

3rd Online Training “make your data FAIR”: Version Control with Git and GitHub



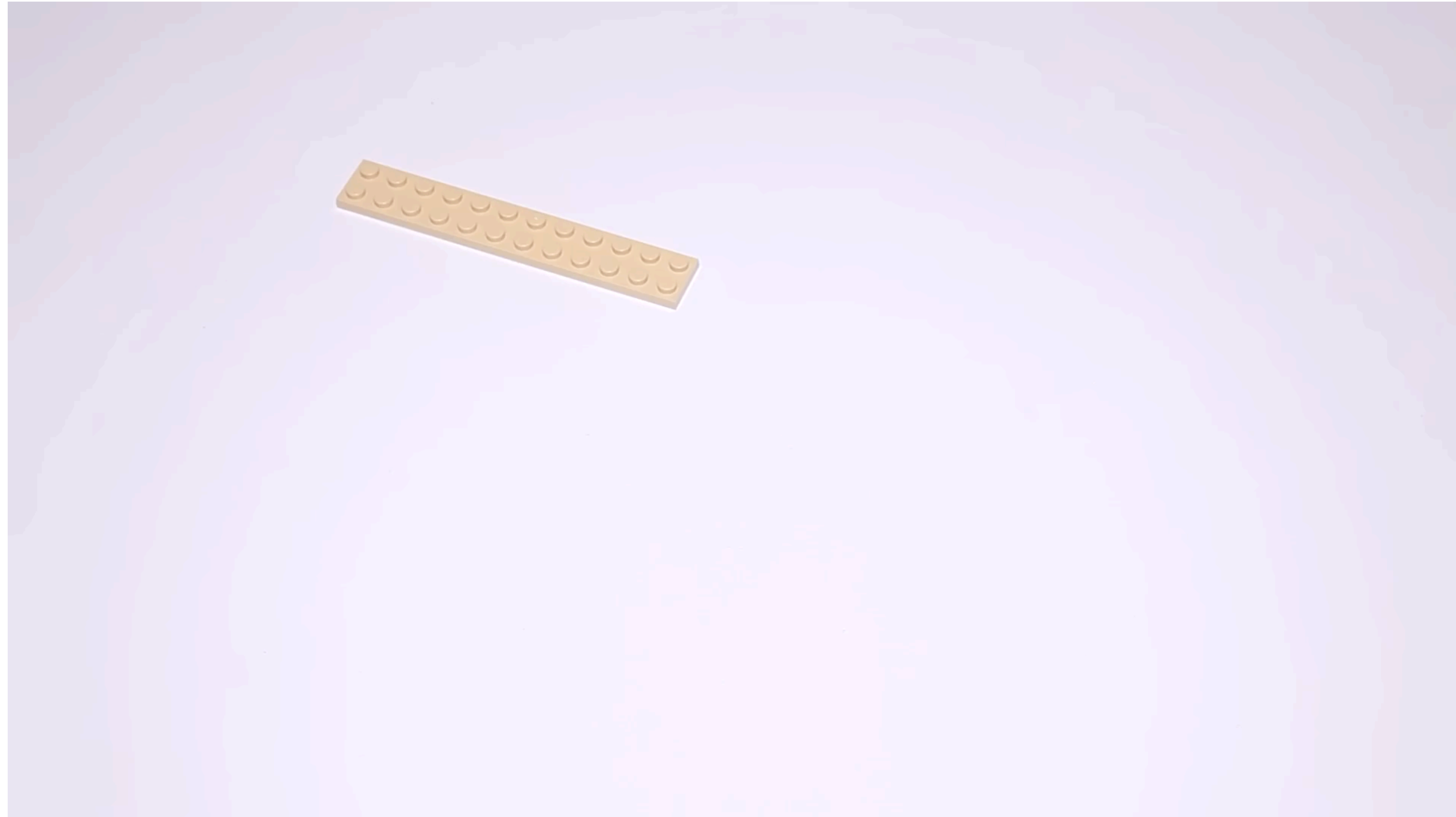
Stefano Rapisarda

15 October 2024

Version control

A system that tracks and manages changes to files over time. It allows multiple users to collaborate, compare different file versions, and revert to earlier states if needed.

Version control



Version control

How can I track systematically my project changes?

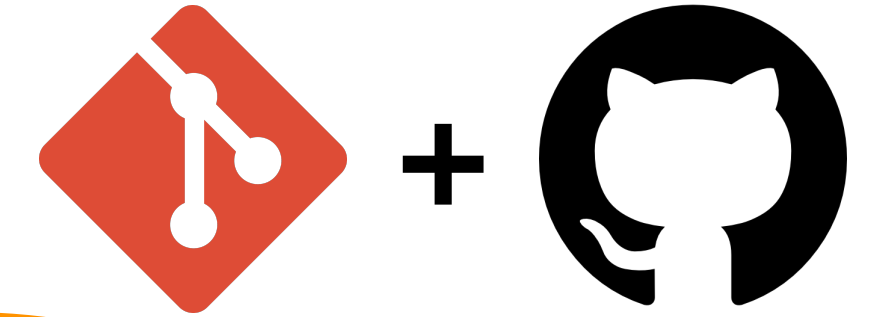
When shall I take the “shots”?

How about I want to try alternative designs?

How can I handle multiple “builders”?

How can I share my project with the community?

Version control



How can I track systematically my project changes?

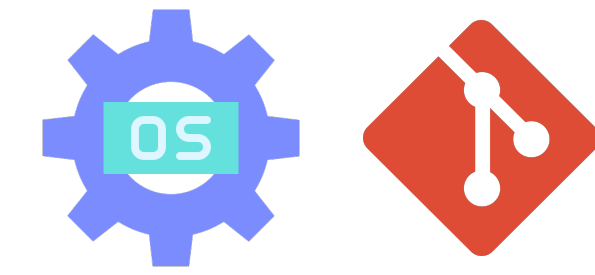
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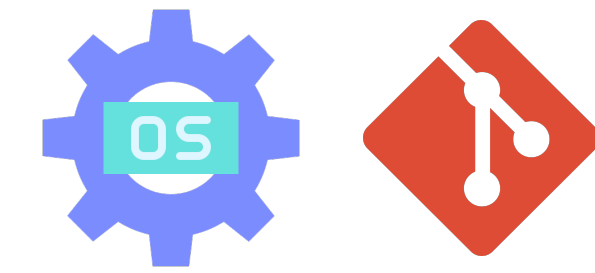
How can I share my project with the community?

Git simple workflow

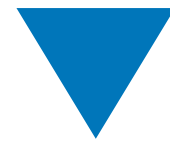


Create directory

Git simple workflow

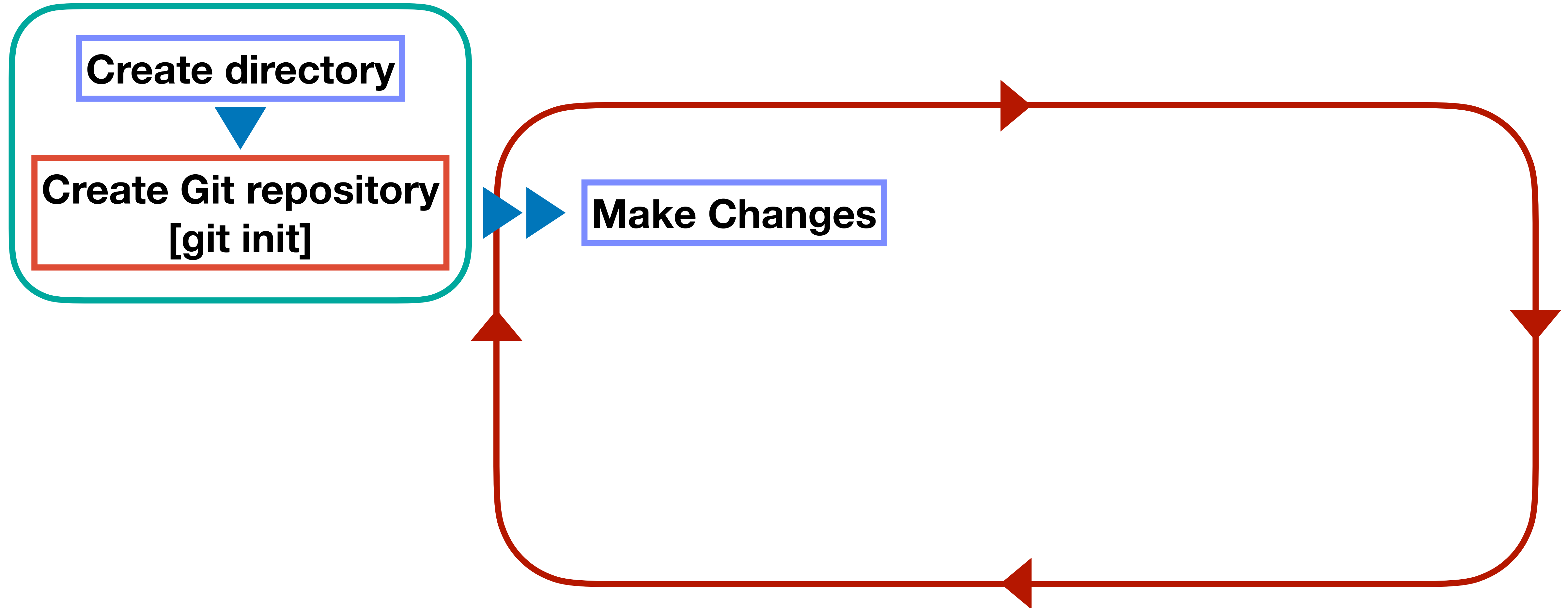
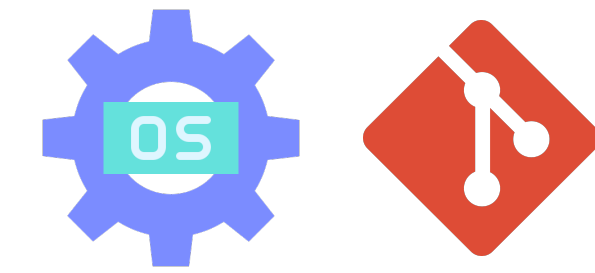


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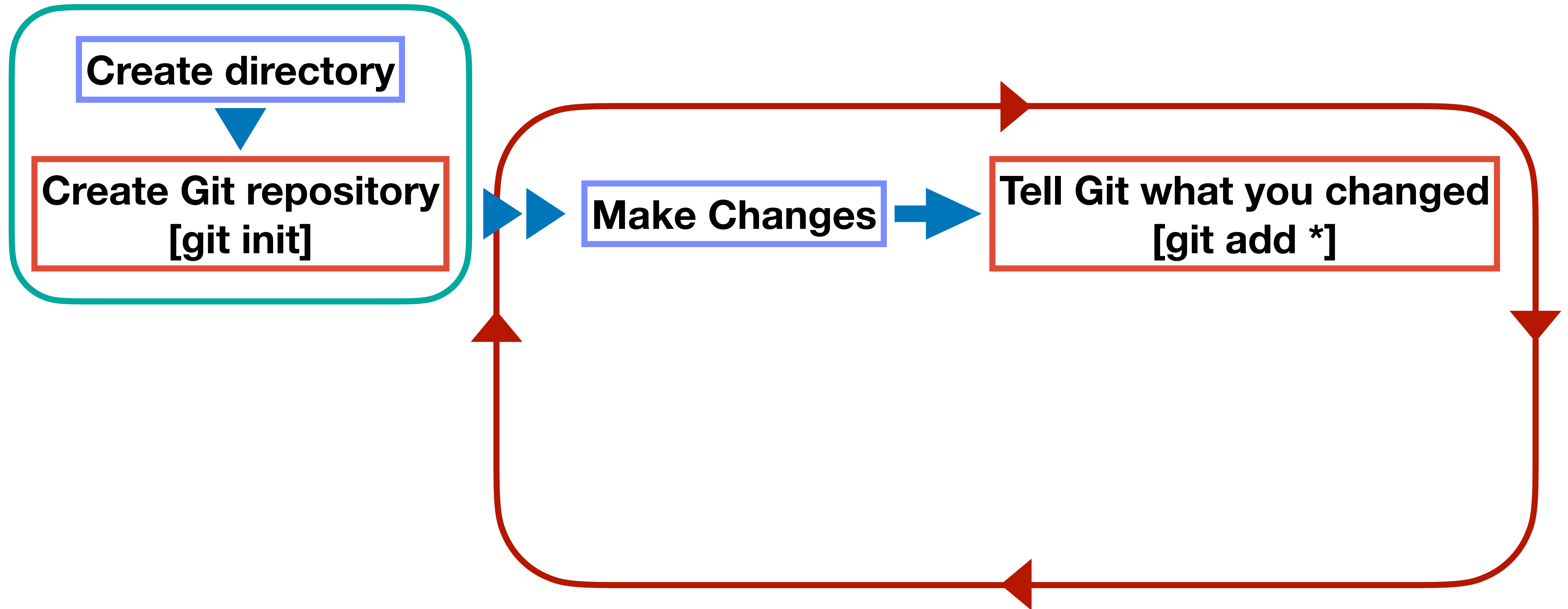
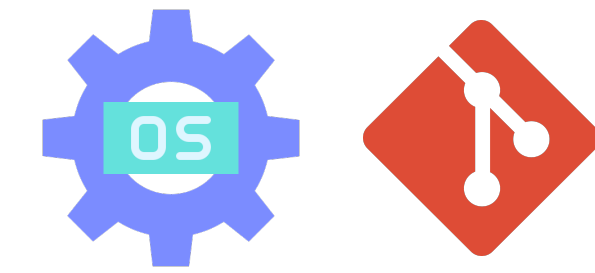


Create Git repository
[git init]

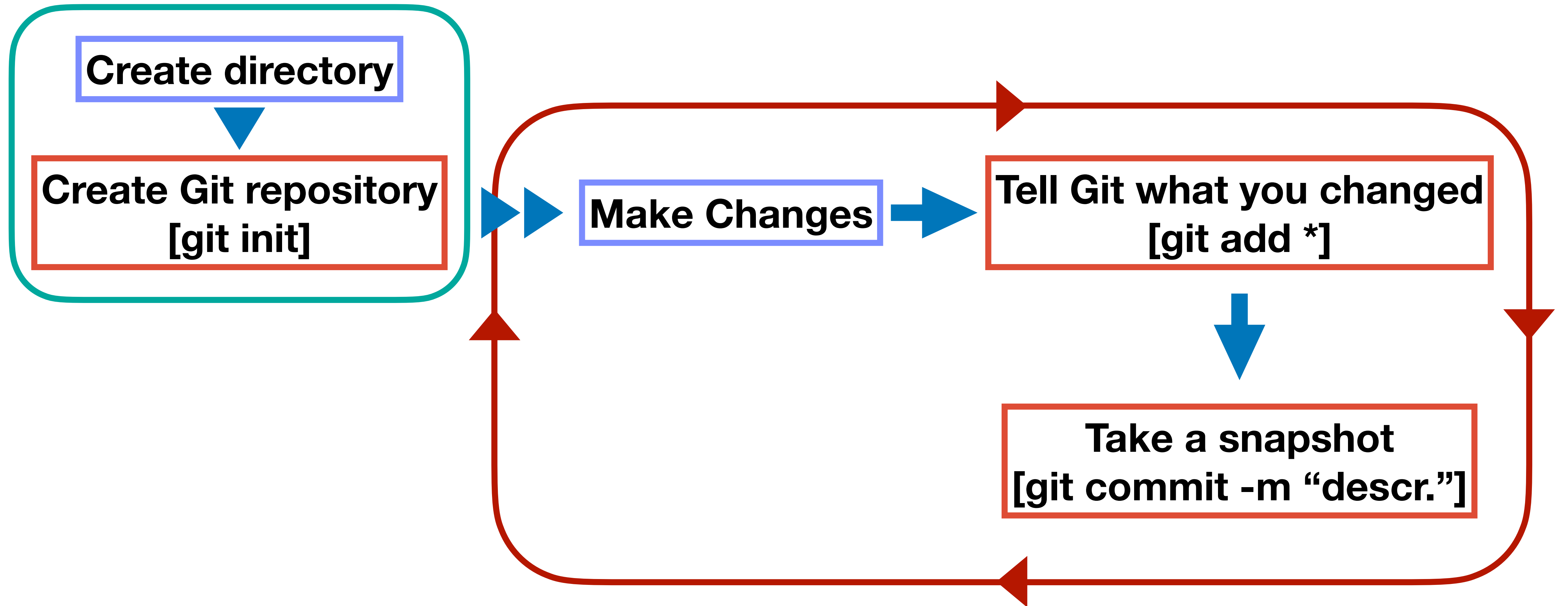
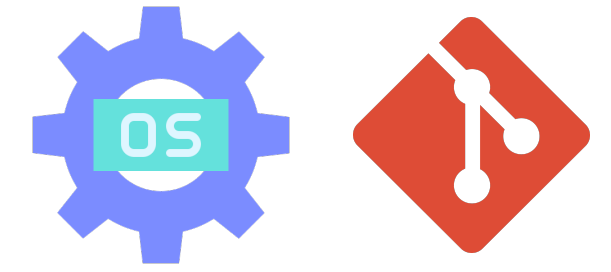
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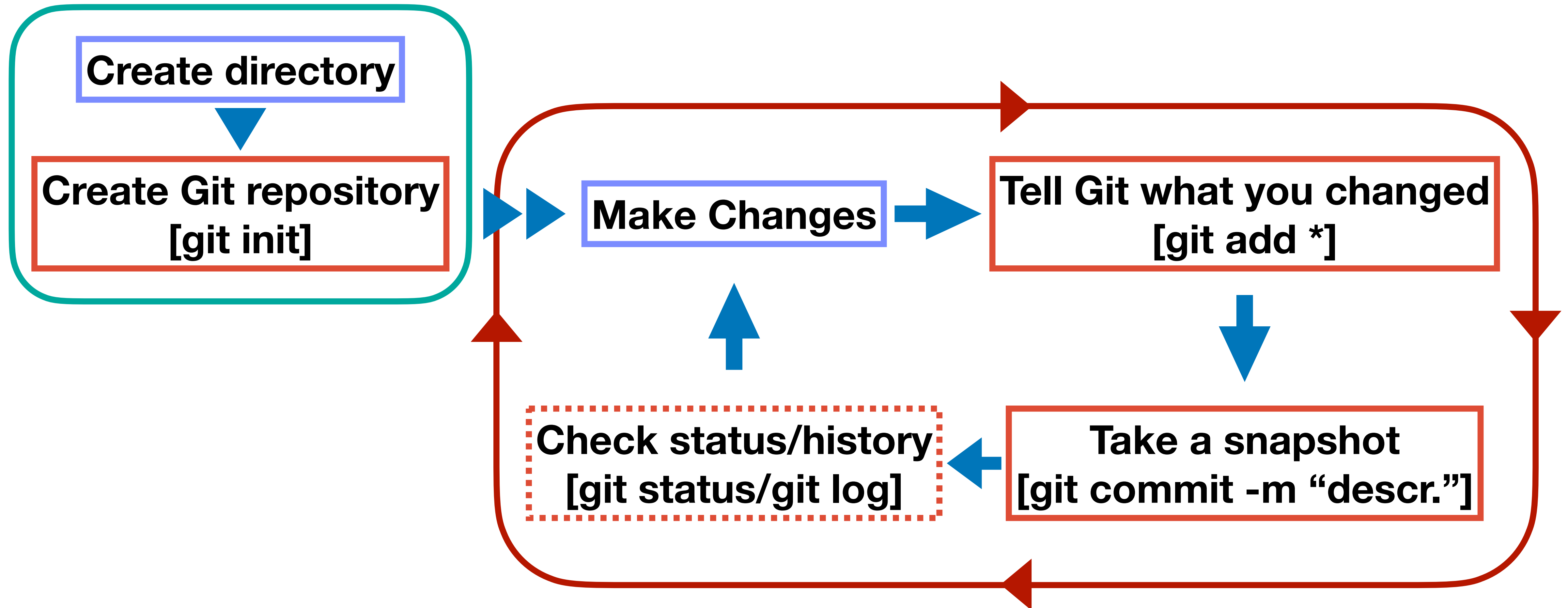
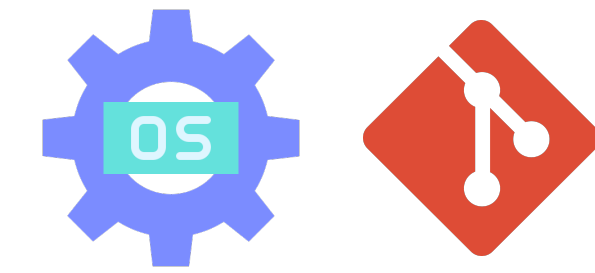
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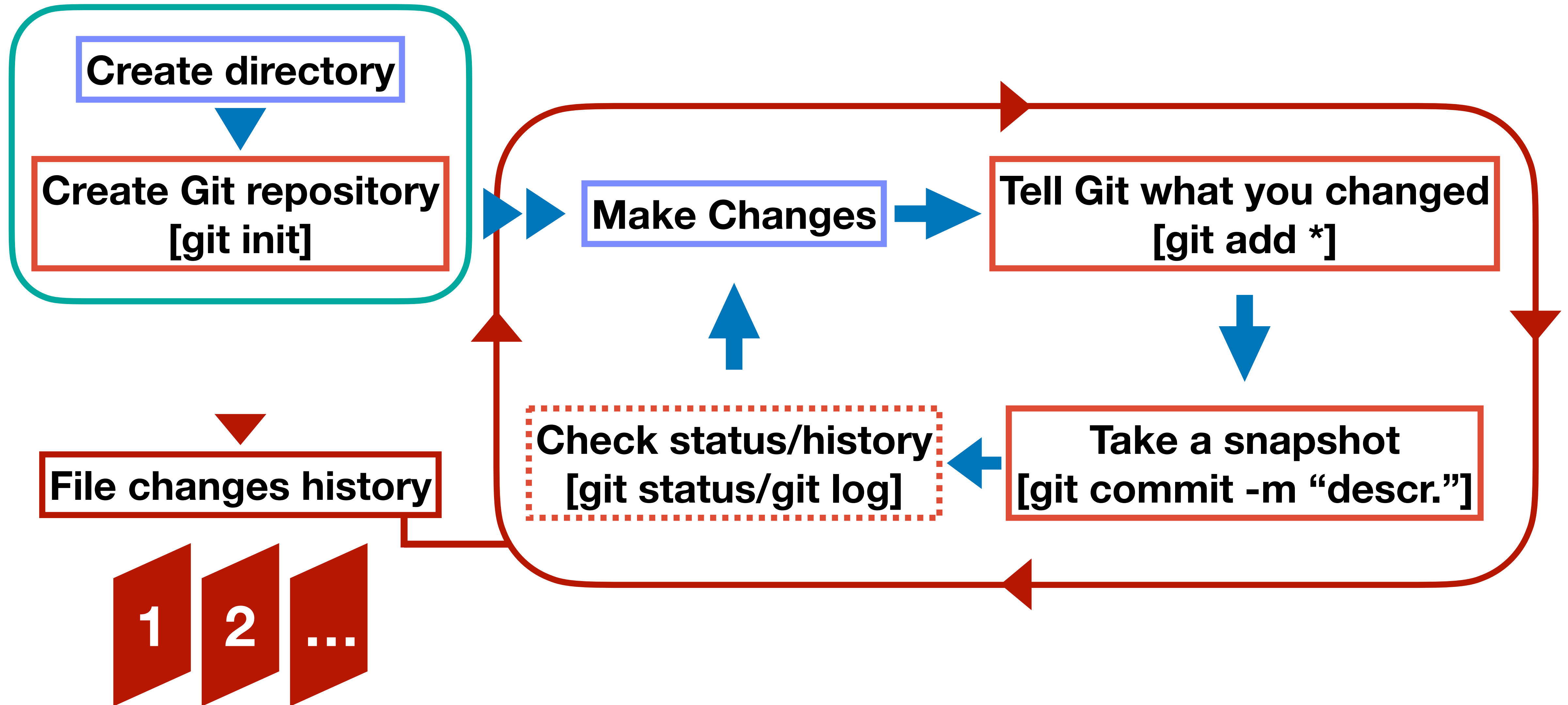
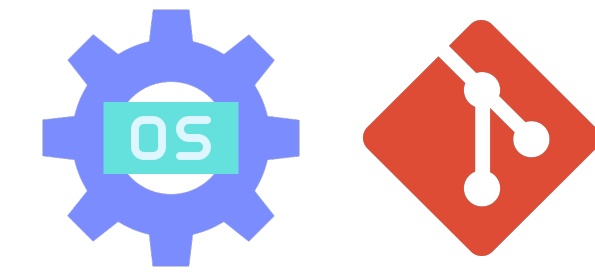
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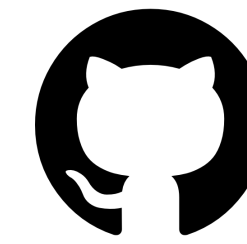
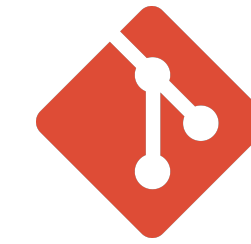
Git simple workflow



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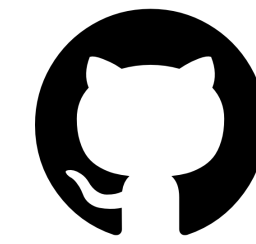
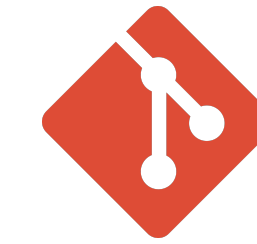
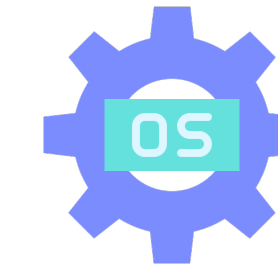
Clone remote repository
[git clone <repo_url>]



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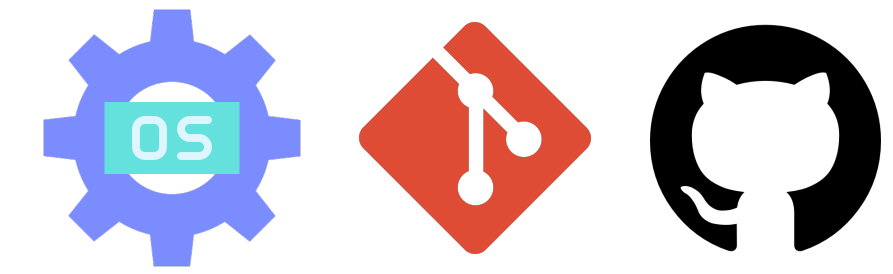
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Make Changes

Tell Git what you changed
[git add *]

Take a snapshot
[git commit -m "descr."]



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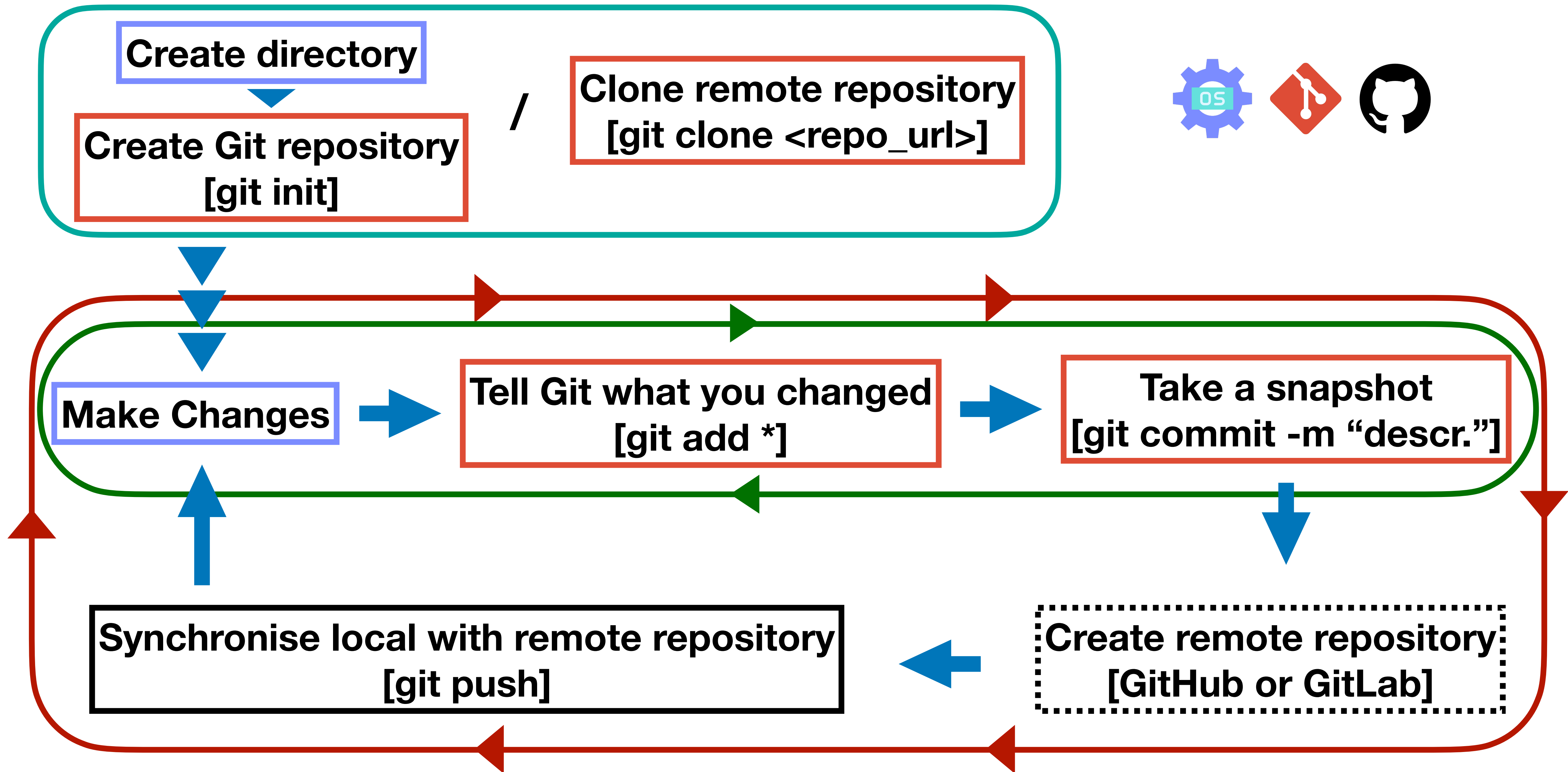
Make Changes

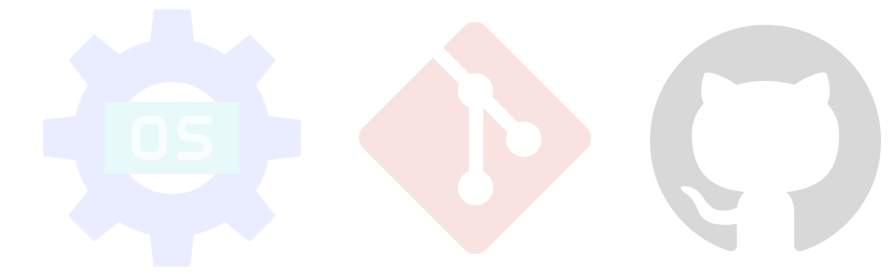
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[git add *]

Take a snapshot
[git commit -m "descr."]

Synchronise local with remote repository
[git push]

Create remote repository
[GitHub or GitLab]





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Clone remote repository
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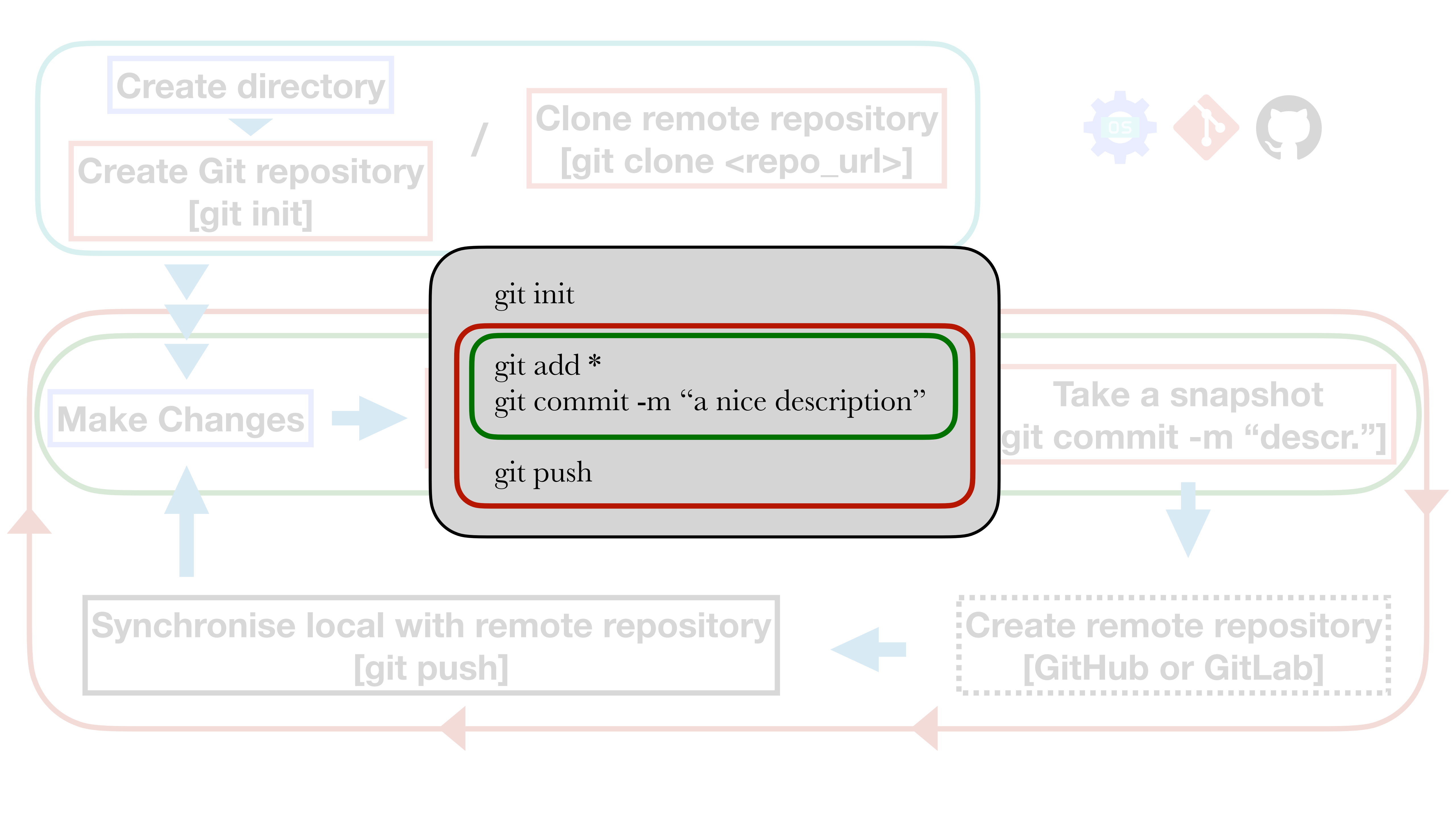
Make Changes

```
git init  
git add *  
git commit -m "a nice description"  
git push
```

Take a snapshot
git commit -m "descr."]

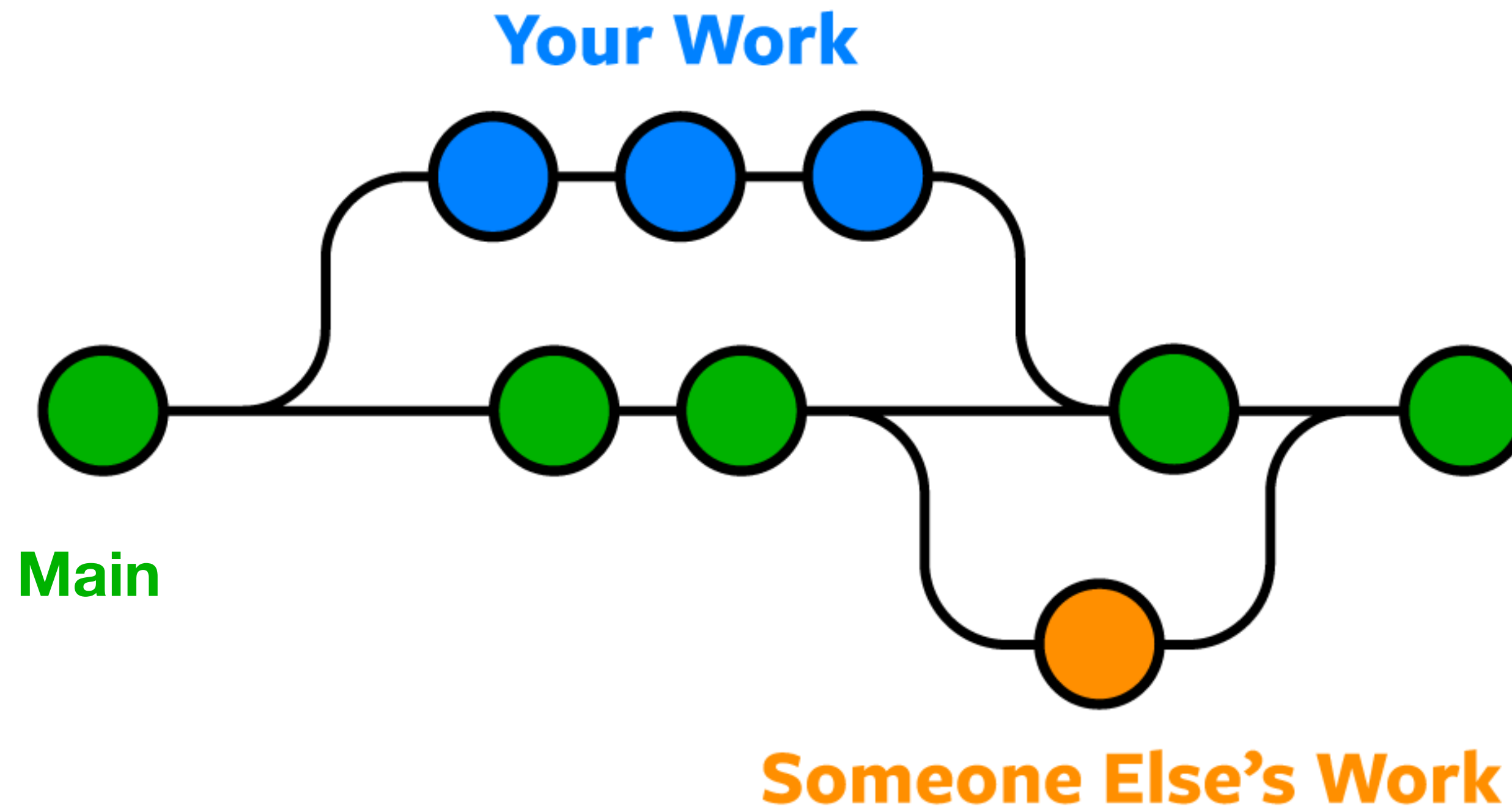
Synchronise local with remote repository
[git push]

Create remote repository
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Git branching

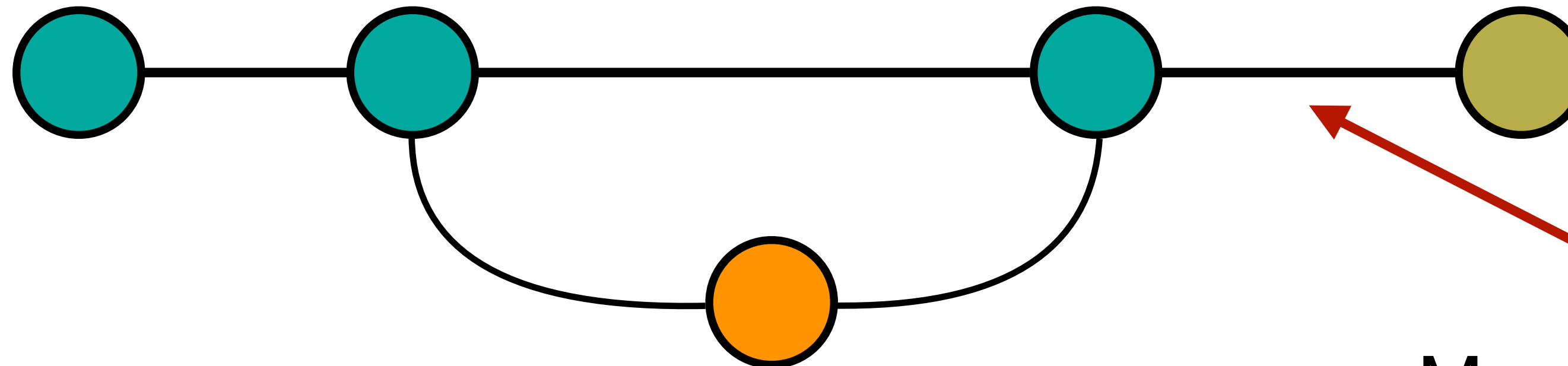
○ Commits



Git branching

Created a README.md file [main]

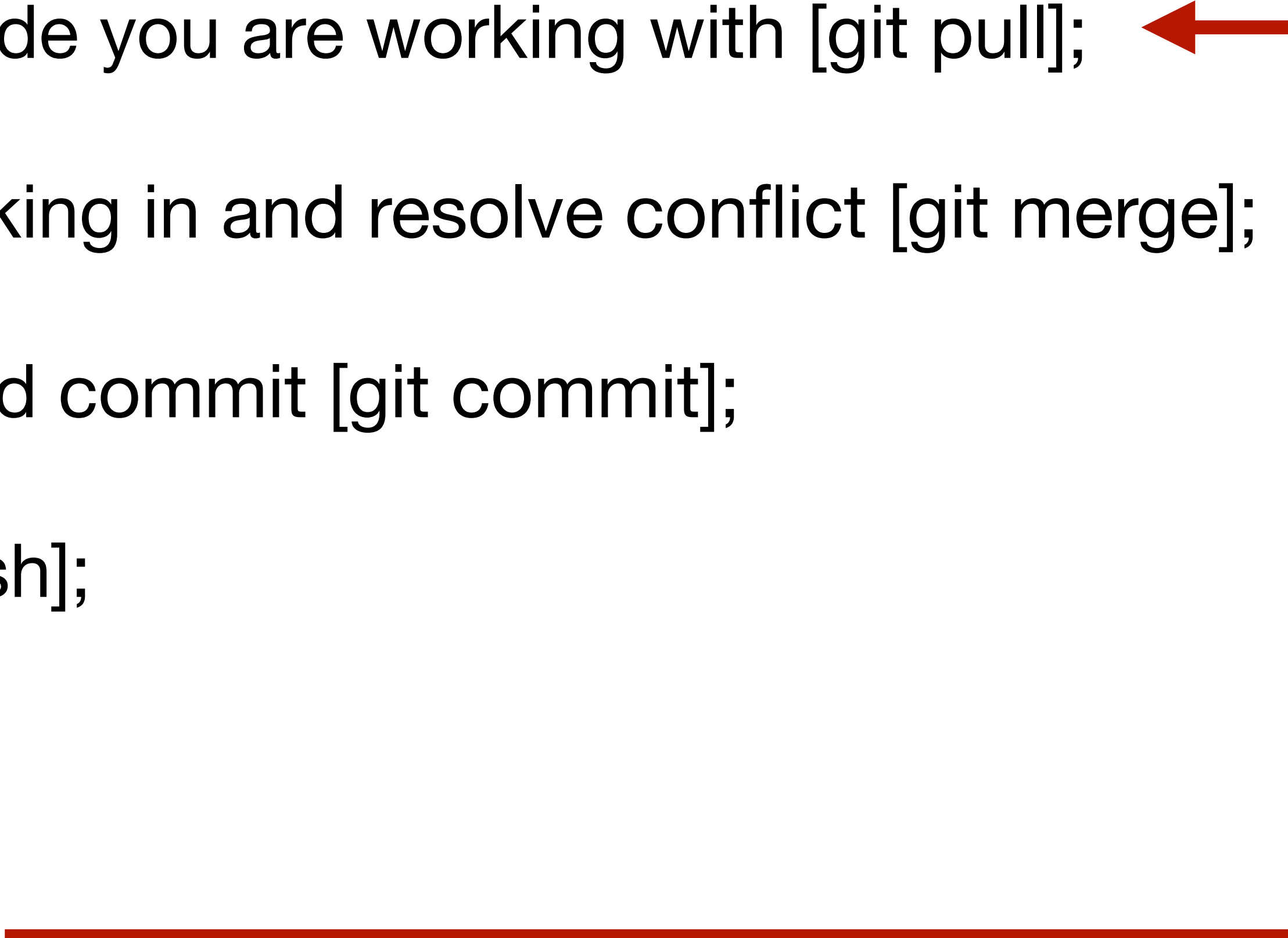
Modified the README.md file [main]



Merged main and feature branches

Modified the README.md file [feature_branch]

Collaborative git workflow

1. Get the most stable version of the code you are working with [git pull];
 2. Merge it with the branch you are working in and resolve conflict [git merge];
 3. Make changes, notify git [git add], and commit [git commit];
 4. Push your changes to remote [git push];
 5. When satisfied, create a pull request;
 6. Implement changes from feedback.
- 

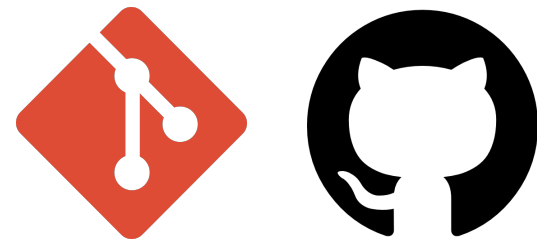
FAIR

FINDABLE

ACCESSIBLE

INTEROPERABLE

REUSABLE



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REUSABLE

TAKE HOME (a.k.a. why all this??)

USE GIT and GITHUB TO...

create a history of your changes

facilitate collaboration

maintain code integrity

simplify code review

enhance project management

improve learning and documentation

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