Lab 01 How to Survive & Introduction to Git

Software Studio DataLab, CS, NTHU

Notice

- These slides will focus on how to submit you code by using Git command line
- You can also use other Git GUI tool or built-in Git tool in other IDE/editor

Teaching Assistants



Yu-Hsuan Chen 陳佑軒



Sheng-Ya Chiu 邱聖雅



Zhao-Jie Chen 陳昭潔

How to Find Us?

- Office Hour (TAs)
 - Tue. 10:10am-12:00pm at Delta 729
- Email
 - Yu-Hsuan Chen: yhch@datalab.cs.nthu.edu.tw
 - Sheng-Ya Chiu: sych@datalab.cs.nthu.edu.tw
 - Zhao-Jie Chen: zjchen@datalab.cs.nthu.edu.tw
- Online Forum
 - eeclass



If I have Question?

- Always Google first!
 - Learn how to google is important.
- If you try your best but still can't catch it.
 - Feel free to ask us on eeclass or office hour.

Outline

- General Rule
- Introduction to Git
 - Version control
 - Git Basics
 - Try Git!
 - Remote Repositories
- How to Submit Your Code to Gitlab
- Tools & References

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The Policy of Labs

- All labs need to be submitted to GitLab.
- Late submission will not be accepted.
- Plagiarism will not be tolerated.
 - If we find you copy someone's code, you will get
 0 point for that lab.
- Grading
 - Submission before lab ends gets 100% score
 - Submission before 11:59pm gets 60% score

Grading Example

- 4 problems, 25% each
- Solved 4 during the lab
 - 100
- Solved 3 during the lab, 1 before 11:59pm
 - -75 + 25*0.6 = 90
- Solved 4 after the lab, before 11:59pm
 - -100*0.6=60

Team Up

- 3~6 people each team
 - 3 people is accepted if you can do as well as others.
- Please register your team here before 3/7 23:59
 - Register form : Teaming
 - After that day we will match the rest student.

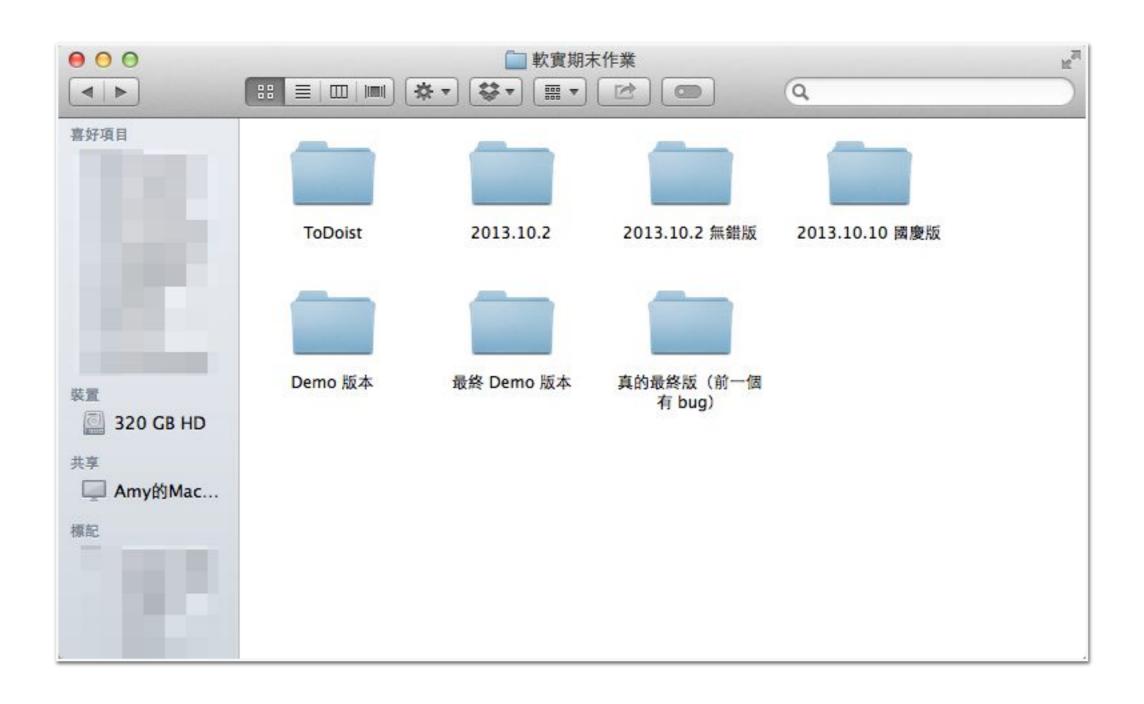
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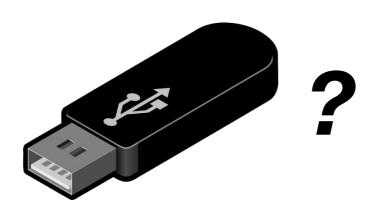
Why use version control?

We want to track what we did and when we did it.

Students' VCS

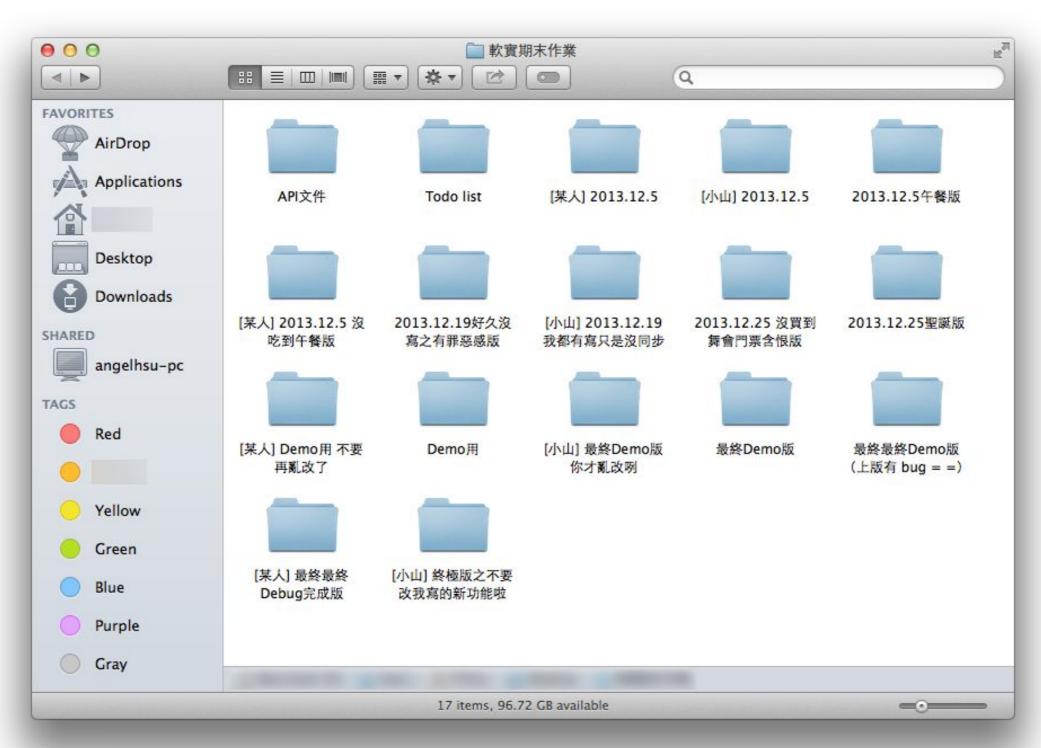


How to work with others?





Dropbox VCS in Reality



Why use VCS?

- Managing your projects tracking your files and modifications.
- Synchronization between modifications made by different developers.
- Revision history is still very helpful even if you work alone.

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Git



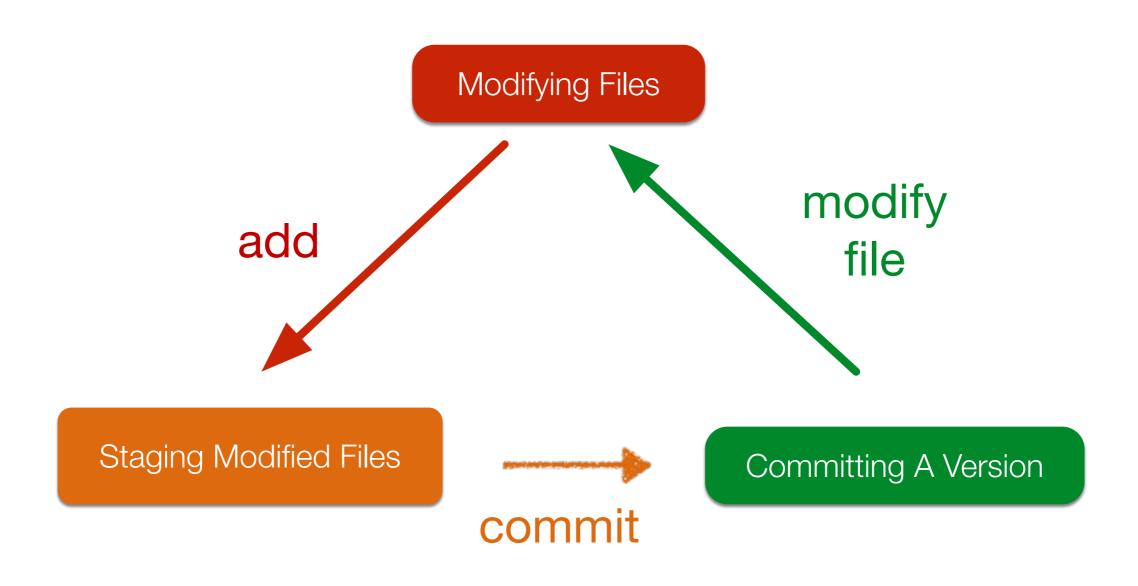
Git

- Git is a popular version control system which is
 - Fast
 - Easy to use
 - Distributed
- A git repository is a mini database that tracks your files.

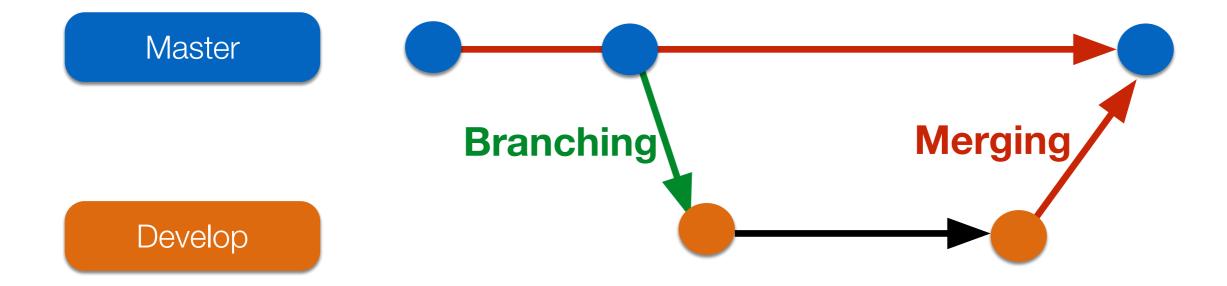
Git Workflow (1/2)

- With a local repository in your computer, you'll need following operations to make git track your work:
 - 1. Create/modify files
 - Let git monitor the files by adding them to staging files.
 - 3. Commit your changes to and git will create snapshots (versions) of the files for you.

Git Workflow (2/2)



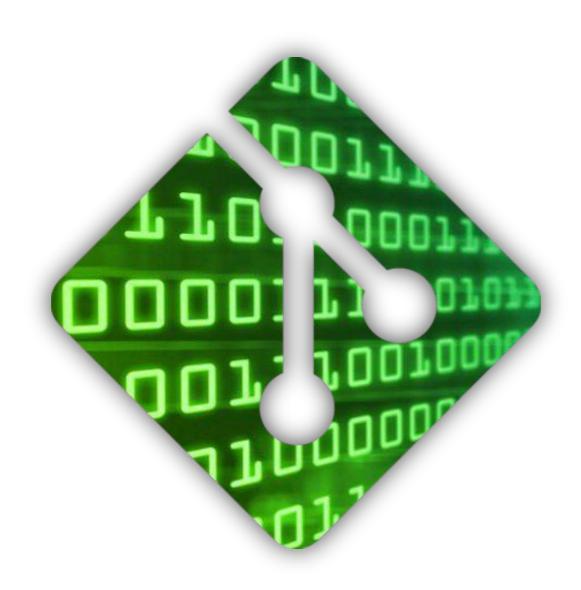
Git Branch



Outline

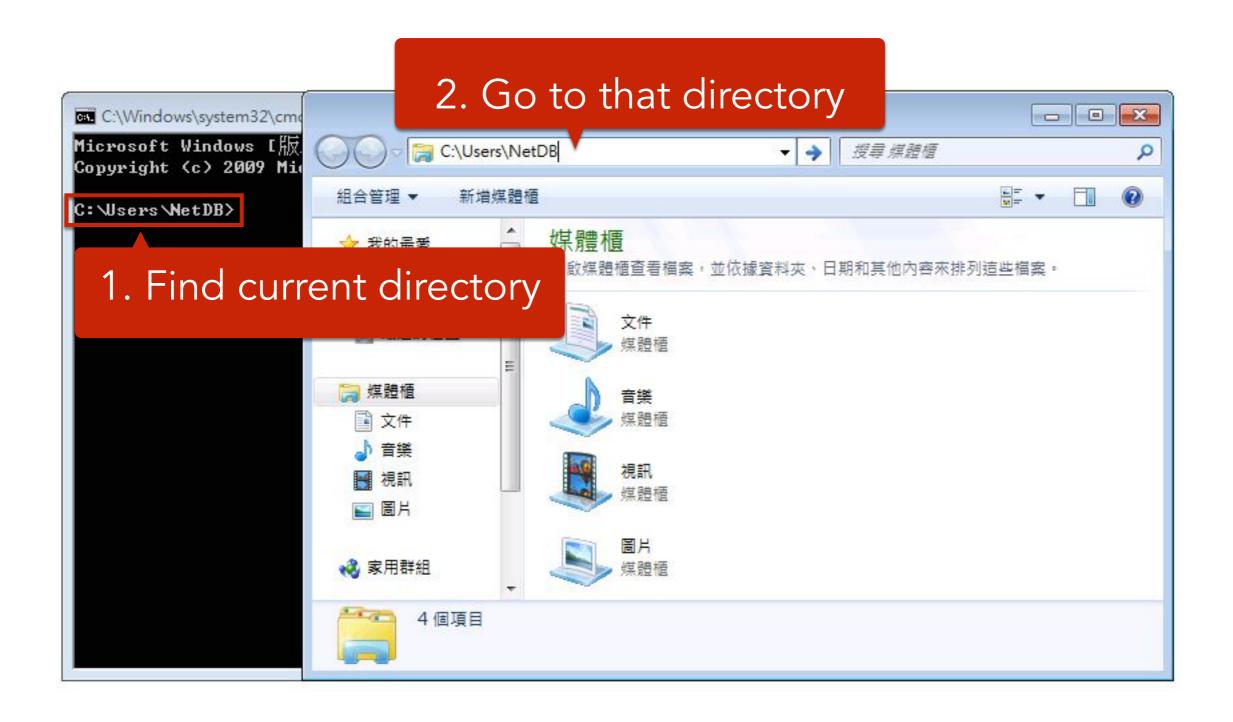
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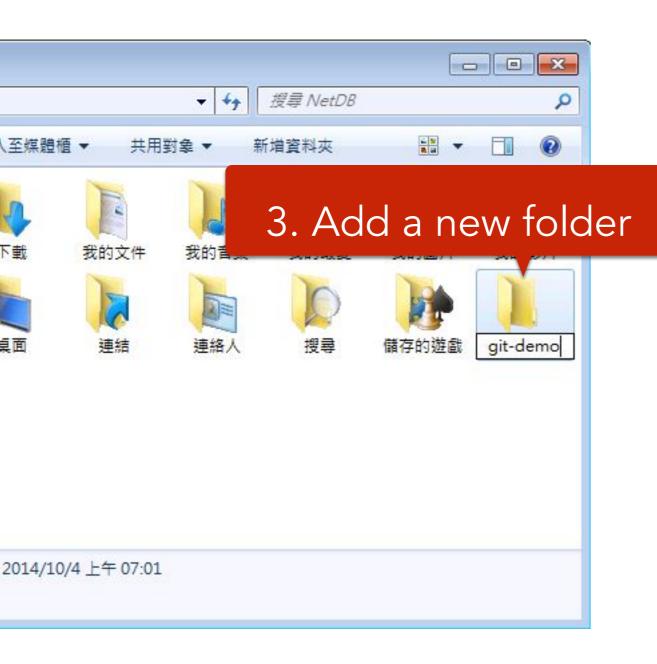
Be Professional

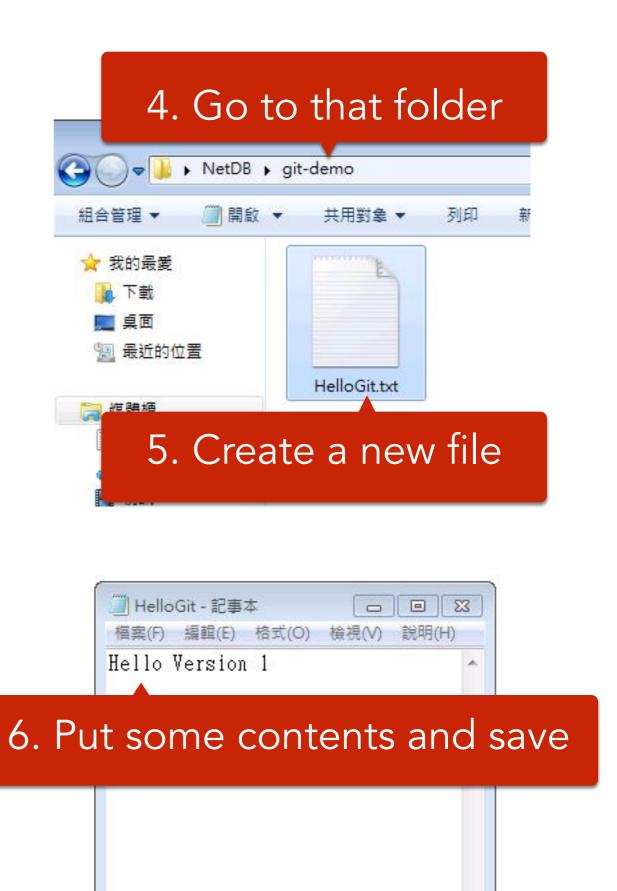


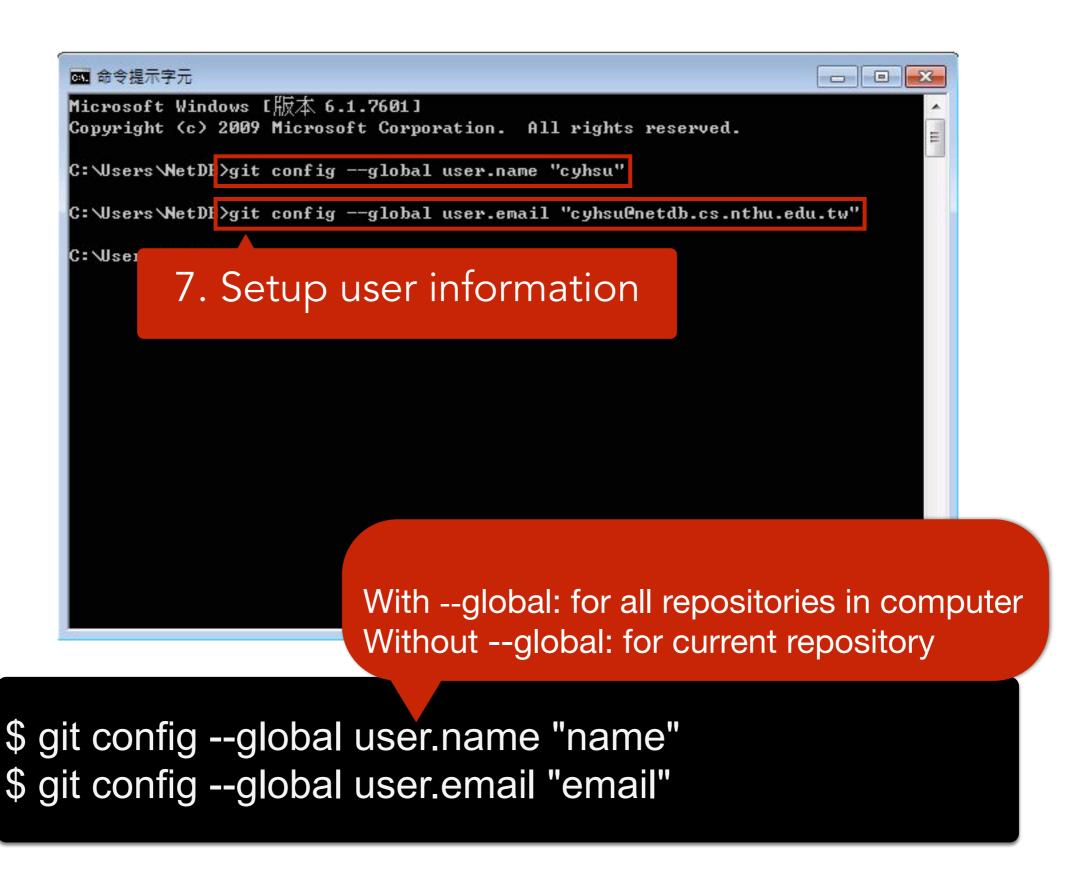
Basic Git Commands

- git init
 - Initialize a repository at current directory.
- git add [file_name]
 - Add files to git repository and let git track them.
- git commit -m "commit messages"
 - · Save the changes to the git repository and create snapshots of the files.
- git checkout [version]
 - · Go to a specific version.









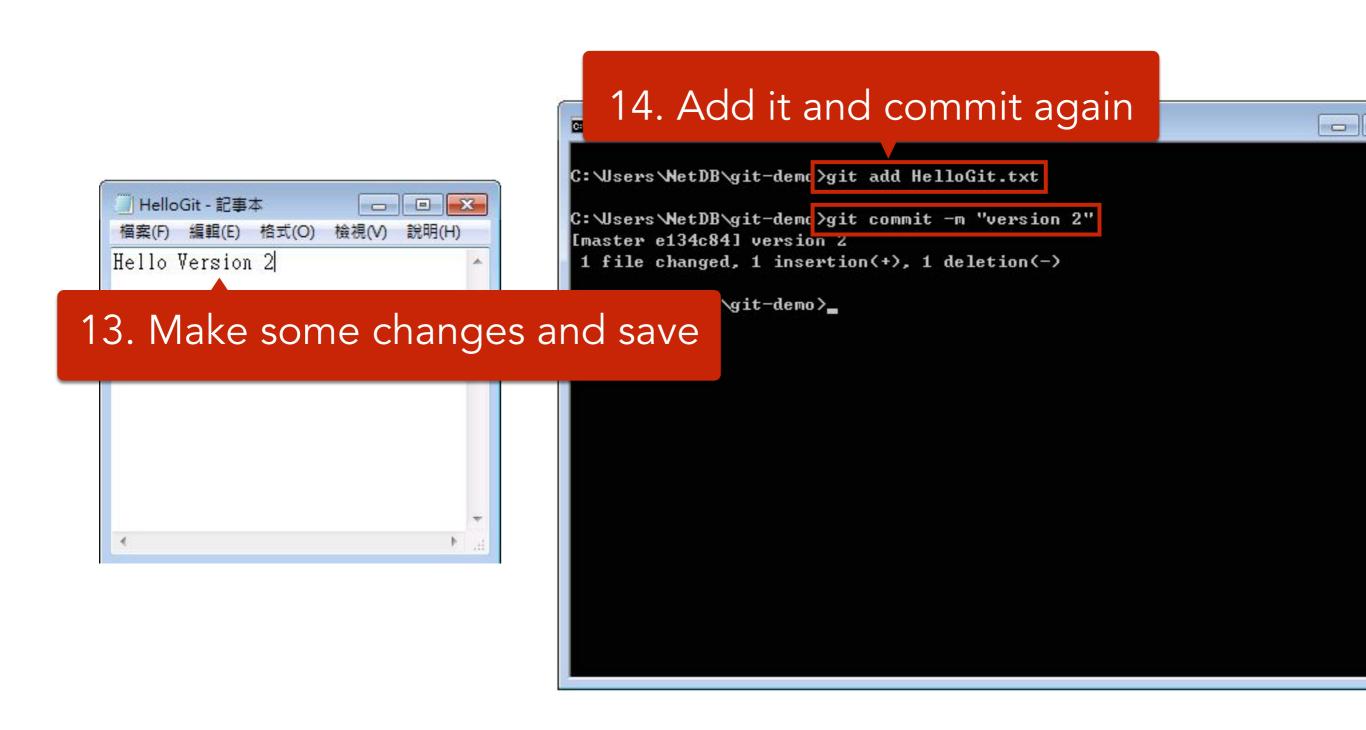
```
- - X
              命令提示字元
              Microsoft Windows [版本 6.1.7601]
              Copyright (c) 2009 Microsoft Corporation. All rights reserved.
                                                     'cyhsu"
              C: Wsers
                     8. Go to "git-demo"
              C: Wser:
                                                      "cyhsu@netdb.cs.nthu.edu.tw"
              C:\Users\NetDF>cd git-demo
                                       9. Show the files in "git-demo"
              C:\Users\MetDB\git-dema\dir
               磁碟區 C 中的磁碟是 WIN7
               磁碟區字號: 187B-C5C9
               C: Wsers WetDB\git-demo 的目錄
              2014/10/04 上午 07:17 (DIR)
                                               15 HelloGit.txt
10. Initialize a Git repository
              C:\Users\NetDB\git-dema\git init
              Initialized empty Git repository in C:/Users/NetDB/git-demo/.git/
              C:\Users\MetDB\git-demo>_
```

```
$ cd git-demo # go to git-demo directory
$ dir # list the files
$ git init # initialize a repository
```

```
命令提示字元
C:\Users\NetDB>cd git-demo
C:\Users\NetDB\git-demo>dir
 磁碟區 C 中的磁碟是 WIN7
 磁碟區字號: 187B-C5C9
C: Wsers WetDB git-demo 的目錄
         上午 07:17
2014/10/04
                      <DIR>
         上午 07:17
2014/10/04
                      <DIR>
2014/10/04
         上午 07:16
                                 15 HelloGit.txt
           11. Add HelloGit.txt to staging files
C: Wsers V
Initializa
C:\Users\MetDB\git-demo>git add HelloGit.txt
C:\Users\NetDB\git-dema\git commit -m "version 1"
[master (root-commit) b302d9c1 version 1
1 file changed, 1 insertion(+)
                                      12. Commit your changes
create mode 100644 HelloGit.txt
C:\Users\MetDB\git-demo}_
```

Add HelloGit.txt to staging files
\$ git add HelloGit.txt

Commit the changes to the repository
where "version 1" is the commit message
\$ git commit -m "version 1"



15. View your versions 命令提示字元 C:\Users\MetDB\git-dema\git log commit e134c845df593f1451c4e9e6c874ddef6df42a76 Author: cyhsu <cyhsu@netdb.cs.nthu.edu.tw> Date: Sat Oct 4 08:09:55 2014 +0800 Version version 2 ommit 39aecfd6820087eda71aa39e8e9855d7fcbfd325 Author: cyhsu <cyhsu@netdb.cs.nthu.edu.tw> Date: Sat Oct 4 08:09:16 2014 +0800 version 1 Commit messages

Show the versions you've created so far \$ git log

```
命令提示字元
                                                       C:\Users\NetDB\git-demc\git checkout 39aecfd6820087eda71aa39e8e9855d7fcbfd325_
                   16. Go to a specific version
```

Go to a specific version \$ git checkout {version_id}

LIFE IS TOO SHORT TO TYPE THAT VERSION ID

which is 40 characters long...

Version ID <

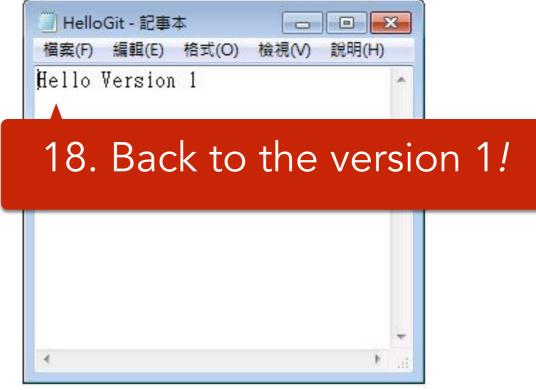
```
命令提示字元
                                                      - - X
C:\Users\MetDB\git-demc\git log --oneline
134c84 version 2
39aecfd version 1
                   15. Show versions with short version ID
C:\Users\MetDB\git-demo
                                                 56%
                                              shorter!
```

Show versions with short version id \$ git log --oneline

```
命令提示字元
C:\Users\MetDB\git-demc>git checkout 39aecfd_
                 16. Go to a specific version
```

```
# Go to a specific version.
# In fact, you only need to type
# the first 5 characters.
$ git checkout {short_version_id}
```





Try yourself (1/2)

- Branching steps
 - Creating a new branch

```
git branch [branch name]
```

Checking out the branch

```
git checkout [branch name]
```

Try yourself (2/2)

- Merging steps
 - Checking out a branch to merge

```
git checkout [branch 1 name]
```

Merging another branch

```
git merge [branch 2 name]
```

Today's exercise (1/2)

- Install Git command line tool in your computer.
 - Follow appendix A.
- Follow above steps.

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Collaboration

- To work with others using git, you'll need a server that store the repository.
- Git is distributed, which means
 - Everyone can store a copy of the repository downloaded from the server to their computer and do their jobs independently.

- If you don't have the project, clone (download) the repository from the server.
- 2. Do your work and commit the changes at local. Once done, *push* (upload) the repository to the server.
- 3. If someone else modified the project, you can *pull* (sync) the repository to get the updated project.
- 4. Repeat 2 and 3.









Commit



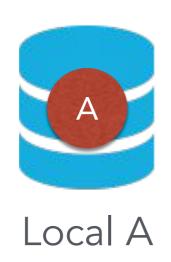






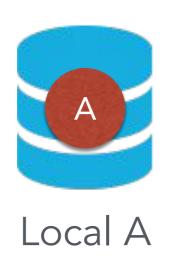














Why Authentication Failed?

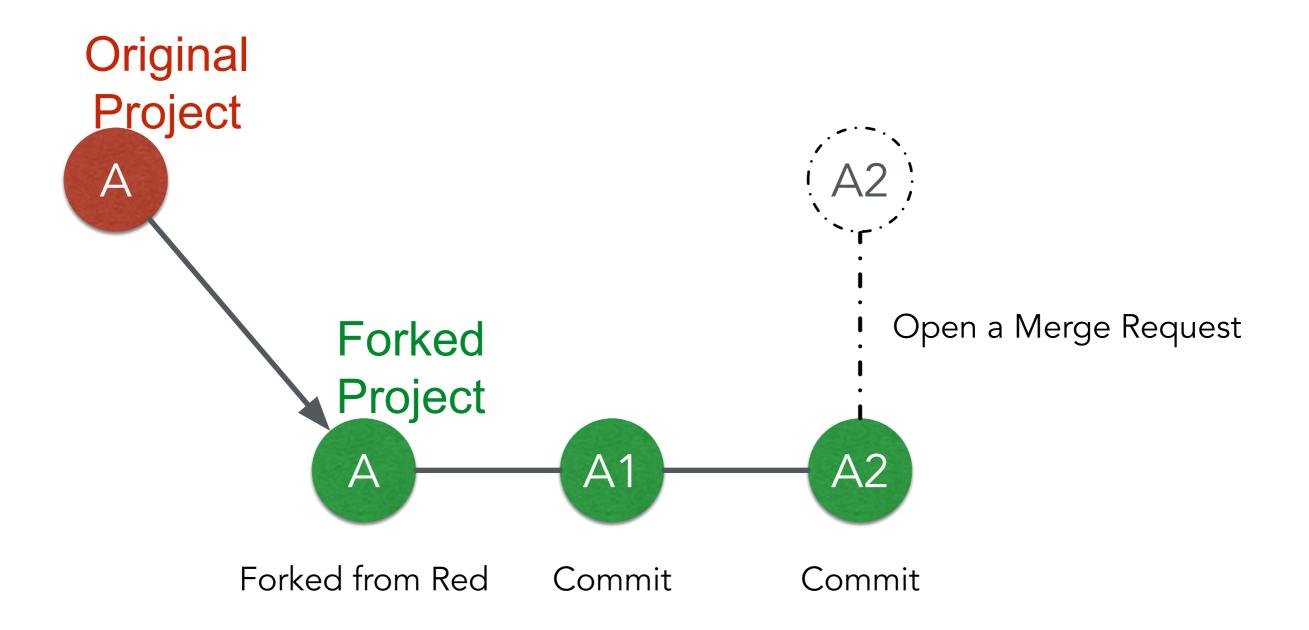
Collaboration Workflow

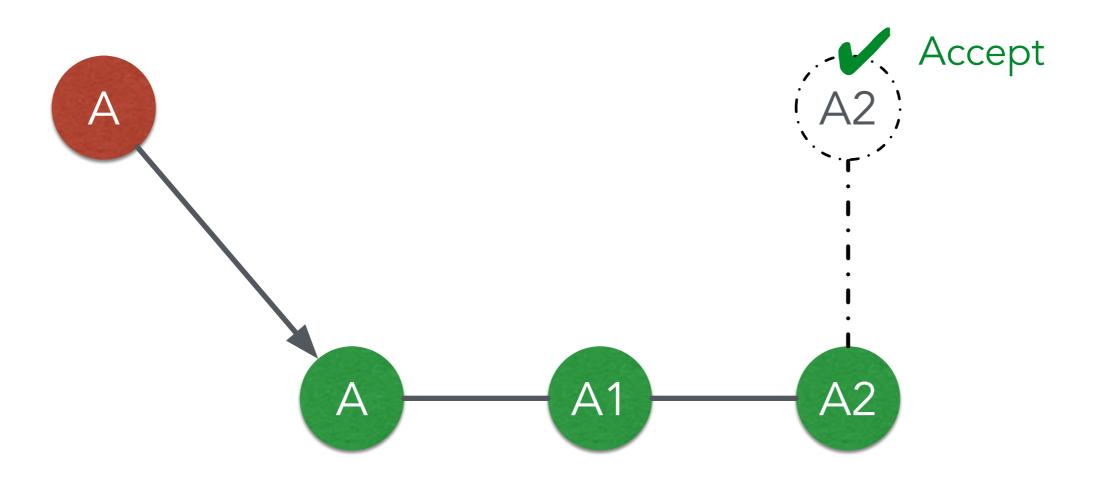
- If you tried to clone the code template from a server and want to push the modified file.
 - You will get authentication failed.
 - It's because it was a project of others, which means you are not able to save the changes back to the server.
- So, how can I copy a project from others on a open source platform like Github?

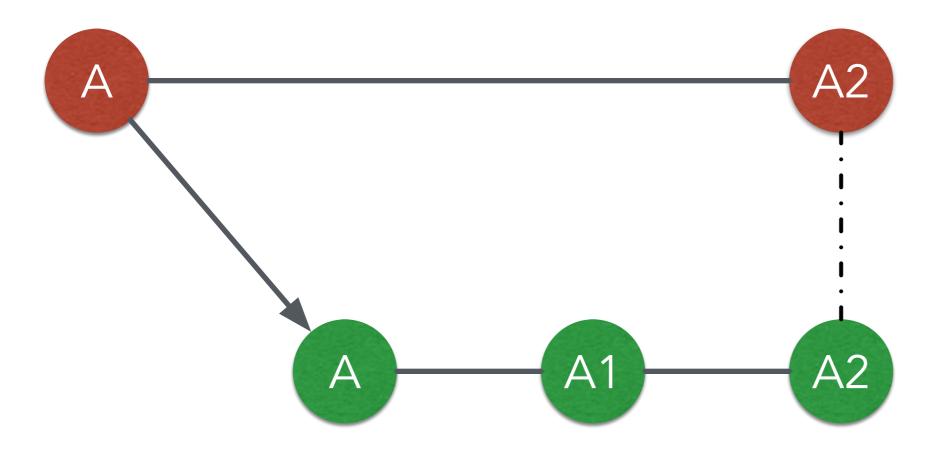
Introducing

Fork

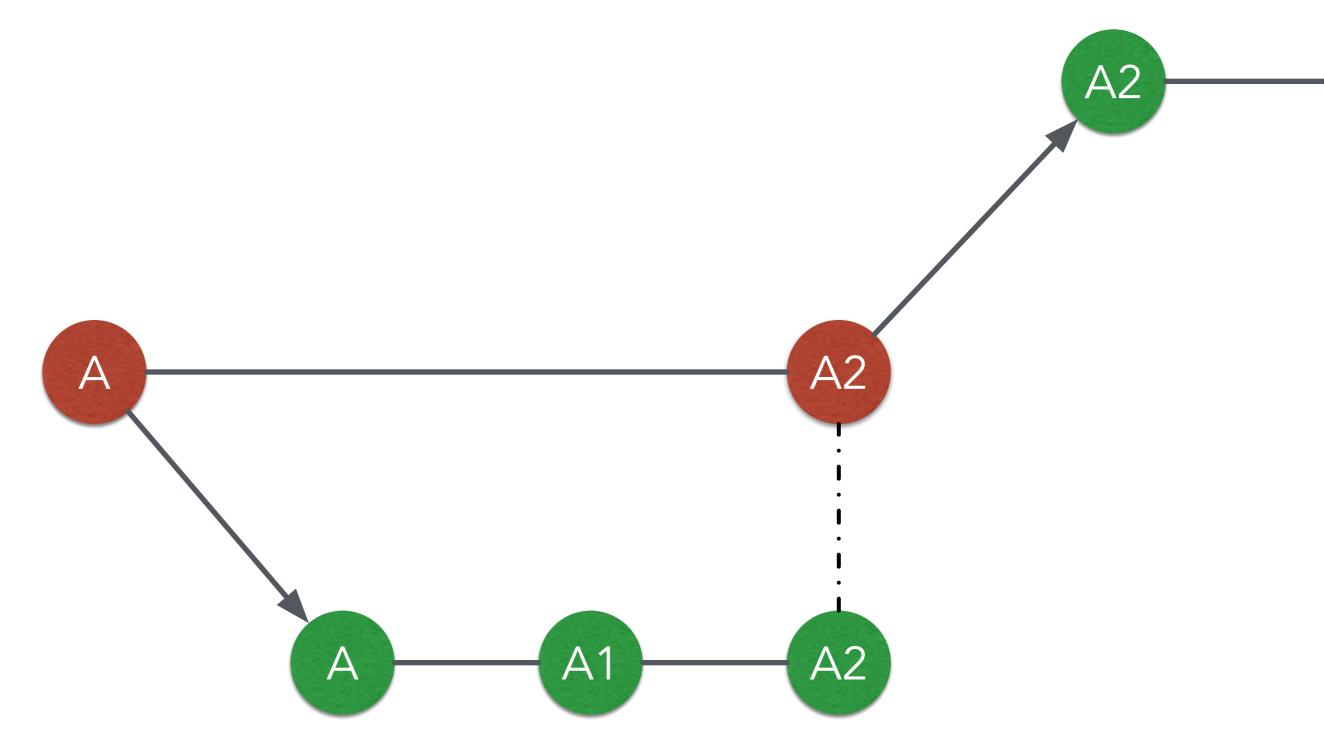








Forked from Red A2



Git Collaboration Workflow

- 1. Fork a repository to make a copy of it.
- Clone the repository you forked to your workspace.
- Do your work and commit the changes in your workspace.
- 4. Push the repository to the server to synchronize them.
- 5. Open a *merge request* to origin repository.

Basic Git Commands (2/2)

- git clone [url]
 - Clone a repository from remote server
- git push [url] [branch-name]
 - Push committed file to remote server

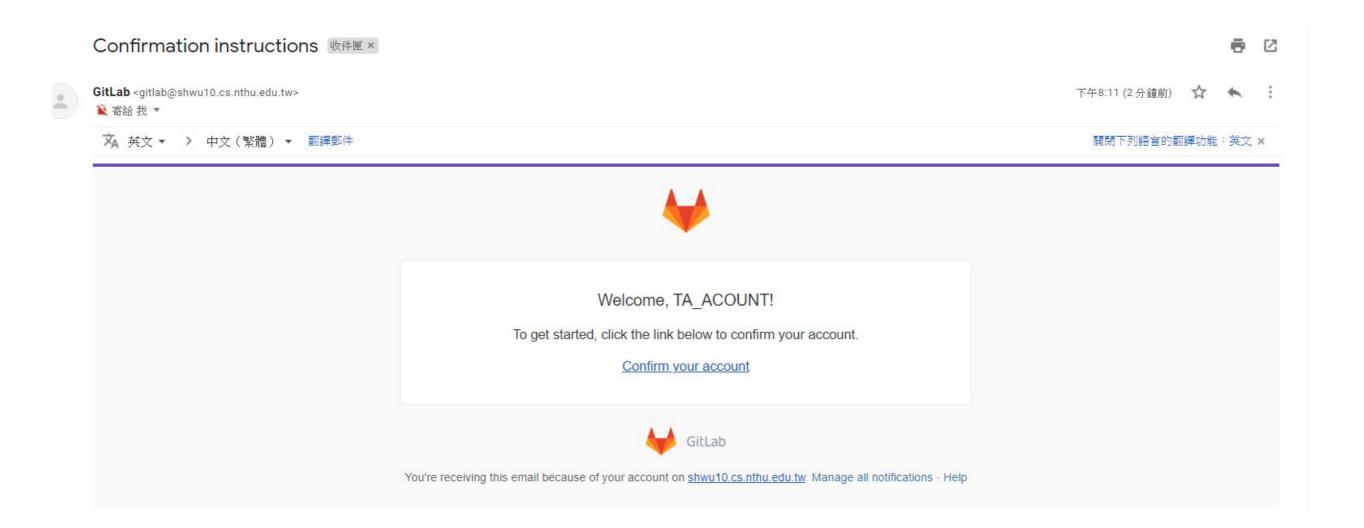
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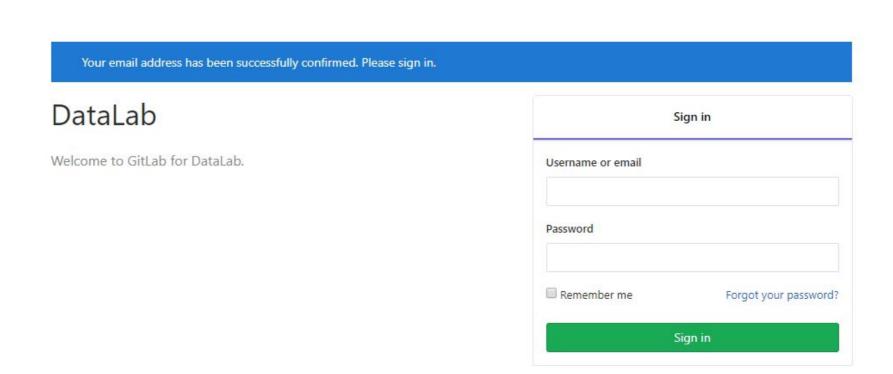


- We have created account for you
- Account: student ID (e.g. 106012345)
- Password: student ID (e.g. 106012345)









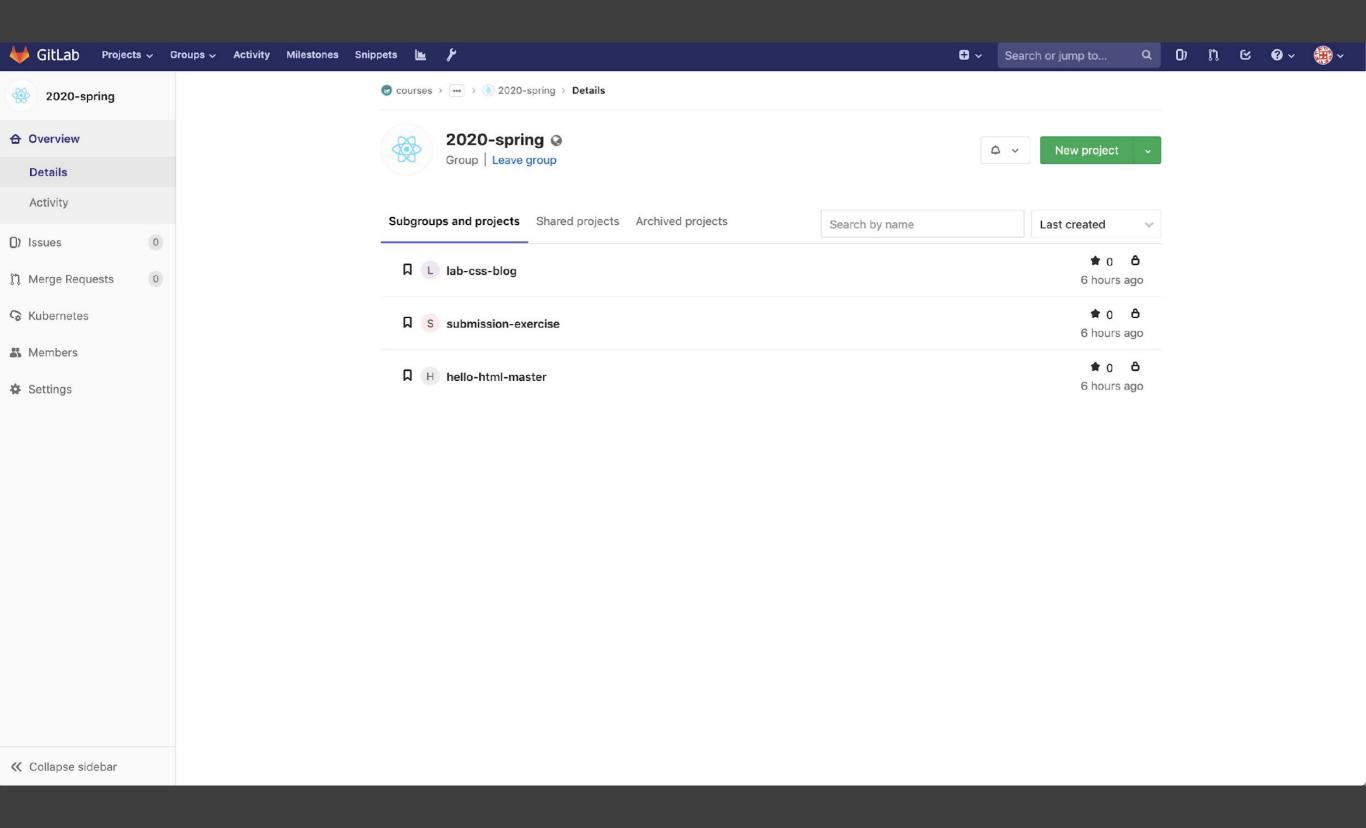
Workflow

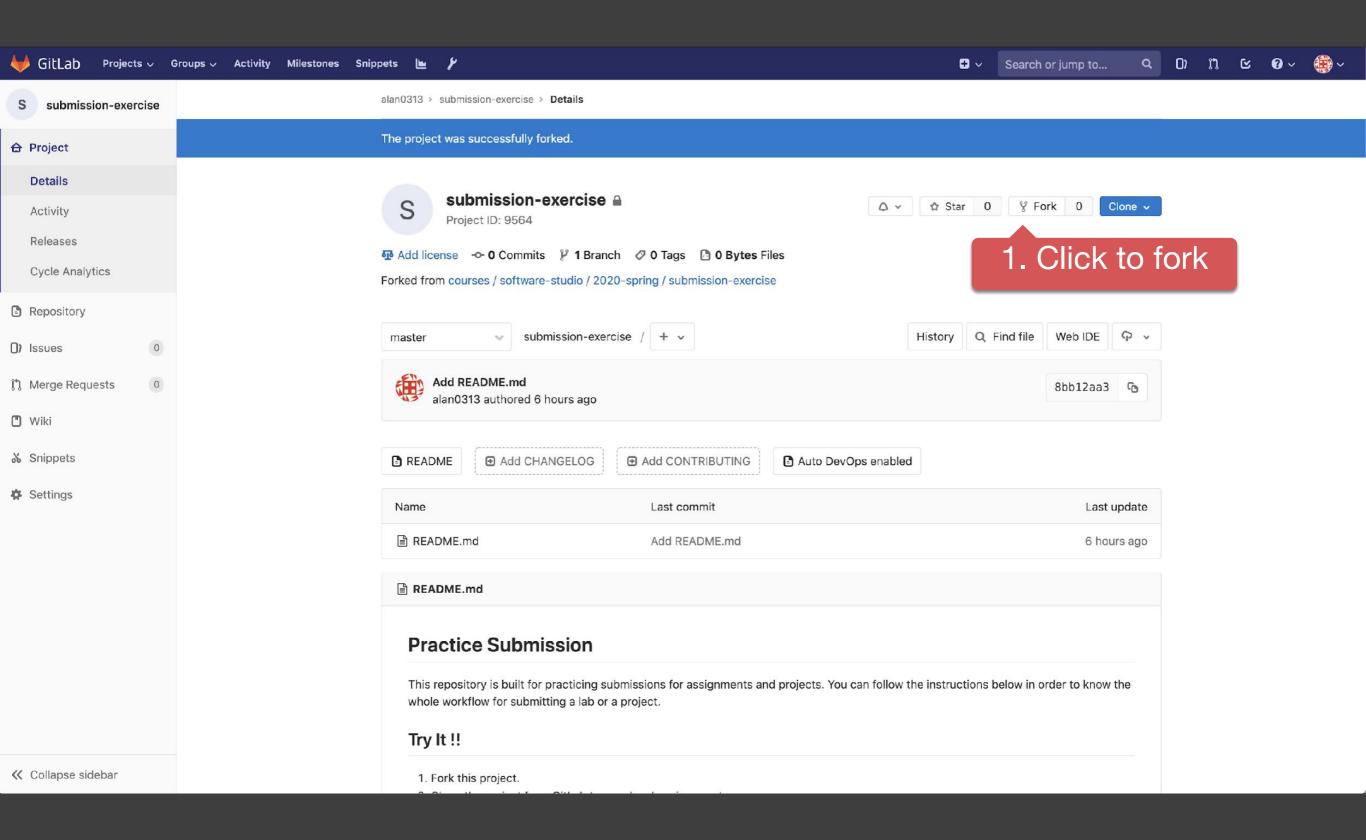
- For each lab, you should follow the workflow below
 - Fork our template repository on Gitlab
 - 2. Clone the **forked** repository to your computer
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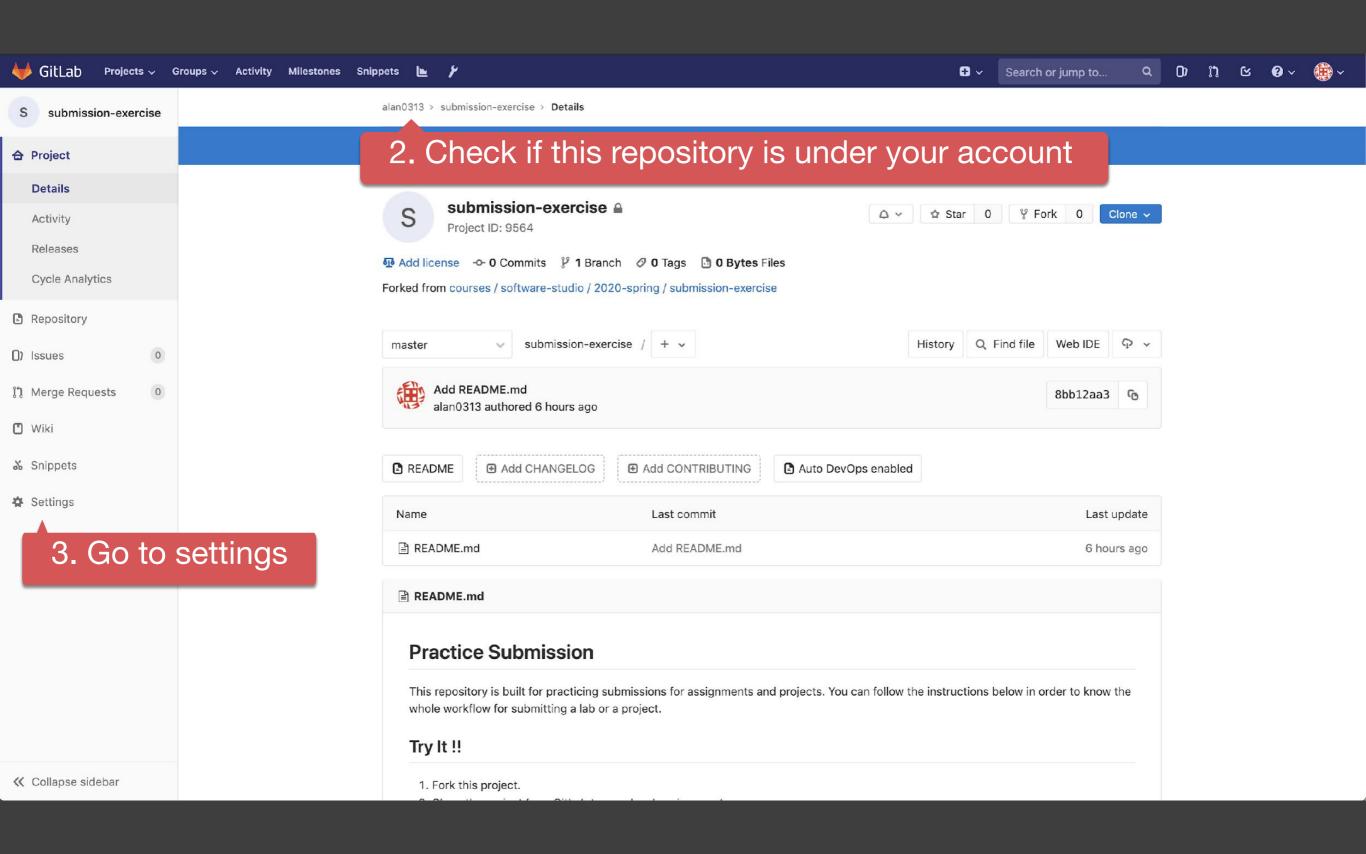
Workflow

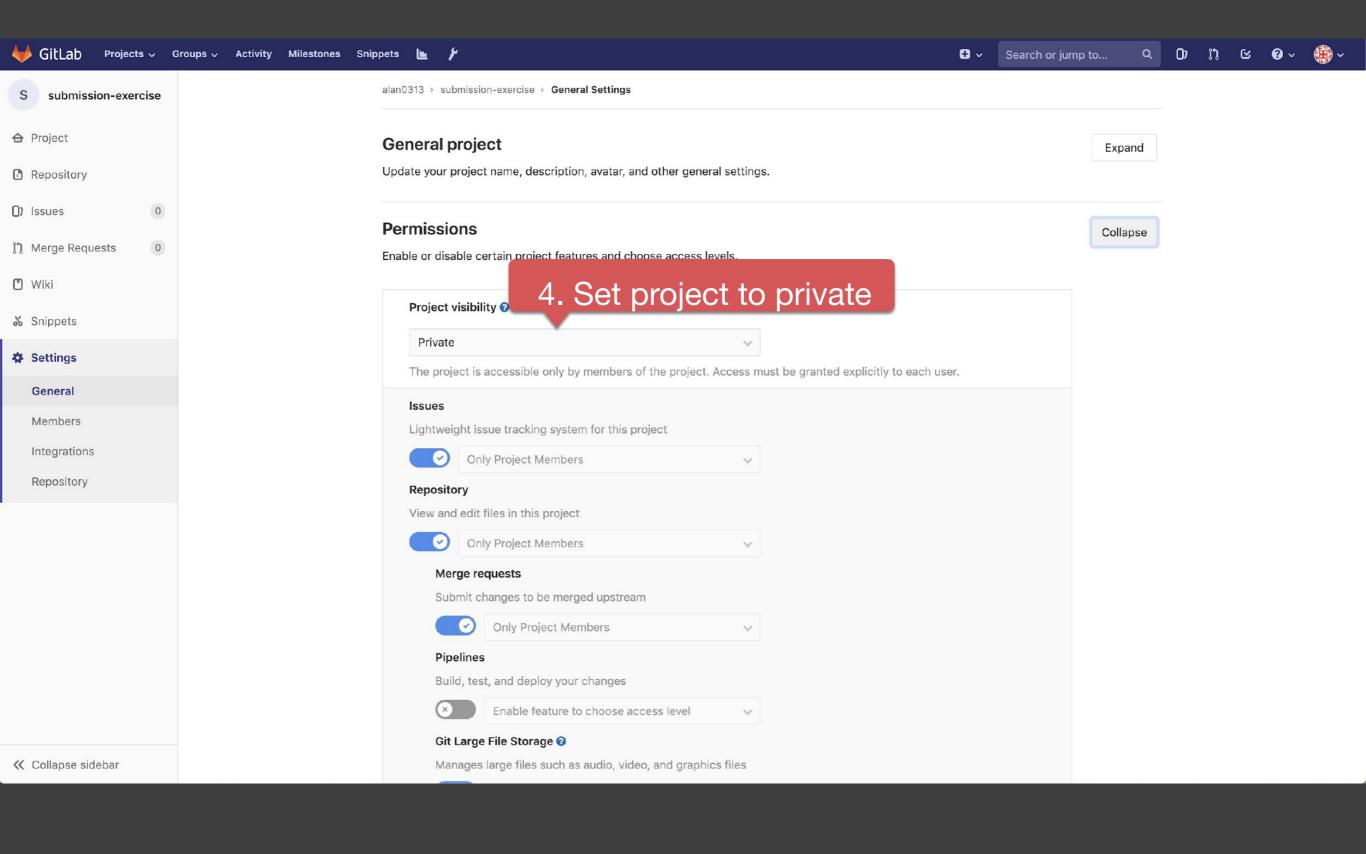
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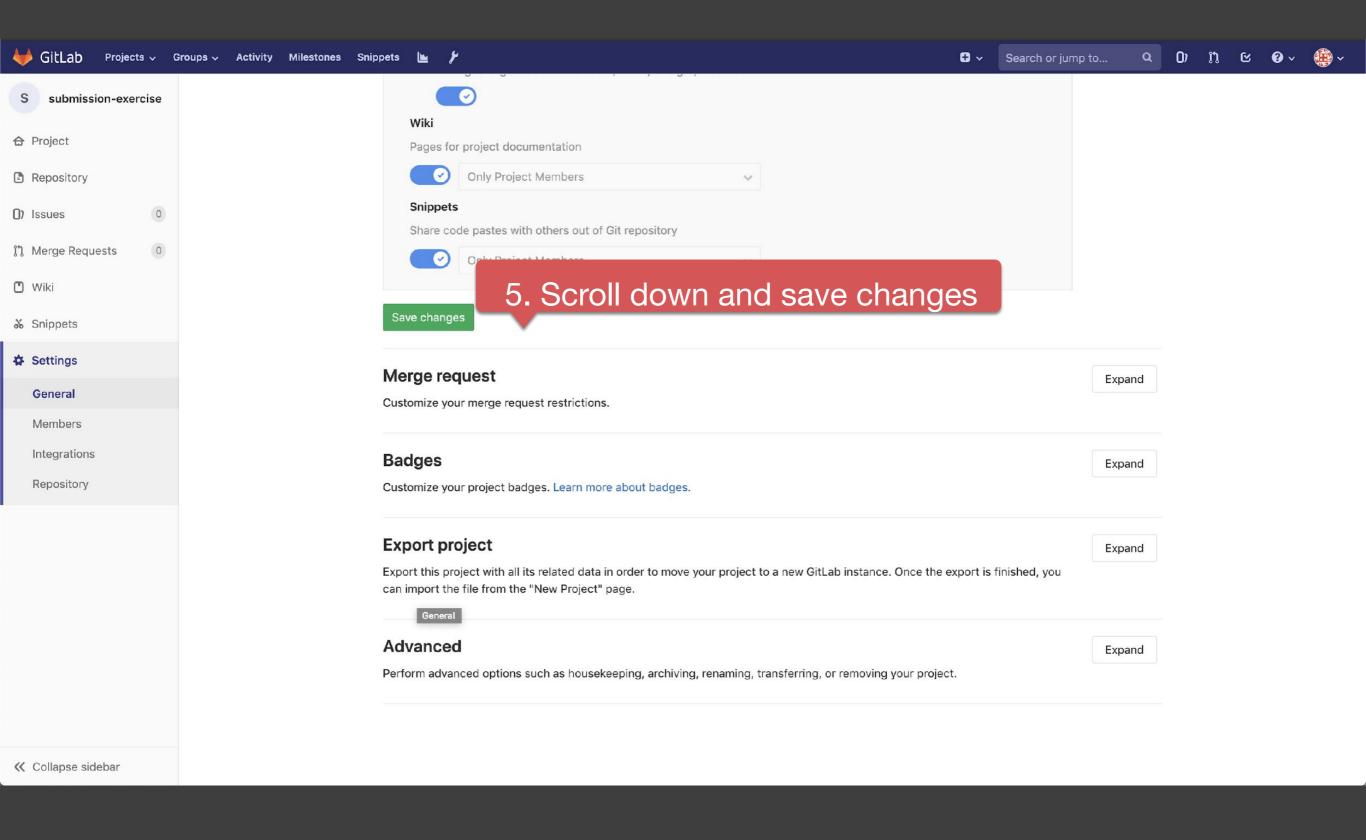
You can access course projects in this group



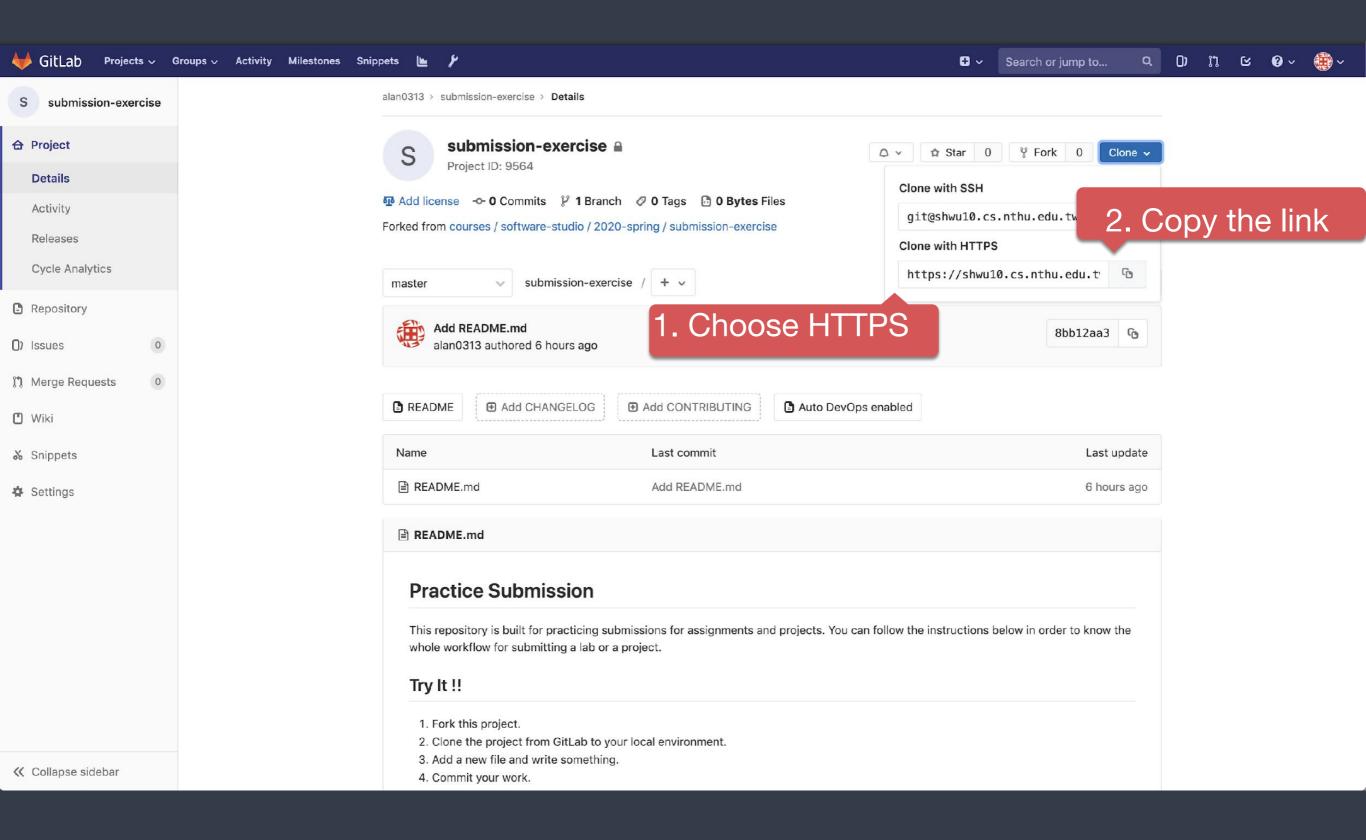




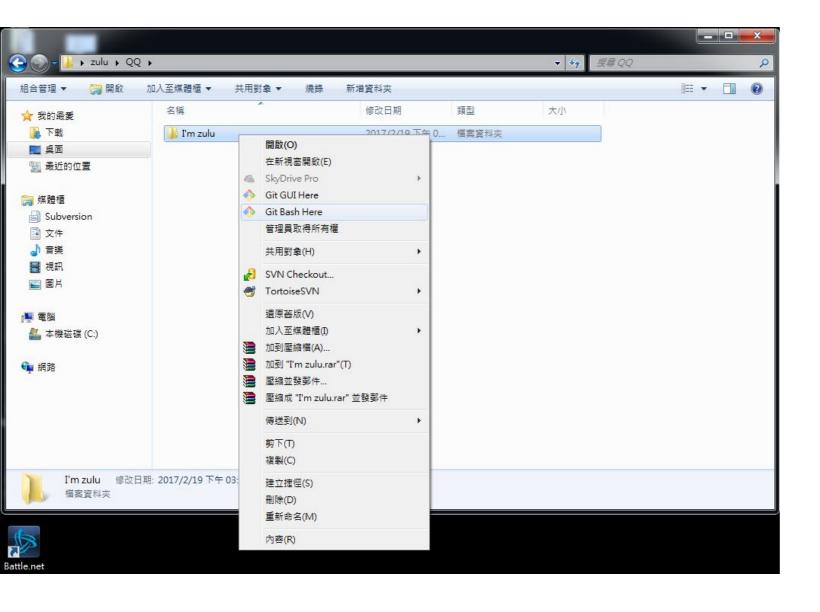




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If You use Windows





```
MINGW64:/c/Users/EdwinYeh/QQ/I'm zulu

EdwinYeh@NetDb_EdwinYeh MINGW64 ~/QQ/I'm zulu

$ |
```

3. Create a folder to put your repos

5. The repo has been successfully cloned

- For each lab, you should follow the workflow below
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 - 3. Finish your lab
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```
~/SS-Projects/submission-exercise
                                             vim lab1.js
                                    master
                                                           1. -A means all files
                                             git add -A
~/SS-Projects/submission-exercise
                                     master
                                               git status
~/SS-Projects/submission-exercise
                                     master +
On branch master
Your branch is up-to-date with 'origin/master'.
                                                  2. Check if your file is added to git
Changes to be committed:
 (use "git reset HEAD <file>..." to unstage)
       new file:
                  lab1.js
~/SS-Projects/submission-exercise
                                   🧷 master +
                                               git commit -m "Finish lab1"
[master c1acaf4] Finish lab1
1 file changed, 1 insertion(+)
                                                         3. Commit your changes
create mode 100644 lab1.js
~/SS-Projects/submission-exercise
                                   ⊅ master
```

```
~/SS-Projects/submission-exercise
                                                vim lab1.html
                                      master
                                       master git add -A
~/SS-Projects/submission-exercise
                                       master + git commit -m "Finish lab1"
~/SS-Projects/submission-exercise
[master 8a603d9] Finish lab1
Committer: Real Wei < realwei@Realweis - MBP.local>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly:
   git config --global user.name "Your Name"
   git config --global user.email you@example.com
After doing this, you may fix the identity used for this commit wit
    git commit --amend --reset-author
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 lab1.html
~/SS-Projects/submission-exercise
                                     7 master
```

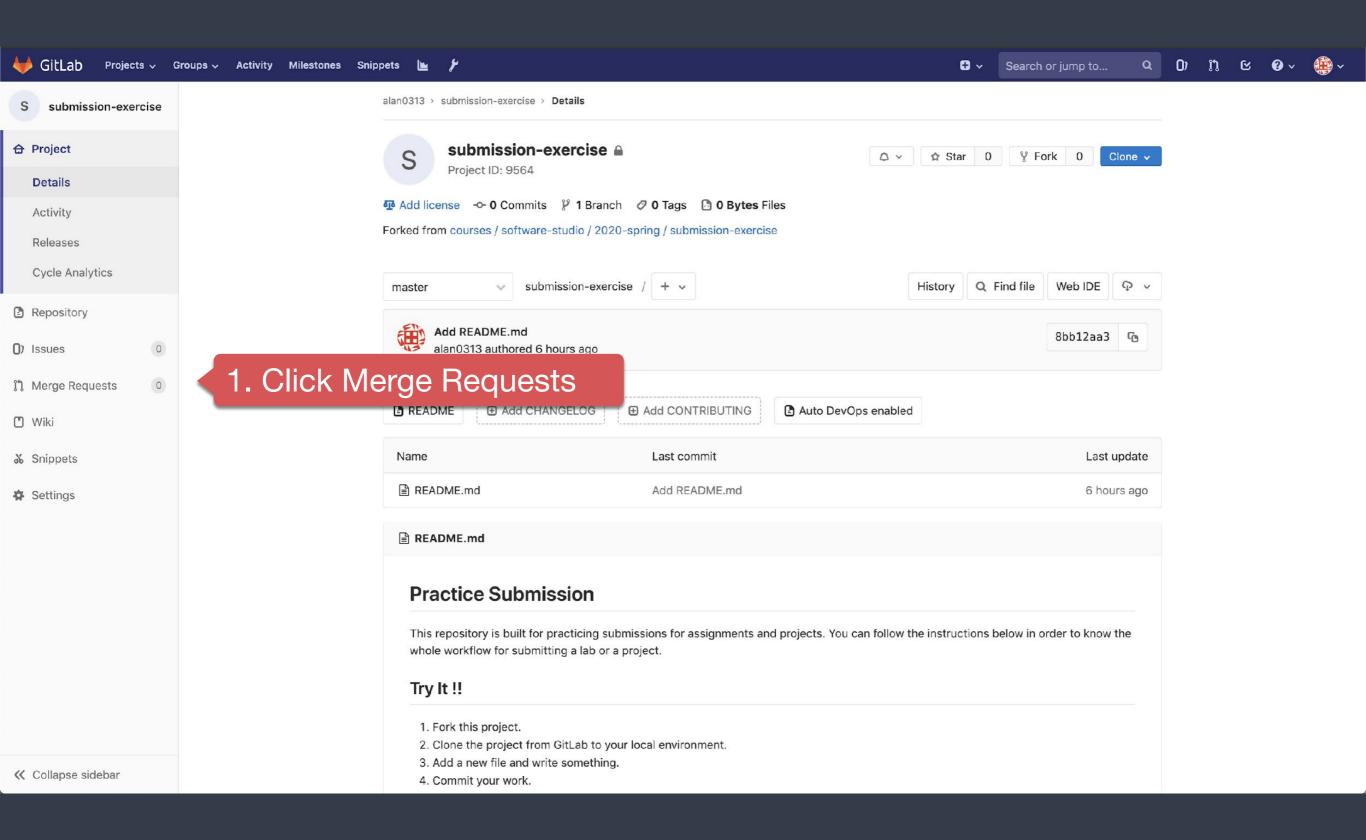
If you see these message, type git config --global user.name "{name}" git config --global user.email "{email}"

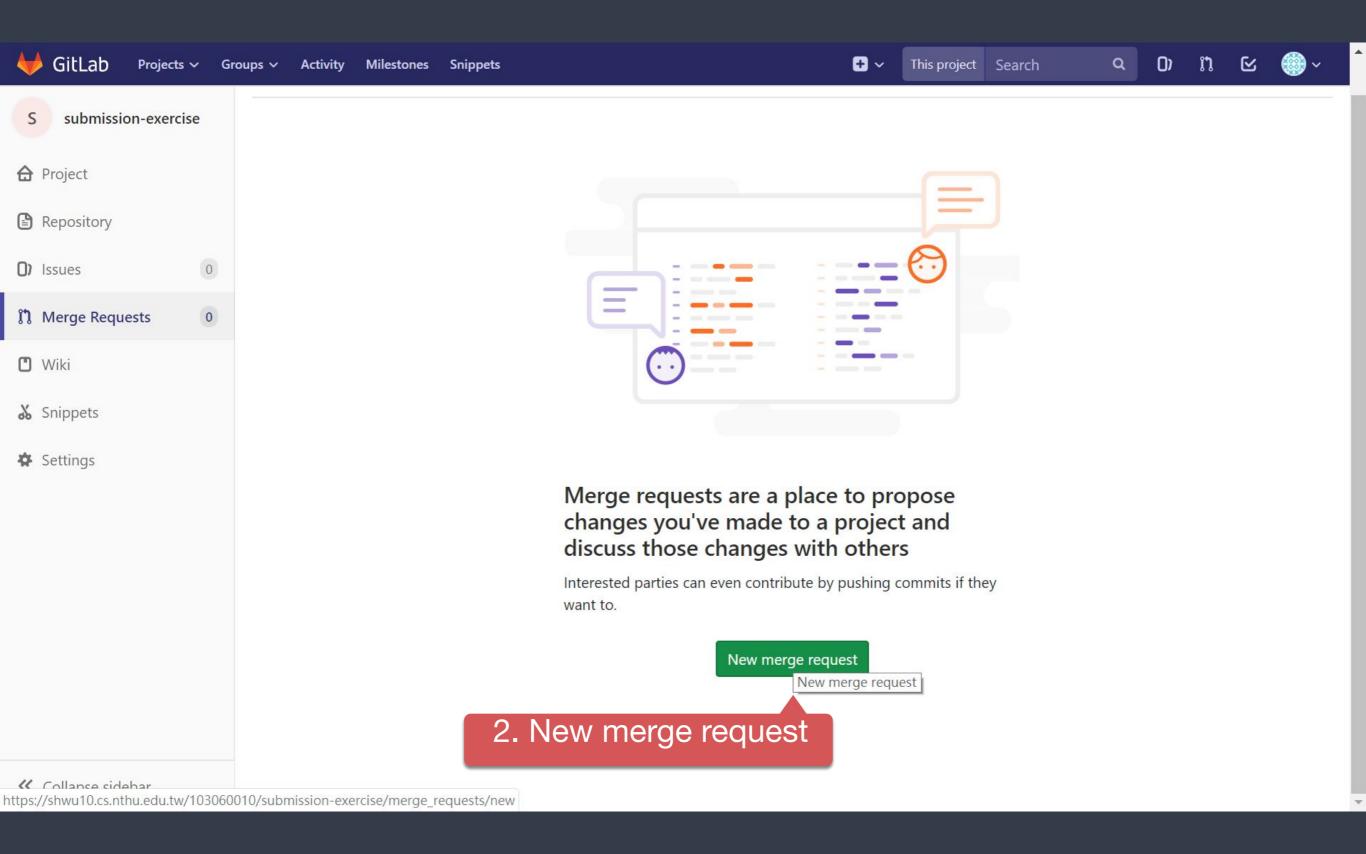
{email} is the email you use on gitlab

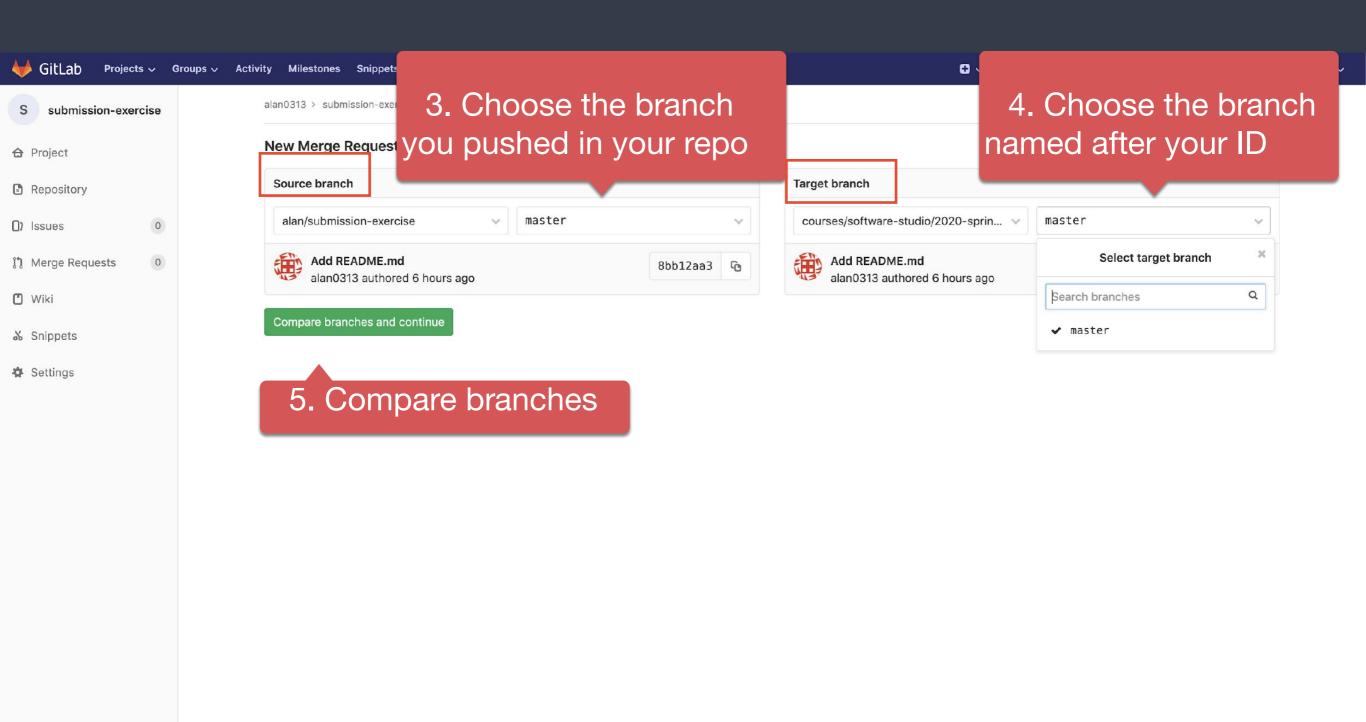
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```
Counting objects: 6, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (4/4), done.
Writing objects: 100% (6/6), 497 bytes | 0 bytes/s, done.
Total 6 (delta 1), reused 0 (delta 0)
To https://shwu10.cs.nthu.edu.tw/ss-student/submission-exercise.git
    b1e0571..8a603d9 master -> master
Branch master set up to track remote branch master from origin.
    ~/SS-Projects/submission-exercise
Pmaster
Image: push -u origin master
Type "git push -u origin master"
```

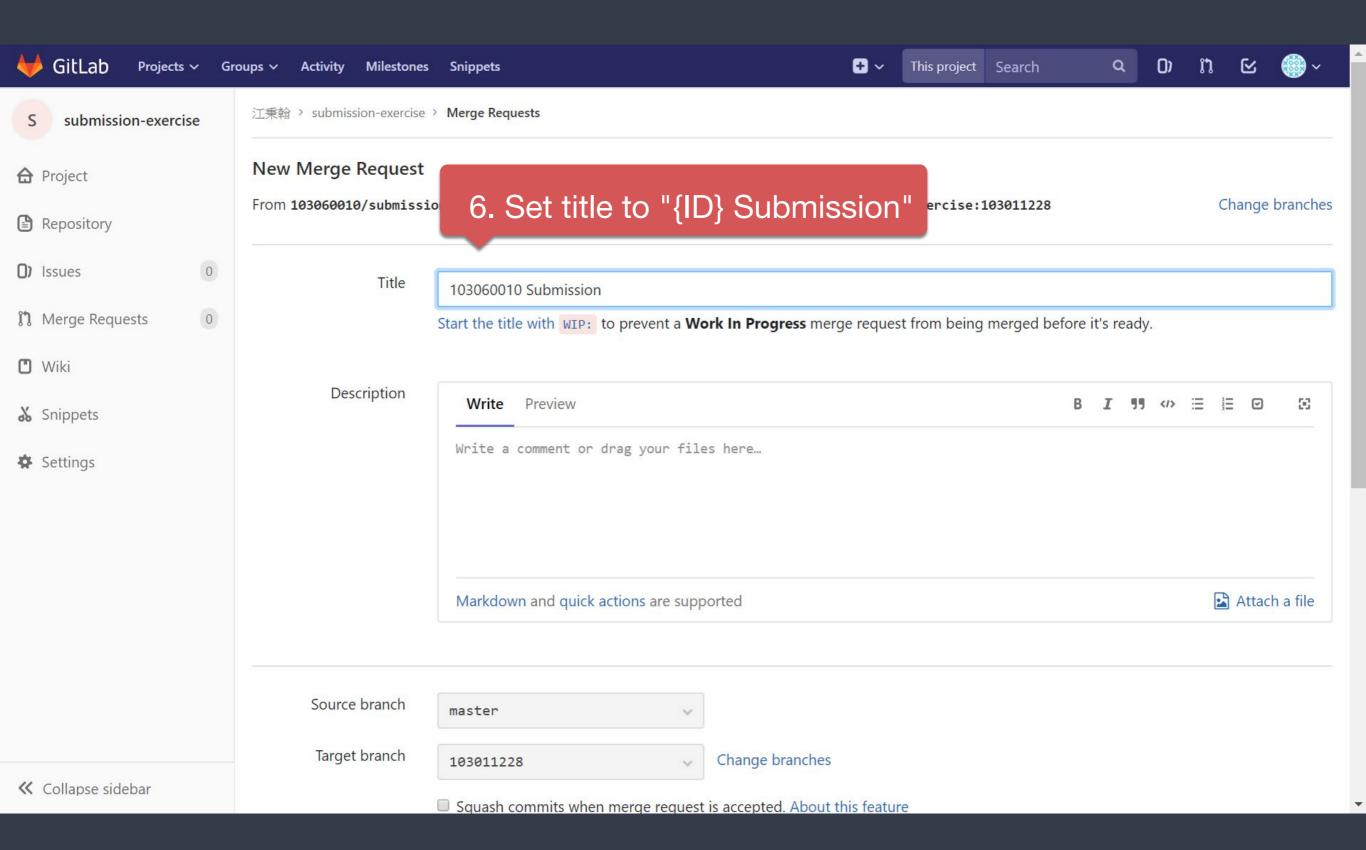
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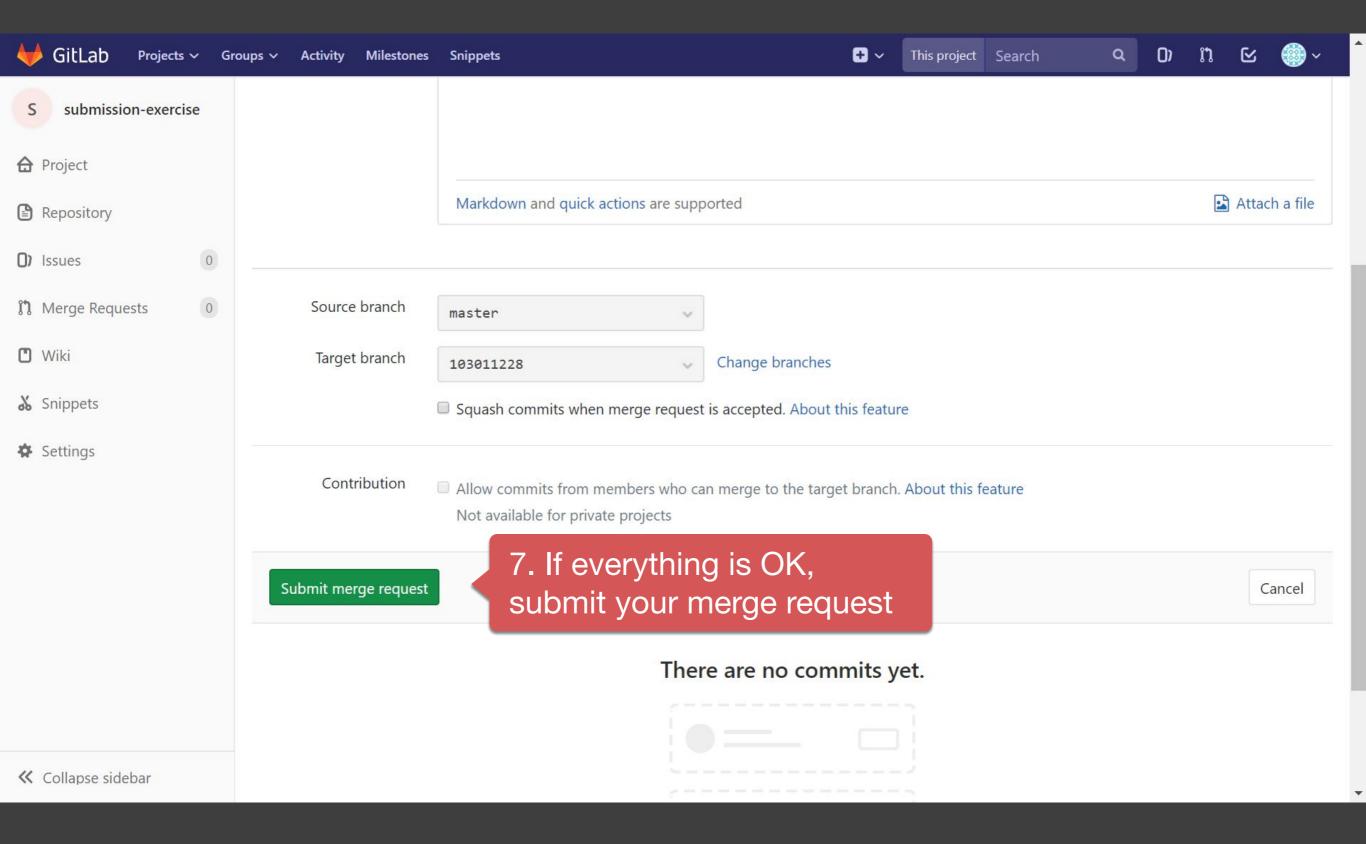






Collapse sidebar





Notice







gitlab





全部 圖片 影片 新聞 書籍 更多

設定 工具

約有 8,300,000 項結果 (搜尋時間: 0.45 秒)

GitLab

https://gitlab.com/ ▼ 翻譯這個網頁

這項網站搜尋結果說明因為網站的 robots.txt 而無法提供 瞭解詳情

GitLab.com | GitLab

https://about.gitlab.com/gitlab-com/▼翻譯這個網頁

GitLab.com. unlimited free repositories and collaborators. Sign Up. Free public & private repositories and unlimited collaborators. Runs GitLab Enterprise Edition ...

GitLab介紹— Practical guide for git users 0.1 文档

git-tutorial.readthedocs.io/zh/latest/gitlab.html ▼

GitLab介紹¶. 目前最流行的線上Git專案管理系統可以說是非GitHub 莫屬,對於一般OpenSource的專案 選擇使用GitHub做為線上Git專案管理系統即可,也免收任何 ...

GitHub - gitlabhq/gitlabhq: GitLab CE | Please open new issues in our ...

https://github.com/gitlabhq/gitlabhq ▼ 翻譯這個網頁

README.md. GitLab. Build status CE coverage report Code Climate Core Infrastructure Initiative Best Practices. Canonical source. The canonical source of ...

Gitlab - 維基百科,自由的百科全書 - Wikipedia

https://zh.wikipedia.org/zh-tw/Gitlab •

GitLab是一個利用Ruby on Rails開發的開源應用程式,實現一個自代管的Git專案倉庫,可通過Web介面進行存取公開的或者私人專案。 它擁有與GitHub類似的功能, ...



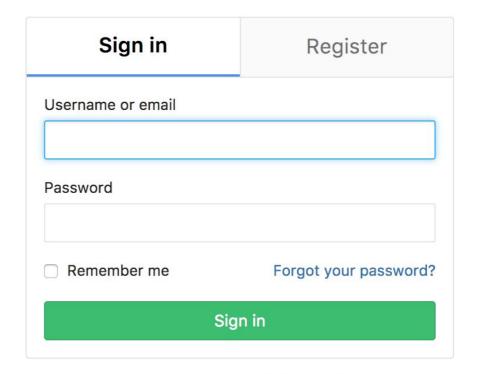
GitLab.com

GitLab.com offers free unlimited (private) repositories and unlimited collaborators.

- Explore projects on GitLab.com (no login needed)
- More information about GitLab.com
- GitLab.com Support Forum

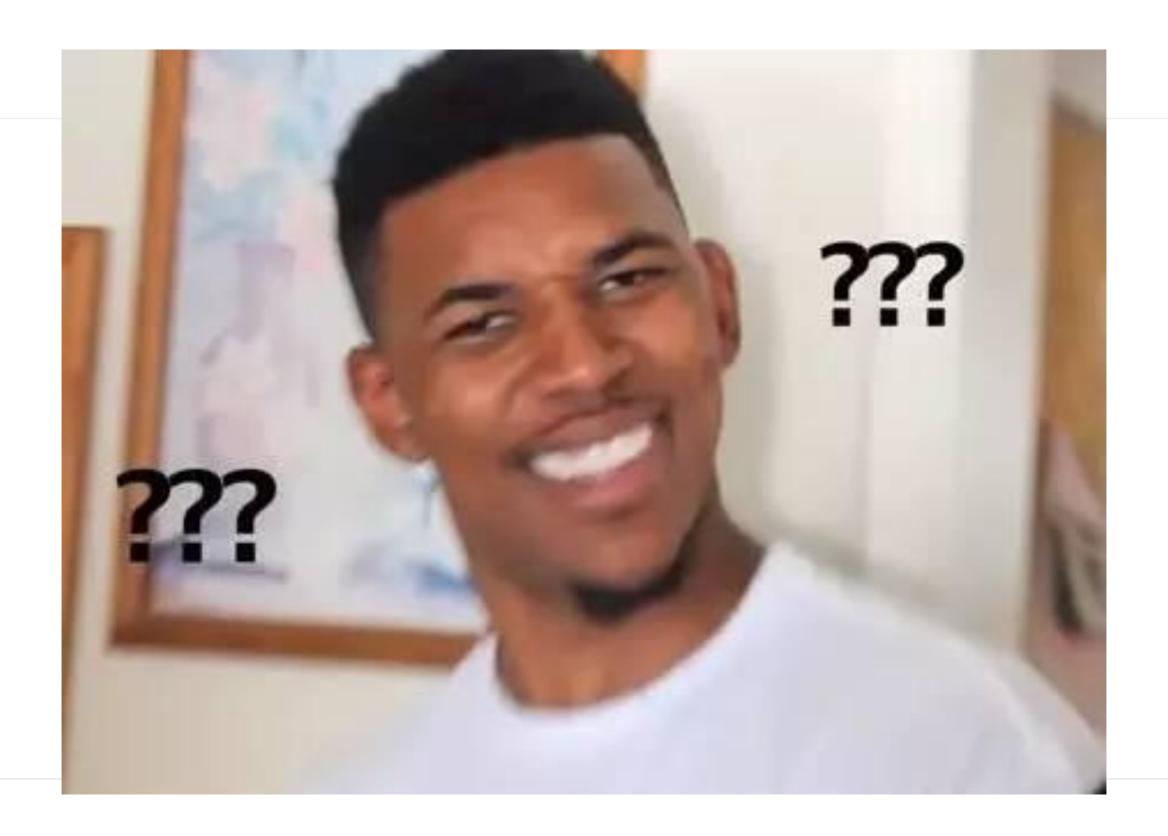
By signing up for and by signing in to this service you accept our:

- Privacy policy
- GitLab.com Terms.



Didn't receive a confirmation email? Request a new one.

Sign in with g 5



Shan-Hung Wu

Description

Announcement

Curriculum +

Resources

Resources

Here are some course materials and resources related to this course. For code and its details (such as assigned reading, project links, quiz, etc.) please refer to the GitLab. For online forum please refer to the iLMS system.



₩ GitLab

☐ iLMS System

Outline

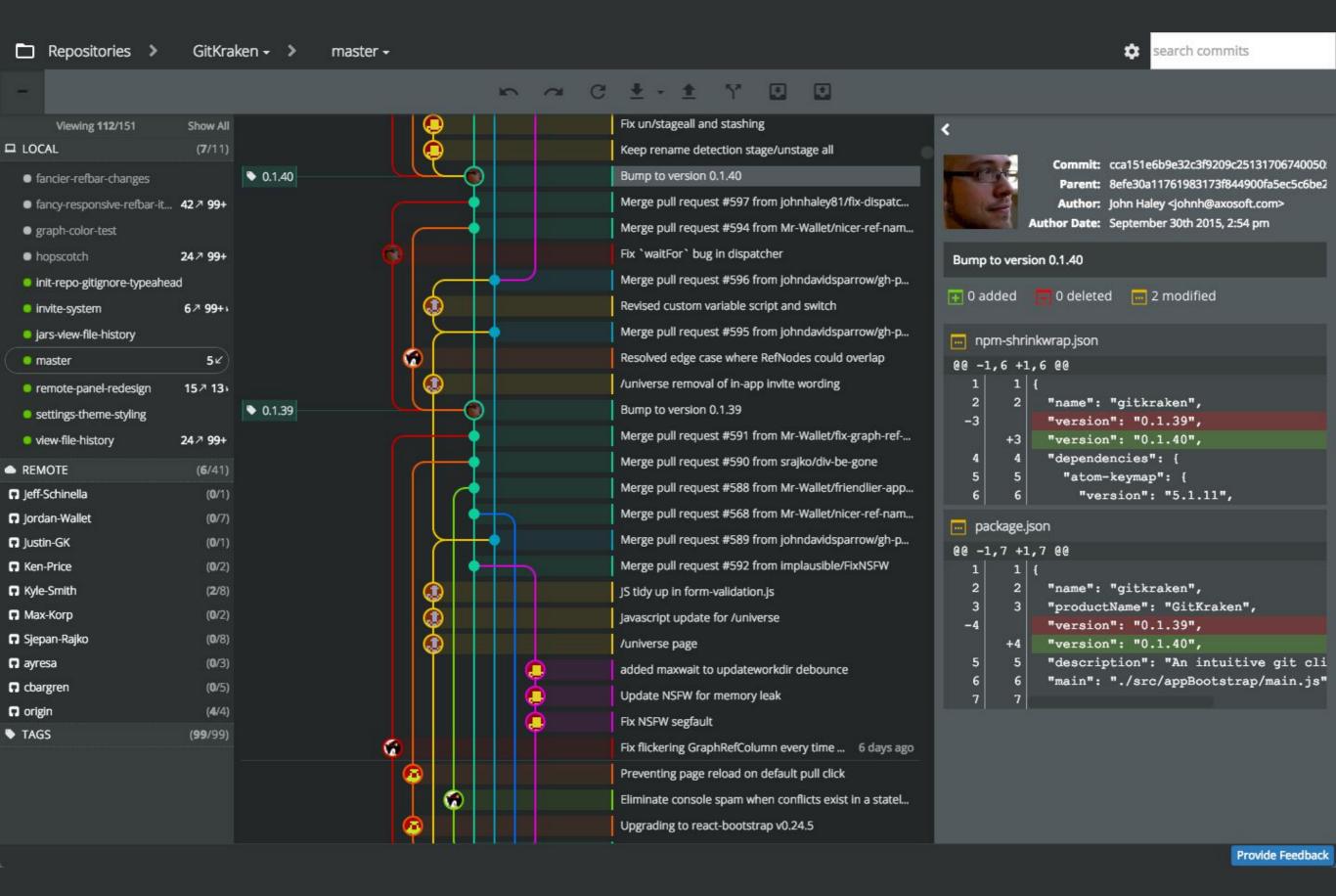
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Tools

- Git GUI
 - GitKraken
- Editor / IDE
 - Visual Studio Code
 - Atom
 - Sublime Text
 - Brackets
 - Notepad++
 - Webstorm



Gitkraken



VS Code

```
Ⅲ 🖟 ×
      EXPLORE
                                 navigation.js js
                                   1 var scriptbase = _spPageContextInfo.webServerRelativeUrl + "/_layouts/15/";

■ WORKING FILES

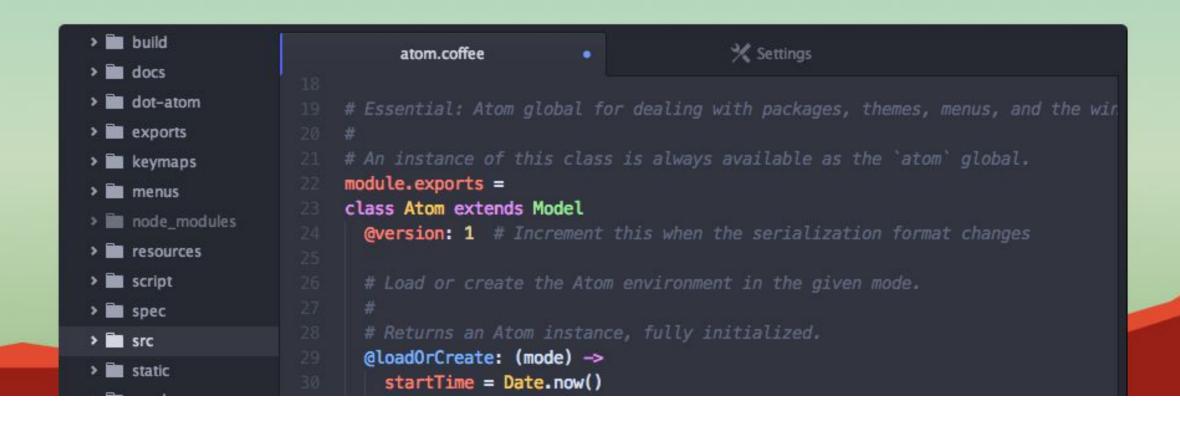
        03.jpg img
                                     $(document).ready(function () {
     ▲ TBL-STYLES
                                         $.getScript(scriptbase + "SP.Runtime.js", function () {
                                             $.getScript(scriptbase + "SP.js", function () {
       ▶ CSS
                                                $.getScript(scriptbase + "SP.Taxonomy.js", function () {
       ▶ img
                                                    context = SP.ClientContext.get_current();
       ⊿ js
                                                    //Call your code here.
                                                    console.log("Navigation - ready to rock.");
          hoverIntent.js
          jquery.dropdown.js
                                                    // Get default termstore
          jquery.more.js
                                                    session = SP.Taxonomy.TaxonomySession.getTaxonomySession(context);
          jquery.more.min.js
                                                    termStore = session.getDefaultSiteCollectionTermStore();
          jquery.plugin.js
                                                    context.load(session);
          jquery.plugin.min.js
                                                    context.load(termStore);
                                                    context.executeQueryAsync(
          mapper.js
                                                        function () {
          maputil.js
                                                            console.log('Got default term store');
          navigation.js
                                                        },
                                                        function(sender, args) {
          smoothscroll.js
                                                            console.log('Could not get default term store. ' + args.get_message());
          tabs.js
                                                    );
                                                });
                                             });
                                         });
                                  30 });
                                  32 var topnavbar;
                                  34 topnavbar +=
                                                     '<div class="tbl-site-navigation">';
                                  35 topnavbar +=
                                                        '';
                                                        '<a href="#">The Brand Code - a</a>';
                                  36 topnavbar +=
                                                        '';
                                  37 topnavbar +=
                                                            '';
                                  38 topnavbar +=
                                  39 topnavbar +=
                                                                '';
                                                                    '<div class="dropdownbox">';
                                  40 topnavbar +=
                                  41 topnavbar +=
                                                                        '<div class="dropdownbox-title">Welcome to the Brand Code</div>';
                                  42 topnavbar +=
                                                                       '';
                                  43 topnavbar +=
                                                                           '<a href="">The importance of Brand Building</a>';
                                  44 topnavbar +=
                                                                           '<a href="">Introduction to the Brand Code</a>';
                                  45 topnavbar +=
                                                                           ''<a href="">You and the Brand Code</a>';
                                  46 topnavbar +=
                                                                       '';
                                                                    '</div>';
                                  47 topnavbar +=

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                                                                                                                                                    Ln 38, Col 72 UTF-8 CRLF
                                                                                                                                                                            JavaScript
```



A hackable text editor for the 21st Century



Reference

- Learn Git branching (interactive)
 - http://pcottle.github.io/learnGitBranching/
- Pro Git
 - http://git-scm.com/book/
- 寫給大家的 Git 教學
 - http://www.slideshare.net/littlebtc/git-5528339

Today's exercise

- Install Git command line tool in your computer.
 - Follow appendix A.
- Try to submit in GitLab.