**What is git, why we need it?**

Git is the most commonly used version control system. It also supports branching and merging.

We need it to tracks the changes when making files, so it has a record of what has been done, and allows to 'stage' and 'commit' files, enabling us to choose specific pieces for version tracking and updates. On the other hand, it can revert to specific versions if we need. Git also makes collaboration easier, allowing changes by multiple people to all be merged into one source.

**Here are some git and GitHub commands we usually use in software development,  please explain the meanings and use cases of them.**

**- git status**

**- git add**

**- git commit**

**- git log**

**- git branch**

**- git push [ repo\_name ] [ branch\_name ]**

**- git merge [branch\_name]**

**- git remote -v**

**- fork**

I use hackmd to describe my answer.

<https://hackmd.io/@smillzy/HyELbJxFp>

**Please describe how to establish a GitHub repo and how to upload the local projects to GitHub. Try to explain your answers with as much detail as possible.**

Create a repo. :

1. Go to your repositories, and click the “new” button. It will show “Create a new repository”.

2. Give your repo. a name down below “Repository name”. You can write some description(optional).

3. Click the “Create repository” bottom.

Upload the local projects(If didn’t create any git):

1. Use ‘git init’ to create a repo.

2. Use ‘git add .’ to add all files.

3. Use ‘git commit -m "discription" ’ to commit file.

4. Use ‘git branch -M main’. ‘-M’ is stands for force rename. Even if the target branch already exists, still overwrites the existing branch with the new name. ‘main’ is the new branch name.

5. Use ’git remote add <name> [https://github.com/<username>/<repo](https://github.com/%3cusername%3e/%3crepo)\_name>’. Set a remote repo. <name> is the name we want to give the remote repo. [https://github.com/<username>/<repo\_name](https://github.com/%3cusername%3e/%3crepo_name)> is the URL of the remote repository.

6. Use ‘git push -u <username> main’. Push commits to GitHub. ‘-u’ is a short for ‘--set-upstream’. Establish a tracking relationship between the local branch and the remote branch. <username> which is named by step5. ‘main’ is the branch name which define by step 4.

Upload the local projects(If create git already):

1. Use ’git remote add <name> [https://github.com/<username>/<repo](https://github.com/%3cusername%3e/%3crepo)\_name>’.

2. Use ‘git branch -M main’.

3. Use ‘git push -u origin main’.

**When we talk about web application, what is client and server?**

Client, also known as service requesters, are pieces of computer hardware or server software that request resources and services made available by a server.

Server, is a device or computer program that provides functionality for other devices or programs.

**What is terminal, shell, CLI, GUI?**

A shell is a command-line interpreter or a program that provides a textual interface for executing commands and interacting with the operating system. The shell is not all about commands; it is divided into two categories: Command-Line Shell, Graphical Shell.

A CLI (short for command-line interface) is a user interface that takes input from the user via text commands entered in a terminal or console window. The CLI is more efficient and faster than GUI.

A terminal refers to a device or a program that provides a user interface for interacting with the computer system. (In Linux or MacOS called terminal, in Windows OS is called “command prompt”.)

(Just like I use shell to tell terminal do something, and terminal will give me some respond.)

A GUI (short for graphical user interface) is based on graphics and visual elements, allowing users to interact with the system using a keyboard and a mouse. It aims to facilitate system management and improve user-friendliness by providing windows, buttons, icons, etc.

**GitHub Page 網址**

<https://smillzy.github.io/remote-assignments.io/week-1/assignment-2/index.html>

**GitHub 網址**

<https://github.com/smillzy/remote-assignments.io>