An Introduction to GitHub

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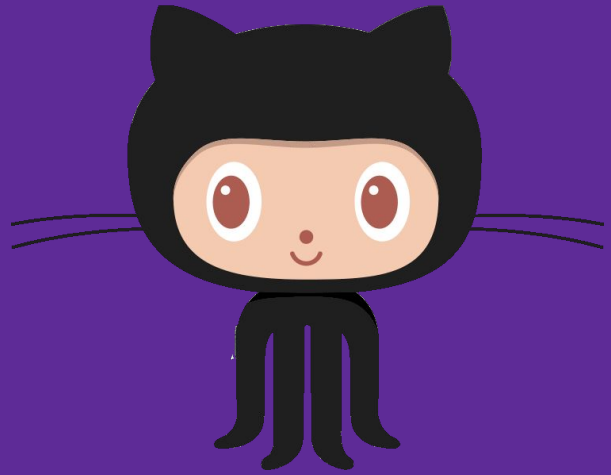
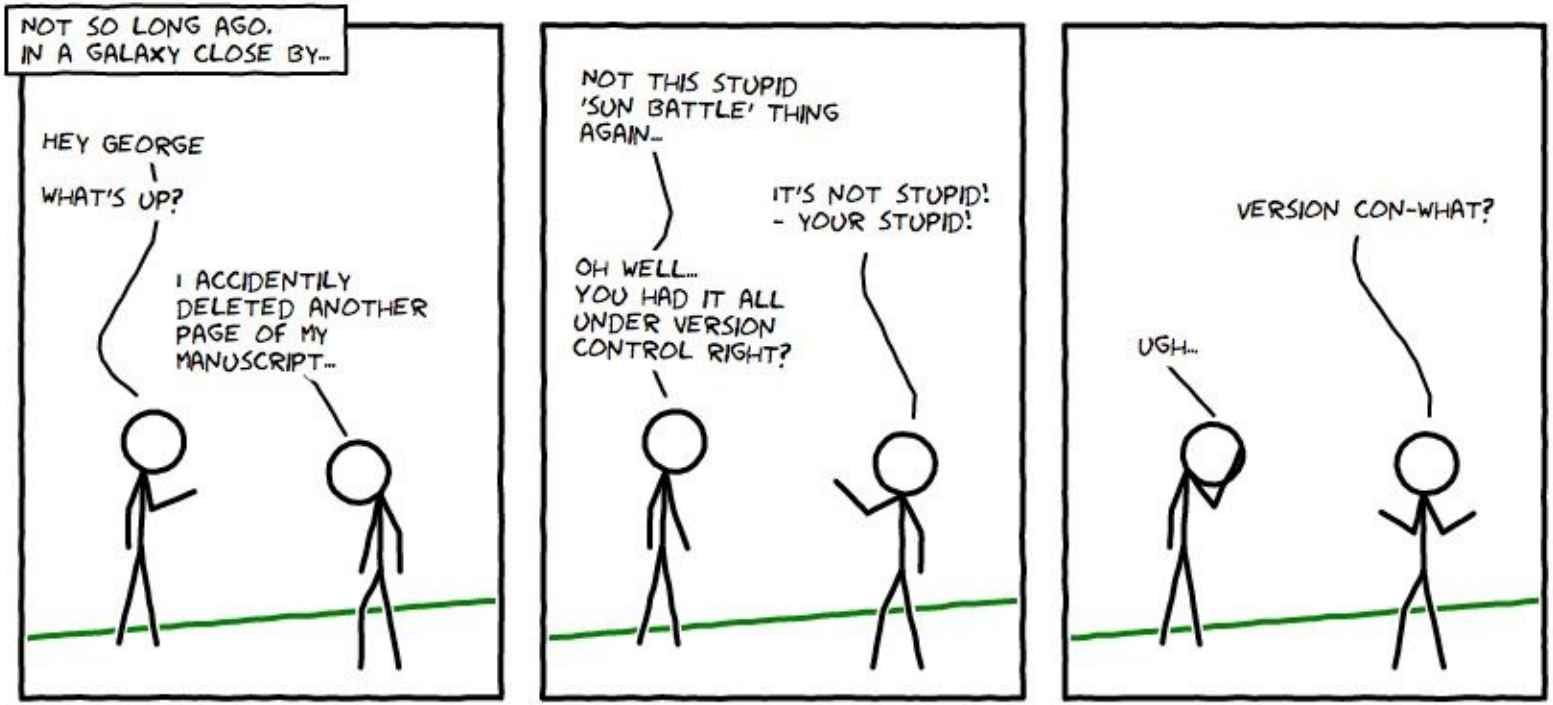


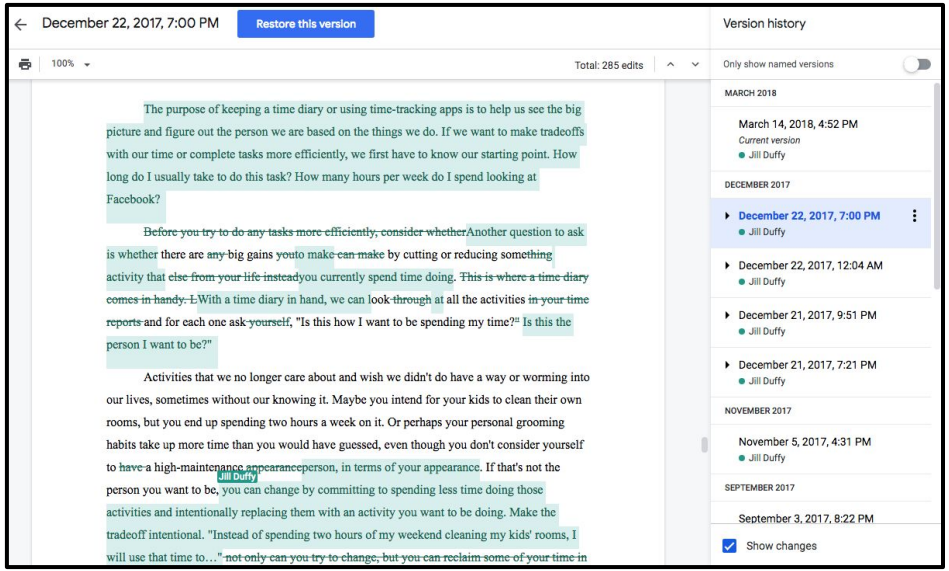
GitHub + GEMINI

Global Emergency Medicine Innovation & Implementation Research Lab


NOT SO LONG AGO.
IN A GALAXY CLOSE BY...
HEY GEORGE
WHAT'S UP?
I ACCIDENTILY DELETED ANOTHER PAGE OF MY MANUSCRIPT...
NOT THIS STUPID 'SUN BATTLE' THING AGAIN...
OH WELL... YOU HAD IT ALL UNDER VERSION CONTROL RIGHT?
IT'S NOT STUPID! - YOUR STUPID!
UGH...
VERSION CON-WHAT?

Version Control System

Version Control System allows developers to work on the same project by tracking and logging changes without any conflict with other iteration. When a developer change or modify a piece of the code, a version control system give other developers power to review and even restore the earlier version of the document.

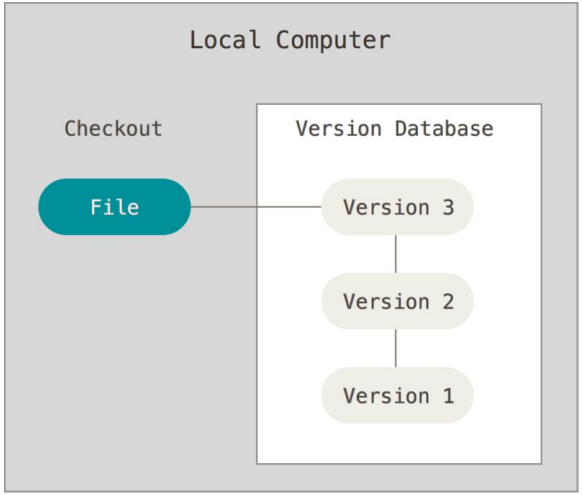


Git GitHub Gitlab

Git

- Git is free, fast and the most popular distributed version control system for storing and tracking changes in the source codes of projects;
- Allows you to create Git Repositories;
- Works locally.

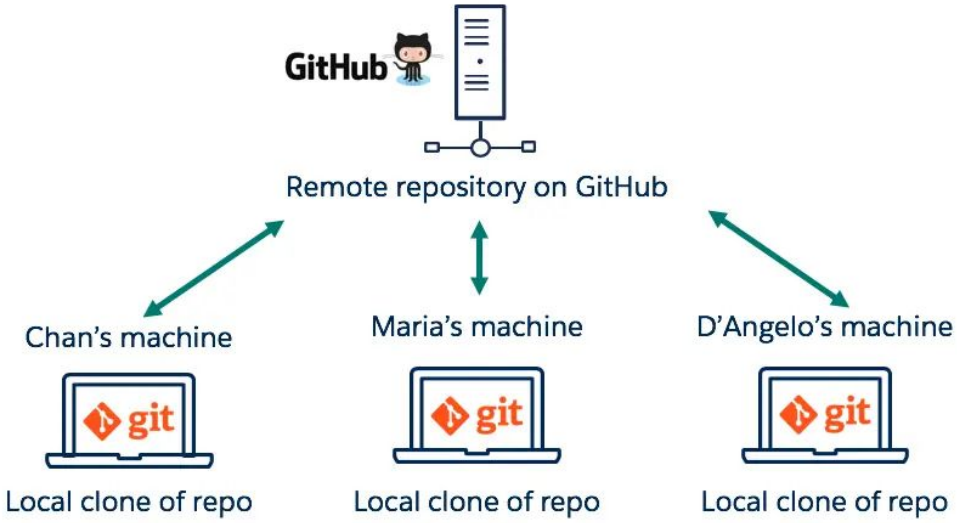
https://git-scm.com/



GitHub

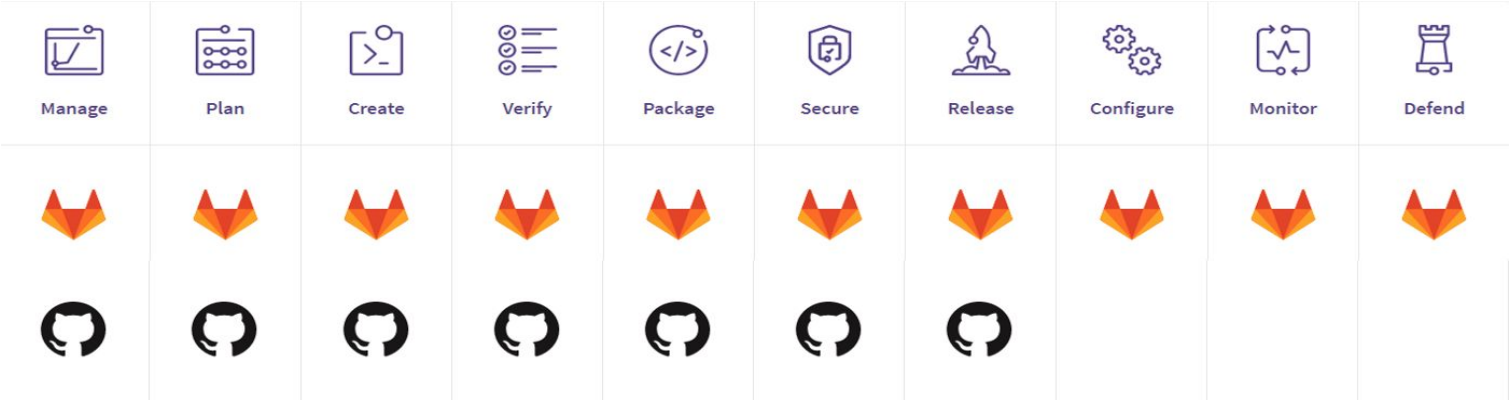
GitHub is a cloud-based hosting service that allows developers to manage Git repositories.

https://github.com/



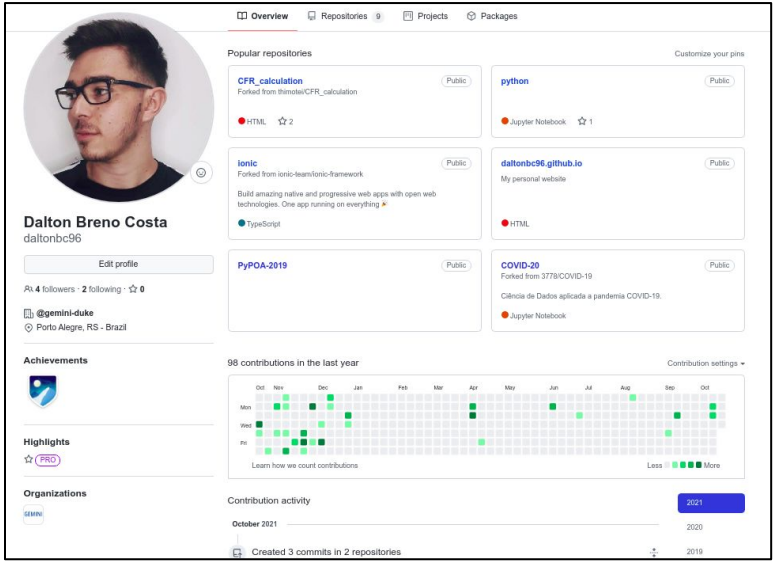
GitLab

- GitLab is a repository manager that provides featured services like custom workflows, DevOps score, value stream mapping, monitoring, and so on;
- GitLab offers some similar features like GitHub, but GitLab is more than Github in terms of collaborative environment and functionalities.

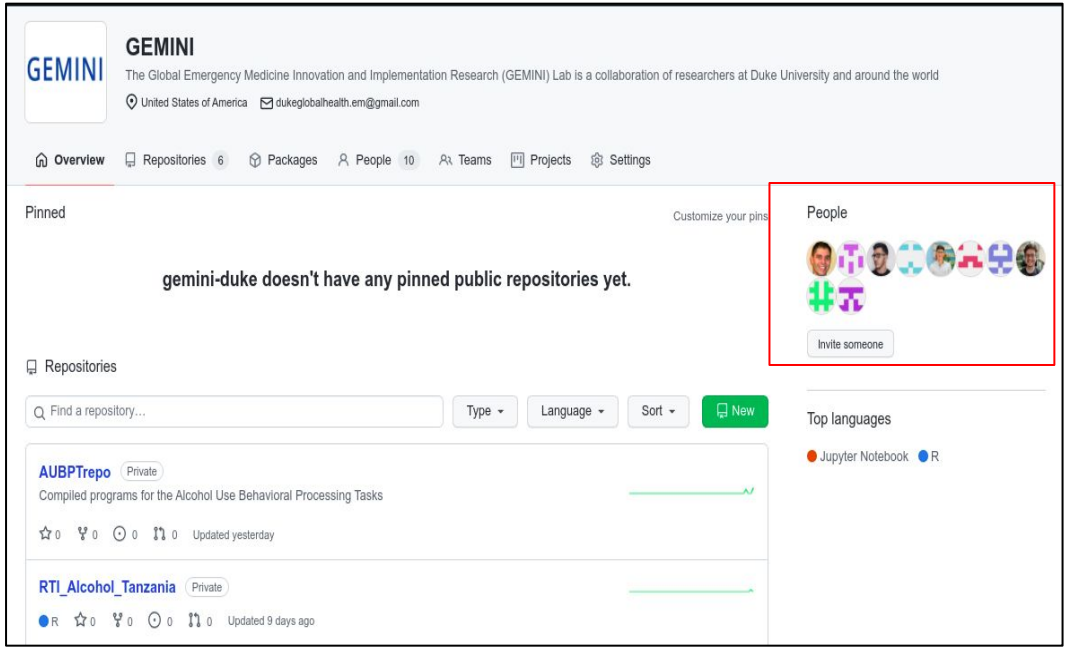


Types of Accounts

Personal user

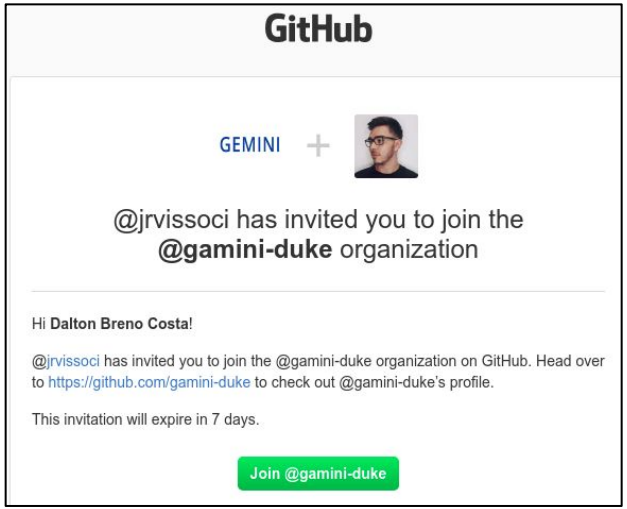


Organization



How to access Gemini account on GitHub?

- You can access it using the address: https://github.com/gemini-duke
- If you want to add or read private files, you need to be added to the organization's team on Github;
- In order to be added to the team you need to provide your username and you will receive an invitation in your email.



How to install GitHub on my computer?

1. Create a personal user account on GitHub: https://github.com/
2. Install Git on your computer: https://git-scm.com/downloads
   a. Tutorial teaching how to install Git on your computer: https://phoenixnap.com/kb/how-to-install-git-windows

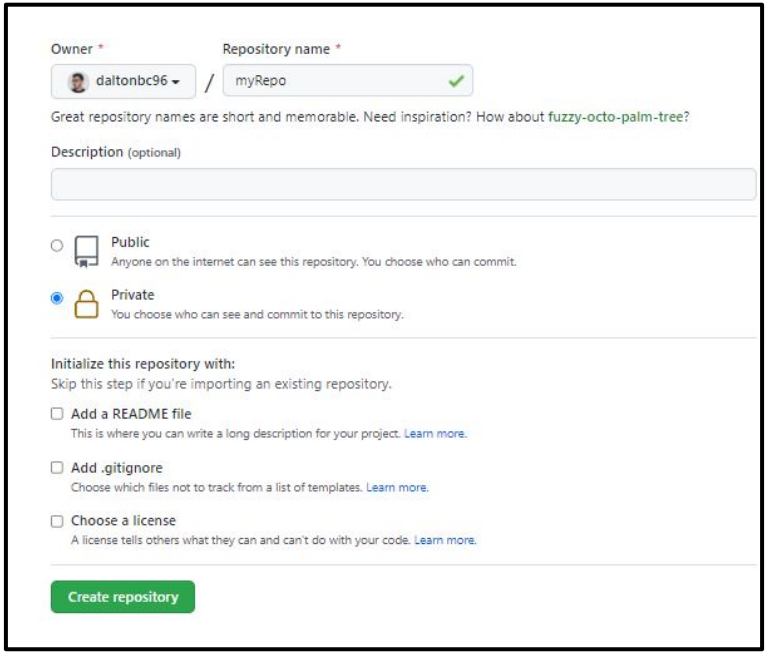
3 - On Git terminal (Git Bash) set global user:

```
$ git config --global user.name “daltonbc96”
$ git config --global user.email dalton.bc96@gmail.com
```

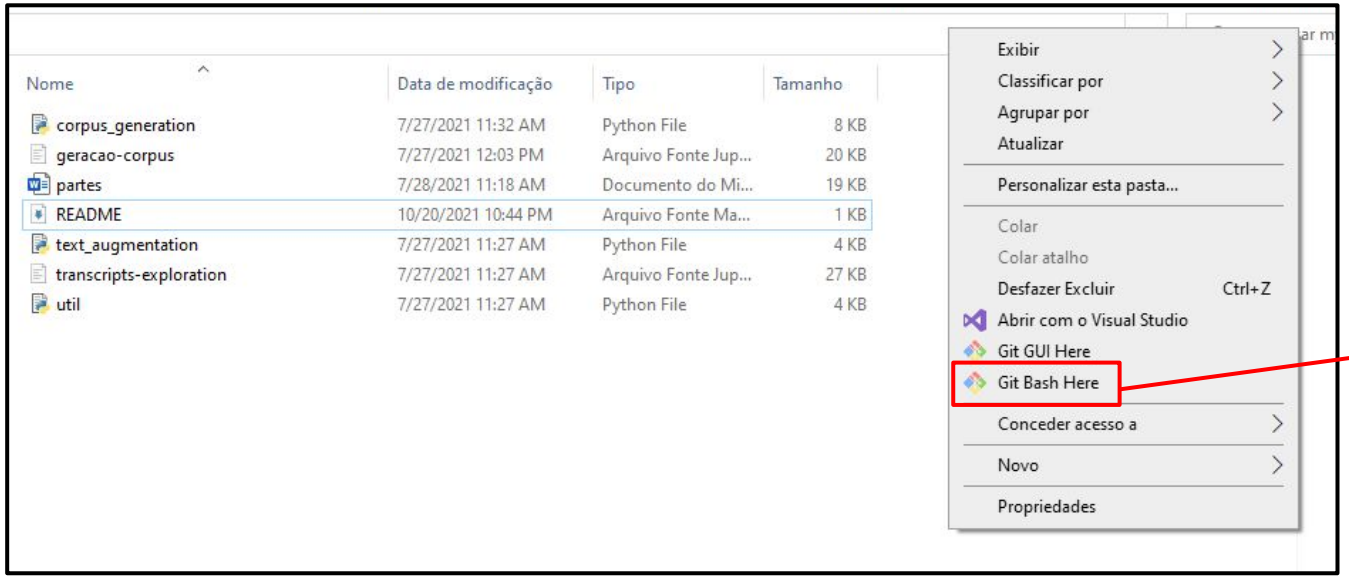
Summary of main Git commands:
https://training.github.com/downloads/github-git-cheat-sheet.pdf

Creating a repository

Step by step how to create a new repository on GitHub:
https://docs.github.com/en/get-started/quickstart/create-a-repo



Create a folder on your computer with your files



Use the right mouse button to open Git Bash in the location of your files

Connecting my remote repository with my local repository

Quick setup — if you've done this kind of thing before

Set up in Desktop or HTTPS SSH https://github.com/daltonbc96/myRepo.git

Get started by creating a new file or uploading an existing file. We recommend every repository include a README, LICENSE, and .gitignore.

...or create a new repository on the command line

```
echo "# myRepo" >> README.md
git init
git add README.md
git commit -m "first commit"
git branch -M main
git remote add origin https://github.com/daltonbc96/myRepo.git
git push -u origin main
```

...or push an existing repository from the command line

```
git remote add origin https://github.com/daltonbc96/myRepo.git
git branch -M main
git push -u origin main
```

...or import code from another repository

You can initialize this repository with code from a Subversion, Mercurial, or TFS project.

Import code

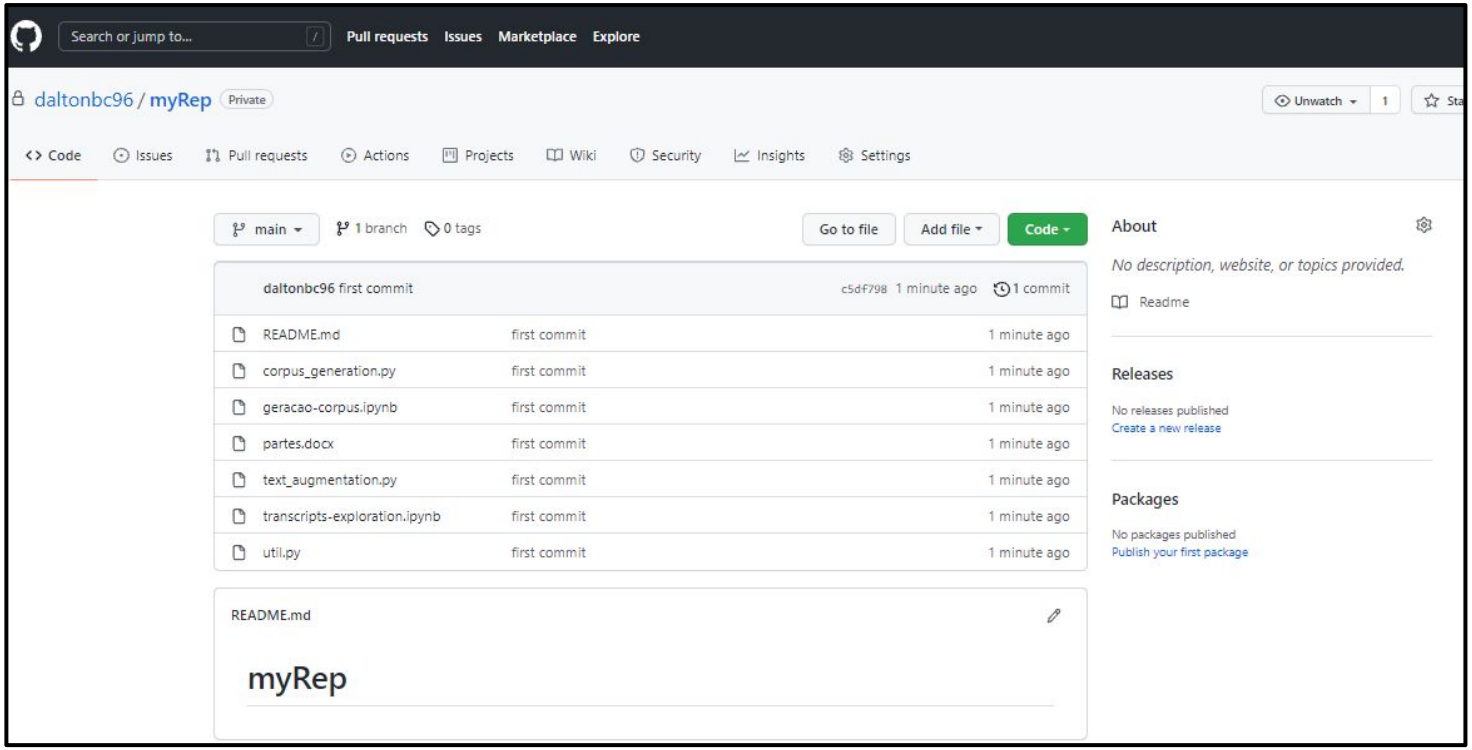
After including the README file, add the other files you need to upload to the repository, for example:

$ add file.csv
$ add file2.py

Or use $ git add . to add all files at once

Use $ git status to check added files

Repository created



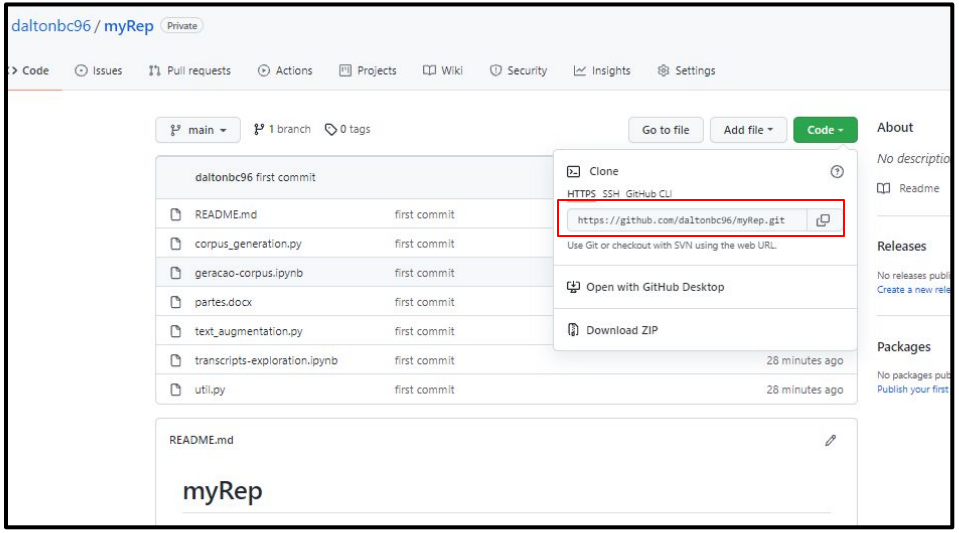
Updated a repository

- When changing the files that are in the local folder you need to update the files in the remote repository:

1. `$ git status` → Use to check which files have changed and need to be uploaded to the remote repository
2. `$ git add nameFile` → Add all changed files
3. `$ git commit -m “Some message”` → After adding all the files, commit this batch of changes and add any message that signals your change
4. `$ git push` → Submit all material to the remote repository

Clone a repository

- When you want to download material that is only in the remote repository on your computer, you should clone the material on your computer. You can update it as shown previously.

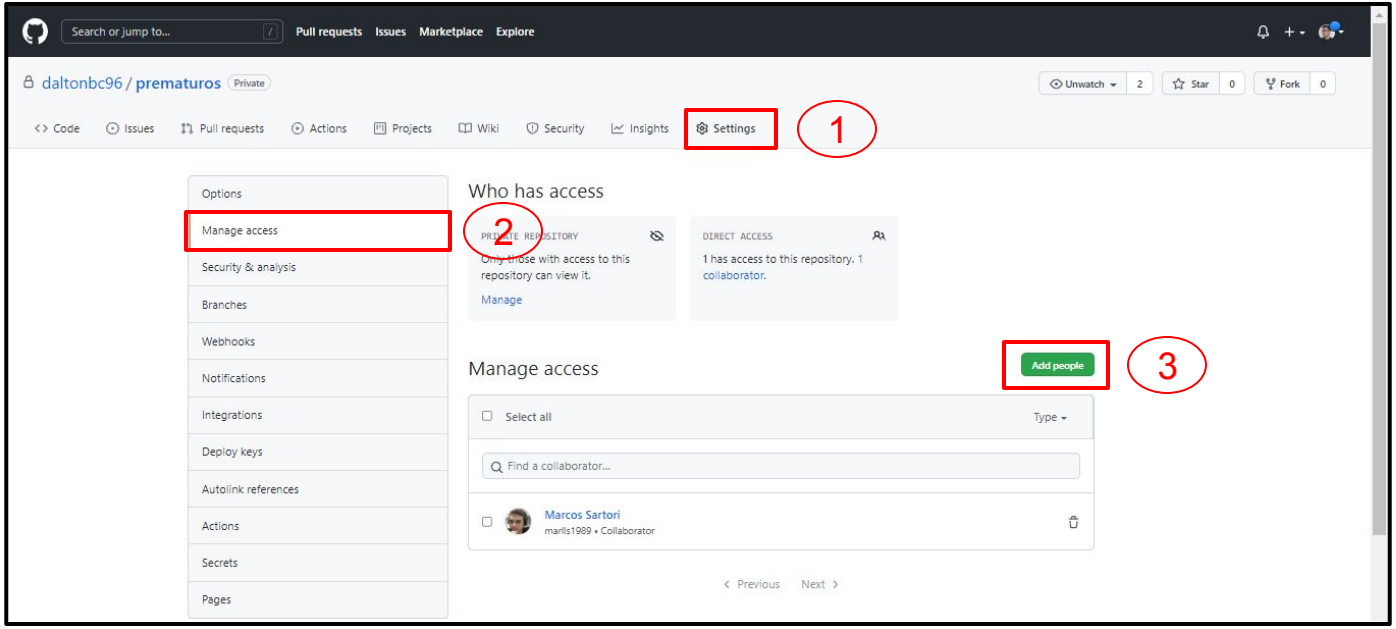


Open your Git Bash in the location you want to save the files and type the command:

```
$ git clone https://github.com/daltonbc96/myRep.git
```

Working with a team

If you need to work with more people, you can add people to your repository and invite them to edit.

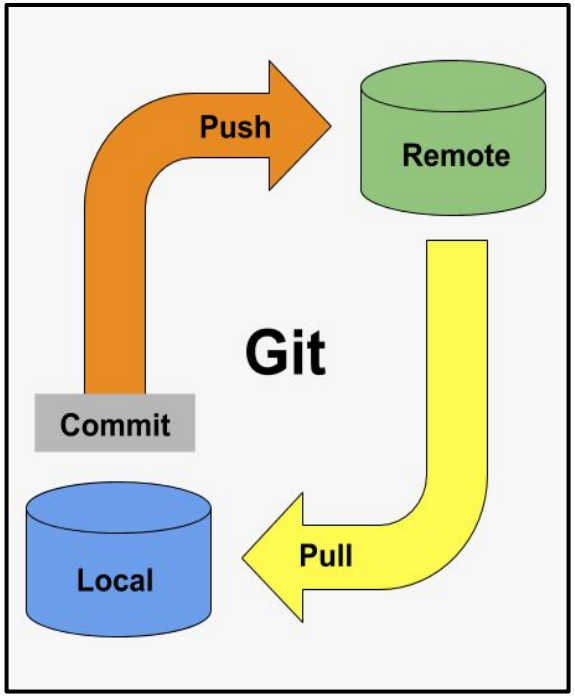


Updating a local repository

- If you are working in a team your colleagues can perform updates in the GitHub repository. **So you need to update the files with the current version from the remote repository before you start any editing**. It is important that the local and remote files are aligned, otherwise you will get conflicting files.

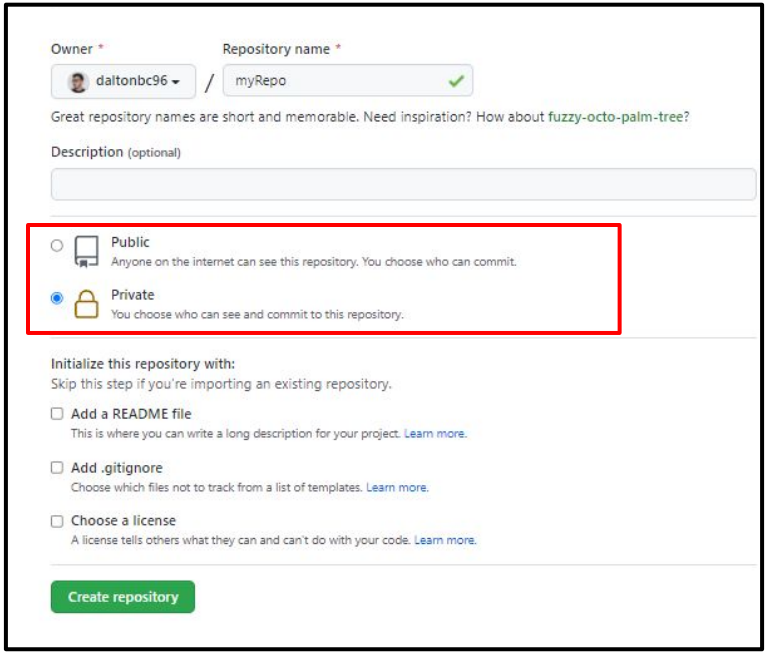
- Go into Git Bash and the address of your local repository and type the command:

```
$ git pull
```



Public or private?

- When your repository is **public**, everyone on the Internet can view your repository.
- When your repository is **private** only authorized people can access your repository.

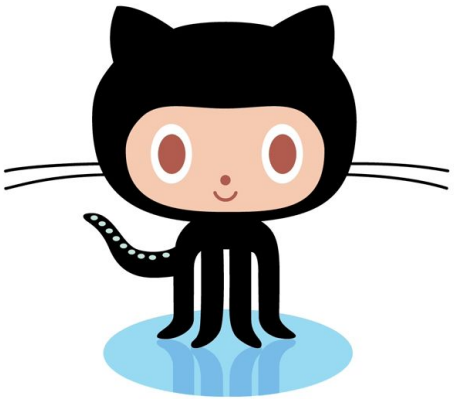


In GEMINI, we usually put the repositories in **private**. In public there are only materials that are finalized.

Final considerations

- Put in your repository only the essential stuff that will be changed constantly, such as: scripts and support material;

- Never put databases in GitHub, the ideal place for databases is the Duke Box.



Thanks!

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