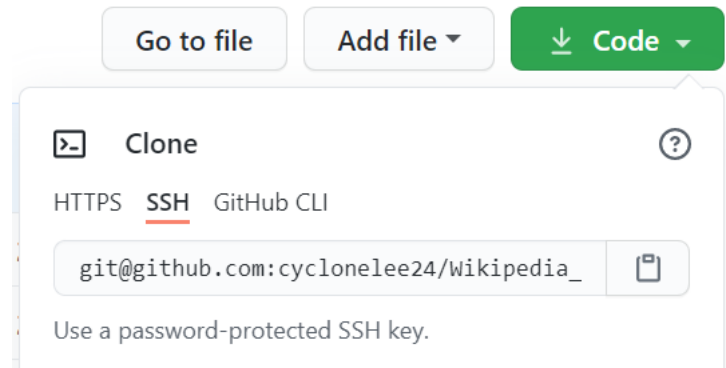
Key

Begins with 'ssh-rsa', 'ssh-ed25519', 'ecdsa-sha2-nistp256', 'ecdsa-sha2-nistp384', or 'ecdsa-sha2-nistp521'

Add SSH key

- 
- 
- Adding SSH key steps reference

- git clone



| 文件 > 2021_Spring > TA_2021 > | | | | 搜尋 TA_2021 |
|------------------------------|--------------------|-------|----|------------|
| 名稱 | 修改日期 | 類型 | 大小 | |
| HW_0 | 2021/2/22 下午 12:18 | 檔案資料夾 | | |
| Lecture_0 | 2021/2/22 下午 02:10 | 檔案資料夾 | | |
| TA_Git_GitHub | 2021/3/3 下午 04:58 | 檔案資料夾 | | |
| Wikipedia_Wikidata_Alignment | 2021/3/3 下午 05:09 | 檔案資料夾 | | |

```
MINGW64:/c/Users/cyclo/Documents/2021_Spring/TA_2021

cyclo@MSI MINGW64 ~/Documents/2021_Spring/TA_2021
$ git clone git@github.com:cyclonelee24/Wikipedia_Wikidata_Alignment.git
Cloning into 'Wikipedia_Wikidata_Alignment'...
remote: Enumerating objects: 52, done.
remote: Counting objects: 100% (52/52), done.
remote: Compressing objects: 100% (34/34), done.
remote: Total 52 (delta 25), reused 38 (delta 14), pack-reused 0
Receiving objects: 100% (52/52), 30.32 MiB | 2.27 MiB/s, done.
Resolving deltas: 100% (25/25), done.

cyclo@MSI MINGW64 ~/Documents/2021_Spring/TA_2021
$ |
```

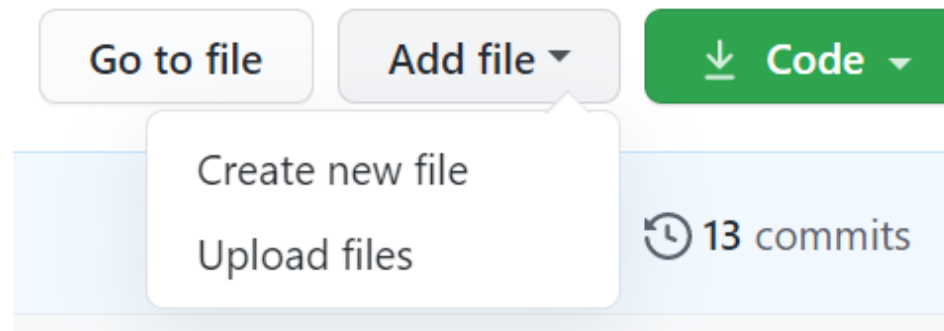
TA_2021 > Wikipedia_Wikidata_Alignment >



搜尋 Wikipedia_Wikidata_Alignment

| 名稱 | 修改日期 | 類型 | 大小 |
|--|-------------------|----------|-------|
| .git | 2021/3/3 下午 05:10 | 檔案資料夾 | |
| data | 2021/3/3 下午 05:10 | 檔案資料夾 | |
| .gitignore | 2021/3/3 下午 05:09 | 文字文件 | 1 KB |
| README.md | 2021/3/3 下午 05:09 | MD 檔案 | 1 KB |
| Wikidata_Coattention_NSMN.ipynb | 2021/3/3 下午 05:09 | IPYNB 檔案 | 46 KB |
| Wikidata_pretrained_BERT.ipynb | 2021/3/3 下午 05:09 | IPYNB 檔案 | 51 KB |
| Wikidata_pretrained_BERT_unlabel.ipynb | 2021/3/3 下午 05:09 | IPYNB 檔案 | 42 KB |

- other method to upload your homework





Drag files here to add them to your repository

Or [choose your files](#)



Commit changes

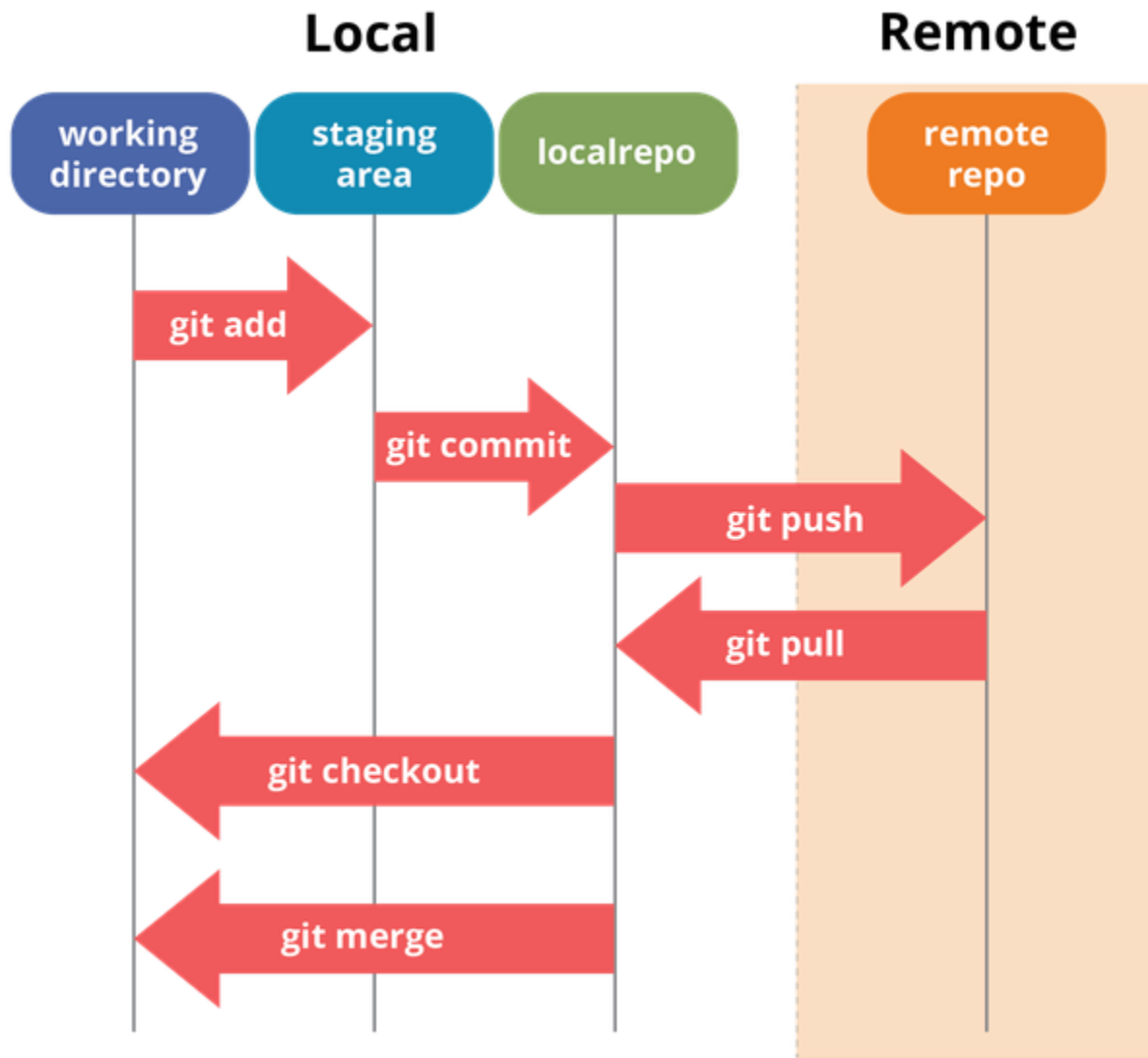
Add files via upload

Add an optional extended description...


- ☒ Commit directly to the `main` branch.
- ☐ Create a **new branch** for this commit and start a pull request. [Learn more about pull requests.](#)

Commit changes

Cancel



More questions ?


 **git** --local-branching-on-the-cheap


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