



GIT GUD Part 1

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- Sherisse Tan Jing Wen

Who we are



Chuan Hao



Sherisse

What is this talk about?

It is about:

- Introduce Git, a Version Control Software
- How to use Git in your projects
- The idea for Git and Version Control

It is **not** about: (Will be covered in later talks)

- Everything you need to know about Git
- How Git works
- Advanced Git workflows
 - Collaboration etc..

Prerequisites (Good to know)

- Knowledge of common bash commands
 - ls, cd, mkdir, etc.
- Basic VSCode Knowledge
- Have a GitHub Account
- Using a UNIX Operating System (OS)
 - I am kidding of course
 - Not really

```
[INS] → Github ls -l
total 0
drwxr-xr-x  3 panda  staff   96 Sep  1 22:53 SEED_talks
drwxr-xr-x  6 panda  staff  192 Aug 25 13:34 dotfiles
drwxr-xr-x  9 panda  staff  288 Aug 24 19:18 portfolio_website
```

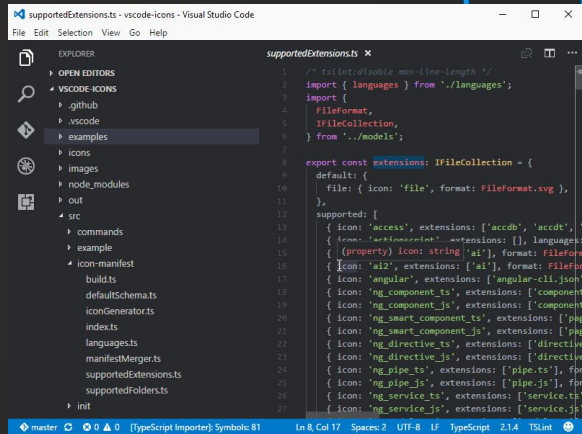


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01

Git Overview

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Why Git?

```

window.onload = function () {





  var s1 = document.querySelector("head").children;
  var s2 = document.querySelector("head").childNodes;
  //console.log(s1);
  //console.log(s2);

  /* var s2 = document.querySelector("ul").children;
  for (let i = 0; i < s2.length; i++) {
    const e = s2[i];
    console.log(e.textContent);
  } */
  var uni = ["Princeton University", "Harvard University", "Columbia University",
"Massachusetts Institute of Technology", "University of Chicago", "Vale
University", "Stanford University", "Duke University"];
  var ul = document.getElementById("university");

  //create new item
  var create_me = document.createElement("input");
  ul.parentNode.appendChild(create_me);
  var create_me_btn = document.createElement("button");
  create_me_btn.innerText = "Add";
  ul.parentNode.appendChild(create_me_btn);
  create_me_btn.addEventListener("click", function () {
    create_me_btn.parentNode = alert("Hello")
  })

  //view item
  for (let i = 0; i < uni.length; i++) {
    const element = uni[i];
    //ul.innerHTML += "<li>"+element+"</li>";
    ul.innerHTML += "<li>${element} <span class='remove_me'>(x)</span> |

```

Folder	Seed	SEED_1
Name		
	draft_1.py	
	v1.py	
	v1_1.py	
	v2.py	

```

/home/chuanhao01/My_Folder/Github/Full_Stack_Web_App/app.js:46
}
^

```

```

SyntaxError: missing ) after argument list
    at Module._compile (internal/modules/cjs/loader.js:760:23)
    at Object.Module._extensions..js (internal/modules/cjs/loader.js:827:10)
    at Module.load (internal/modules/cjs/loader.js:685:32)
    at Function.Module._load (internal/modules/cjs/loader.js:620:12)
    at Function.Module.runMain (internal/modules/cjs/loader.js:877:12)
    at internal/main/run_main_module.js:21:11
[nodemon] app crashed - waiting for file changes before starting...

```

```

[0] 0:bash 1:bash 2:bash- 3:npm* "chuanhao01-Lenovo-YOG" 13:25 14-Jan

```

```

// Setting up ports
const PORT = 3000;
app.listen(PORT, function() {
  console.log(`Server listening at port ${PORT}`);
}

```


Why Git?

[INS] → Basic-Template git:(master) git status
On branch master
Your branch is up to date with 'origin/master'.
nothing to commit, working tree clean

1 README.md > # Overview

1 # Overview

2

3 This Github Repository is used for <Insert here>

4

1 # Overview

2

3 This Github Repository is used for <Insert here>

4

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```
* commit f8ee97dcd2e65c182cdb0594bab0f7c087d5c36b (HEAD -> main, origin/main, origin/HEAD)
| Merge: 0524c4d 7ec7444
| Author: Lim Chuan Hao <34702921+chuanhao01@users.noreply.github.com>
|
| Merge pull request #108 from chuanhao01/chal/coin-change
|
* commit 7ec7444d525090208ab3ffab12efd3d3ca379381
| Author: chuanhao01 <34702921+chuanhao01@users.noreply.github.com>
|
| [doc] data
|
* commit 428fb2b72a204f6c456f6bda0099630c1051fb62
| Author: chuanhao01 <34702921+chuanhao01@users.noreply.github.com>
|
| [feat] making it harder
|
* commit 35fca21d40d0b73fc44dc90f62e6a09fabe16a2
| Author: chuanhao01 <34702921+chuanhao01@users.noreply.github.com>
|
| [doc] format
|
* commit c1803a2d2ae93ce1befd3bb15aee934fe66301f7
| Author: chuanhao01 <34702921+chuanhao01@users.noreply.github.com>
|
| [feat] work
|
* commit 59ea696f5a4f9564a652262ccb281c102f4a5367
| Author: chuanhao01 <34702921+chuanhao01@users.noreply.github.com>
|
| [feat] chal
|
* commit 0524c4dd530bc3ca32e7f8f09d5dd0a4ca3ff7e
| Merge: 39ba9ea bce0436
| Author: David-The-Programmer <42868389+David-The-Programmer@users.noreply.github.com>
|
| Merge pull request #104 from chuanhao01/chal/days
|
* commit bce04369a6d0aa0469a4ac666b63a1d95834cf95 (origin/chal/days)
| Author: David-The-Programmer <42868389+David-The-Programmer@users.noreply.github.com>
|
| Apply suggestions from code review
|
```


Why Git?

README.md > # Overview

1 # Overview

2

3 This Github Repository is used for <Insert here>

4

1 # Overview

2

3 This Github Repository is used for <Insert here>

4

5+

6+ # Table of Contents

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Why Git?



Automatic Versioning

Track/Undo changes

Fast

Free

Open source

What Git?

- Free
- Open-source
- Version Control



Installing Git

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

```
~ brew install git
```

```
~ sudo apt-get update && sudo apt-get install git
```

Installing Git

Downloads



macOS



Windows



Linux/Unix

```
panda@Pandas-MacBook-Pro:~  
[INS] → ~
```

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02

Git Theory

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PLACEHOLDER

Difference between working directory, index and repo

What are commits, hashes, branches



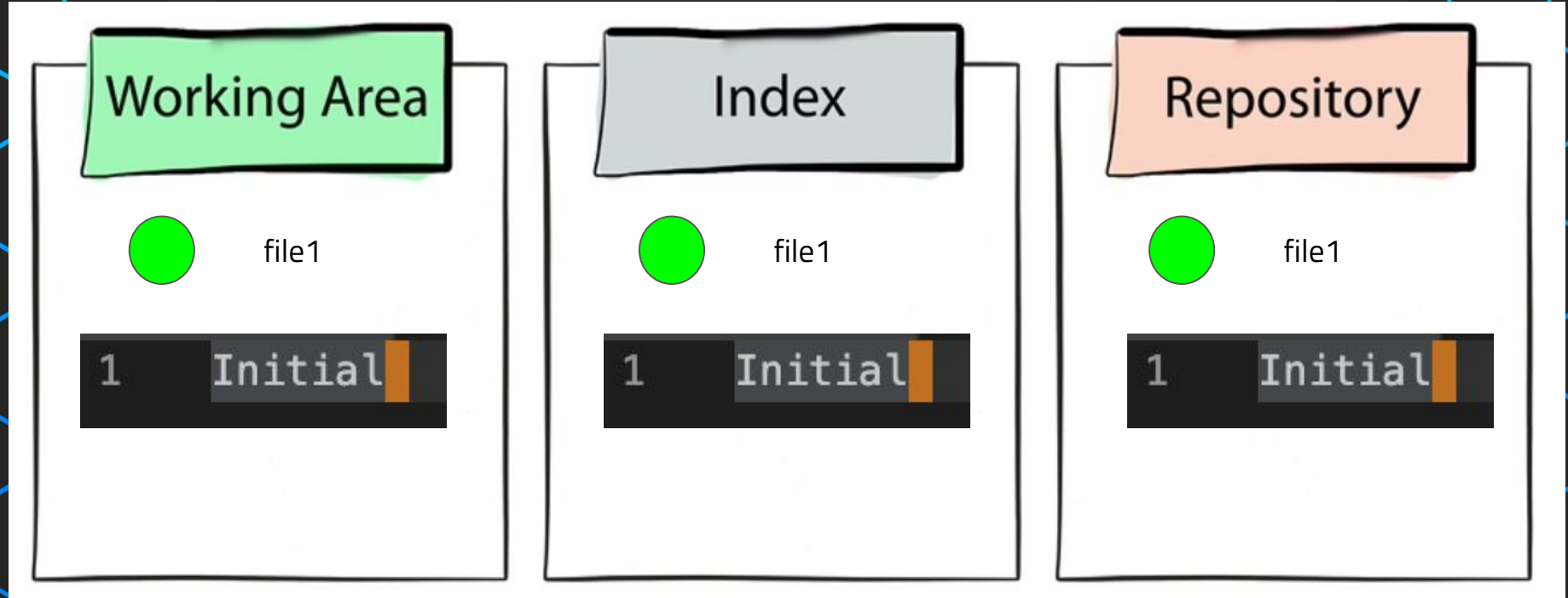
Public Service Announcement (PSA)

- This is a Brief Overview
- Take the theory as is
- **Do not** need to know the theory to use git
- More important for advanced usage of git
 - Collaboration
 - Git history management
 - etc.



**DON'T
WORRY!**

How does git work



How does git work

Working Area



file1

```
1 Initial
2 hi, this is new |
```

Index



file1

```
1 Initial |
```

Repository



file1

```
1 Initial |
```

How does git work

Working Area



file1

```
1 Initial  
2 hi, this is new |
```

Index



file1

```
1 Initial  
2 hi, this is new |
```

Repository



file1

```
1 Initial |
```

How does git work

Working Area



file1

```
1 Initial  
2 hi, this is new |
```

Index



file1

```
1 Initial  
2 hi, this is new |
```

Repository



file1

```
1 Initial  
2 hi, this is new |
```


How does git work

Working Area



file1

```
1 Initial  
2 hi, this is new |
```

Index



file1

```
1 Initial  
2 hi, this is new |
```

Repository

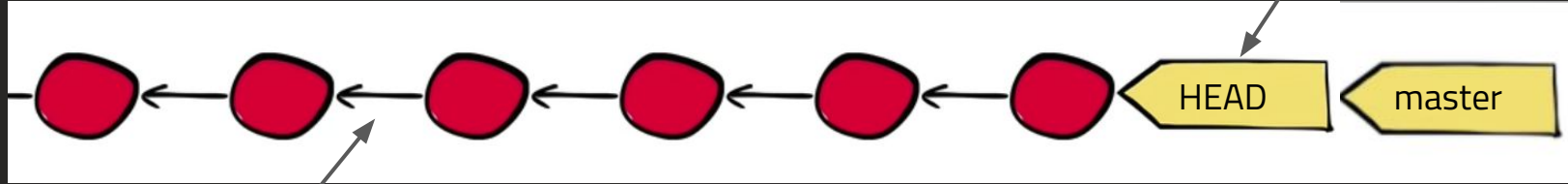


file1

```
1 Initial  
2 hi, this is new |
```

How Git Works

Can have other Names



Commits are linked

781as1f6..

837ba20..

PLACEHOLDER

PLACEHOLDER

```
1 Initial
```

```
1 Initial  
2 hi, this is new
```

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03

Git & Github

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Commands

- status
- add
- commit
- log
- restore
- reset/checkout
- stash

Commands Planning

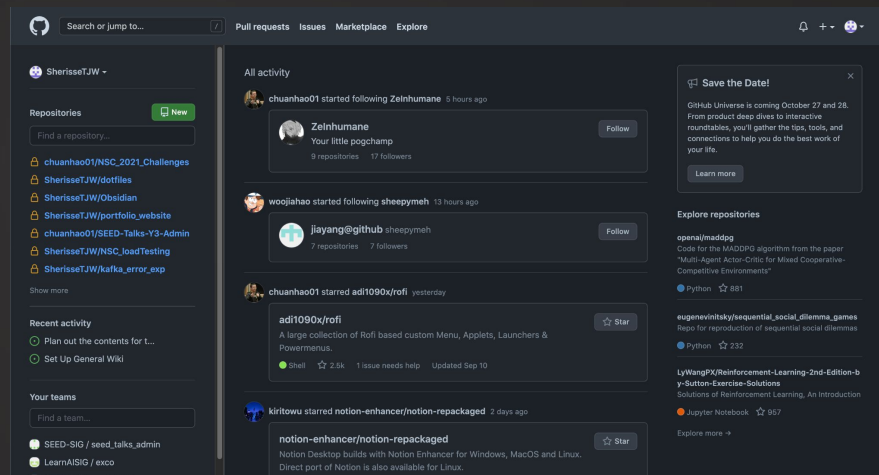
1. **status**
 - a. Show what git is currently seeing
2. **add**
 - a. Staging changes for commit
3. **commit**
 - a. Store change as a version
 - b. Has hashes
 - c. Can look at them later
4. **log**
 - a. Look at all the commits, hashes
5. **restore**
 - a. Unstage, delete changes
6. **reset/checkout**
 - a. More basic of restore

1. **checkout**
 - a. See previous changes
 - b. Go back to master
 - c. Status is your friend
2. **stash**
 - a. --include-untracked
 - b. List
 - c. Push
 - d. Pop
 - e. Clear
 - f. Stash away current changes

Github Browser

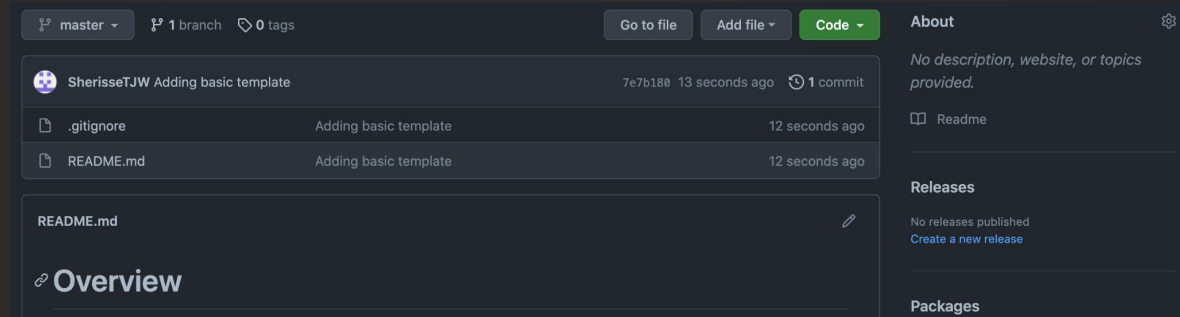
<https://github.com>

- Repository
- Profile
- Recent Activity
- Followers & Followings



Commands

- clone
- push
- pull



The screenshot displays a GitHub repository interface. At the top, it shows the 'master' branch with 1 branch and 0 tags. Below this, a commit by 'SherisseTJW' is shown, titled 'Adding basic template', with a commit hash of '7e7b180' and a timestamp of '13 seconds ago'. The commit includes two files: '.gitignore' and 'README.md', both with the description 'Adding basic template' and a timestamp of '12 seconds ago'. The 'README.md' file is expanded, showing its content. On the right side, the 'About' section is visible, stating 'No description, website, or topics provided.' and a 'Readme' link. Below this, the 'Releases' section shows 'No releases published' and a 'Create a new release' link. At the bottom, the 'Packages' section is partially visible.

master 1 branch 0 tags Go to file Add file Code

SherisseTJW Adding basic template 7e7b180 13 seconds ago 1 commit

.gitignore	Adding basic template	12 seconds ago
README.md	Adding basic template	12 seconds ago

README.md

Overview

About No description, website, or topics provided. Readme

Releases No releases published Create a new release

Packages

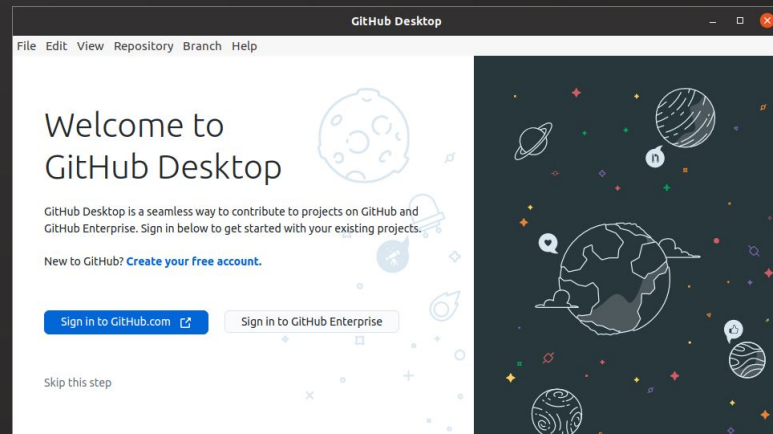
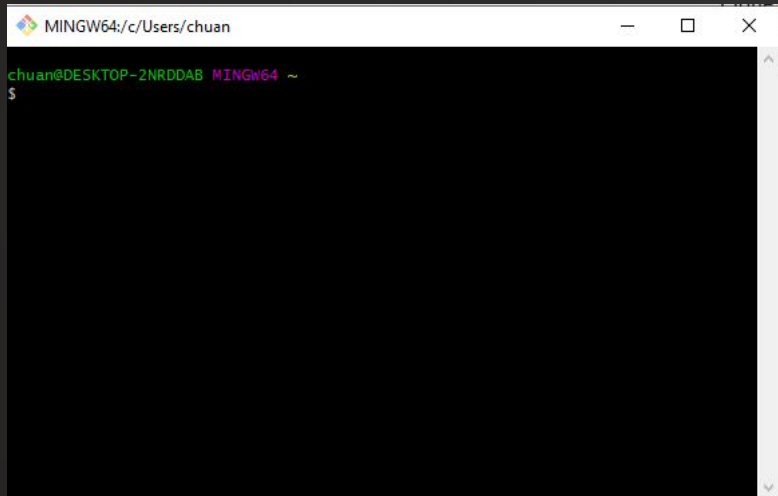
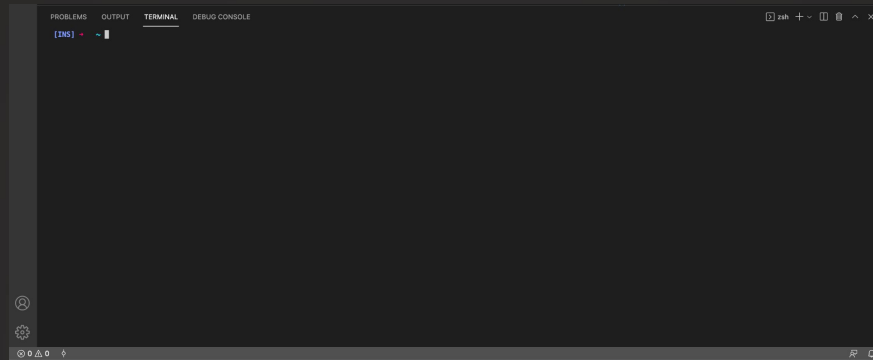
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04

Git Tools & Commands

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Tools



Commands

- clone
- status
- log
- checkout
- stash

- add (stage)
- commit
- reset/restore
- push
- pull



Conclusion