



Módulo II | Clase 2

Python para Data Science: Conceptos Básicos de Git





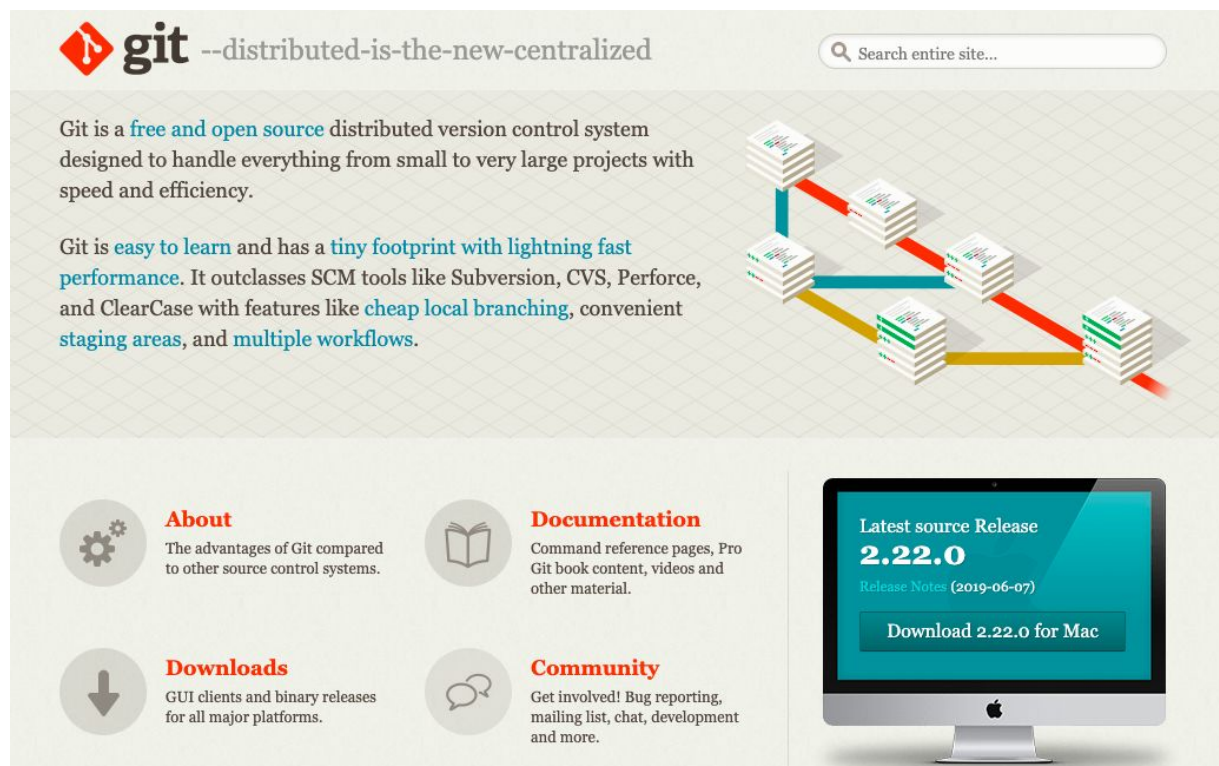
¿Qué es Git?

Git

Es un sistema de **control de versiones** que administra **cambios** hechos en archivos y directorios de un proyecto.



Git



The screenshot shows the Git website homepage. At the top, the Git logo is followed by the tagline "--distributed-is-the-new-centralized". A search bar is located in the top right corner. The main content area features two paragraphs of text describing Git as a free and open source distributed version control system, highlighting its speed, efficiency, ease of learning, and tiny footprint. To the right of the text is a diagram illustrating the distributed nature of Git with multiple repositories connected by lines. Below the text are four sections: "About" (advantages of Git), "Documentation" (command reference, Pro Git book, etc.), "Downloads" (GUI clients, binary releases), and "Community" (bug reporting, mailing list, etc.). On the right side of the lower section, there is a monitor displaying the latest source release (2.22.0) and a button to download it for Mac.

git --distributed-is-the-new-centralized

Search entire site...

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.

Git is **easy to learn** and has a **tiny footprint with lightning fast performance**. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like **cheap local branching**, convenient **staging areas**, and **multiple workflows**.

About
The advantages of Git compared to other source control systems.

Documentation
Command reference pages, Pro Git book content, videos and other material.

Downloads
GUI clients and binary releases for all major platforms.

Community
Get involved! Bug reporting, mailing list, chat, development and more.

Latest source Release
2.22.0
Release Notes (2019-06-07)
Download 2.22.0 for Mac

```
sudo apt-get install git
```

Ventajas de Git

1

Es seguro, efectivo, gratuito y de código abierto

2

Notifica automáticamente si hay **conflictos** entre archivos

3

Sincroniza trabajo hecho por **diferentes** personas en diferentes computadoras.

4

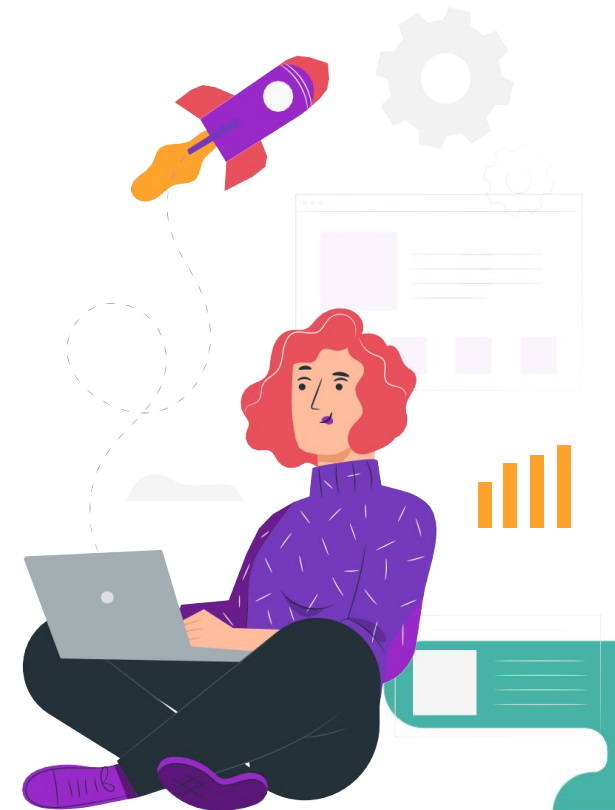
Nada se pierde si está guardado en Git

Repositorio

Archivos y directorios + **información** de Git sobre historia del proyecto.




Los archivos se modifican localmente y un **COMMIT** es hecho al repositorio

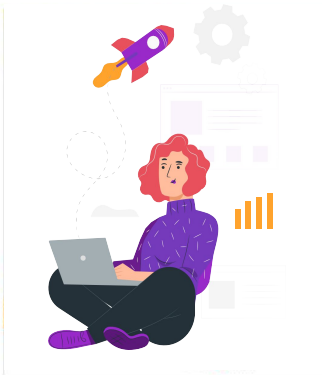


GitHub y GitLab



GitLab

 Search or jump to... Pull requests Issues Marketplace Explore



Full Name
User

★ PRO


Edit profile

• Data Scientist •

📍 Argentina


Overview Repositories 23 Projects 0 Stars 2 Followers 13 Following 2

Pinned

 **clustering_analysis**


Performs an exploratory analysis on a dataset containing information about shop customers. Check that the assumptions K-means makes are fulfilled. Apply K-means clustering algorithm in order to seg...

Jupyter Notebook ★ 2 🍴 1

 **analysing_twitter**

Stream Tweets and store them in a relational DB. Perform sentiment analysis and network interaction.


Jupyter Notebook ★ 7 🍴 1

 **movie_predictions**

Analyze a dataset with information about movies. Creates a linear and a bayesian model to predict movie popularity.


HTML ★ 2 🍴 2

Customize your pins

 **creatingDCGAN**


Show how DCGAN works. Contains some code about the generator, discriminator and training step.

Python

 **essential_tools_ner**

Retrieves information from a particular website. Uses different tools and pre-trained models for Named Entity Recognition.

Jupyter Notebook

 **predicting_survival_hepatitis**

Analyze a dataset with information about liver disease patients. Creates a model to predict their survival.

Jupyter Notebook

Repositorio

GitHub y GitLab



GitLab

171 commits 1 branch 0 releases 1 contributor

Branch: master ▾ New pull request

Create new file Upload files Find File Clone or download ▾

Switch branches/tags

Find or create a branch...

Branches Tags

✓ master

README.md

requirements.txt

README.md

Latest commit 50508a0 on May 29

Analysis of Twitter	2 months ago
Analysis of Twitter	3 months ago
Interaction Network Project	4 months ago
Update README.md	2 months ago
Interaction Network Project	3 months ago

GitHub y GitLab



GitLab

Stream Tweets and store them in a relational DB. Perform sentiment analysis and network interaction.

Edit

tweets avenger tweepy postgresql-database sentiment-analysis keras python network-graph Manage topics

171 commits

1 branch

0 releases

1 contributor

Branch: master

New pull request

Create new file

Upload files

Find File

Clone or download

User Merge branch 'master'

Jupyter Notebook files	Analysis of Twitter
images	Analysis of Twitter
.gitignore	Interaction Network Project
README.md	Update README.md
requirements.txt	Interaction Network Project

Clone with SSH

Use HTTPS

Use an SSH key and passphrase from account.

git@github.com: user /analysing_twitt

Open in Desktop

Download ZIP

Clave para clonar

README.md



Comandos Útiles

Interactuando con Git

Los **comandos de Git** proveen una manera de realizar operaciones de alto nivel y acceso completo al funcionamiento de Git.



Comandos Útiles

Utilizando la consola podemos realizar operaciones en las carpetas y archivos del repositorio. Si bien hay muchos comandos, los más utilizados y básicos para saber son:

- **git clone:** permite bajarse la última versión de un proyecto remoto y copiarlo a la ubicación seleccionada de la computadora.

```
MacBook-Pro pythonProject3 ]$ git clone <url o clave del repositorio>
```

- **git checkout:** permite crear o moverse a un branch específico del repositorio

```
MacBook-Pro pythonProject3 ]$ git checkout <branch>
```

```
MacBook-Pro pythonProject3 ]$ git checkout -b <branch>
```

- **git status:** comprueba si hay algún cambio en los archivos actuales y cuales pueden ser comiteados

```
MacBook-Pro pythonProject3 ]$ git status
```

Comandos Útiles

Utilizando la consola podemos realizar operaciones en las carpetas y archivos del repositorio. Si bien hay muchos comandos, los más utilizados y básicos para saber son:

- **git commit:** permite bajarse la última versión de un proyecto remoto y copiarlo a la ubicación seleccionada de la computadora.

```
MacBook-Pro pythonProject3 ]$ git commit -m "<Mensaje que identifica los cambios>"
```

- **git push:** Luego que los cambios se han hecho localmente, permite guardarlos en el repositorio remoto. Es decir “empuja” los cambios para que se vean impactados a nivel remoto y no solo local.

```
MacBook-Pro pythonProject3 ]$ git push origin <branch>
```

- **git pull:** Actualiza el estado del repositorio local en caso de que haya habido cambios en el repositorio remoto

```
MacBook-Pro pythonProject3 ]$ git pull origin <branch>
```

Comandos Útiles

Utilizando la consola podemos realizar operaciones en las carpetas y archivos del repositorio. Si bien hay muchos comandos, los más utilizados y básicos para saber son:

- **git add:** agrega un archivo modificado especificado que luego van a pushearse al repositorio remoto.

```
MacBook-Pro pythonProject3 ]$ git add "archivo a agregar"
```

- **git init:** Inicializa un repositorio vacío nuevo.

```
MacBook-Pro pythonProject3 ]$ git init <nombre del repositorio>
```



Descanso

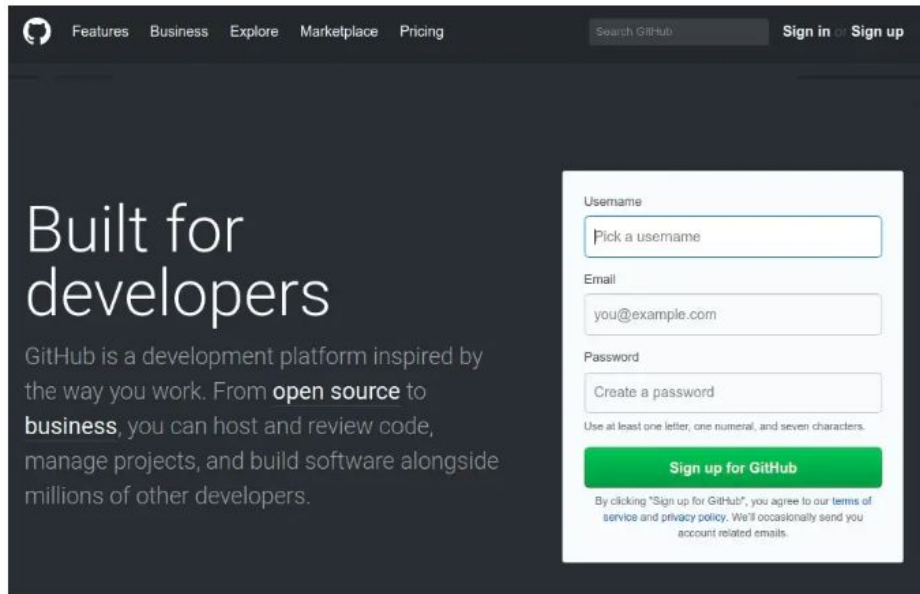
Nos vemos en 5 minutos



Sección práctica

¿Cómo configurar Git y crear un perfil y repositorio?

Crear un perfil



The screenshot shows the GitHub sign-up page. The header includes the GitHub logo, navigation links (Features, Business, Explore, Marketplace, Pricing), a search bar, and 'Sign in' and 'Sign up' buttons. The main content area has the text 'Built for developers' and a description of GitHub as a development platform. On the right, there is a sign-up form with fields for Username, Email, and Password, each with a placeholder and a red eye icon for toggling visibility. Below the fields is a green 'Sign up for GitHub' button. At the bottom, there is a disclaimer about agreeing to terms and privacy policy.

Features Business Explore Marketplace Pricing Search GitHub Sign in Sign up

Built for developers

GitHub is a development platform inspired by the way you work. From **open source** to **business**, you can host and review code, manage projects, and build software alongside millions of other developers.

Username
Pick a username

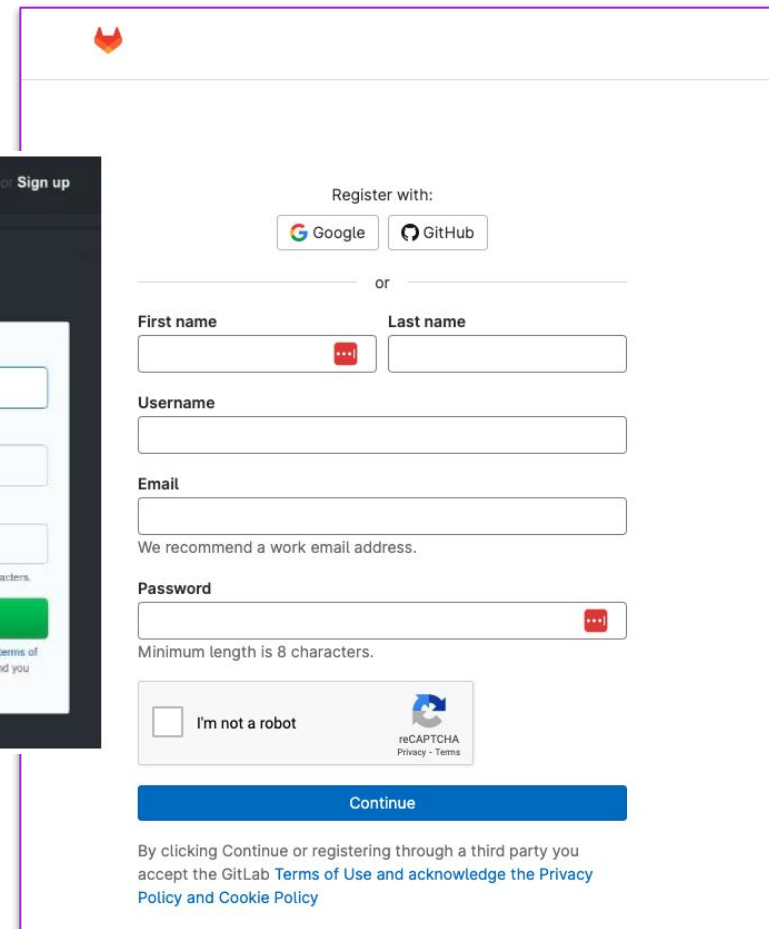
Email
you@example.com

Password
Create a password

Use at least one letter, one numeral, and seven characters.

Sign up for GitHub

By clicking "Sign up for GitHub", you agree to our [terms of service](#) and [privacy policy](#). We'll occasionally send you account related emails.



The screenshot shows the GitLab sign-up page. The header includes the GitLab logo. The main content area has the text 'Register with:' and buttons for Google and GitHub. Below this, there is a form with fields for First name, Last name, Username, Email, and Password, each with a placeholder and a red eye icon for toggling visibility. Below the fields is a blue 'Continue' button. At the bottom, there is a disclaimer about agreeing to terms and privacy policy.

Register with:

Google GitHub

or

First name Last name

Username

Email

We recommend a work email address.

Password

Minimum length is 8 characters.

☐ I'm not a robot

reCAPTCHA
Privacy - Terms

Continue

By clicking Continue or registering through a third party you accept the GitLab [Terms of Use](#) and acknowledge the [Privacy Policy](#) and [Cookie Policy](#)

Configurando Git

01

Visitamos la página de Git y lo instalamos:

<https://www.atlassian.com/git/tutorials/install-git>

Install Git

[Install Git on Mac OS X](#) / [Install Git on Windows](#) / [Install Git on Linux](#)

02

En la terminal, configuramos usuario y email (con el que creamos la cuenta)

```
$ git config --global user.name "Emma Paris"
```

```
$ git config --global user.email "eparis@atlassian.com"
```

03

Configuramos las claves SSH (Próxima Slide)

Configurando claves SSH

01

Correr el siguiente comando en la terminal para crear las claves:

```
ssh-keygen -t rsa -b 4096 -C "email@example.com"
```

02

Cuando nos pida un archivo donde guardarlo, presionar enter

03

Cuando nos pida una contraseña, elegir una que recordemos

Configurando claves SSH

01

Iniciar el agente ssh en el fondo de nuestro ambiente

```
eval "$(ssh-agent -s)"
```

02

Agregar nuestra clave al agente

```
ssh-add ~/.ssh/id_rsa
```

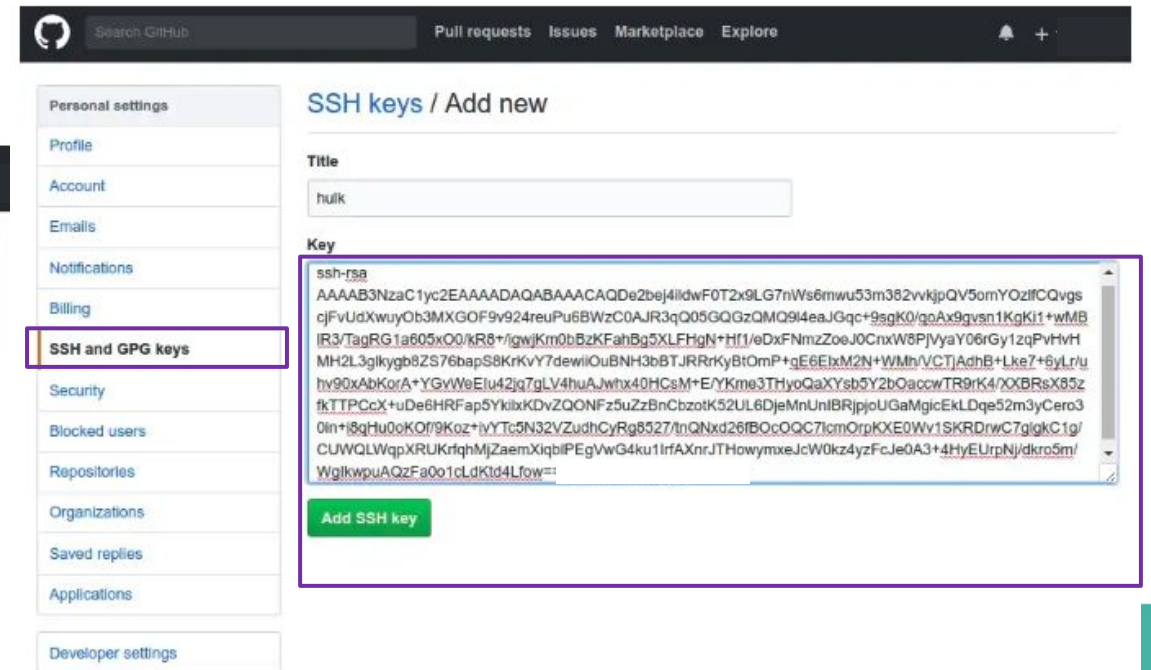
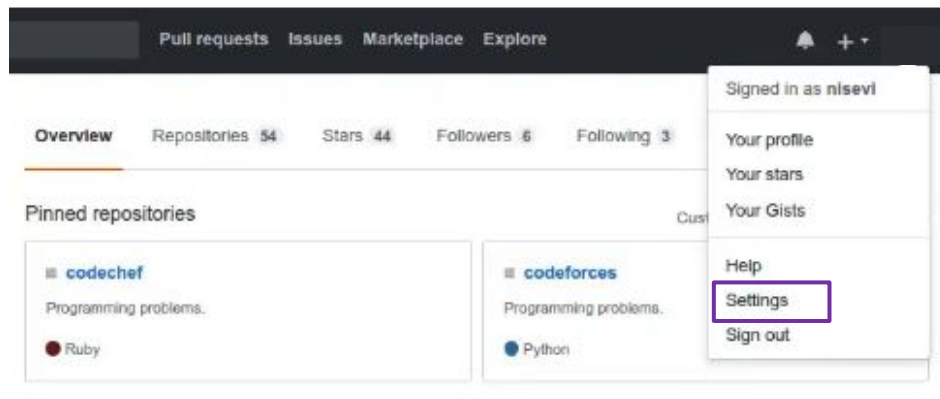
03

Copiar tu clave al portapapeles

```
cat ~/.ssh/id_rsa
```

Configurando claves SSH

01 Agregar la clave al perfil de GitHub o GitLab



Crear un repositorio

Overview Repositories 35 Projects Packages Stars 1

Find a repository...

Type ▾

Language ▾

Sort ▾

New

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository](#).

Owner *

Repository name *

Repository names are short and memorable. Need inspiration? How about **glowing-octo-fiesta**?

on (optional)

☒ Public

Anyone on the internet can see this repository. You choose who can commit.

☐ Private

You choose who can see and commit to this repository.

Initialize this repository with:

Skip this step if you're importing an existing repository.

☐ Add a README file

This is where you can write a long description for your project. [Learn more](#).

Add .gitignore

Choose which files not to track from a list of templates. [Learn more](#).

.gitignore template: None ▾

Choose a license

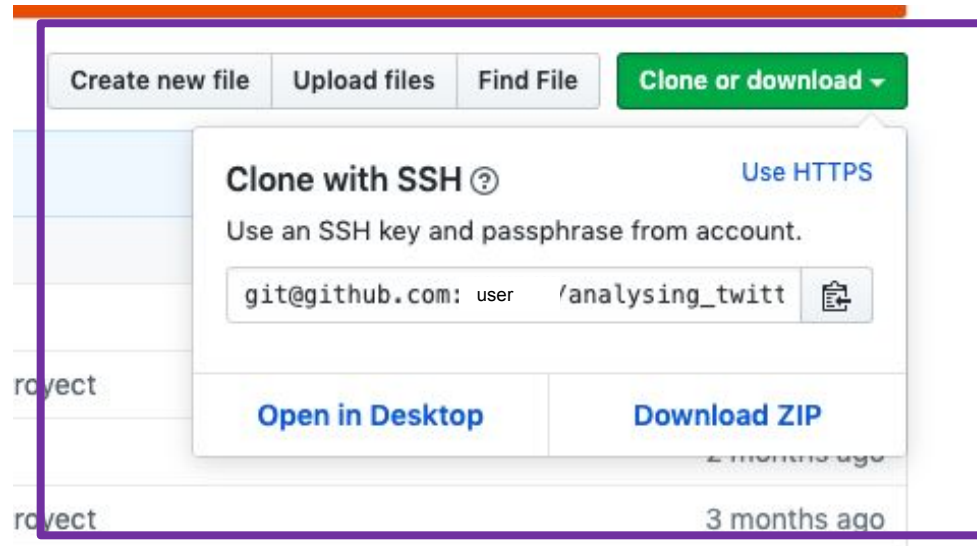
A license tells others what they can and can't do with your code. [Learn more](#).

License: None ▾

① You are creating a public repository in your personal account.

Create repository

Clonar un repositorio



```
MacBook-Pro pythonProject3 ]$ git clone <url o clave del repositorio>
```



Actividad práctica

Configurar Git y Crear Perfil



Trabajamos en salas

Trabajamos en salas de zoom

Configurar GIT y crear perfil

En los grupos establecidos, configuramos Git en nuestra compu, creamos un perfil y un repositorio.



30 minutos de actividad



Desafío 3

Para la siguiente clase:

- Instalar GIT en sus computadoras y configurarlo
- Practicar el uso de GIT



¿Alguna consulta?

FUNDACIÓN
YPF

¡Muchas gracias!

