CS109 Lab 7

Ben Chen

SUSTech

March 27, 2023

What is git?

Git is a version control system that helps you,

- track the changes of your source code.
  e.g. update your v1.0 program to v2.0
- cooperate with your team.
  e.g. sync with the progress of your team
- ~~get bonus for your project.~~
  we think using git is a normal action for project

Installation

You need to follow these steps to install git,

- For Mac users, try Xcode or Homebrew in Terminal
  `xcode-select --install` or `brew install git`
- For Windows users, use git for Windows
  download from `https://gitforwindows.org`
- For Linux/Unix users, you should already know how to install git since you're using *nix.

Create your repository

Your project is stored in a repo, which is within a folder.

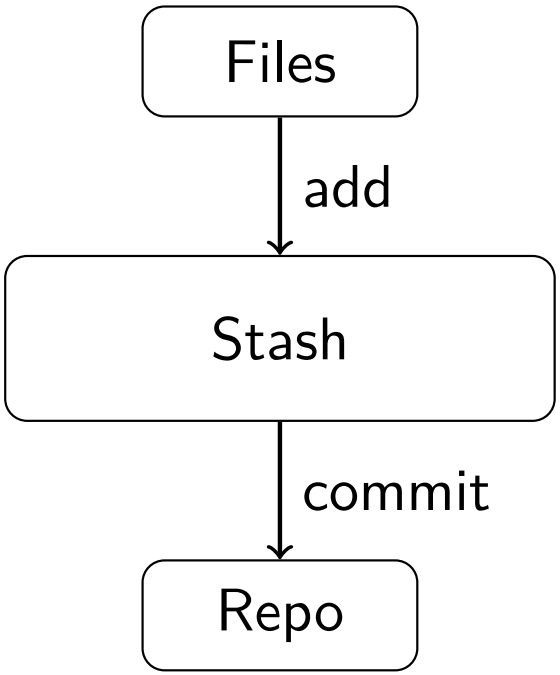
- In your project folder, use this to create a repo.

```
cd /path/to/your/project
git init
```

- To download an existing repo, use

```
git clone <url>
```

Saving changes



To save changes, you should

1. add new or modified files to stash to pack them together

   ```
   git add Demo.java
   git add Readme.md
   ```

2. commit the files in stash and write a comment

   ```
   git commit -m "add demo and
       readme doc"
   ```

3. remove files from stash and repo

   ```
   git remove <file>
   ```

Check Something

- Check the status of stash

  ```
  git status
  ```

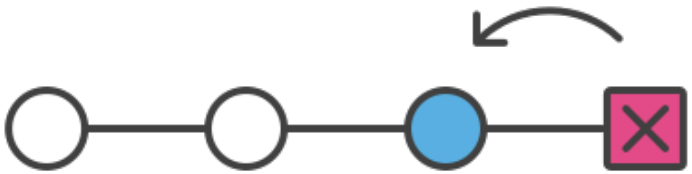
- Check the history of the repo

  ```
  git log
  ```

- Check the history of file

  ```
  git blame <file>
  ```

Version



To undo changes and go back to some version

- go back to last version

```
git reset --hard HEAD^
```

- go back to last 3 version

```
git reset --hard HEAD~3
```

- go back to specific version

```
git reset --hard <id>
// commit id is at git log
```

Remote Repo

Generally, we use the website Github as our remote repo.

1. Sign up in `https://github.com`
2. Create a new blank repo
3. Use `git clone` to download the repo
4. In Settings, add your teammates at Collaborators
5. Start developing your project!

Remote Repo

In local computer, we can use these commands,

- To sync with your current progress

```
git fetch origin // origin is alias of github address
```

- To push your new version to remote

```
git push origin main // main is the name of branch
```

Wildcard Character

Wildcard is a symbol used to represent more characters

- * is used to match any characters

```
git add *.java // add any .java file
git add * // add all files
git add Demo.* // add any files named Demo
```

- ? is used to match one character

```
git add ???.java // add .java with name of 3 characters
```

- More...

To be continued...

You may look them up by yourself,

- Branch and Conflict Resolving
- *.gitignore* file
- Lisence for your repo
- Git config
- You tell me