

Git Tutorial

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\$ whois author

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#「喵，借貓手掘頂，bug 會變少哦。」



\$ whatis git



\$ whatis git

Git

一種好用的版本控制工具

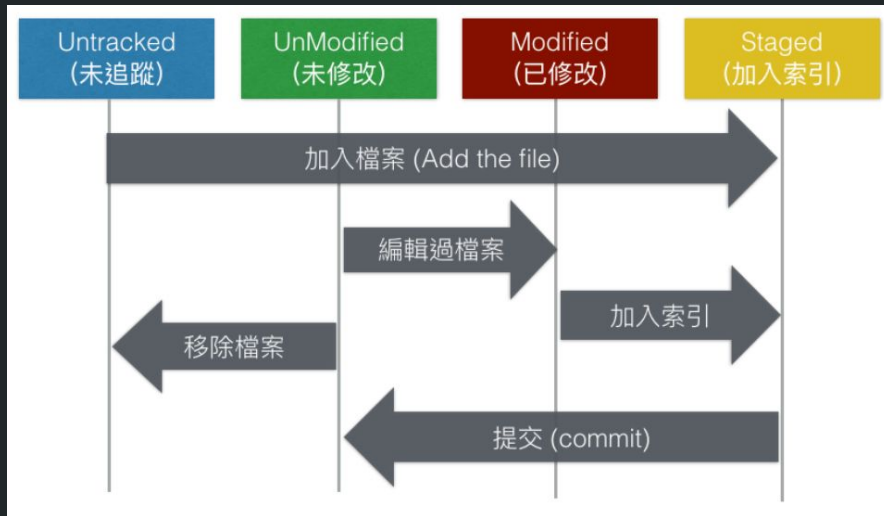
```
y2mk1ng@ubuntu:~$ whatis git
git (1)          - the stupid content tracker
Git (3pm)        - Perl interface to the Git version control system
```

\$ whatis git

Git:

Tracking the files and when they
update

Ref: <https://w3c.hexschool.com/git/3236f0ec>



```
$ sudo apt install git
```

Ubuntu 和 Debian 系列:度的 94這一行 ⬆

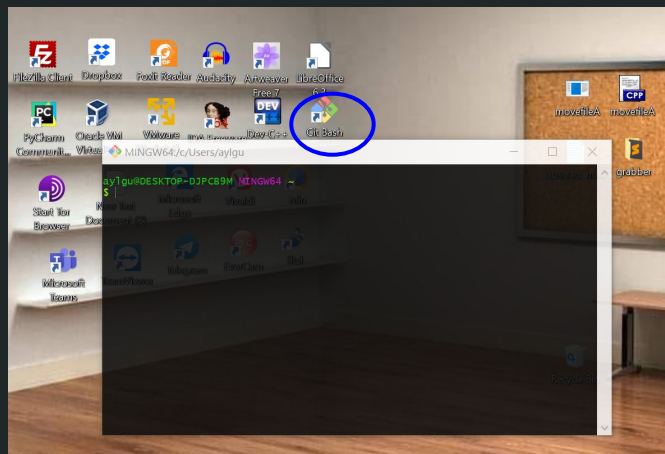
Windows: 先安裝 Git Bash

<https://git-scm.com/downloads>

或 Cmdr

<https://cmdr.net/>

```
y2mking@ubuntu: ~  
y2mking@ubuntu:~/Desktop$ cd ~  
y2mking@ubuntu:~$ sudo apt install git  
[sudo] password for y2mking:  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
git is already the newest version (1:2.25.1-1ubuntu3).  
The following package was automatically installed and is no longer required:  
  zlib1g-dev  
Use 'sudo apt autoremove' to remove it.  
0 upgraded, 0 newly installed, 0 to remove and 267 not upgraded.  
y2mking@ubuntu:~$
```




\$ git --help

Git 的使用方法

1. 建立一個資料夾
2. 如果你想要在網路上備份的話, 建立一個跟 1. 同名的 GitHub repo
- 3.

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

 Set up in Desktop or ☐ HTTPS ☐ SSH `https://github.com/y2mk1ng/Git-tutorial-bckp.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 "# Git-tutorial-bckp" >> README.md
git init
git add README.md or any files you want to add to this git
git commit -m "first commit"
git branch -M main
git remote add origin https://github.com/y2mk1ng/Git-tutorial-bckp.git
git push -u origin main
```

\$ git status

\$ git status [<options>...] [--] [<pathspec>...]

可以看到在一個資料夾中 git 的狀態

```
aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents
$ cd git-tutorial

aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents/git-tutorial (main)
$ git status
On branch main
Your branch is up to date with 'y2mk1ng/main'.

nothing to commit, working tree clean
```

```
aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents/git-tutorial (main)
$ git status
On branch main
Your branch is up to date with 'y2mk1ng/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")

aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents/git-tutorial (main)
$ git add README.md
warning: LF will be replaced by CRLF in README.md.
The file will have its original line endings in your working directory

aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents/git-tutorial (main)
$ git status
On branch main
Your branch is up to date with 'y2mk1ng/main'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   README.md

aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents/git-tutorial (main)
$ git commit -m "add content"
[main b3c2fe6] add content
1 file changed, 2 insertions(+)
```


\$ git add

\$ git add <file>

可以把檔案添加到 git 中

```
aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents
$ cd git-tutorial

aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents/git-tutorial (main)
$ git status
On branch main
Your branch is up to date with 'y2mk1ng/main'.

nothing to commit, working tree clean
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```
aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents/git-tutorial (main)
$ git status
On branch main
Your branch is up to date with 'y2mk1ng/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")

aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents/git-tutorial (main)
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aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents/git-tutorial (main)
$ git status
On branch main
Your branch is up to date with 'y2mk1ng/main'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   README.md

aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents/git-tutorial (main)
$ git commit -m "add content"
[main b3c2fe6] add content
1 file changed, 2 insertions(+)
```

\$ git fetch && git merge

```
$ git fetch
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (5/5), done.
remote: Total 5 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (5/5), done.
From https://github.com/CCLoLab/git-tutorial
   c792ee0..0ae35b2  main          -> y2mk1ng/main
   * [new branch]    add-license-1 -> y2mk1ng/add-license-1
```

\$ git fetch: 把遠端的 git 和本地的 git 比較後, 把本地沒有的下載下來

\$ git merge: 把兩個 branch 融合

\$ git pull && git push

如果

\$ git push -u XXX XXXX

跳出了錯誤訊息

!**[rejected]** main -> main (fetch first)

怎麼辦呢？

```
aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents/git-tutorial (main)
$ git pull --rebase
First, rewinding head to replay your work on top of it...
Applying: add content

aylgu@DESKTOP-DJPCB9M MINGW64 ~/Documents/git-tutorial (main)
$ git push -u y2mk1ng main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 347 bytes | 347.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/CCLoLab/git-tutorial.git
   0ae35b2..cb1866f  main -> main
Branch 'main' set up to track remote branch 'main' from 'y2mk1ng'.
```

\$ git pull == \$ git fetch + \$ git merge

\$ git pull -- rebase: 把 git 資料庫更新程目前狀態

\$ git remote || git clone

有了 GitHub repo 後可以做的事！

Git remote: 用在跟 GitHub repo 連結時

```
$ git remote add y2mk1ng  
https://github.com/CCLoLab/git-tutorial.git
```

Git clone: 用在下載 GitHub 上的 repo 時

```
$ git clone https://github.com/CCLoLab/git-tutorial.git
```

\$./practice.out

練習: 請用 git command 在實驗室的 git-tutorial repo 上

(1) 新增一個文字檔 && (2) 在 README.md 的亂聊區寫一句話

Repo 網址: <https://github.com/CCLoLab/git-tutorial.git>

Hint: 第一步:

```
$ git clone https://github.com/CCLoLab/git-tutorial.git
```