

Software Studio

軟體設計與實驗

Git Advanced

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What are we going to learn?



We are going to learn to...

- Fork / Pull request (merge request)
- Clone a specified branch from remote repo
- Solve merge conflicts
- Publish branches to remote repo

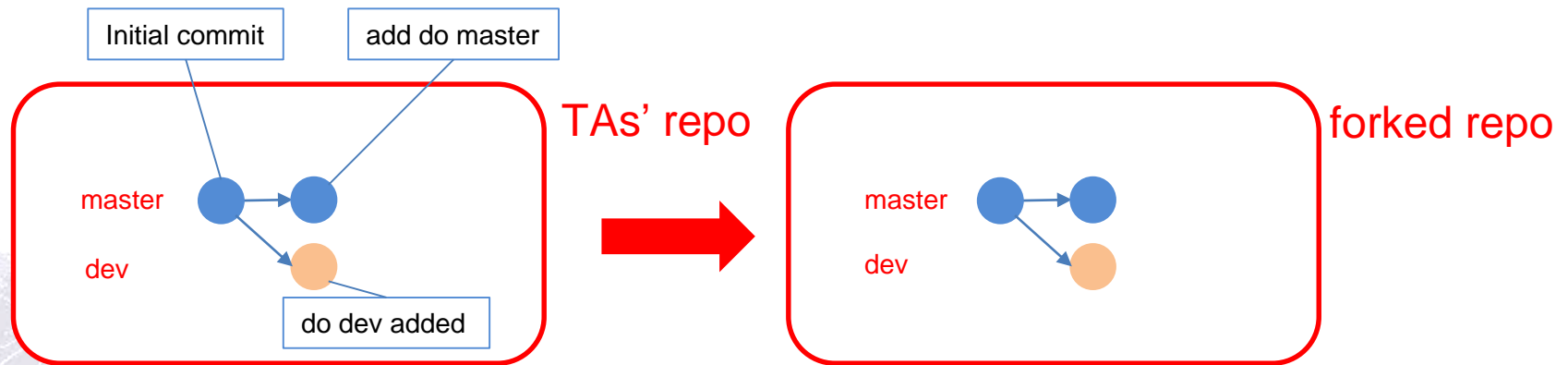


What are we going to do?



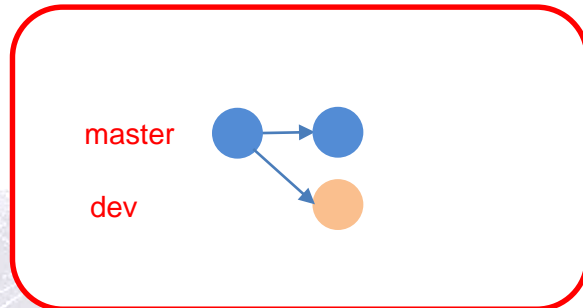
Todo

- fork repo

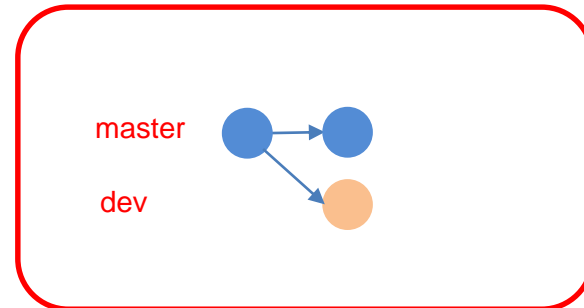


Todo

- Clone “dev” from forked repo



TAs' repo



forked repo

```
Admin@DESKTOP-ITN6JDN MINGW64 /d/Desktop/新增資料夾/lab02-git-advanced (dev)
$ git log
commit b4afb6fe4cbfa652e5dcf8ef26ca193e8c6f981a (HEAD -> dev, origin/dev)
Author: RPKQ <rpq0512@gmail.com>
Date: Thu Mar 12 21:38:14 2020 +0800

    do dev added

commit 280daffef5257c0c79d1a8f33782737d23618a31
Author: Sienna <rpq0512@gmail.com>
Date: Thu Mar 12 13:36:22 2020 +0000

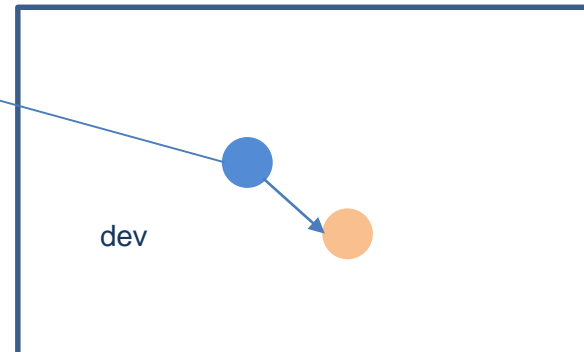
    Initial Commit
```

```
Admin@DESKTOP-ITN6JDN MINGW64 /d/Desktop/
$ git branch
* dev
```

Clone only “dev”

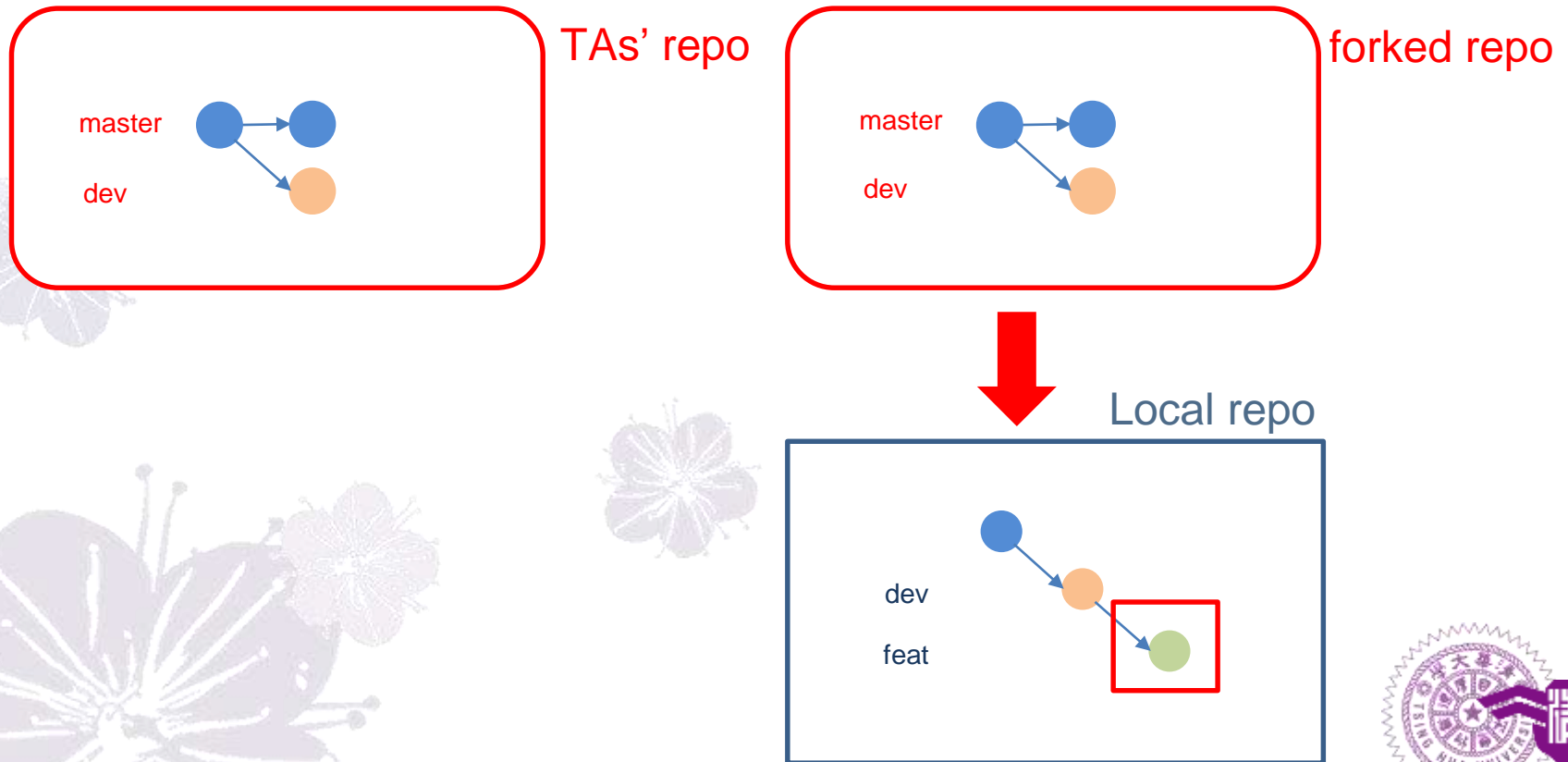


Local repo



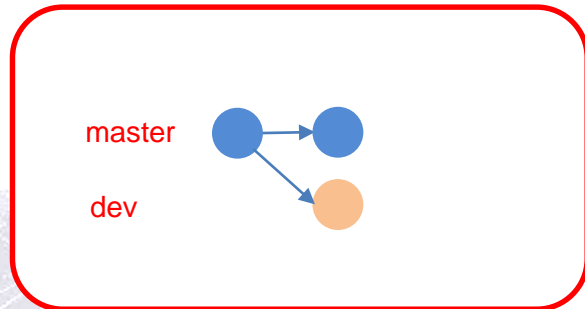
Todo

- Create a new branch “feat” and modify it

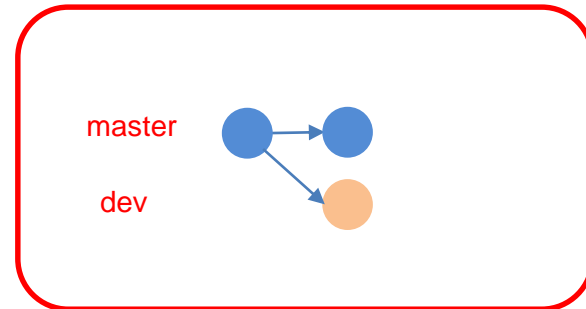


Todo

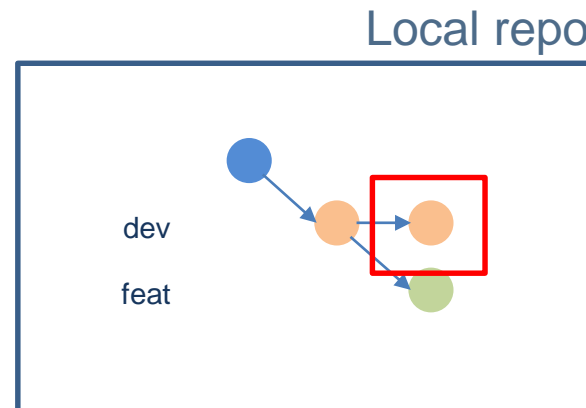
- Modify “dev”



TAs' repo



forked repo

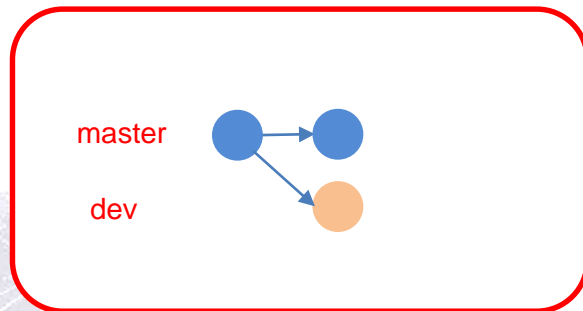


Local repo

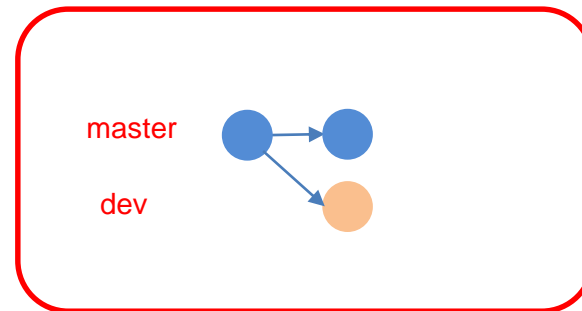


Todo

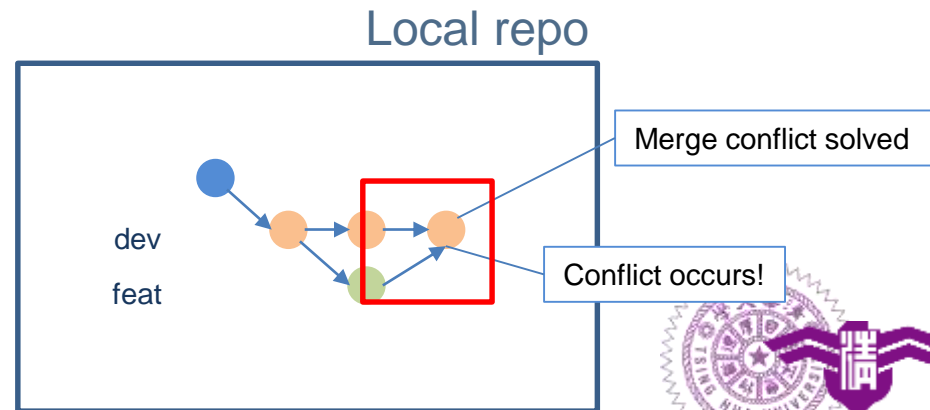
- Merge “feat” to “dev” and solve the conflict



TAs' repo

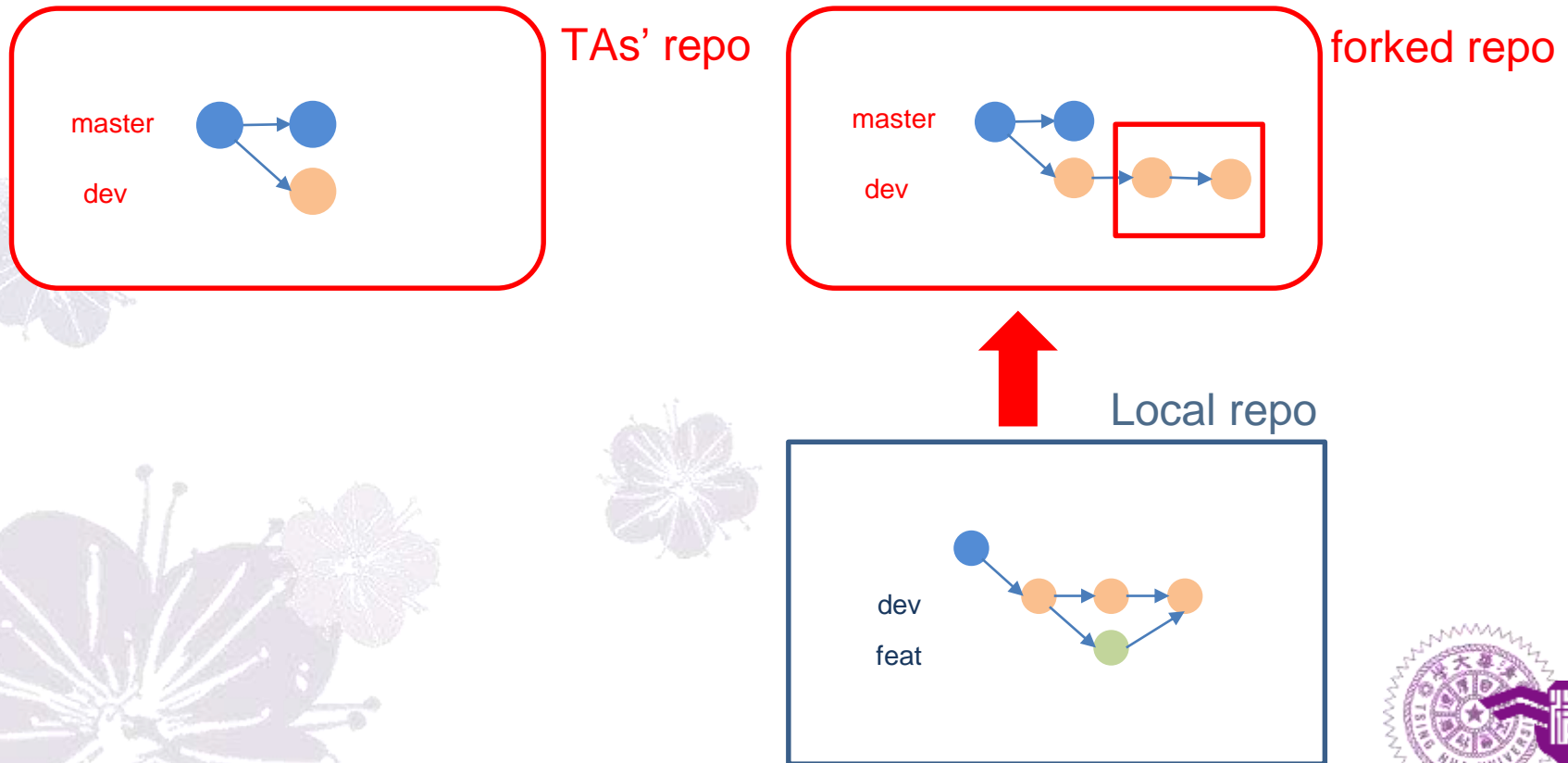


forked repo



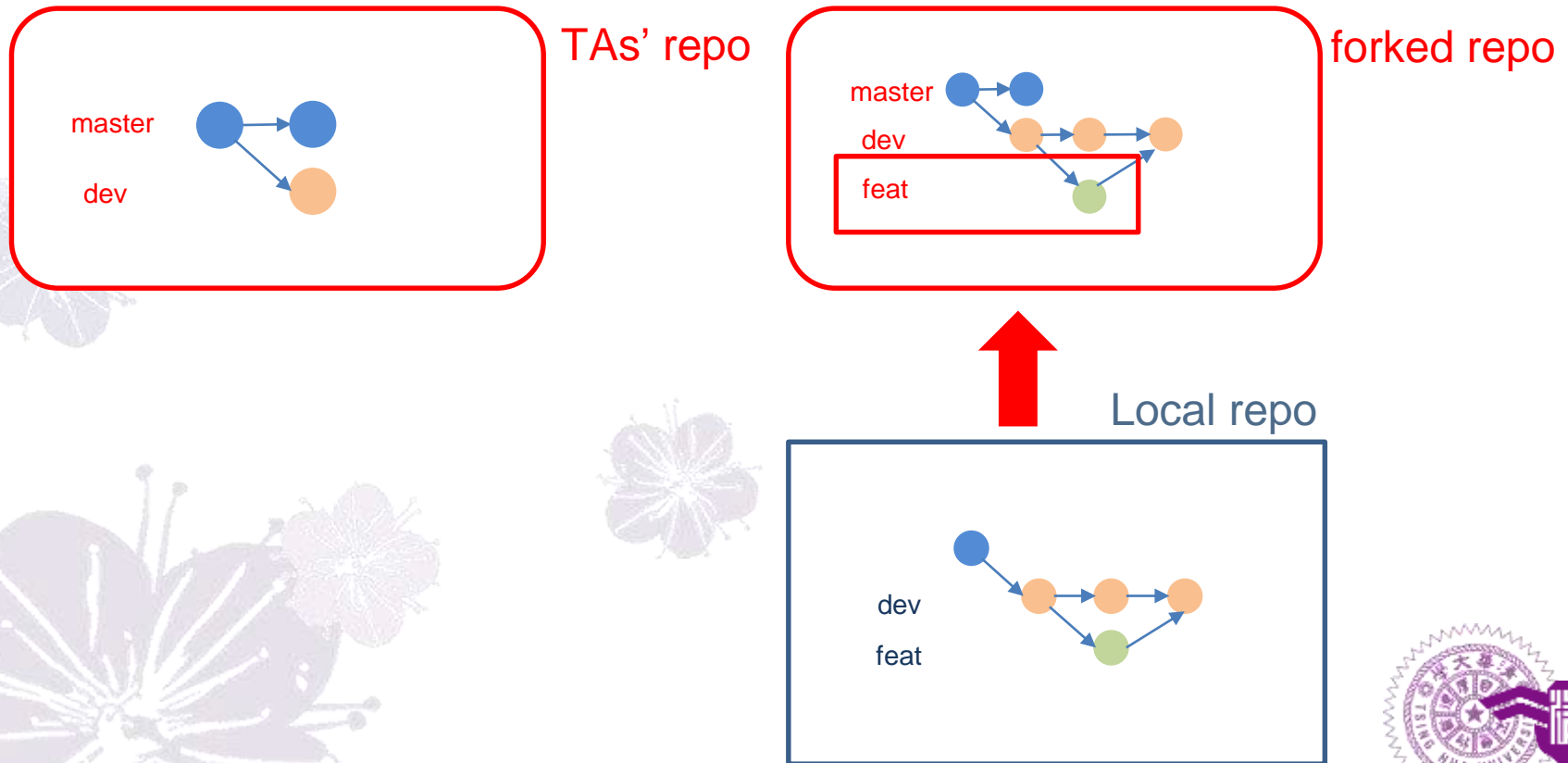
Todo

- Push changes from local “dev” to remote “dev”.



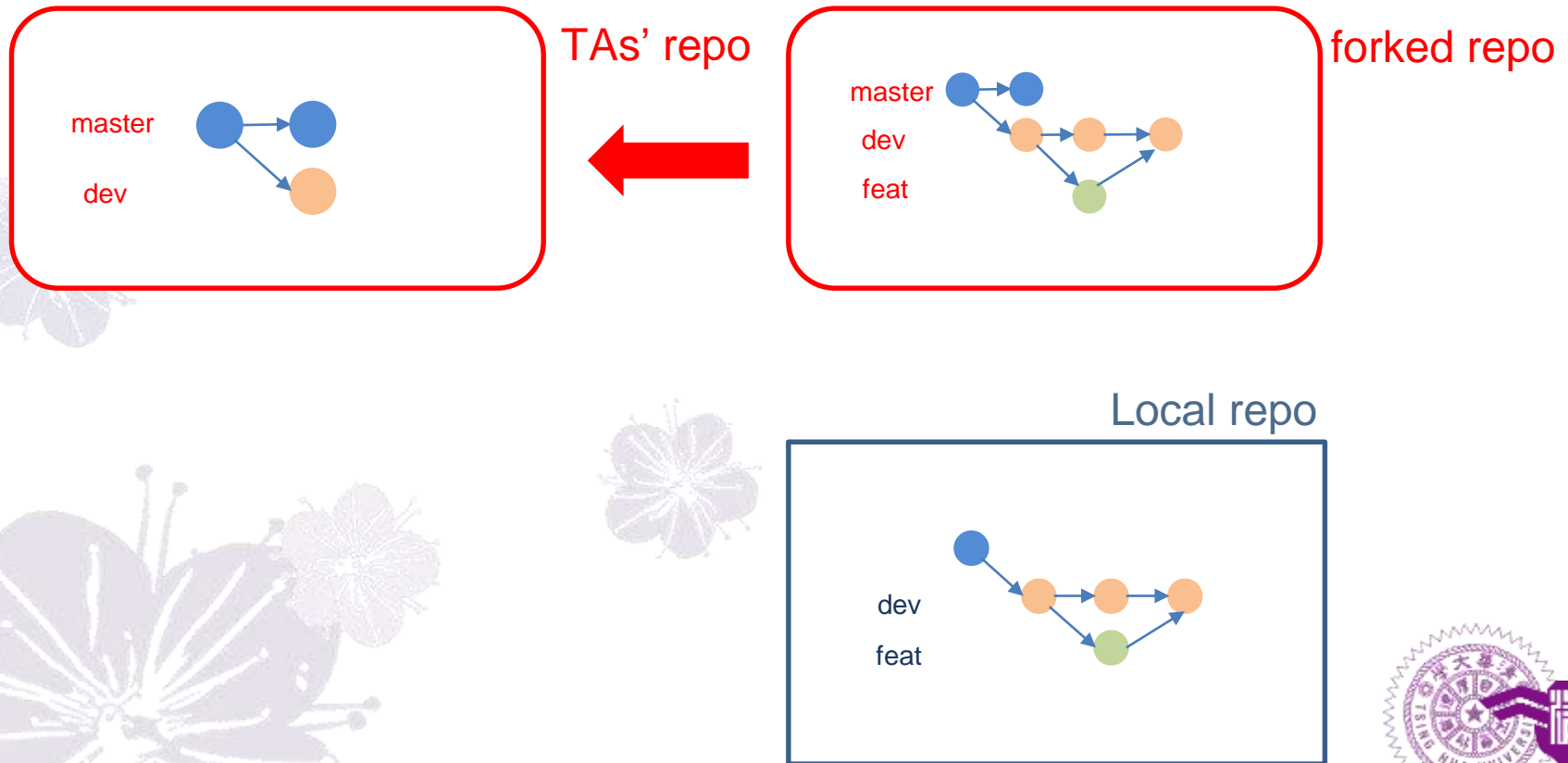
Todo

- Publish local “feat” to remote “feat”



Todo

- Make merge request from “dev” to “dev”.



Todo Layout



Todo Layout

- **Fork** the project to your account.
- **Clone** branch “dev”.
- Create a **new branch “feat”**
 - add “do feat” to the list
 - Add and commit the change.
- Switch back to “dev”
 - add “do dev2” to the list
 - Add and commit the change.
- **Merge** “feat” to “dev”
 - **Solve the conflict** by keeping “do feat”
 - Add and commit the change.



Todo Layout

- **Push** “dev” to remote repo.
- **Publish** “feat” to remote repo.
- Make **merge request** from “dev” to “dev”.



Step by Step



Todo – Fork Repo




Lab02-Git Advanced 

Project ID: 44074962 

🔗 1 Commit 🌿 2 Branches 🏷 0 Tags 💾 123 KB Project Storage

  Star 0  Fork 0



Fork project

A fork is a copy of a project.
Forking a repository allows you to make

Software_Studio_2023 > student > Lab02-Git Advanced > Fork project


Project name
Lab02-Git Advanced


Must start with a lowercase or uppercase letter, digit, emoji, or underscore. Can also contain dots, pluses, dashes, or hyphens.


Project URL
<https://gitlab.com/> 107062117

Project slug
lab02-git-advanced

Want to organize several dependent projects under the same namespace? [Create a group](#)




Lab02-Git Advanced 

Project ID: 44075413 


🔗 2 Commits 🌿 2 Branches 🏷 0 Tags 💾 102 KB Project Storage

add do master
李采蓉 authored 13 minutes ago

5d58e013 

master lab02-git-advanced / +

Forked from [Software_Studio_2023 / student / Lab02-Git Advanced](#)
Up to date with the upstream repository.

Find file Web IDE  Clone

Clone with SSH
git@gitlab.com:software_studio_

Clone with HTTPS
https://gitlab.com/software_stu



Todo – Clone “dev”

1. Open a new folder with VSCode.
2. Ctrl + ` to open the terminal.
3. Clone “dev” from **your repo**. **Do not clone TAs’ repo!**

```
PS D:\Desktop\New folder\lab02-git-advanced> |
```

remote branch name

- `git clone --single-branch --branch dev <URL>`
(If you simply use “git clone” then you will clone “master” instead of “dev”)
- `git branch`

```
• (base) licaorongdeMacBook-Pro:lab02-git-advanced licaorong$ git branch  
* dev
```

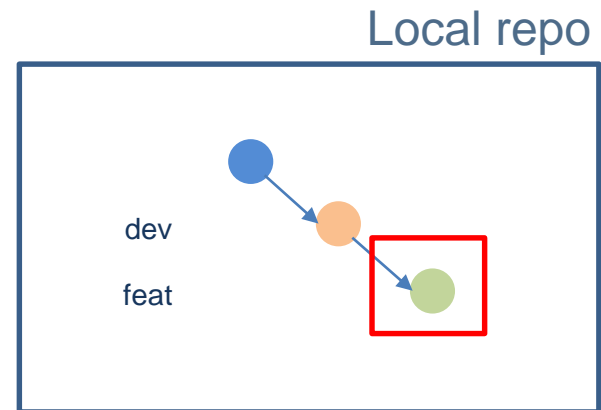


Todo – Branch “feat”

1. Create branch “feat” and switch to it.
2. Add “**do feat**” to the list and commit the changes.

```
PS D:\Desktop\New folder\lab02-git-advanced> |
```

- `git checkout -b feat`
- Modify the list content: add “**do feat**”
- `git add *`
- `git commit -m "add do feat"`

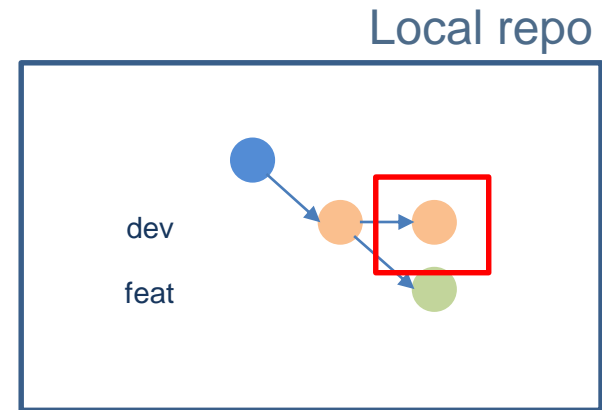


Todo – Branch “dev”

1. Switch back to “dev”.
2. Add “do dev2” to the list and commit the changes.

```
PS D:\Desktop\New folder\lab02-git-advanced> |
```

- `git checkout dev`
- Modify the list content: add “do dev2”
- `git add *`
- `git commit -m "add do dev2"`



Todo – Merge and Conflict

1. Merge feat to dev.
2. Solve the conflict by keeping “do feat”.
3. Add and commit the change.

```
PS D:\Desktop\New folder\lab02-git-advanced> |
```

- `git merge feat`
- **solve the conflict: keep “do feat”**
- `git add *`
- `git commit -m "merge conflict solved"`

You, a few seconds ago | 1 author (You)

[todo list]

- do dev

Accept Current Change | **Accept Incoming Change** | Accept Both Changes | Compare Changes

<<<<<< HEAD (Current Change)

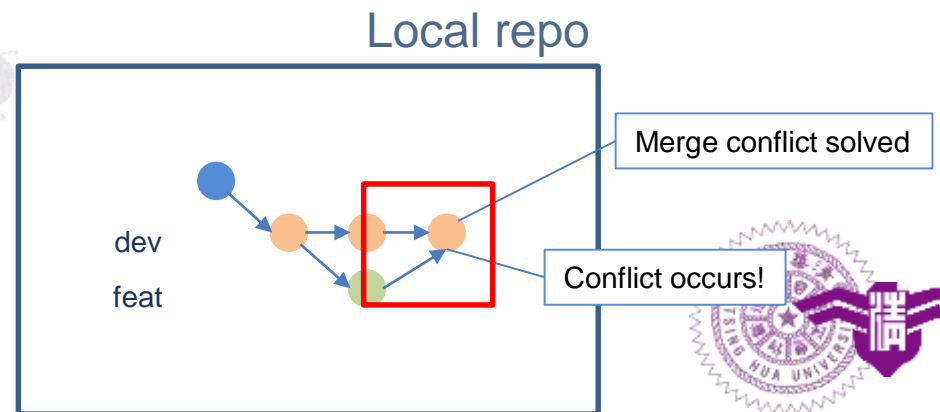
- do dev2

=====

- do feat

>>>>>> feat (Incoming Change)

In VScode

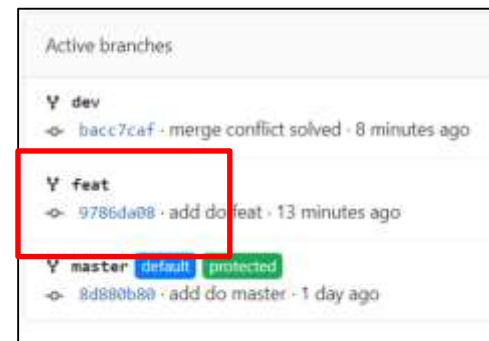


Todo – Push and Publish Branch

- “**dev**” : Push to update the remote branch “dev”.
- “**feat**” : There is no “feat” branch in remote repo. Use “-u” to **publish** a local branch to remote project.

```
PS D:\Desktop\New folder\lab02-git-advanced>
```

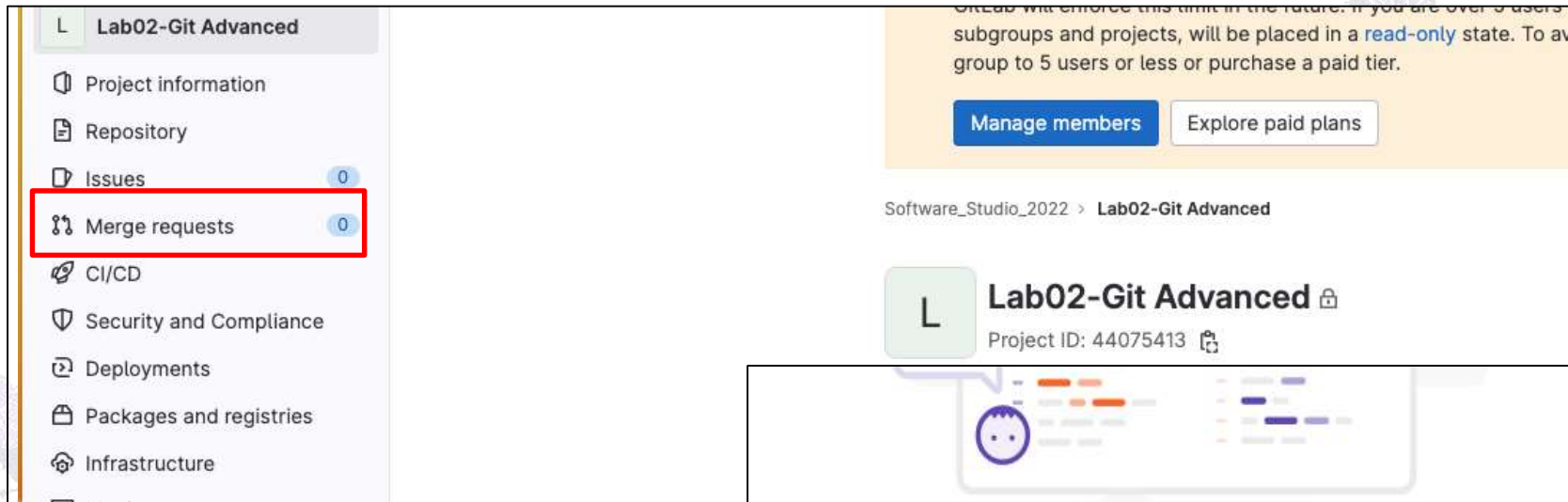
- `git push`
- `git checkout feat`
- `git push -u <URL> feat`



You should be able to see the remote “feat” you published.

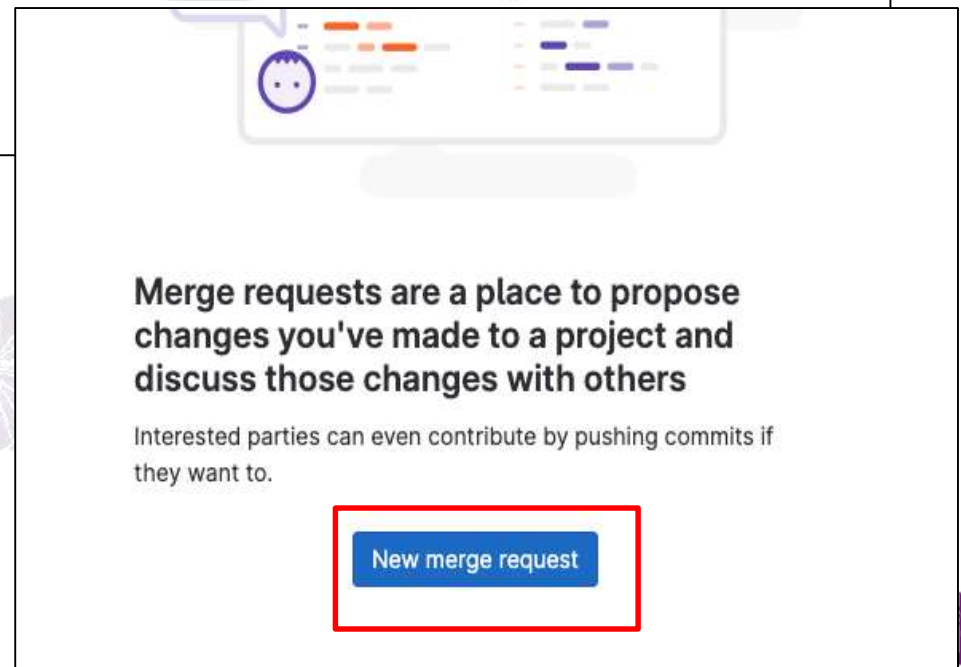


Todo – Pull(Merge) Request



The screenshot shows the 'Lab02-Git Advanced' interface. On the left is a sidebar with a list of navigation items: 'Project information', 'Repository', 'Issues' (with a blue circle containing '0'), 'Merge requests' (with a blue circle containing '0' and highlighted by a red rectangle), 'CI/CD', 'Security and Compliance', 'Deployments', 'Packages and registries', and 'Infrastructure'. The main content area on the right displays a warning banner about user limits, followed by the breadcrumb 'Software_Studio_2022 > Lab02-Git Advanced', the project name 'Lab02-Git Advanced' with a lock icon, and the 'Project ID: 44075413'.

Choose “Merge requests”



The screenshot shows the main content of the 'Merge requests' page. It features a decorative header with a stylized face icon and a diagram. Below this, the text reads: 'Merge requests are a place to propose changes you've made to a project and discuss those changes with others'. A subtext line states: 'Interested parties can even contribute by pushing commits if they want to.' At the bottom, there is a blue button labeled 'New merge request' which is highlighted by a red rectangle.

Todo – Pull(Merge) Request

- Make merge requests from “dev” to “dev”

New merge request

Source branch

107062117/lab2-git-advanced **1.** dev

merge conflict solved
107062117 authored 2 minutes ago

3. Compare branches and continue

Target branch

software_studio_2023/student **2.** dev

add do dev
107062117 authored 23 minutes ago

New merge request

From 107062117/lab2-git-advanced:feat into software_studio_2022/student/lab2-git-advanced:master [change branches](#)

4. <student ID> - dev

Title

<Student ID> - dev

Start the title with **Draft:** to prevent a merge request draft from merging before it's

Add [description templates](#) to help your contributors communicate effectively!

5.

Create merge request

Cancel



Grading Policy

- Branch “dev”
 - Merge Request “dev” to “dev” 10%
 - log message 20%
 - list content correct 20%
- Branch “feat”
 - “feat” branch exists in remote repo 30%
 - log message 10%
 - list content correct 10%



Grading Policy

1. Merge request

Software_Studio_2023 > student > Lab02-Git Advanced > Merge requests > !1

<Student ID> - dev

Edit

Code ▾

⋮

 Open 107062117 requested to merge `software_studio_2022/lab02...` into `dev` just now

Overview 0 Commits 0 Pipelines 0 Changes 0



0



0



This merge request contains no changes.

Use merge requests to propose changes to your project and discuss them with your team. To make changes, push a commit or edit this merge request to use a different branch. With [CI/CD](#), automatically test your changes before merging.

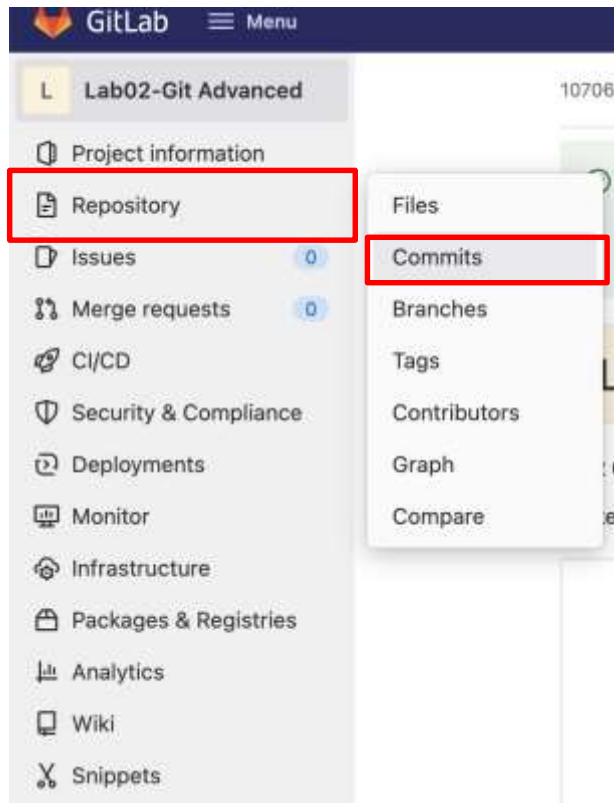
Create file



Grading Policy

2. Commit logs of dev and feat

1. Repository -> Commits



2. Show dev and feat

107062117 > Lab02-Git Advanced > Commits

dev lab02-git-advanced

28 Feb, 2022 5 commits

-  merge conflict solved
107062117 authored 7 minutes ago
-  add do dev2
107062117 authored 8 minutes ago
-  add do feat
107062117 authored 9 minutes ago

 do dev added
107062117 authored 15 minutes ago

 init commit
107062117 authored 16 minutes ago

107062117 > Lab02-Git Advanced > Commits

feat lab02-git-advanced

28 Feb, 2022 3 commits

-  add do feat
107062117 authored 10 minutes ago
-  do dev added
107062117 authored 15 minutes ago
-  init commit
107062117 authored 16 minutes ago



Grading Policy

3. Content of the following 3 commits



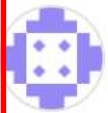
merge conflict solved

107062117 authored 14 minutes ago



add do dev2

107062117 authored 15 minutes ago



add do feat

107062117 authored 16 minutes ago

list.txt

1	1	[todo list]
2	2	- do dev
3		- - do dev2
		\ No newline at end of file
	3	+ - do feat

list.txt

1	1	[todo list]
2	2	- do dev
	3	+ - do dev2

list.txt

1	1	[todo list]
2	2	- do dev
	3	+ - do feat
		\ No newline at



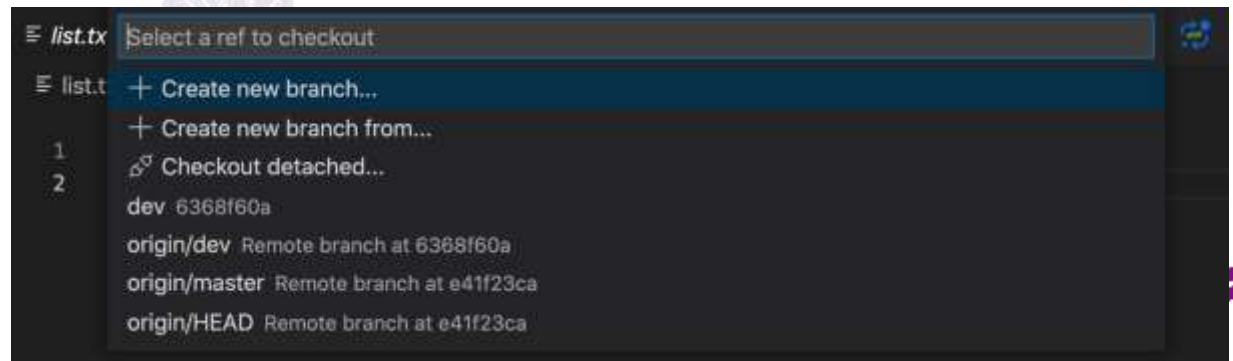
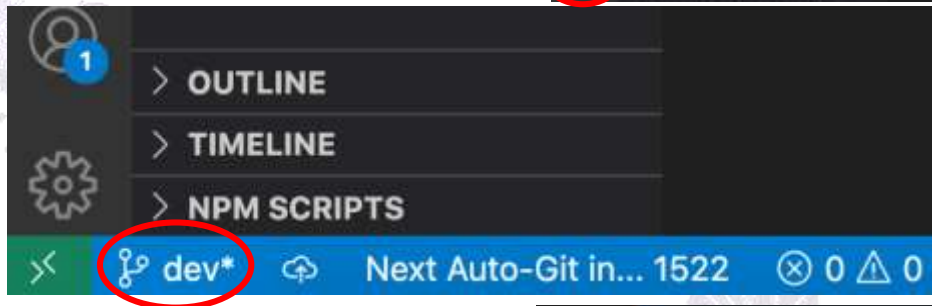
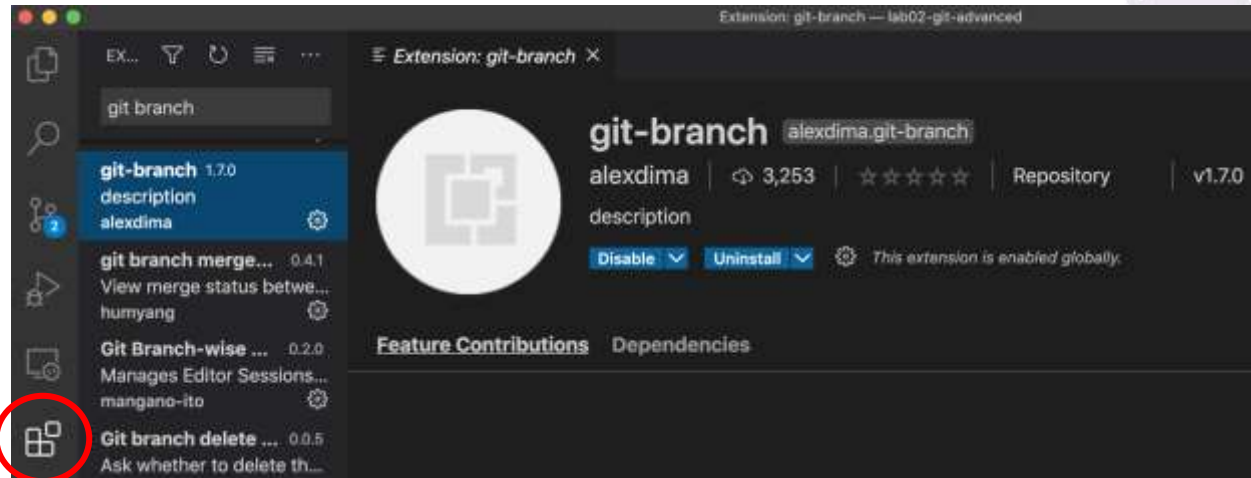
Notice

- If you damage TA's repo, you will be **-20** points.
- Please **fork** the repo before syncing any changes.



Appendix – git plug-in (branch)

You can install git plug-in here!



thank
you!

Question

