Introduction to GitHub

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Introduction

Git and GitHub

- Git is a version control system, i.e. a way to keep track of the whole history of things you do on a file. It is useful to save, manage and edit all the different versions of your project.

- GitHub is a web service that allows to conveniently work with Git. It allows you to create your own directories, see projects of other people and collaborate with them.

- You can read more about Git and GitHub here and here.

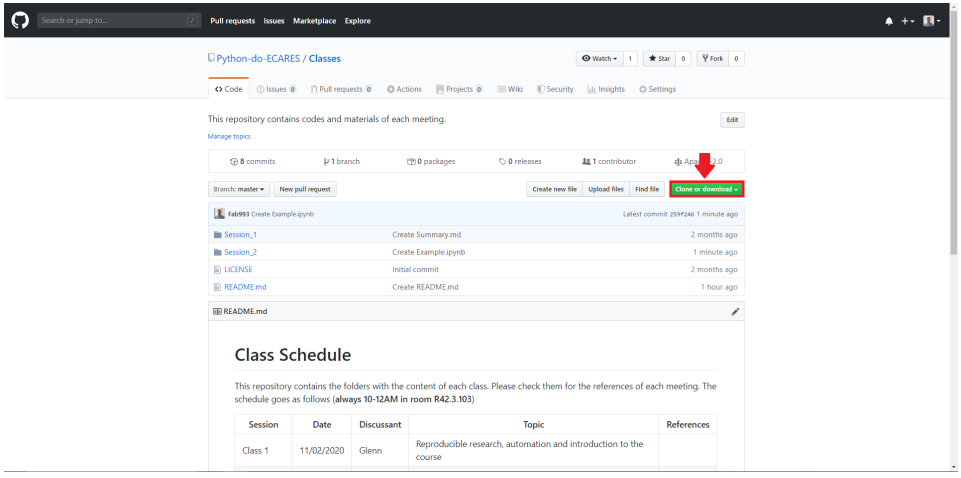
GitHub Desktop

- In this course, we interact with GitHub mostly through the GitHub Desktop application.
- GitHub Desktop provides a simple yet powerful desktop interface to GitHub.
- You can download GitHub desktop here.
- You can also interact with GitHub using the Terminal (not covered in this class).

First Steps With GitHub Desktop

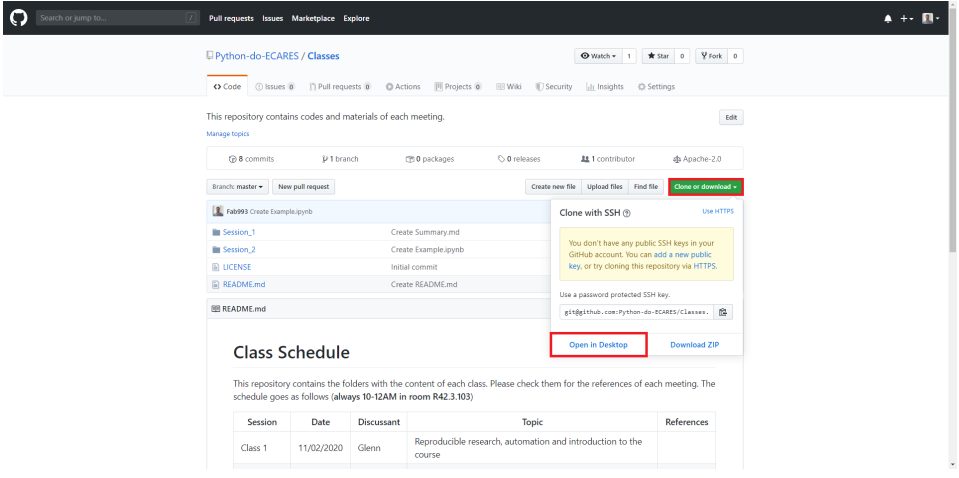
Step 1. Clone Repository

Go to Classes repository on GitHub and click on the "Clone or download" button.



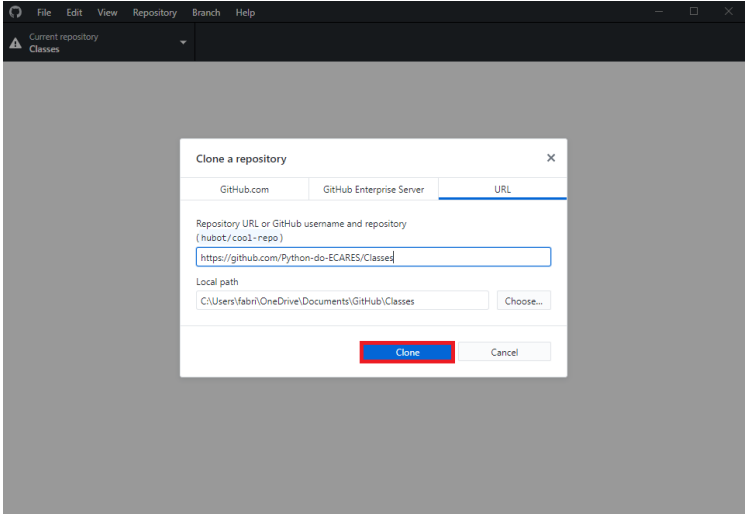
Step 1.A Open Repository

Choose "Open in Desktop".



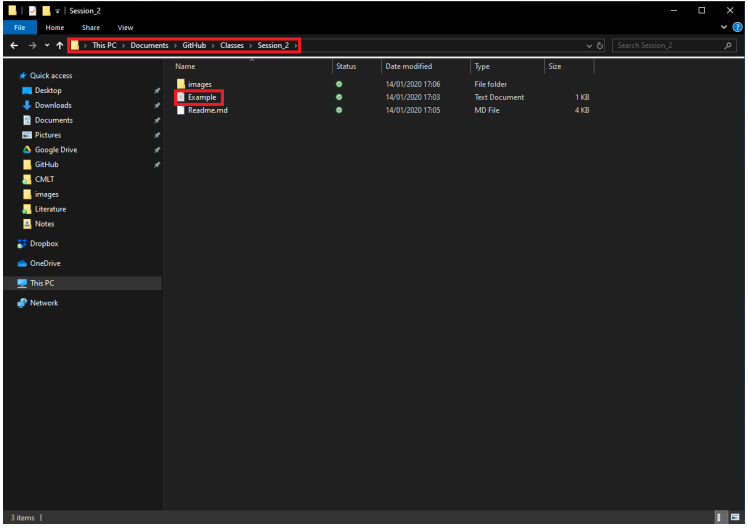
Step 1.B Clone Repository

Check the local path where to clone the repository and click ”Clone”.



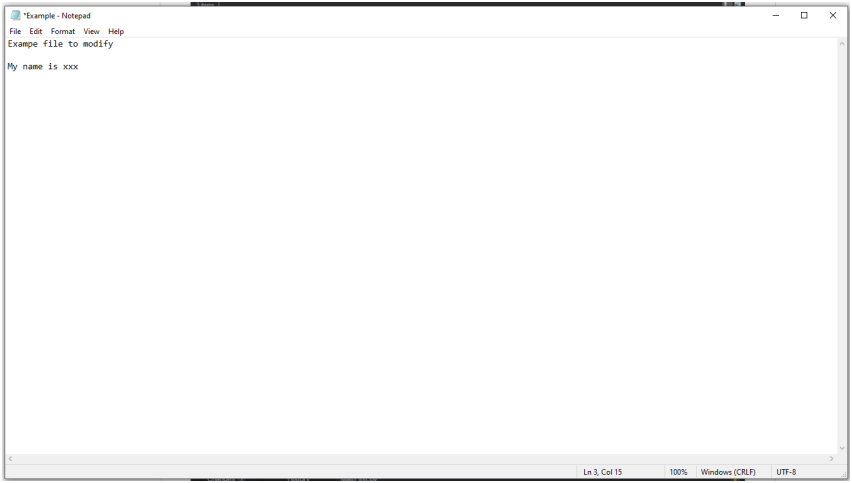
Step 1.C Open Local Directory

Under GitHub Desktop/Classes/Session_2 you will see the following files.



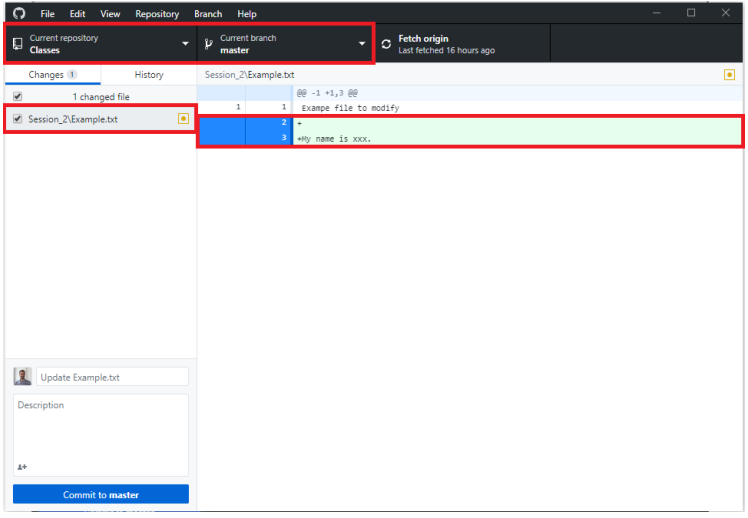
Step 2 Make Changes

Open *Example.txt*. Add a comment line with your name.



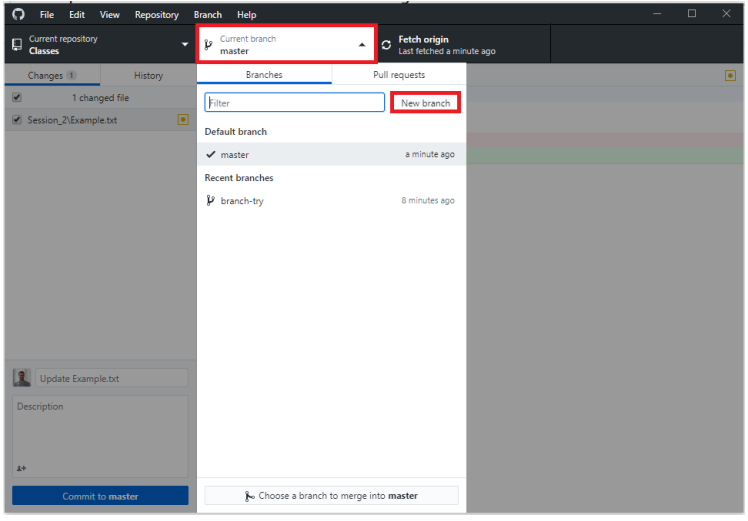
Step 2.A Save Changes

Save the file. Changes will be displayed in GitHub Desktop as follows.



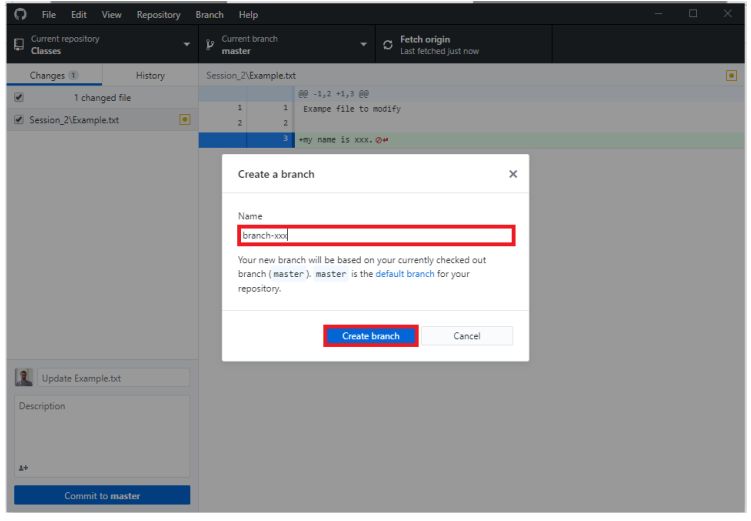
Step 2.B Create Your Own Branch And Commit Changes

Select "Master" and "New Branch". Never directly commit your changes to the Master during this course.



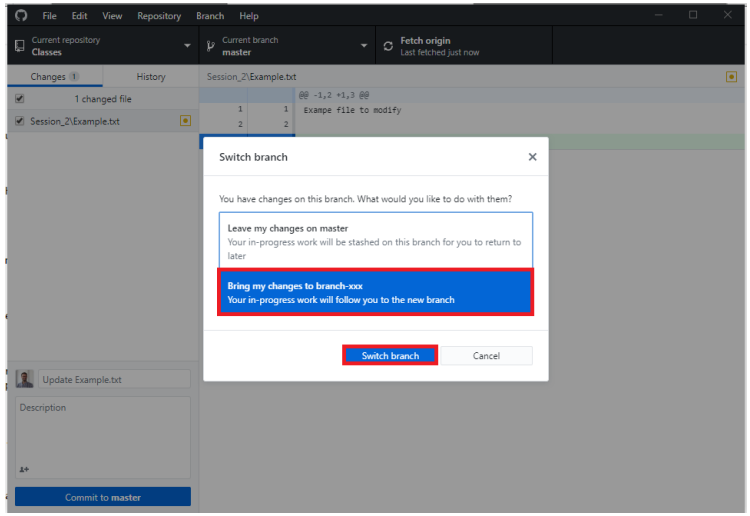
Step 2.C Name Branch

Give the new branch your name. Then click ”Create Branch”.



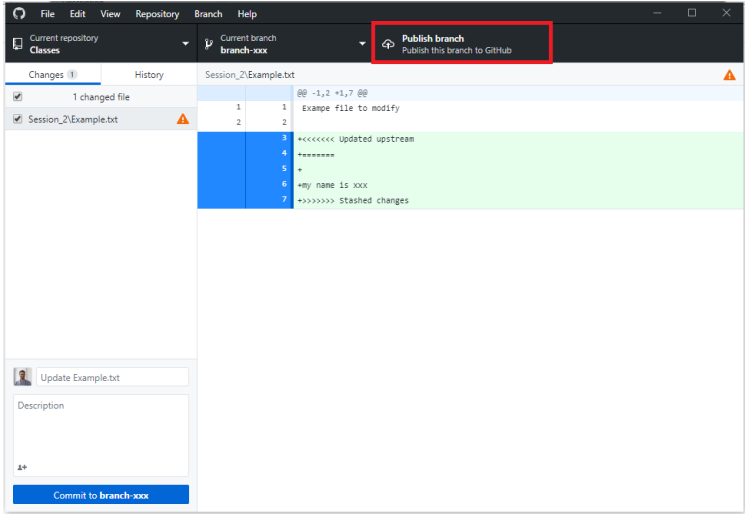
Step 2.D Switch Branch

Switch changes to your own branch.



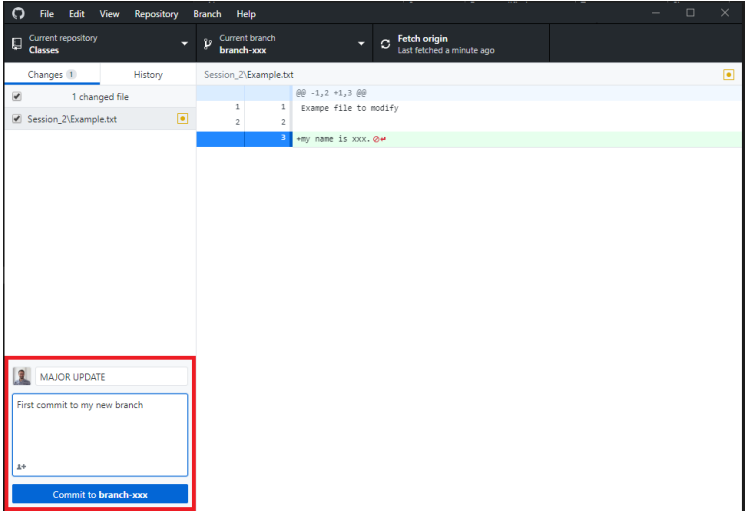
Step 2.E Publish Branch

Publish your branch online.



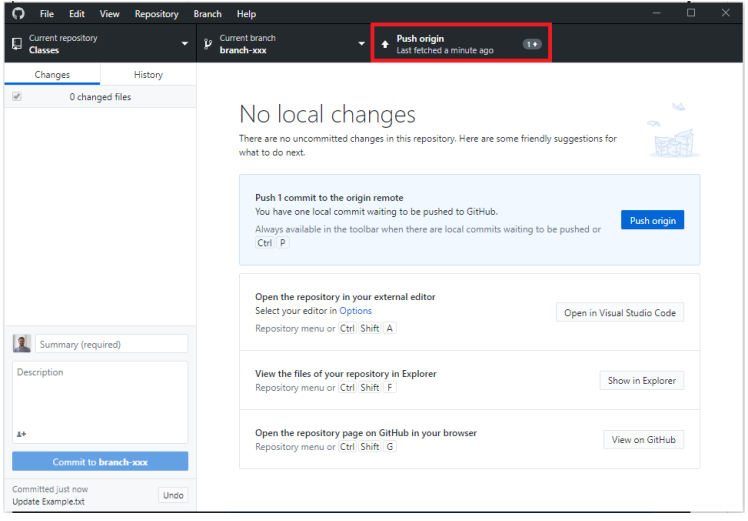
Step 2.E Commit to Branch

Give Description and summary. Then commit.



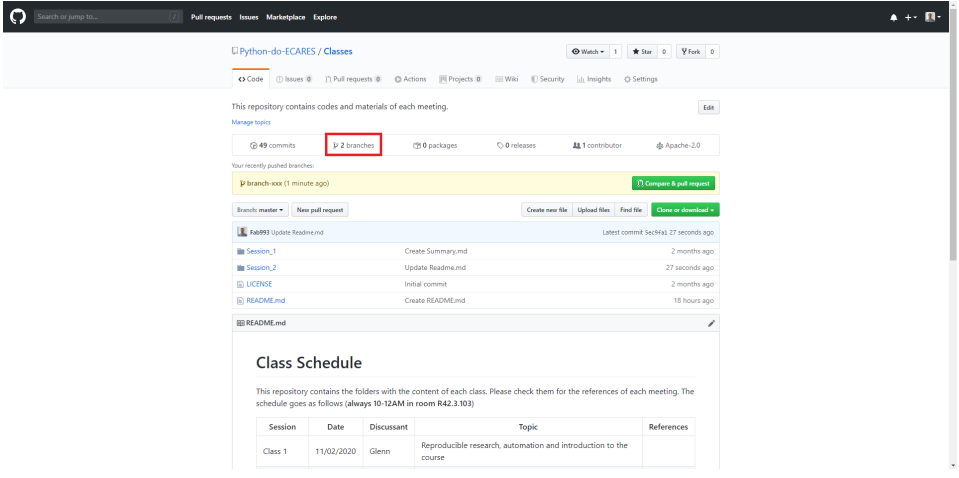
Step 2.E Push to Branch

Push changes to your branch.



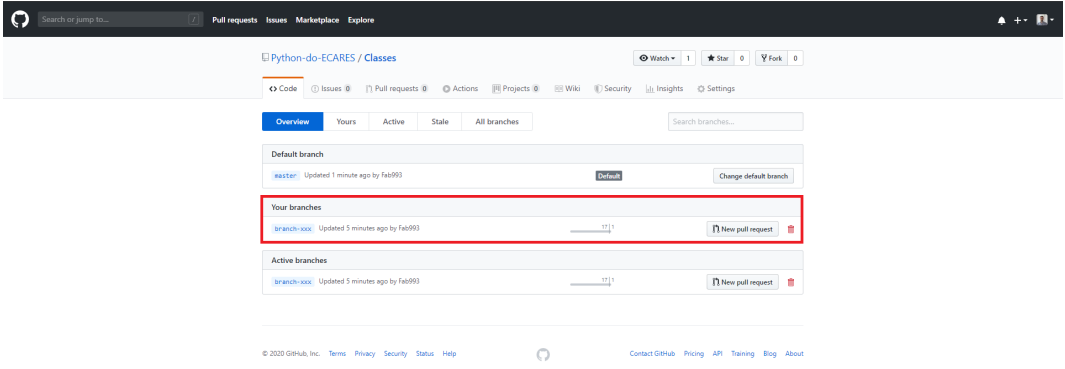
Step 3 Next Steps

Go to "Classes" page. Notice that now there are 2 branches. Click on "branches".



Step 3.A Done!

Your directory will now appear below "branches" as follows.



Taking Stocks

- You are now able to create and maintain **your own repositories**.
- Please **make sure your only push changes to your own branch during this course**. You are encouraged to collaborate and see what other people is up to, but **never** commit changes directly to other people's branches.
- Good news is that you can always revert changes back if you do so by mistake. This is why GitHub is so useful!

Commit and Push

Commit and Push

- **Committing** and **pushing** are the main two words you have to familiarize with.
- *Committing changes* to a branch, means that you are "saving" your changes.
- *Pushing changes* means, instead, that you are publishing them online on GitHub.Think of the pushing action as a way of creating different stable releases of your code.
- With this respect, we recomment to commit changes regurlarly (you can always revert them back), but to only push them online if you have made a stable change.

Social Norms

- We encourage you to adopt the following standards to commit and push tidely.

- Summary should be either **Minor Change**, **Major Change** or **Bug Fixes**. The first should indicate small changes in syntaxis or general improvements. The second to major modifications (e.g. add new section or function), while the third is to notify that you have fixed some bug.

- **Description** should briefly explain what the summary refers to.

Social Norms

- Suppose you **create a new function for data cleaning in your code**. When pushing this change to GitHub, you want to give**Major Change** as summary and ”added function for data cleaning” as description.

- A tidy pushing activities will create a full history of changes in GitHub that you can scroll through to check different versions of your code.

- Finally, it will also help other people to understand your work.

More Functionalities