Git Tutorial

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Git

- Version control system
- Powerful, supports efficient multi-developer collaboration, branching, rollback
- Every clone of a repository is an “equal status”
- Supports cloud-based online repositories such as GitHub, GitLab, etc.

Git – first steps

Step 1: Make sure you have git on your system!

open up a shell and type:

```
which git
```

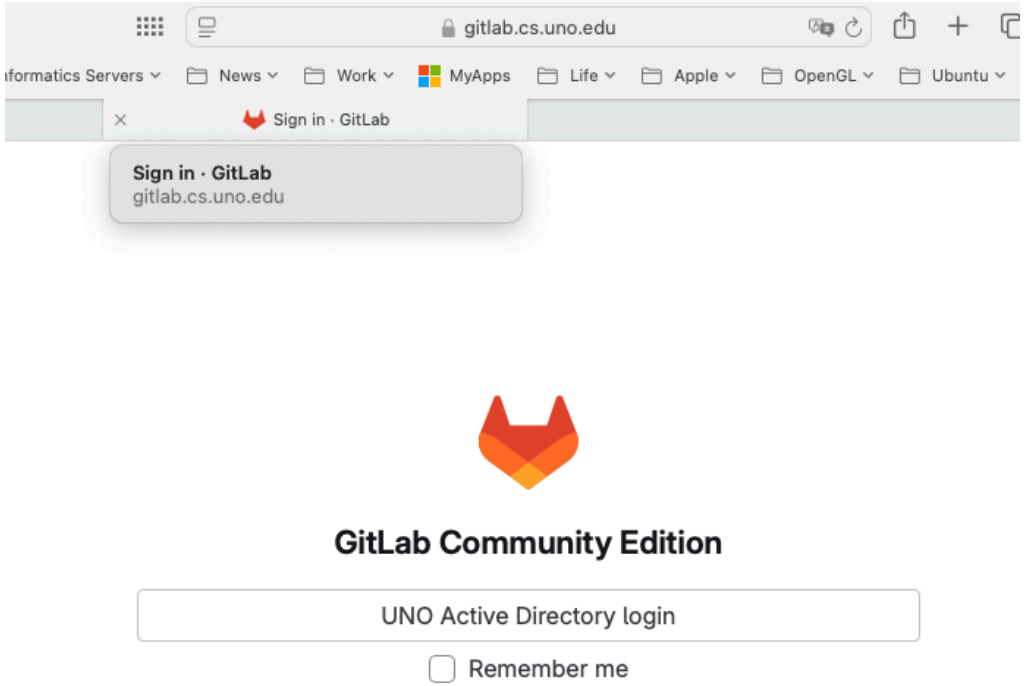
If you get a response, **you're good to go**! Otherwise….

Windows: git-scm.com (downloads will also install gitbash, a shell)
MacOS: Xcode (install command-line developer tools)
Linux: use `apt` or whatever package manager is native to your system

Git – first steps

Step 2: Create a repository

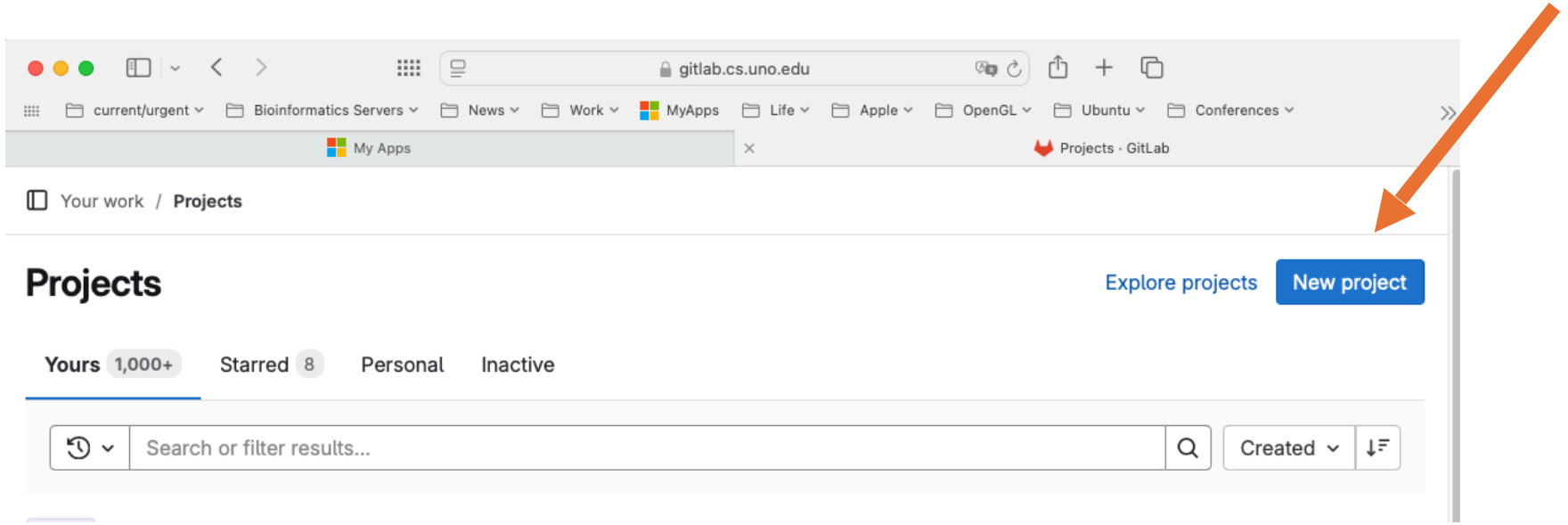
A) We'll work with UNO's internal gitlab for now



Git – first steps

Step 2: Create a repository

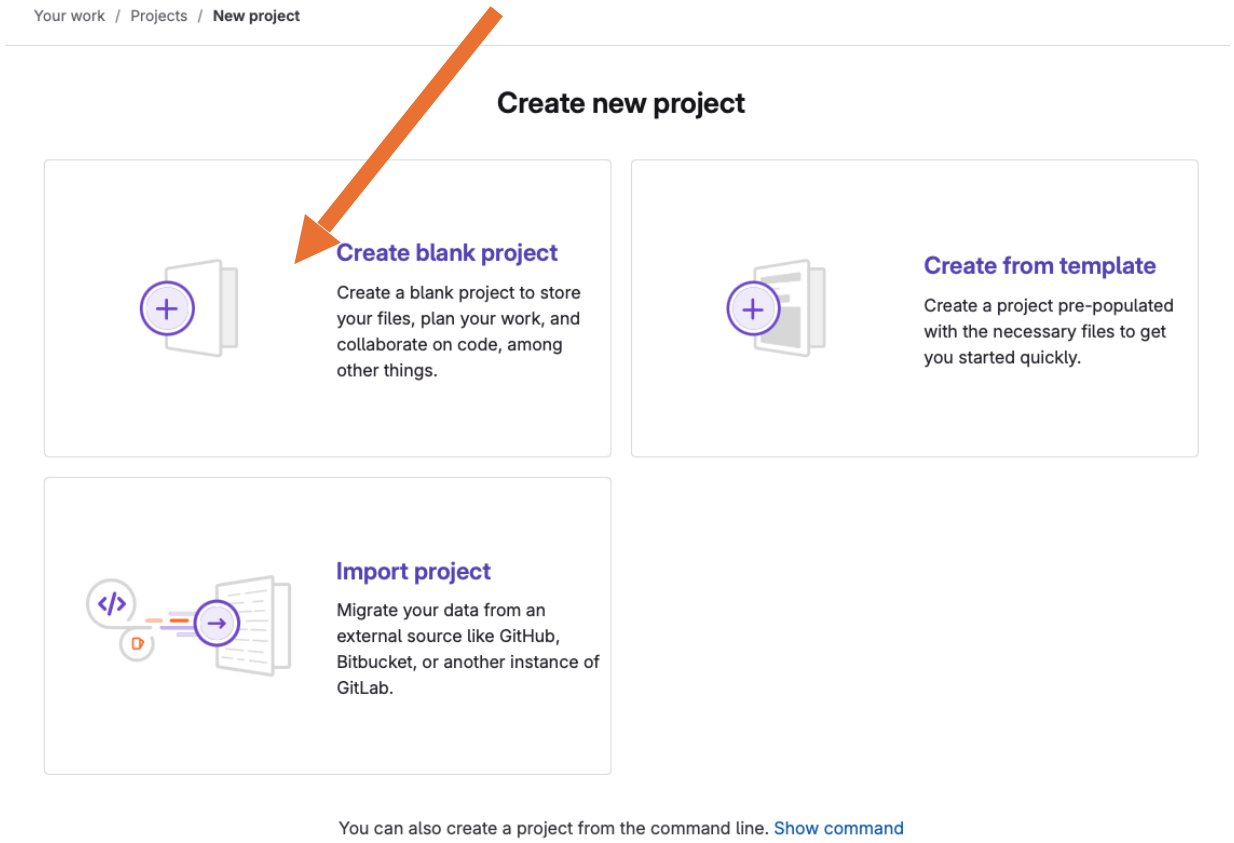
B) Once logged in, create a new repository – click on the blue “New Project” button:



Git – first steps

Step 2: Create a repository

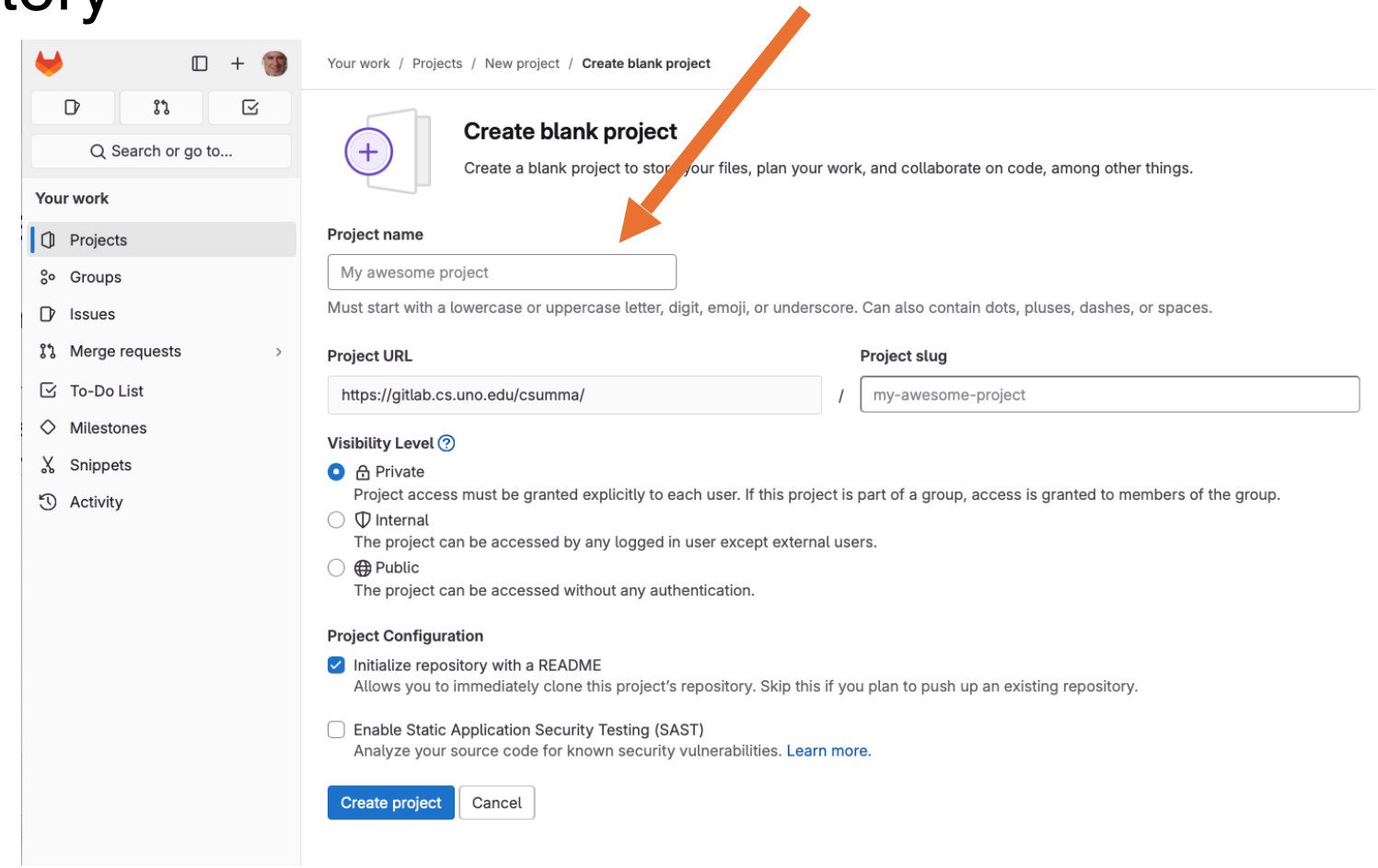
C) Here you have a few choices – let's create a "blank" empty repository



Git – first steps

Step 2: Create a repository

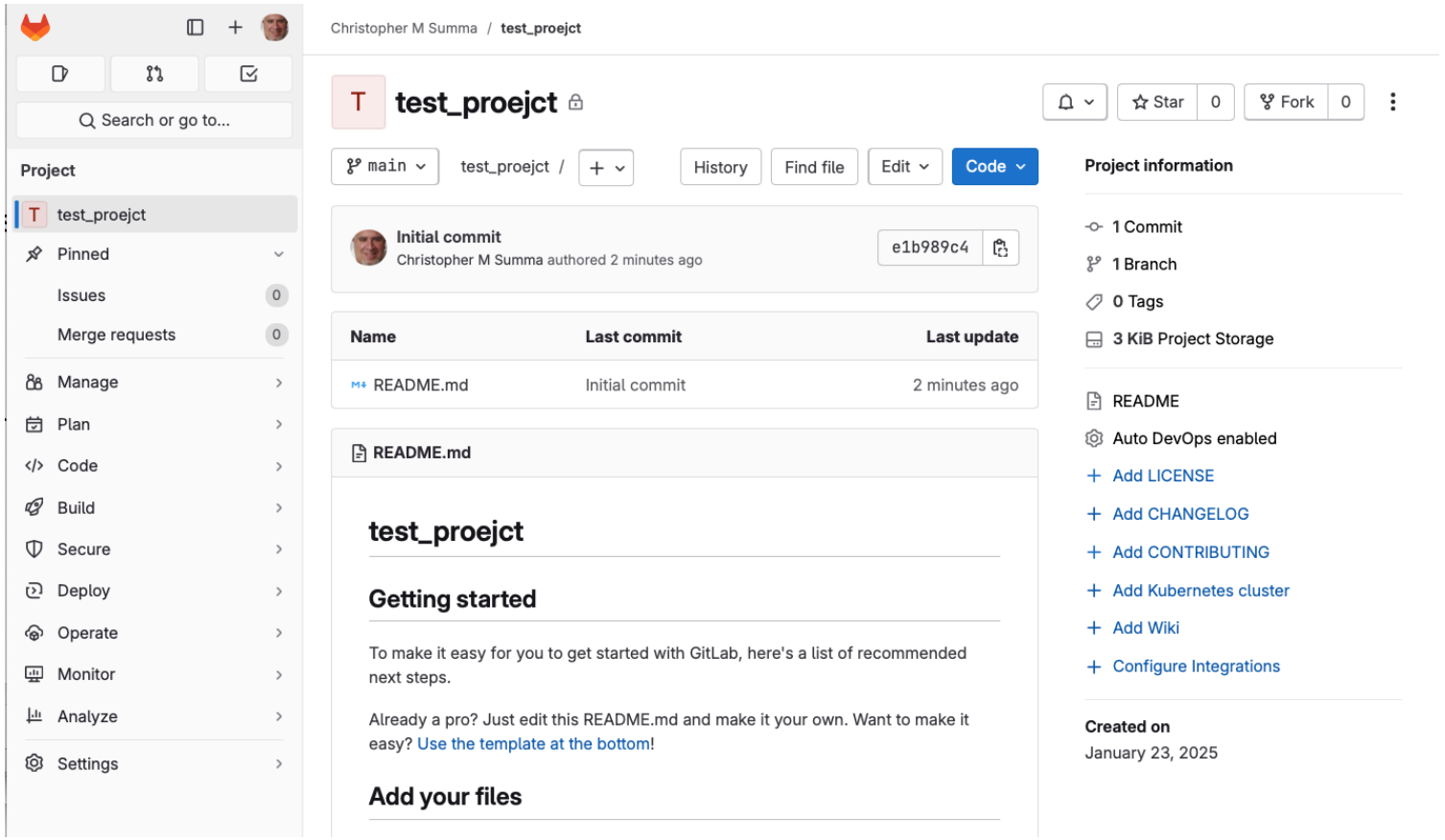
D) It's here that we can give our repository a name. NOTE that everything in this repository, when on your computer, will live in a directory with the same name. Also, since the terminal REALLY doesn't like spaces in directory (folder) names, instead of spaces always use the underscore character



Git – first steps

Step 2: Create a repository

E) Once you've created the project you'll be brought to that project's page and it should look like this (just hit the x in the light blue notification boxes at the top of the page to dismiss them)



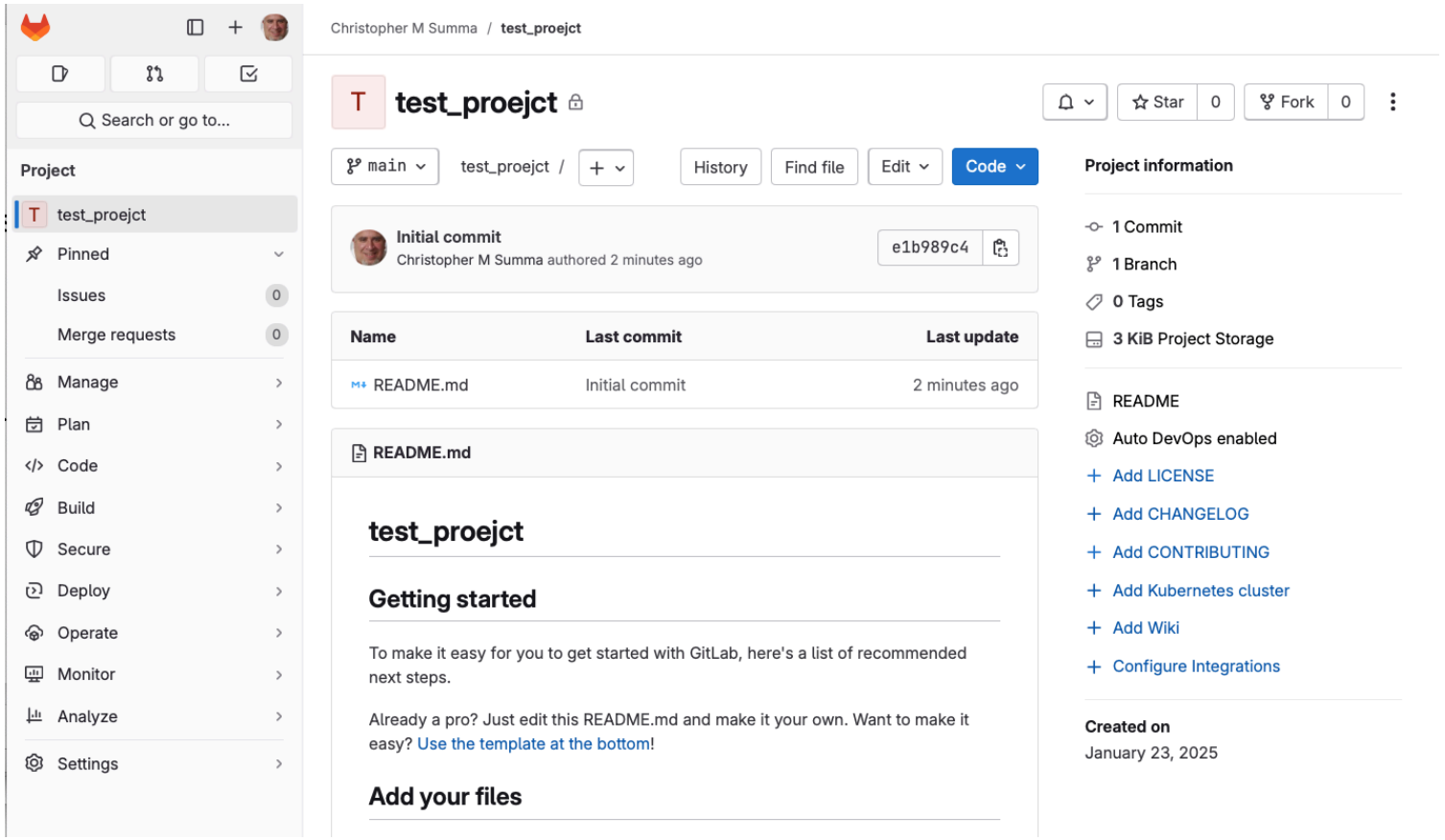
Git – first steps

Step 2: Create a repository

F) Next, let's make sure we've got our ssh keys set up. This is something you'll only need to do once per computer you plan to use to interact will this git server.

Click on the little icon that looks like a circular mandala at the red arrow, which is where your "user setting stuff" is found and choose "Preferences"

(you may have to expand the browser window to see this contextual menu)

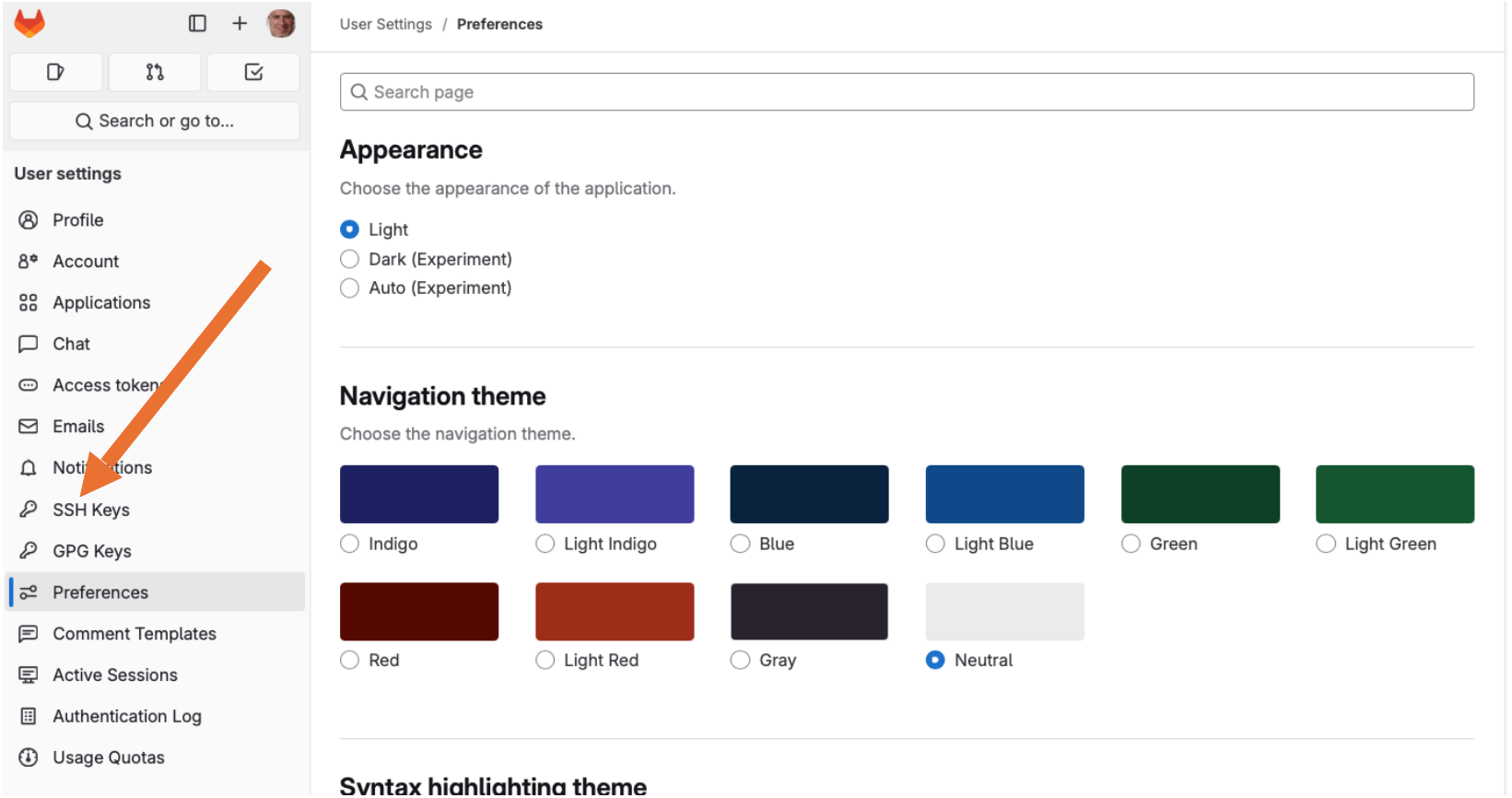


Git – first steps

Step 2: Create a repository

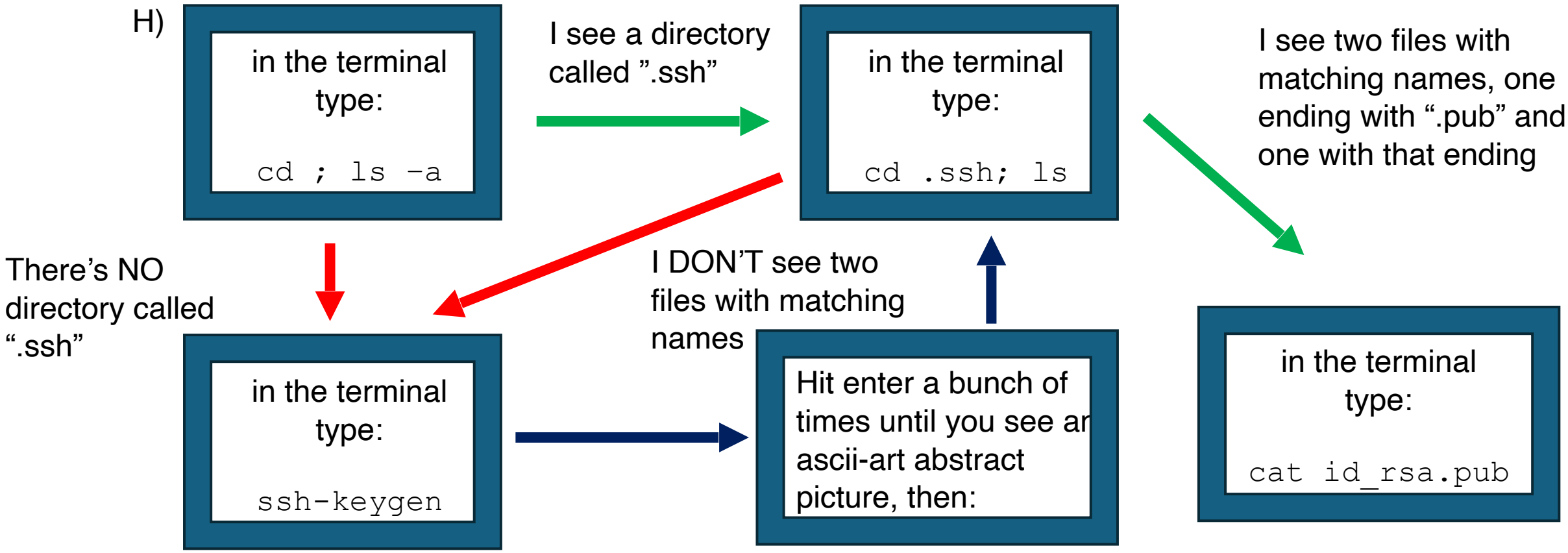
G) in the contextual menu on the left, just pat midway down you'll see "SSH Keys". Click on this.

If you see an ssh key representing you at the machine you're currently working on you can skip the next bit and move on to **Step 3**, **if not**, open up a terminal window…



Git – first steps

Step 2: Create a repository

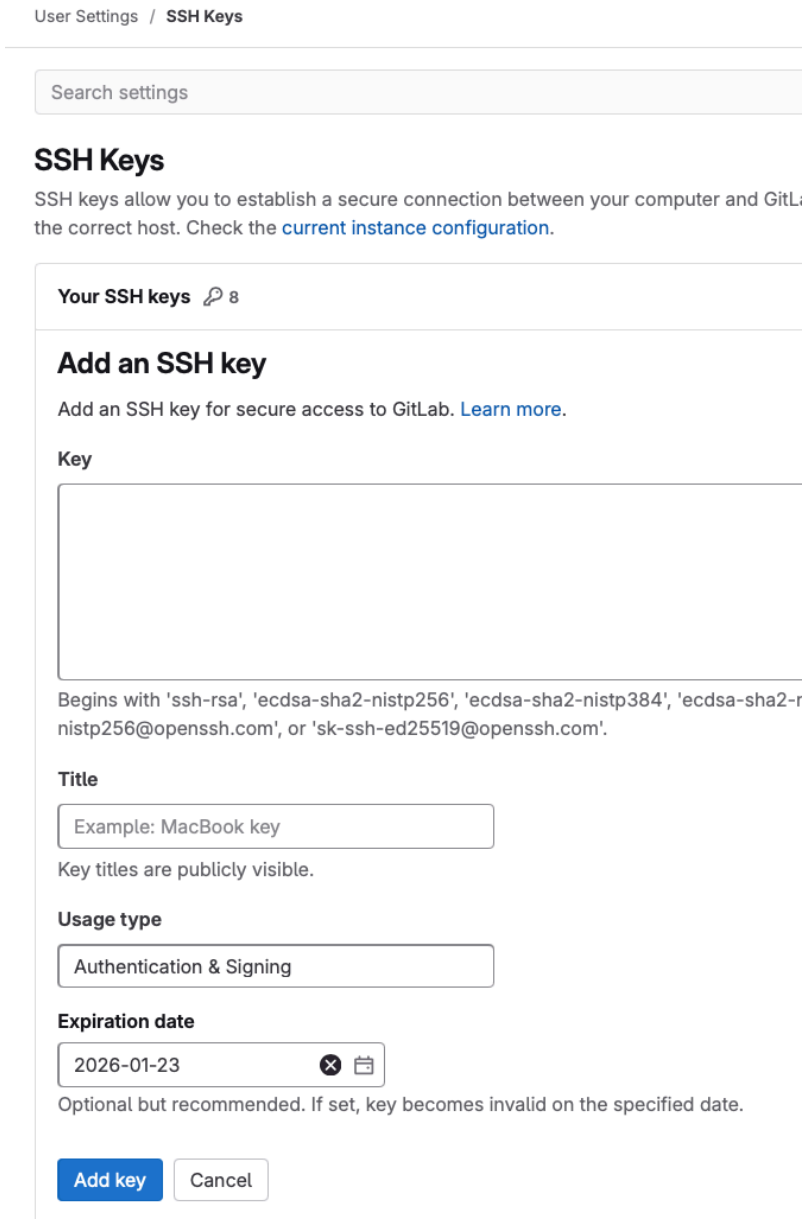


Git – first steps

Step 2: Create a repository

I) Copy the output (if using gitbash you'll need to right-click copy) then go back to the website and click "Add new key" in the upper right.

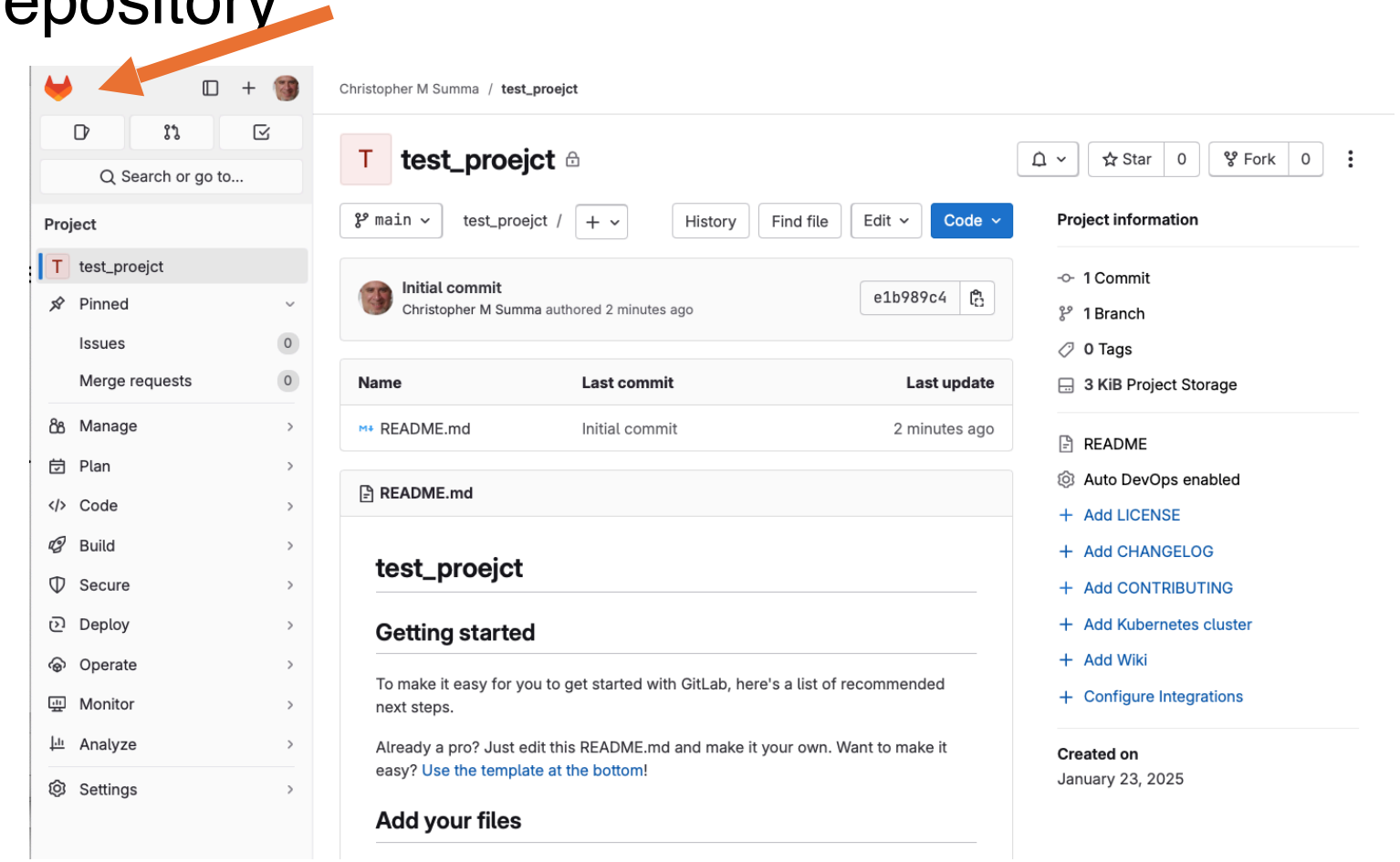
Paste into the Key ntry box, change the Title if you'd like and clear out the Expiration Date, then click "Add Key" at the bottom



Git – first steps

Step 3: Clone your repository

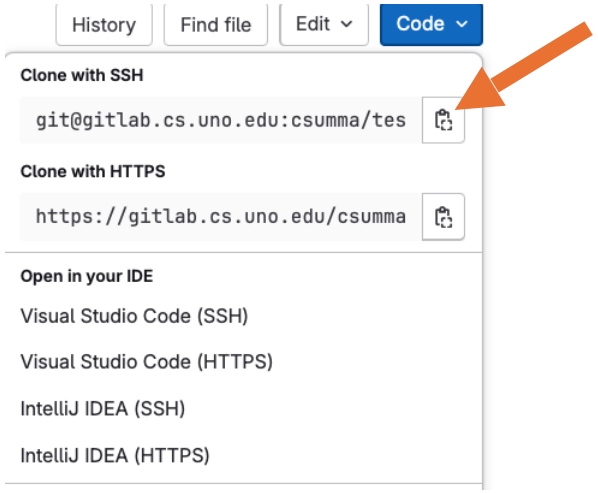
A) Go back to your "home" by clicking on the fox icon in the upper left. You should see your new repository listed in the window on the right. Click on your repo.

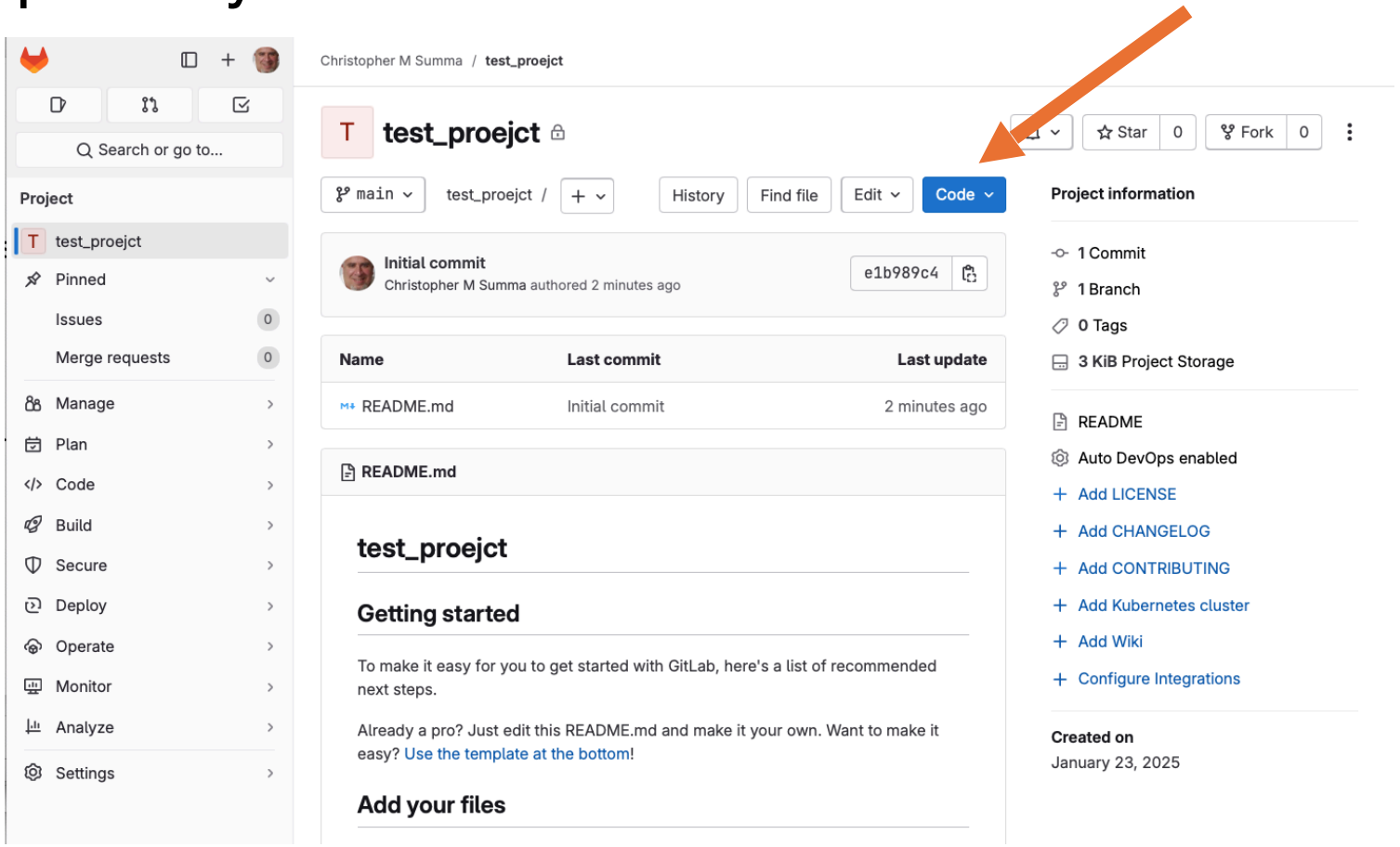


Git – first steps

Step 3: Clone your repository

B) Click the blue “Code” button, and copy text in ” Clone with SSH” by clicking on the button just to the right of text box





Git – first steps

Step 3: Clone your repository

C) Back in your terminal:

```
cd
```

if you do an `ls` and see a directory called ”source” or ”projects” just `cd` into it, otherwise:

```
mkdir source ; cd source
```

Once you are in your source directory:

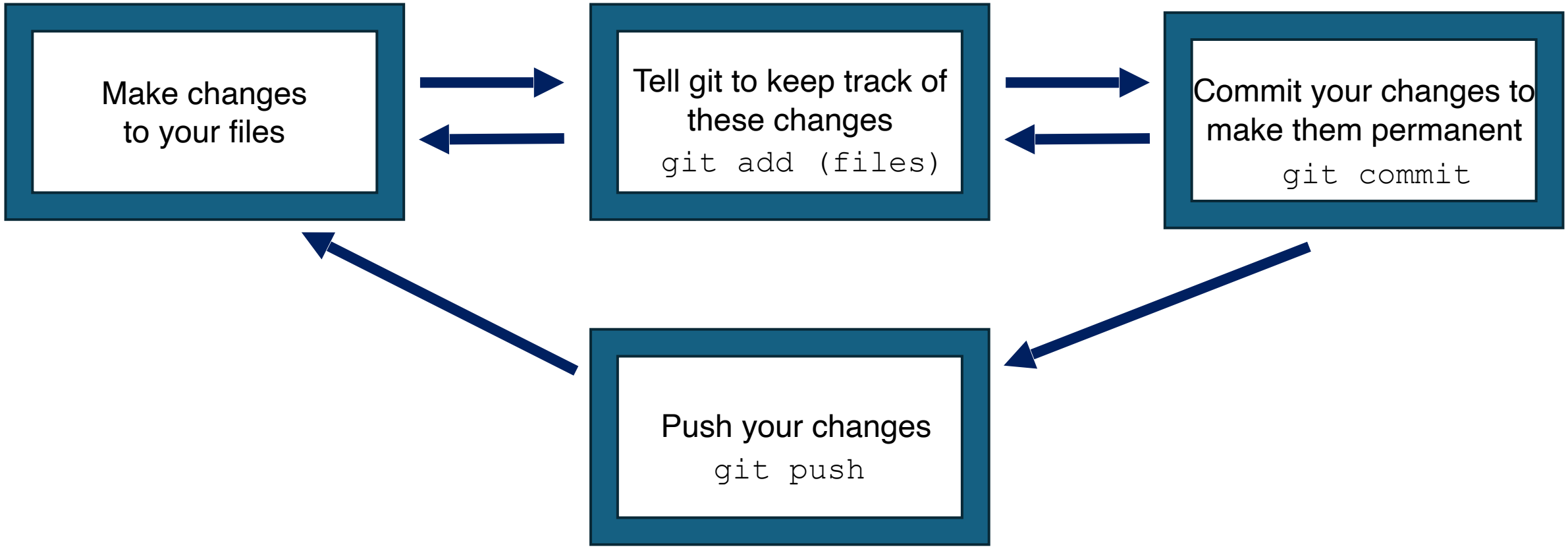
`git clone` (then paste what you’ve copied from the website, and hit enter)

This should have created a new folder, which is now under the control of git…

`cd` (directory name i.e. name of your repository)

Git – Basic Idea

The general workflow of working with git looks like this:



Git – Basic Idea

If you are working with others, or using multiple machines, there is an extra step at the beginning before you start to change your files: