

## Task 1.2. Decentralized VCS practice with Git

### Task Objective:

Show the process for creating a new Git repository on your machine. Add a new file to be tracked by the repository, commit changes. Slightly modify the file (to create a versioning diff), then commit the changes. Be nice to your future self by writing a descriptive commit message for your log. Upload the changes to a GitHub Repository.

1. type `git init` to initialize an empty Git repository

```
jiawe_000@deMacBook-Pro Task1.2 % git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /Users/jiawe_000/Desktop/CISC3140/Lab/Task1.2/.git/
```

2. Create a file(i.e. text.txt) to the working directory(i.e. Task1.2).

Type `git add <file>` to add the file in the working directory to the staging area.

Type `git status` can display the state of the working directory and the staging area.

Type `git commit -m '<message>'` to commit the file in the staging area to the local repository with a descriptive commit message.

```
jiawe_000@deMacBook-Pro Task1.2 % git add text.txt
jiawe_000@deMacBook-Pro Task1.2 % git status
On branch master
```

```
No commits yet
```

```
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
       new file:   text.txt
```

```
jiawe_000@deMacBook-Pro Task1.2 % git commit -m 'first commit'
[master (root-commit) b33cc9b] first commit
 1 file changed, 1 insertion(+)
 create mode 100644 text.txt
```

3. Make some changes on the file. (Here use `git status`, will see “modified: text.txt” is in red, so need to add and commit the file again after make changes on the file)

```
jiawe_000@deMacBook-Pro Task1.2 % git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   text.txt

no changes added to commit (use "git add" and/or "git commit -a")
```

Type `git add <file>` and `git commit -m '<message>'` to add the changes to the local repository.

```
jiawe_000@deMacBook-Pro Task1.2 % git add text.txt
jiawe_000@deMacBook-Pro Task1.2 % git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   text.txt

jiawe_000@deMacBook-Pro Task1.2 % git commit -m 'second commit'
[master 7187dd4] second commit
 1 file changed, 2 insertions(+)
```

Type `git log` can show a list of all the commits made to a repository.

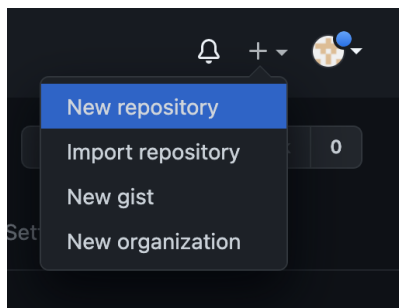
```
jiawe_000@deMacBook-Pro Task1.2 % git log
commit 7187dd400697f52073d9f616fa9c224b08ca04f6 (HEAD -> master)
Author: Jiawei Chang <jiawei9950@gmail.com>
Date:   Wed Jul 14 02:31:53 2021 -0400

    second commit

commit b33cc9b6d4abc69b7a2d2c04b54a810dfa890d37
Author: Jiawei Chang <jiawei9950@gmail.com>
Date:   Wed Jul 14 02:28:21 2021 -0400

    first commit
```

#### 4. Create a new repository on Github

A screenshot of the 'Create a new repository' form on GitHub. The form includes fields for 'Owner' (Jiawei41), 'Repository name' (cisc3140-lab1.2), and 'Description' (Task 1.2. Decentralized VCS practice with Git). It also has radio buttons for 'Public' and 'Private' visibility, and checkboxes for 'Add a README file', 'Add .gitignore', and 'Choose a license'. A green 'Create repository' button is at the bottom.

Then it will show some command lines that let you upload your local git repository to Github.

A screenshot of the 'Quick setup' section on GitHub. It shows two methods: 'Set up in Desktop' and 'HTTPS'/'SSH'. The 'SSH' method shows the URL 'https://github.com/Jiawei41/cisc3140-lab1.2.git'. Below this, it says 'Get started by creating a new file or uploading an existing file. We recommend every repository include a README'. Then, it says '...or create a new repository on the command line' and lists a series of git commands. The last three commands are highlighted with a red box: 'git branch -M main', 'git remote add origin https://github.com/Jiawei41/cisc3140-lab1.2.git', and 'git push -u origin main'.

I only use the last three command lines since I already did the second and fourth lines and I am not going to add README.md.

```
jiawe_000@deMacBook-Pro Task1.2 % git branch -M main
jiawe_000@deMacBook-Pro Task1.2 % git remote add origin https://github.com/Jiawei41/cisc3140-lab1.2.git
jiawe_000@deMacBook-Pro Task1.2 % git push -u origin main
Username for 'https://github.com': jiawei41
Password for 'https://jiawei41@github.com':
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (6/6), 498 bytes | 498.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/Jiawei41/cisc3140-lab1.2.git
 * [new branch]      main -> main
Branch 'main' set up to track remote branch 'main' from 'origin'.
```

Then go to the repository on your github account, you can see the file.

