Lab 1

Git and GitHub

Objectives

Towards the end of this lab, you should be able to

- Differentiate between Git and GitHub
- Create a GitHub account
- Maintain both local and remote repositories using Git commands.

What is Git?

- **Git** is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

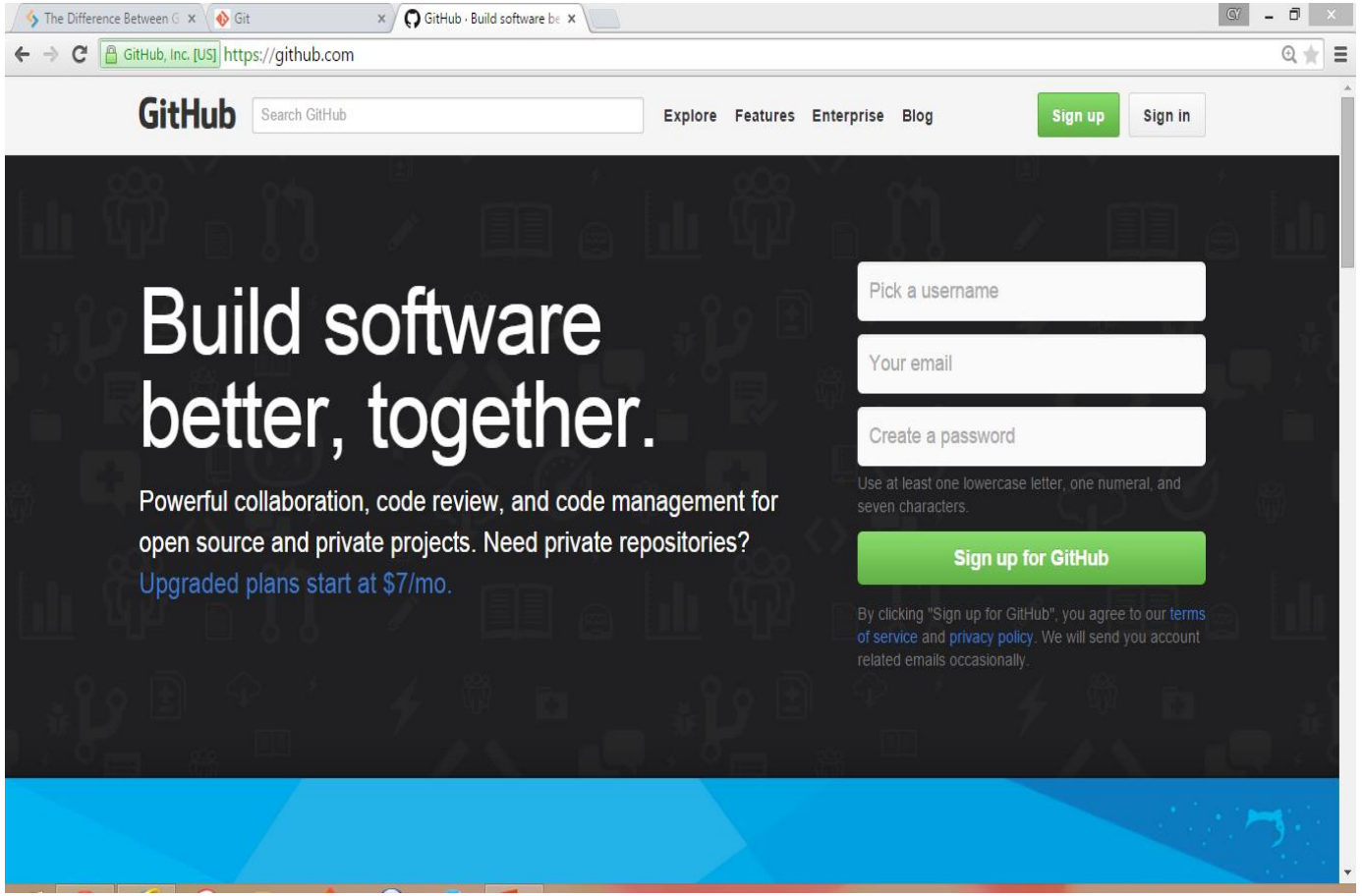
(https://**git**-scm.com/, 2015)

What is GitHub?

- A website on which you can host and publish your Git repositories as well as collaborate with others.
- Provides basic functionalities to maintain your repositories.
- The difference between Git and GitHub can be found at https://youtu.be/B44jvGEdrko

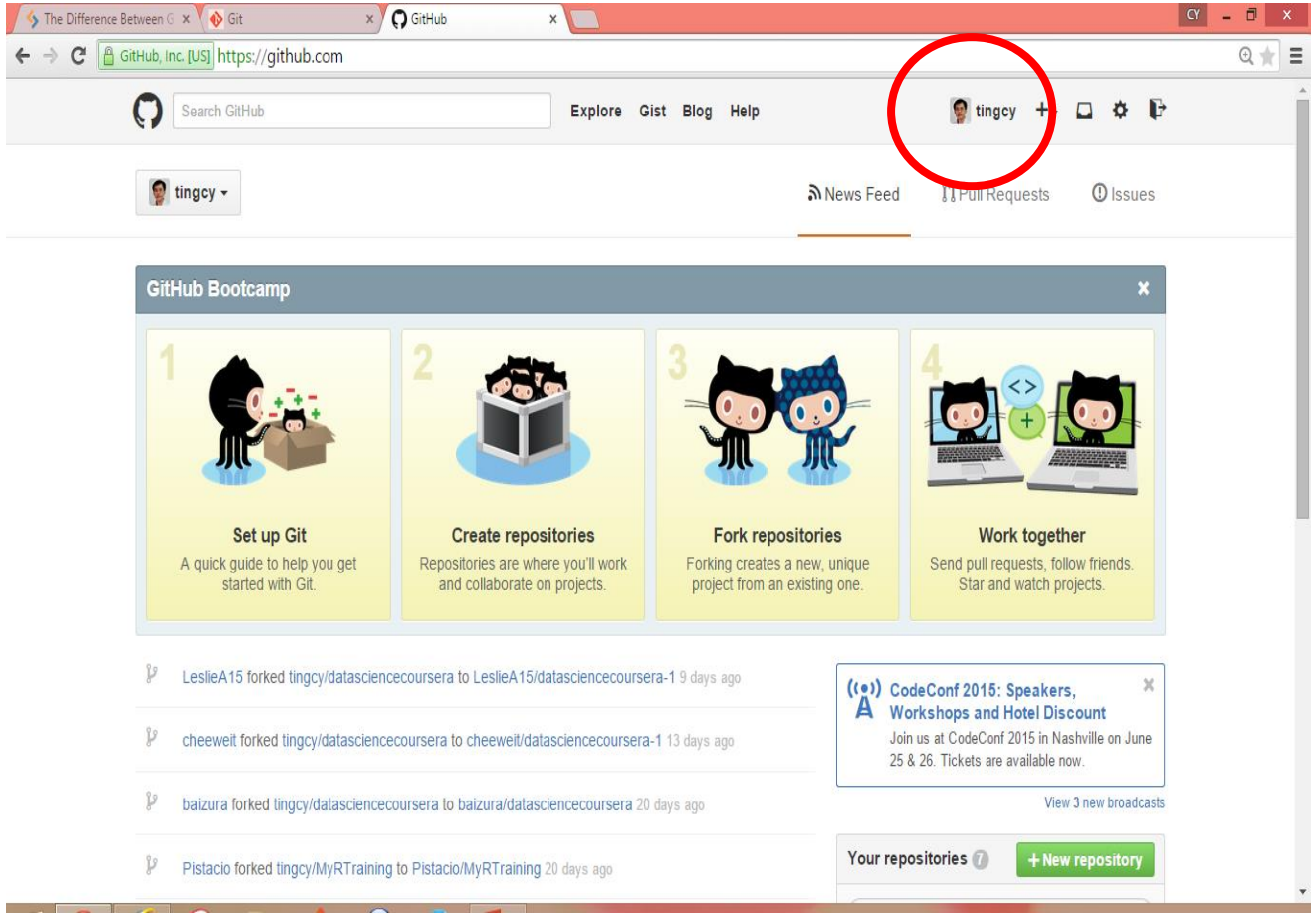
Creating a GitHub Account

- Navigate to https://github.com
- Create a new account by clicking at the “sign up” button.



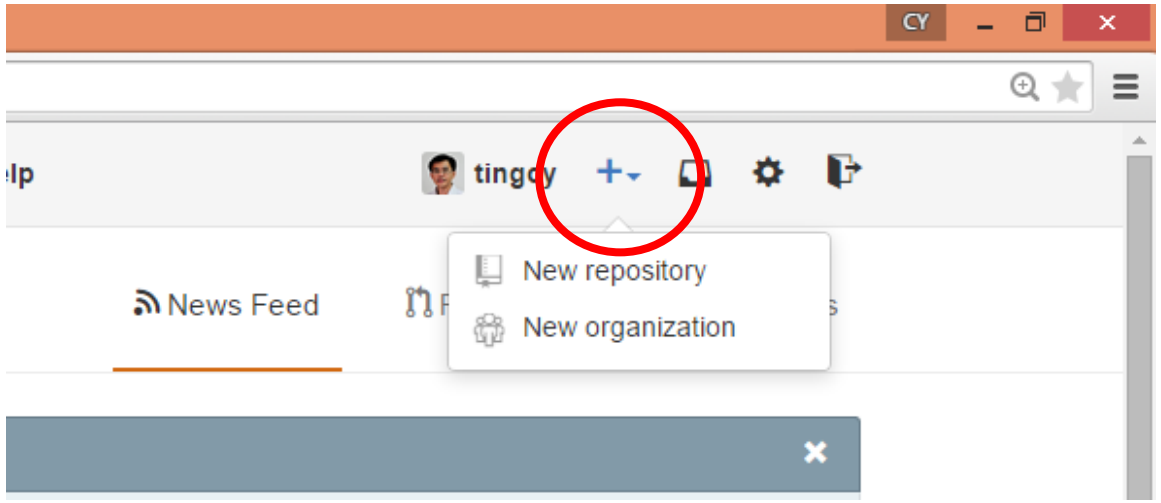
Creating a GitHub Account

- Using your username and password, once log in, you should see your username appear at the right-upper corner of the webpage.



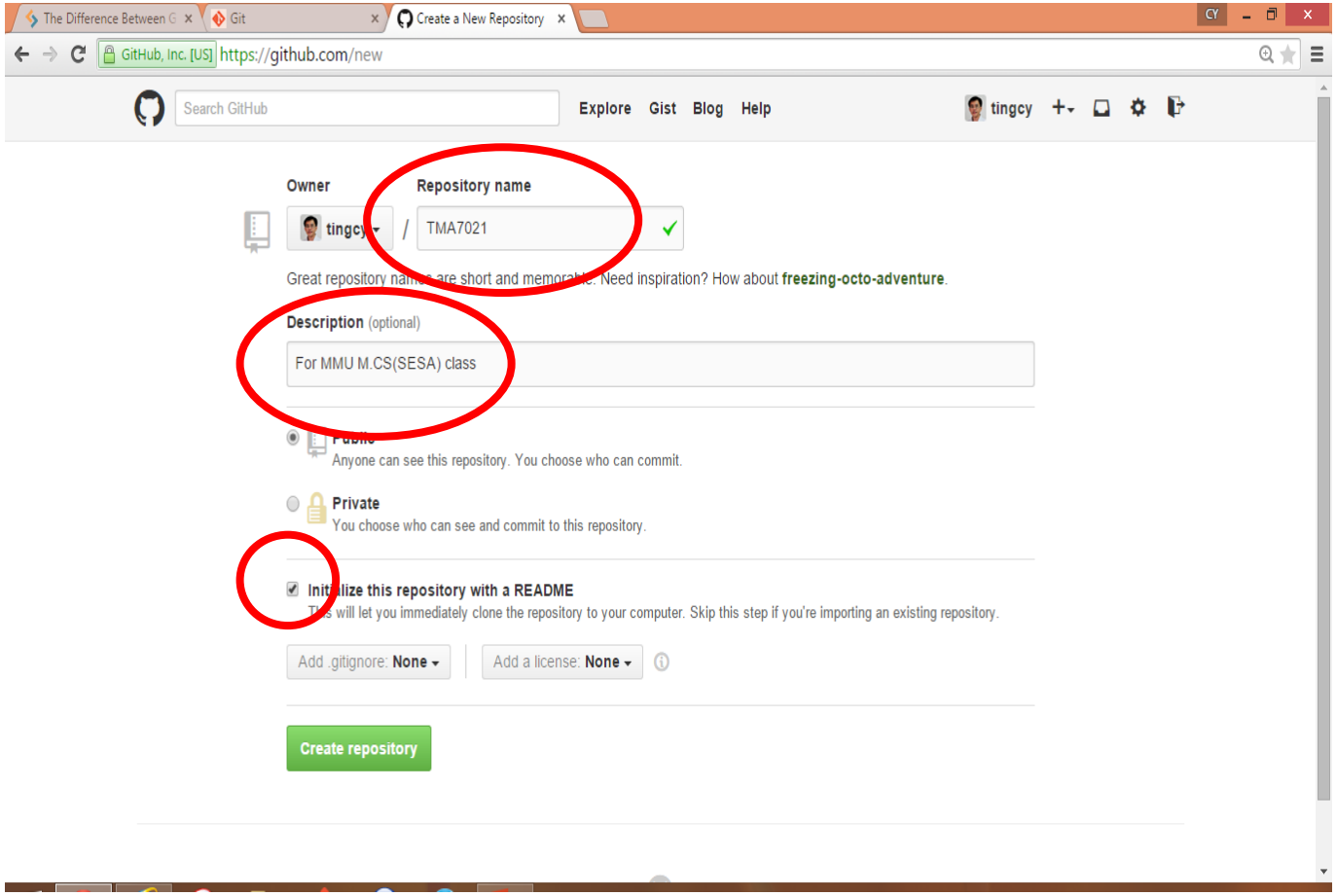
Creating a GitHub Account

- Click at the “+” sign to create a new repository.



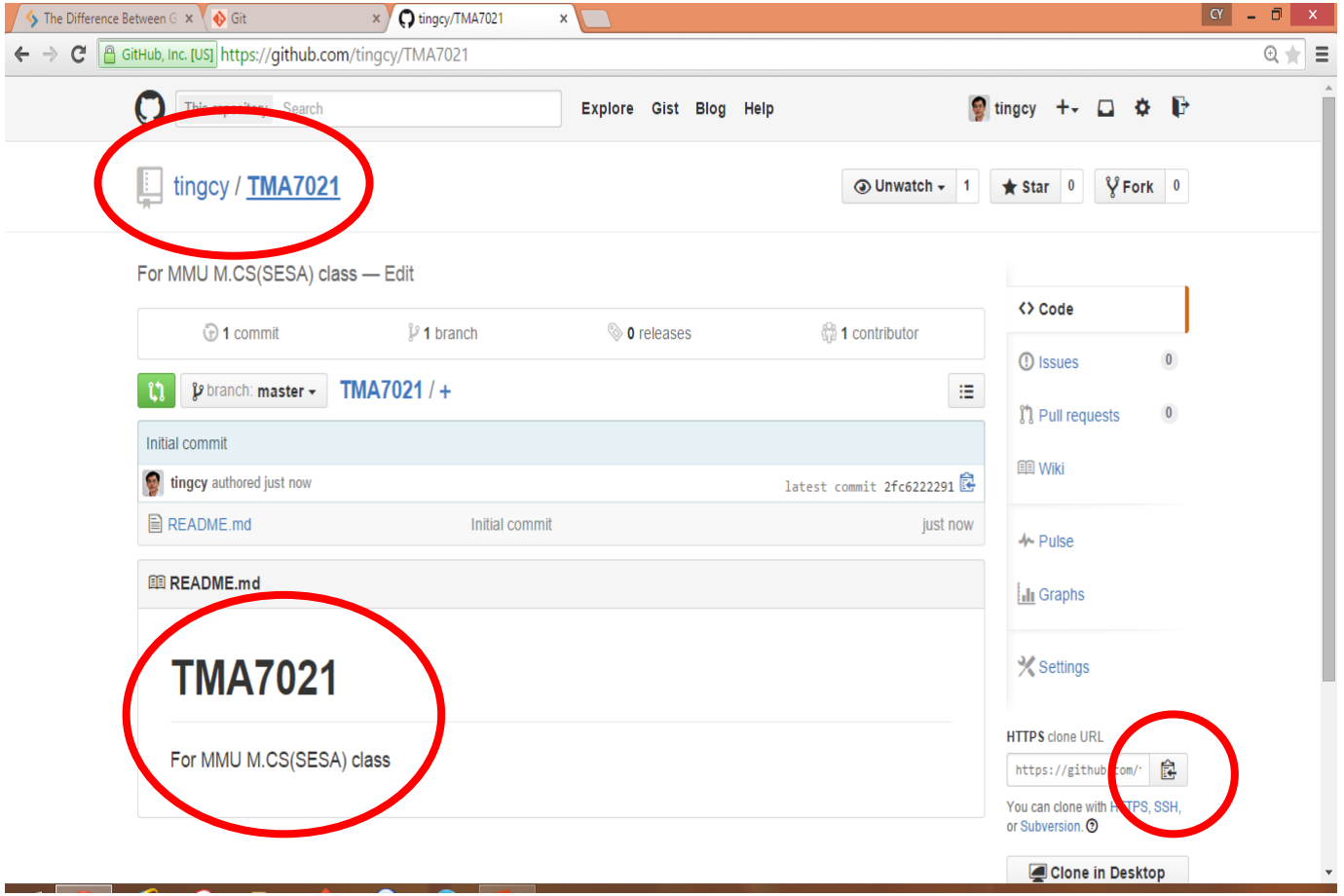
Creating a GitHub Account

- Type "**TMA7021**" at the "Repository name"
- Put some description to your repository (optional).
- Tick at the checkbox "Initialize this repository with a README"
- Lastly, click at the "**Create repository**" button.



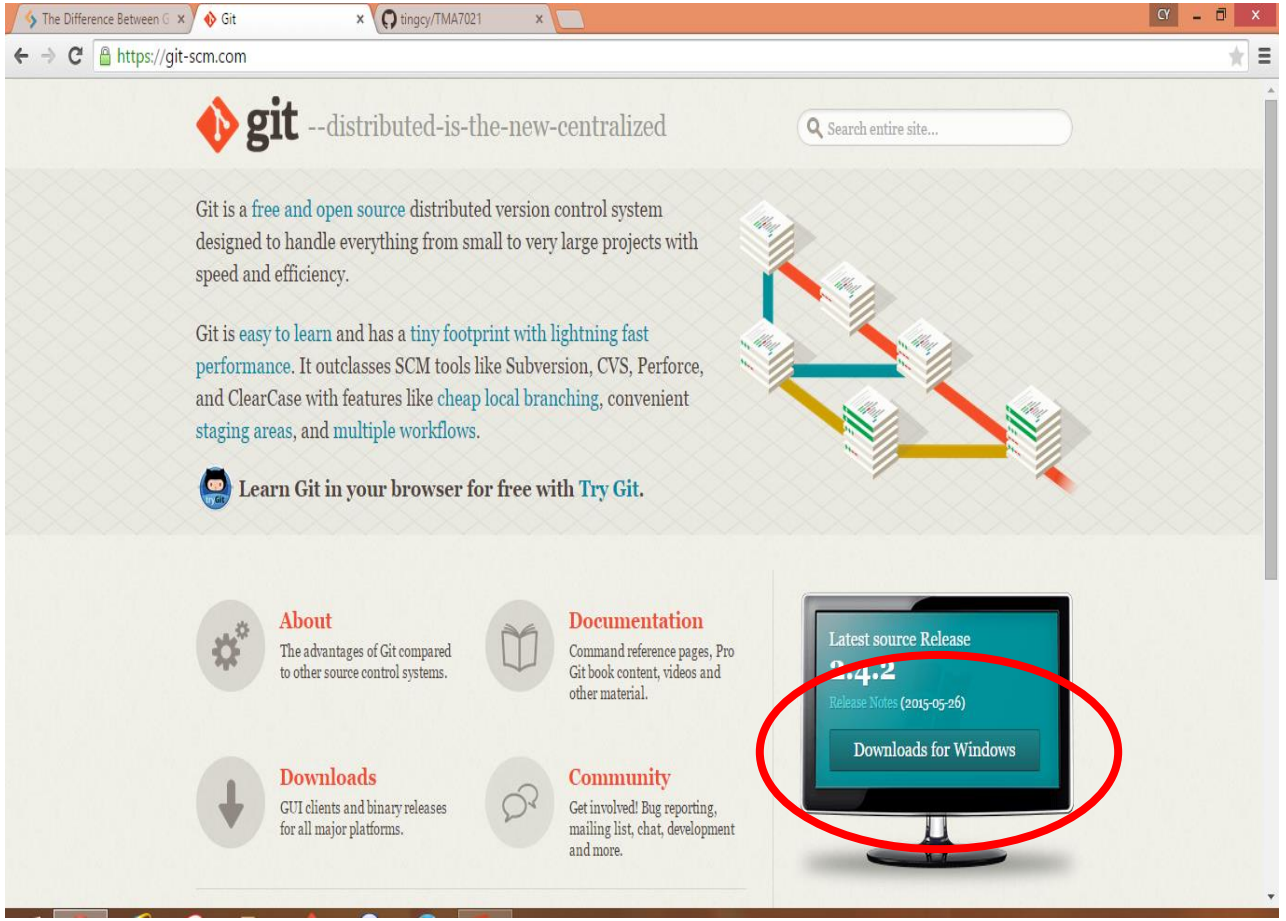
Creating a GitHub Account

- A new repository TMA7021 has been successfully created for you!
- The content of the README.md file is “TMA7021” and “For MMU M.CS(SESA) class”
- At the **HTTPS clone URL** section, copy the URL.



Installing Git

- Navigate to https://git-scm.com/ to download git.
- Select the appropriate platform.



Git Bash

- After installing git, execute the Git Bash program.

Git Bash Commands: Cloning a Repo

Type the following commands:

```
$ git config --global user.name "YOUR NAME"
$ git config --global user.email "YOUR EMAIL"
```

Navigate to the directory/folder where you want to place the clone copy of the remote repo. E.g., I want to place to clone repo into the directory **Dropbox\Teaching\TMA7021_DMAnalytics**, I type

```
$ cd Dropbox/Teaching/TMA7021_DMAnalytics
```

Git Bash Commands: Cloning a Repo

To list the content of the folder, you type:

```
$ ls
```

Before cloning, make sure you have copied the URL (see slide 9).
To start cloning the remote repo TMA7021, you type:

```
$ git clone https://github.com/XXX/yyy.git
```

Type `ls` to check the content of the directory/folder, you should see TMA7021 created. Navigate into TMA7021 by using the command

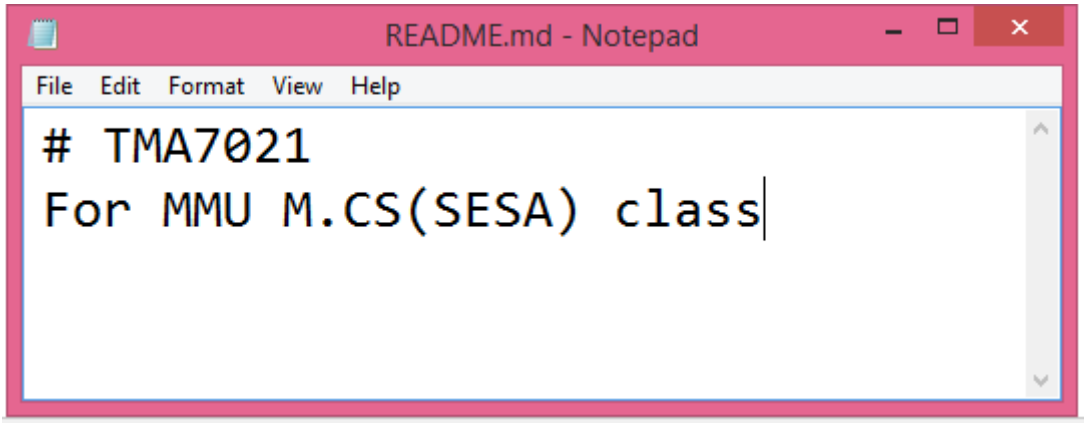
```
$ cd TMA7021
```

Creating a GitHub Account

- Check the content of TMA7021 by issuing the command `ls`. You should see `README.md`

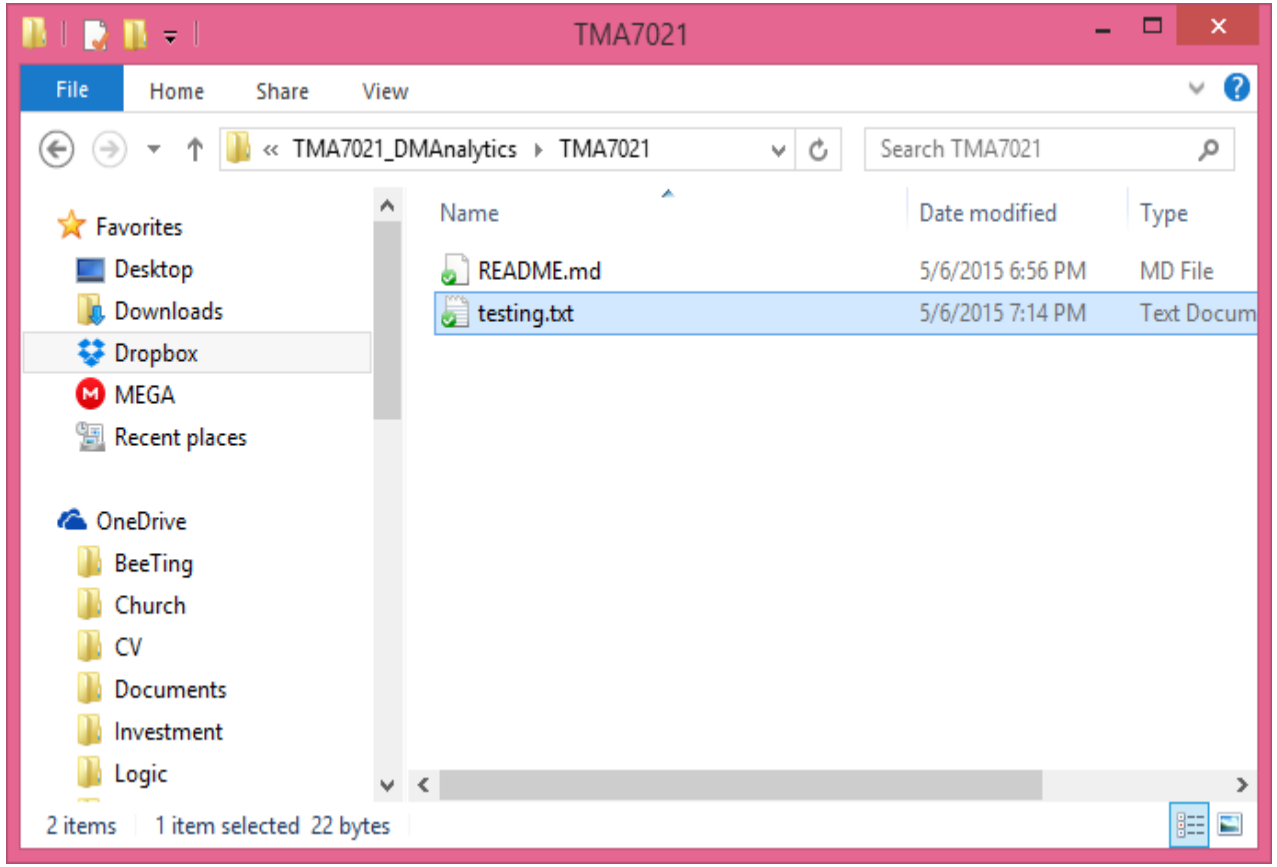
```
Choo-Yee@TING-MARTIAL ~/Dropbox/Teaching/TMA7021_DMAnalytics/TMA7021 (master)
$ ls
README.md
```

- Open the file using notepad and you will see the content. You can edit the content.



Adding a File to Remote Repo

- If you are using Windows, use the File Explorer to navigate **TMA7021**.
- Create a new file named **testing.txt**. The content of the file should be "*This is my first test*."



Adding a File to Remote Repo

- Using Git Bash, check whether `testing.text` is inside TMA7021.

```
Choo-Yee@TING-MARTIAL ~/Dropbox/Teaching/TMA7021_DMAnalytics/TMA7021 (master)
$ ls
README.md  testing.txt
```

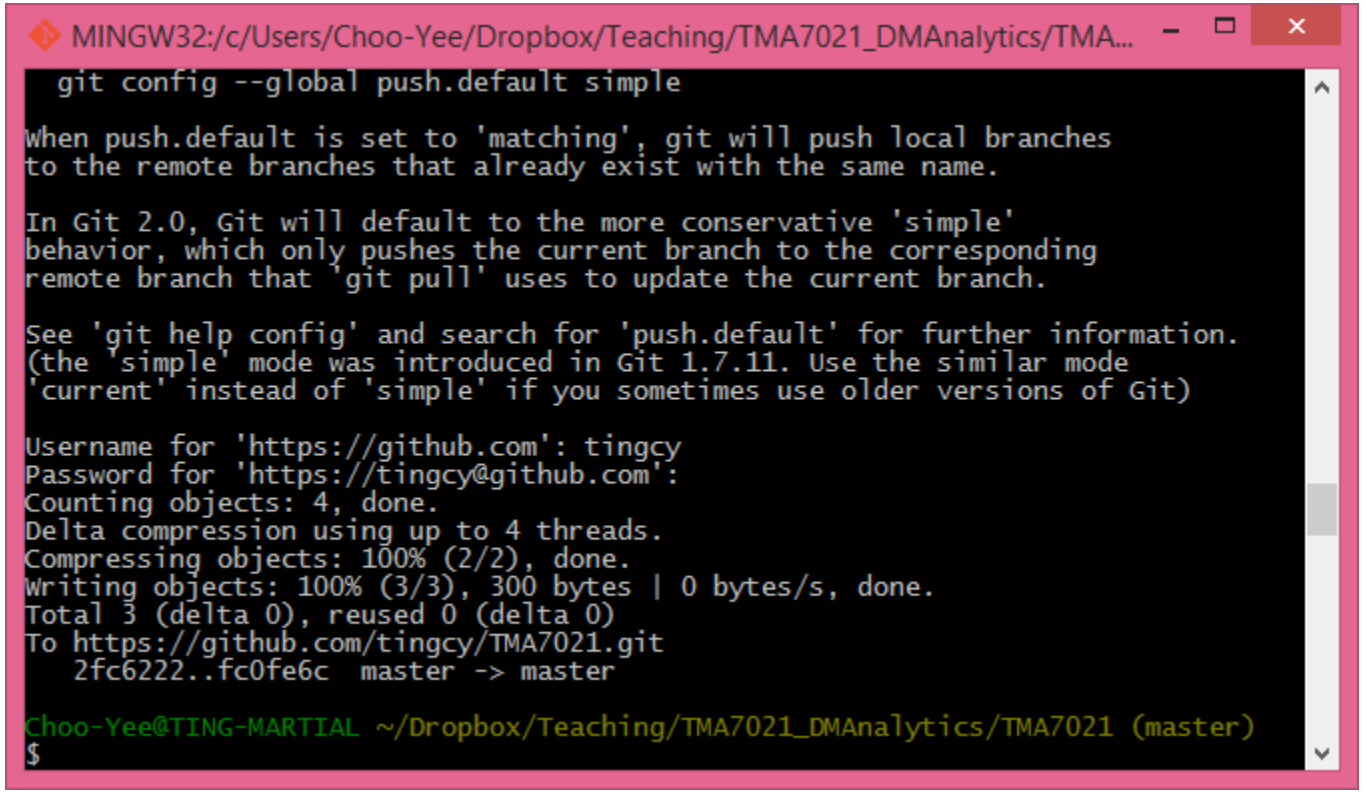
- Type the following set of commands to add the file into your remote repo:

```
$ git add testing.txt
$ git commit –m “adding new file”
$ git push
```

- Key in your username and password of your GitHub account.

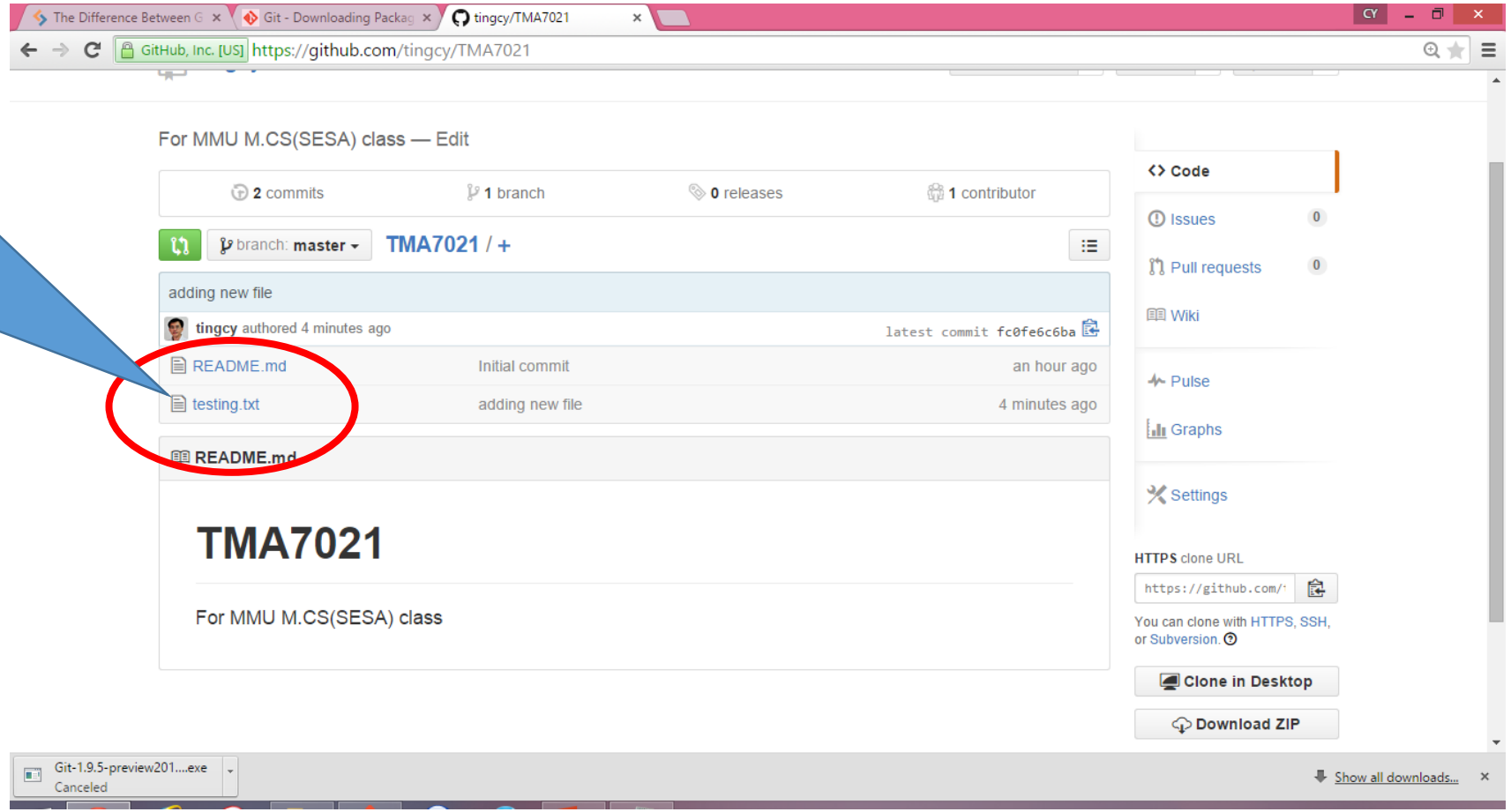
Adding a File to Remote Repo

- Message is shown indicating that file has been successfully uploaded to your GitHub repo.



Adding a File to Remote Repo

Refresh your GitHub and testing.txt is added to your remote repo



Remove a Local Repo

- In case you need to remove the current local repo, so that you can re-clone the remote repo, the command is

```
$ rm –rf TMA7021
```

Note: Make sure you know what you are doing.

Remove a File from both Local and Remote Repo

- In case you need to remove a file (in this example testing.txt) from both local and remote repo, the command is

```
$ git rm testing.txt
$ git commit -m "remove file testing.txt
$ git push
```

You will need to key in username and password.

Note: Make sure you know what you are doing.