EPH Lunchtime hacks, June 29th 2021

Version control, git, and GitHub

Carlos Valencia-Hernández

Outline

- Version control, git, GitHub
- Frequently used terms
- GitHub in Mac/Windows
- Integration with R?

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VERSION CONTROL

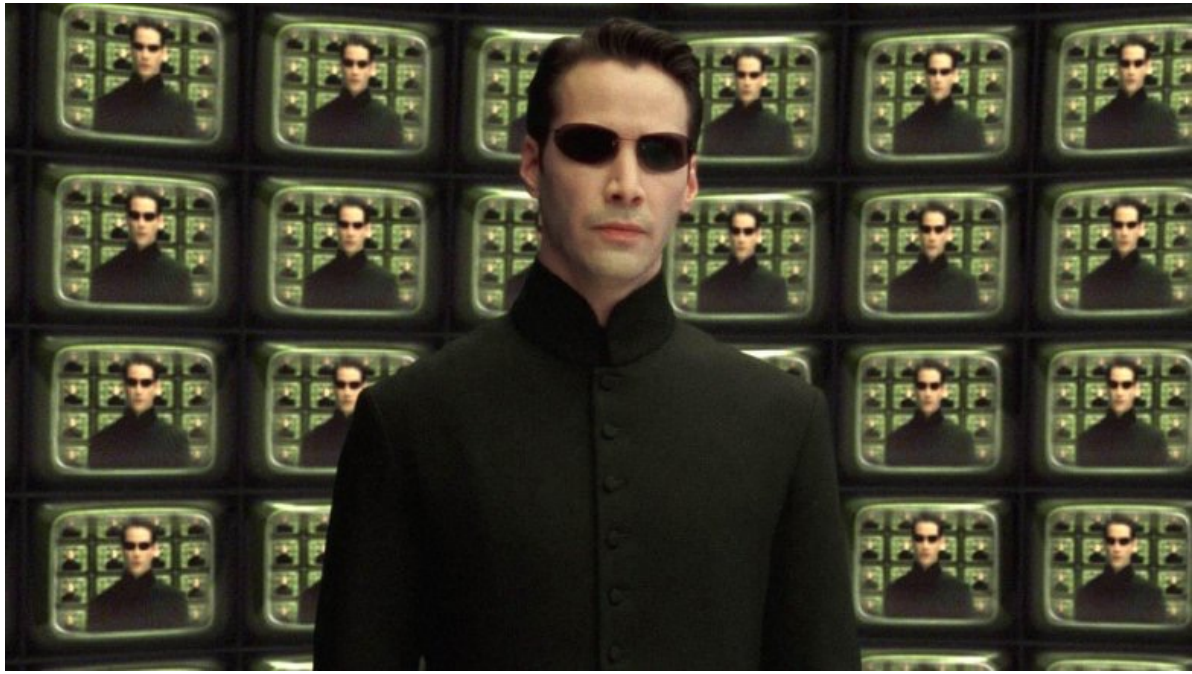
What is git?

"A free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency"

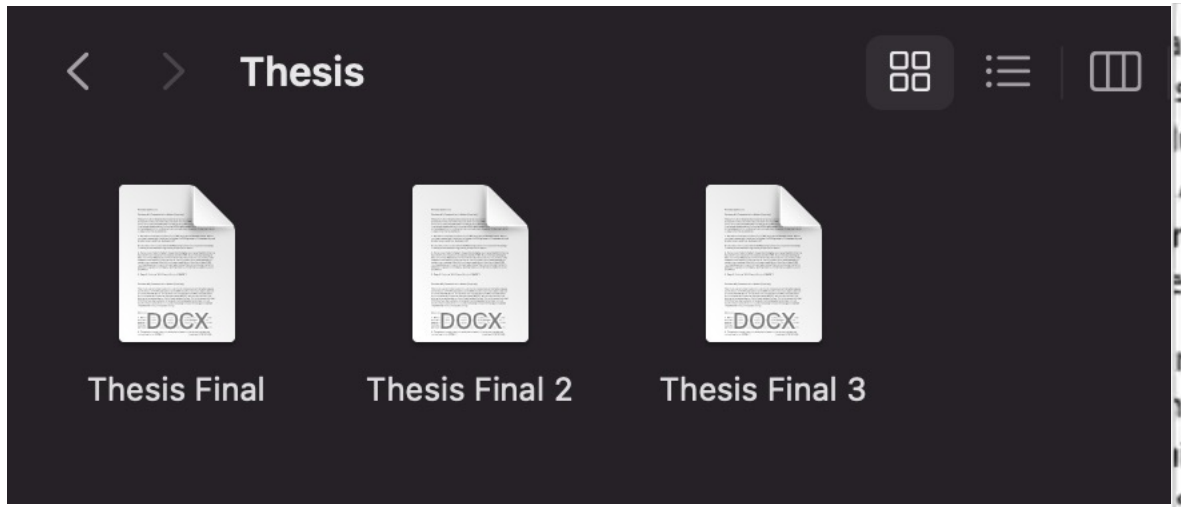
https://git-scm.com/

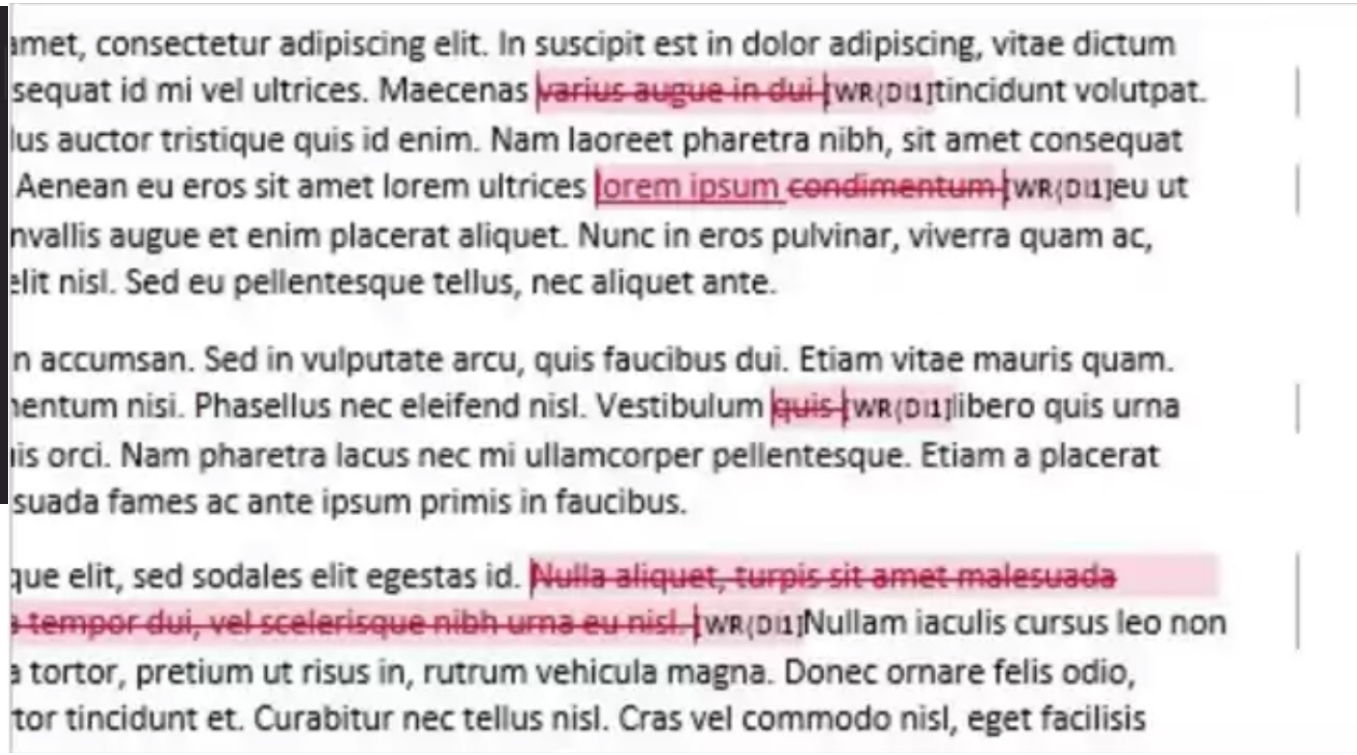
Version control

- Record changes over time
- Management of changes to documents, programs, web sites, or any other information
- Snapshots of every change you make
- Revert changes if needed

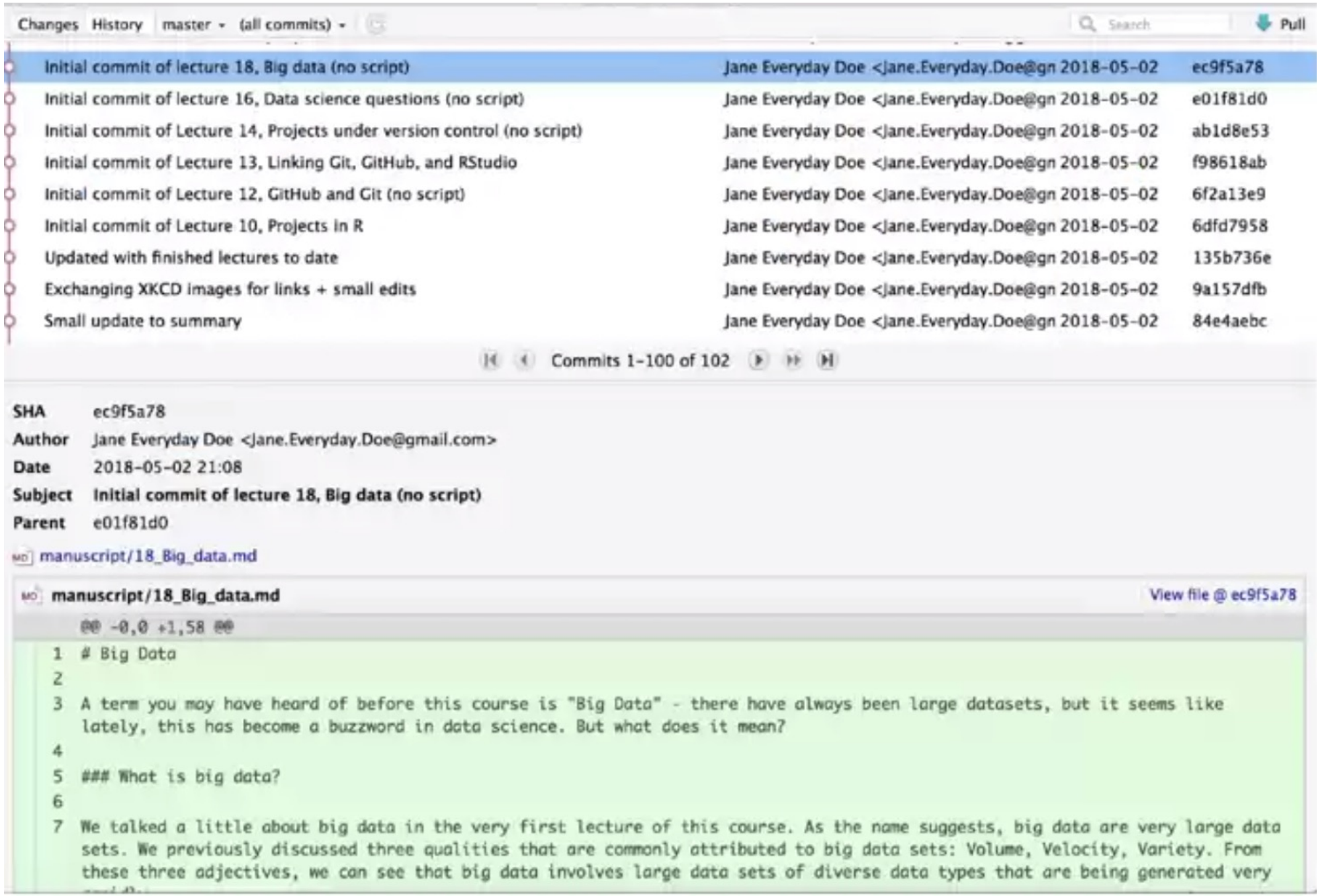


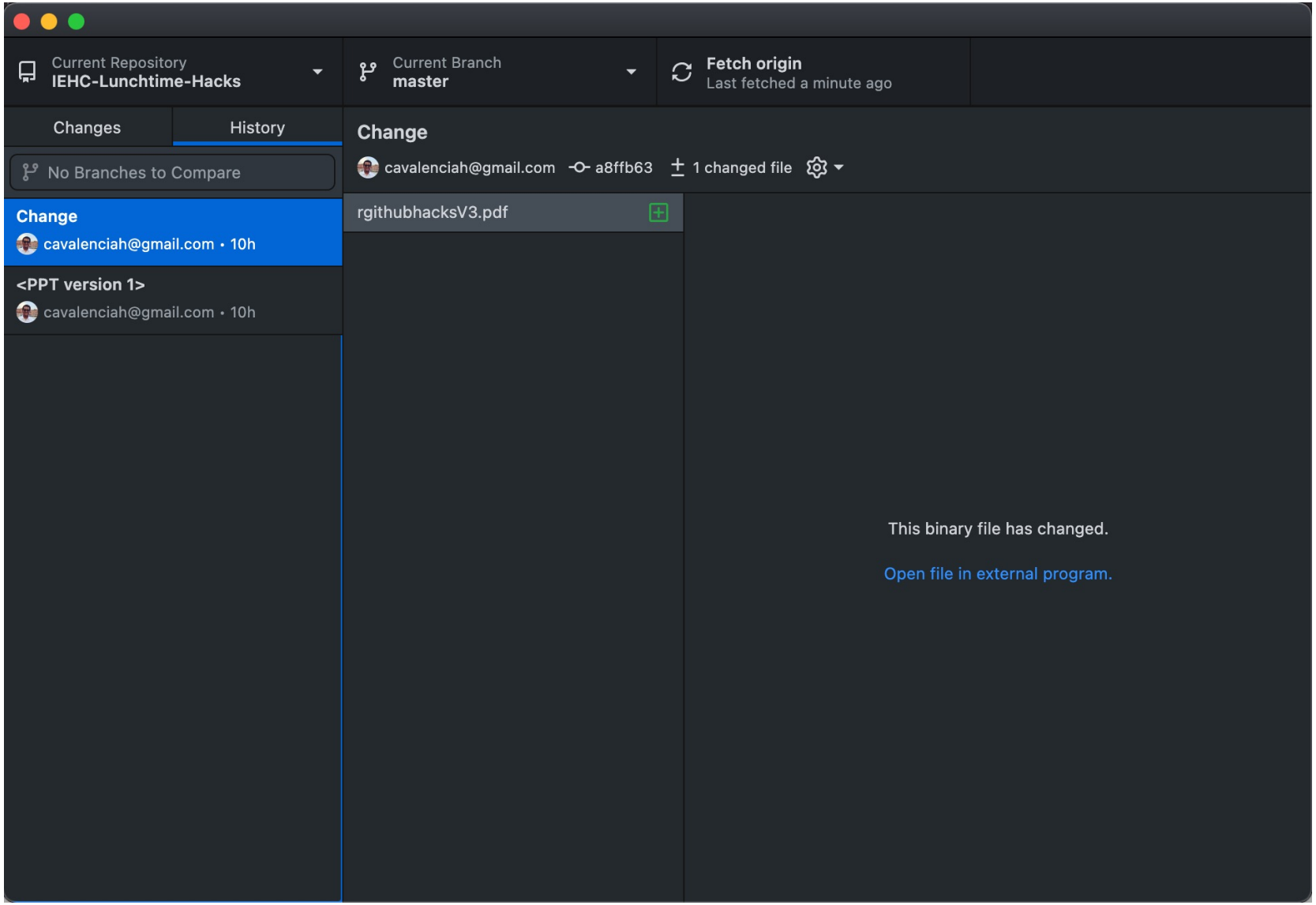
Track changes in MS Word





VectorStock® VectorStock.com/26012951


Changes History master (all commits) Search Pull
Initial commit of lecture 18, Big data (no script) Jane Everyday Doe <Jane.Everyday.Doe@gn 2018-05-02 ec9f5a78
Initial commit of lecture 16, Data science questions (no script) Jane Everyday Doe <Jane.Everyday.Doe@gn 2018-05-02 e01f81d0
Initial commit of Lecture 14, Projects under version control (no script) Jane Everyday Doe <Jane.Everyday.Doe@gn 2018-05-02 ab1d8e53
Initial commit of Lecture 13, Linking Git, GitHub, and RStudio Jane Everyday Doe <Jane.Everyday.Doe@gn 2018-05-02 f98618ab
Initial commit of Lecture 12, GitHub and Git (no script) Jane Everyday Doe <Jane.Everyday.Doe@gn 2018-05-02 6f2a13e9
Initial commit of Lecture 10, Projects in R Jane Everyday Doe <Jane.Everyday.Doe@gn 2018-05-02 6dfd7958
Updated with finished lectures to date Jane Everyday Doe <Jane.Everyday.Doe@gn 2018-05-02 135b736e
Exchanging XKCD images for links + small edits Jane Everyday Doe <Jane.Everyday.Doe@gn 2018-05-02 9a157dfb
Small update to summary Jane Everyday Doe <Jane.Everyday.Doe@gn 2018-05-02 84e4aebc
Commits 1-100 of 102
SHA ec9f5a78
Author Jane Everyday Doe <Jane.Everyday.Doe@gmail.com>
Date 2018-05-02 21:08
Subject Initial commit of lecture 18, Big data (no script)
Parent e01f81d0
manuscript/18_Big_data.md
manuscript/18_Big_data.md
View file @ ec9f5a78
@@ -0,0 +1,58 @@
1 # Big Data
2
3 A term you may have heard of before this course is "Big Data" - there have always been large datasets, but it seems like lately, this has become a buzzword in data science. But what does it mean?
4
5 ### What is big data?
6
7 We talked a little about big data in the very first lecture of this course. As the name suggests, big data are very large data sets. We previously discussed three qualities that are commonly attributed to big data sets: Volume, Velocity, Variety. From these three adjectives, we can see that big data involves large data sets of diverse data types that are being generated very


Current Repository
IEHC-Lunchtime-Hacks
Current Branch
master
Fetch origin
Last fetched a minute ago
Changes
History
No Branches to Compare
Change
cavalenciah@gmail.com • 10h
<PPT version 1>
cavalenciah@gmail.com • 10h
Change
cavalenciah@gmail.com
a8ffb63
1 changed file
rgithubhacksV3.pdf
This binary file has changed.
Open file in external program.

Online version control?

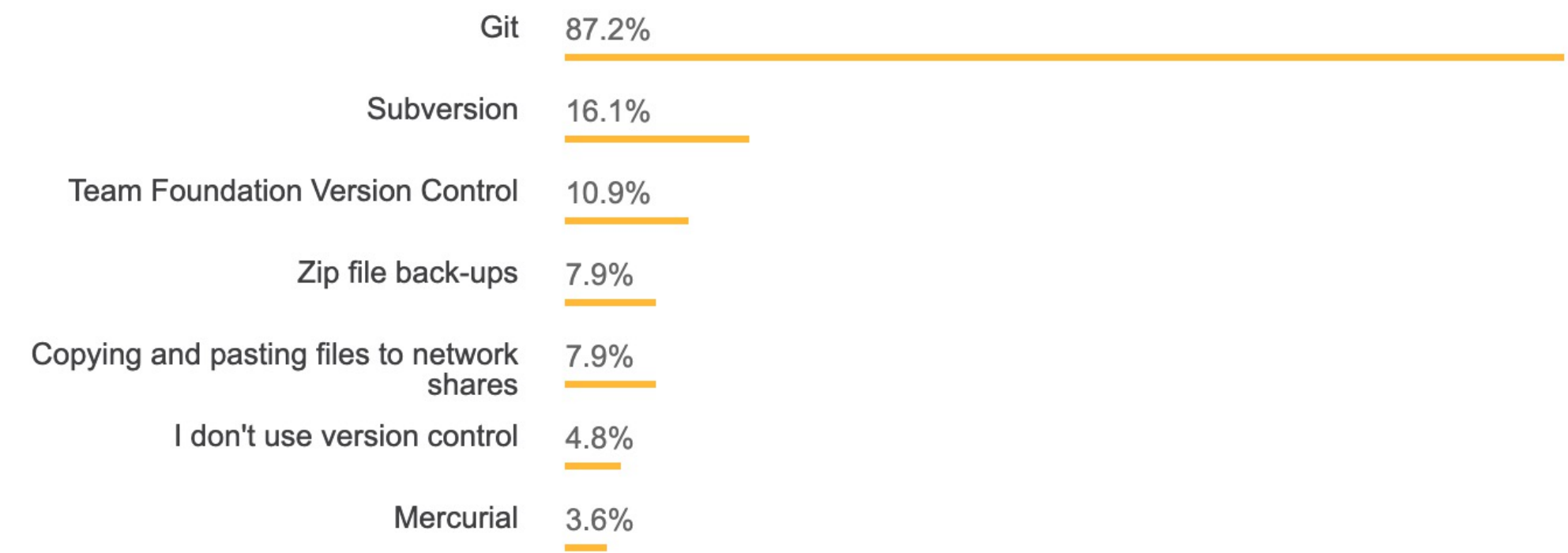
GitHub

GitLab

Atlassian Bitbucket

Version Control

All Respondents | Professional Developers

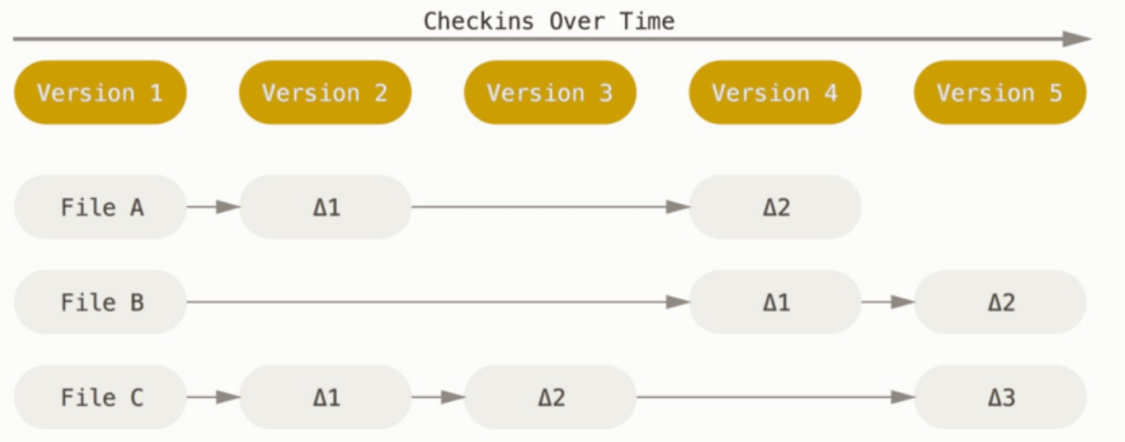


74,298 responses; select all that apply

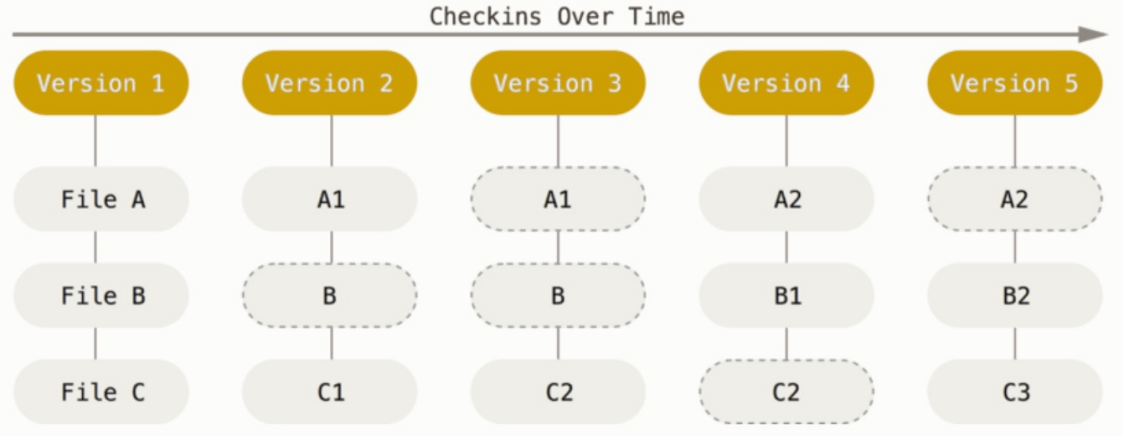
https://insights.stackoverflow.com/survey/2018#development-practices

Snapshots, not differences

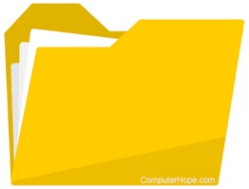
- Other version control software



- Git (snapshots)



Frequently used terms



- **Repository**

A folder that contains a project. (Although you can have multiple projects inside a repository)

- **Commit**

Each snapshot or version of the project (locally)

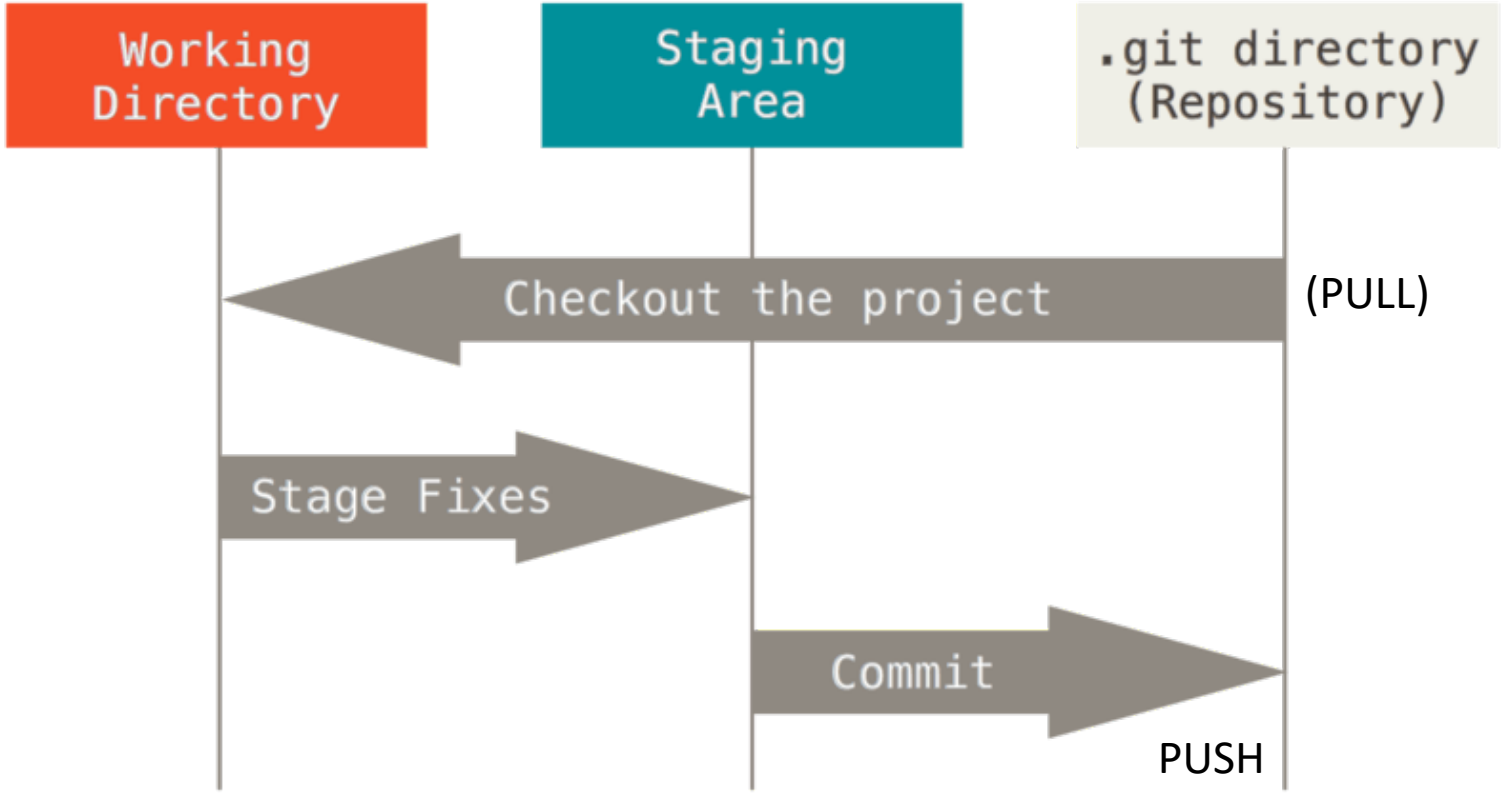
- **Branch**

A sequence of commits that has an order. (A *Master* branch)

- **Push**

- **Pull**

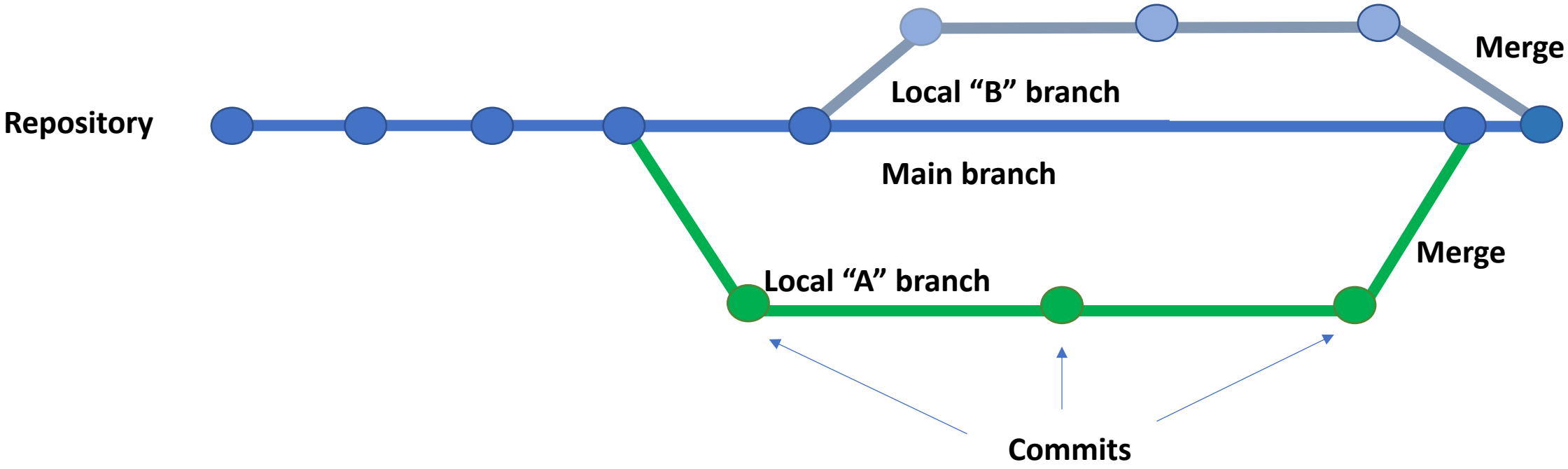
Main sections of a Git project



https://git-scm.com/book/en/v2/Getting-Started-What-is-Git%3F

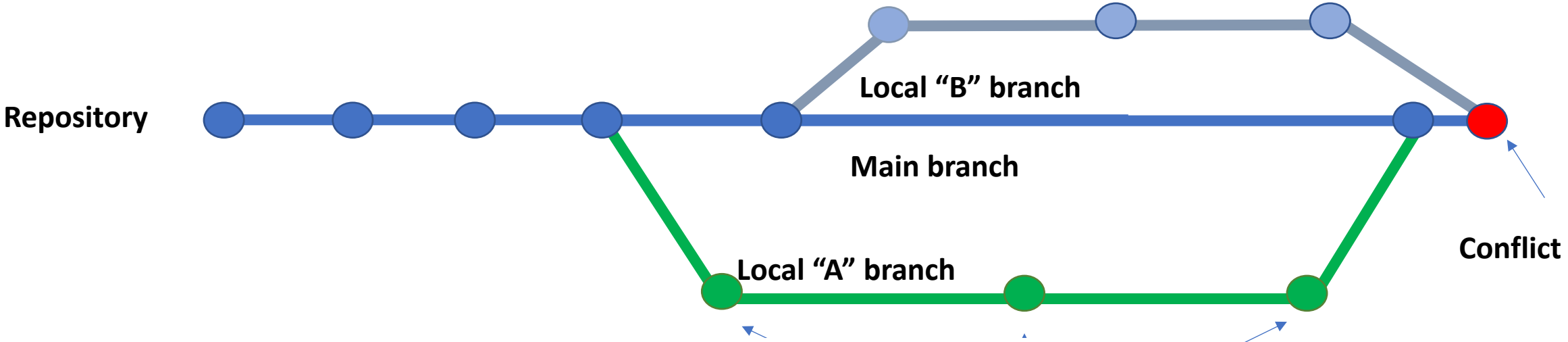
Branches

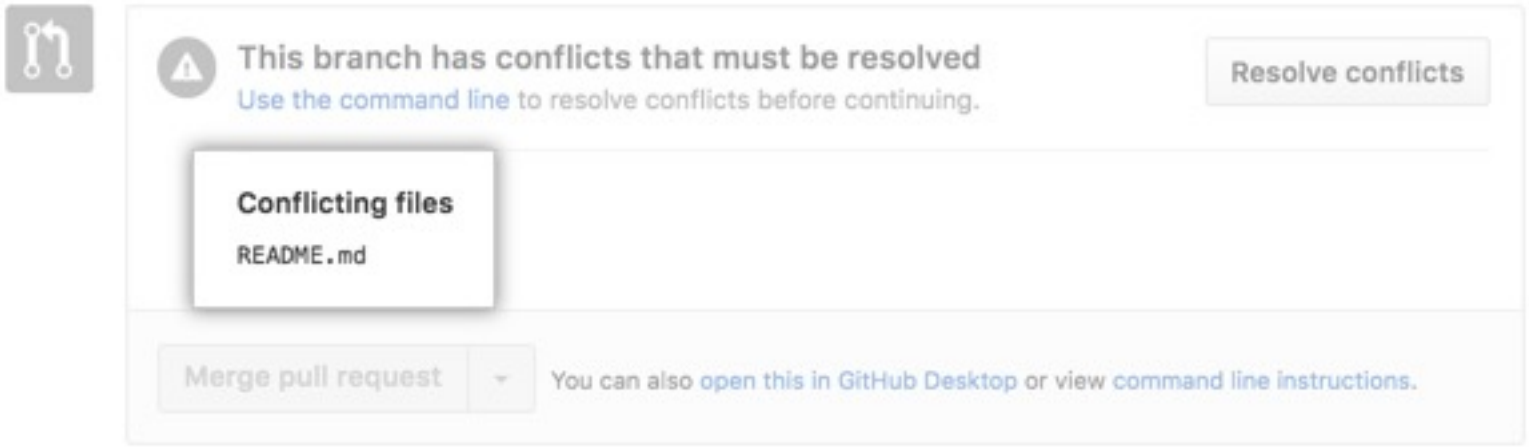
- Files with two copies that are *simultaneous*



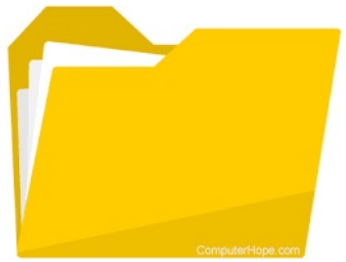
Conflict

- Merging branches with competing commits



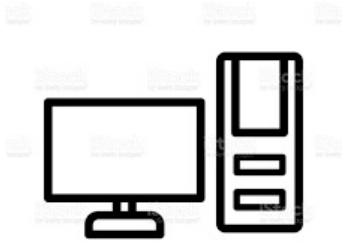


ts



github/repository

clone →



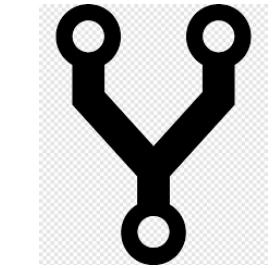
localgithub/repository

branch →

PULL REQUEST-→ OWNER

github/repository

fork →



mygithub/repository

What is Git(Hub?)

The GitHub

- Open source program for version control
- Multiple programming languages (Also Stata)

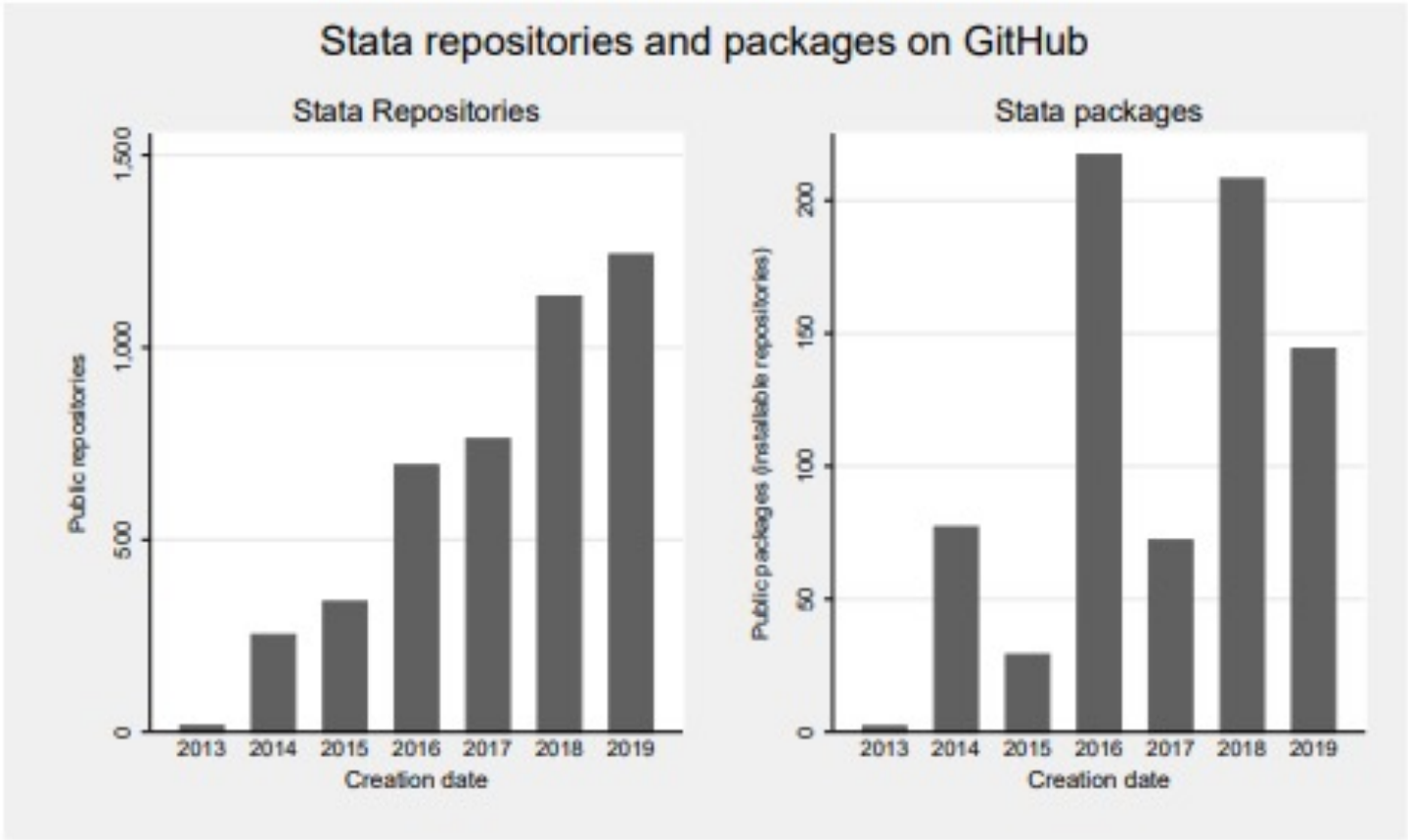
The GitHub

- A collaboration platform
- Showcase
- Repository

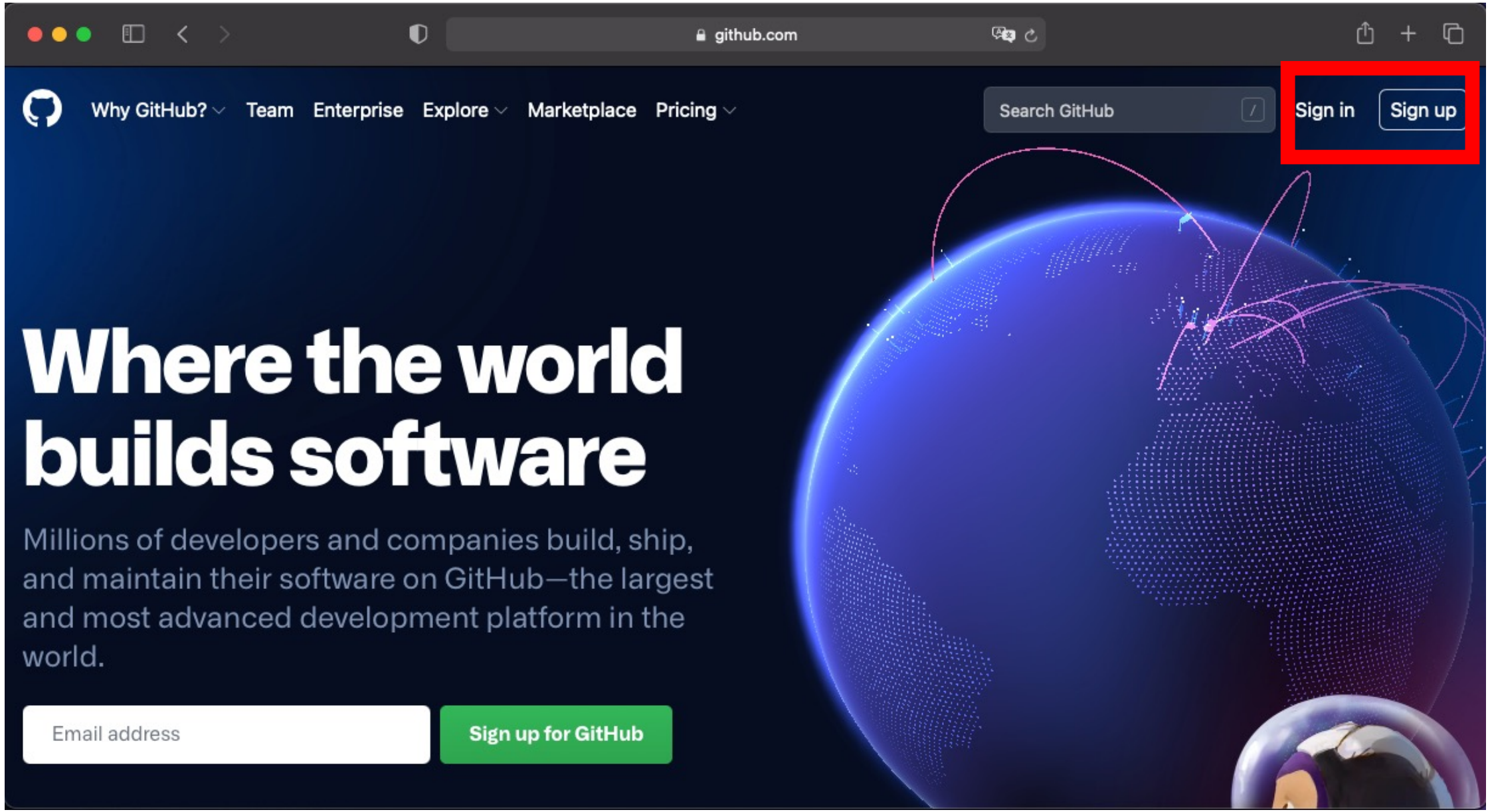
Most popular languages on GitHub

Place	Language	%
1	JavaScript	18.756% (+0.053%)
2	Python	16.628% (+0.390%)
3	Java	11.680% (+0.742%)
4	Go	7.829% (-1.176%)
5	Ruby	7.588% (+0.776%)
6	C++	6.985% (-0.439%)
7	TypeScript	6.604% (-0.164%)
8	PHP	5.081% (-0.046%)
9	C#	3.614% (-0.221%)
10	C	3.253% (+0.072%)
33	R	

Growing popularity of Stata in GitHub



http://www.haghish.com/resources/pdf/github.pdf


github.com
Why GitHub?
Team
Enterprise
Explore
Marketplace
Pricing
Search GitHub
/
Sign in
Sign up
Where the world builds software
Millions of developers and companies build, ship, and maintain their software on GitHub—the largest and most advanced development platform in the world.
Email address
Sign up for GitHub

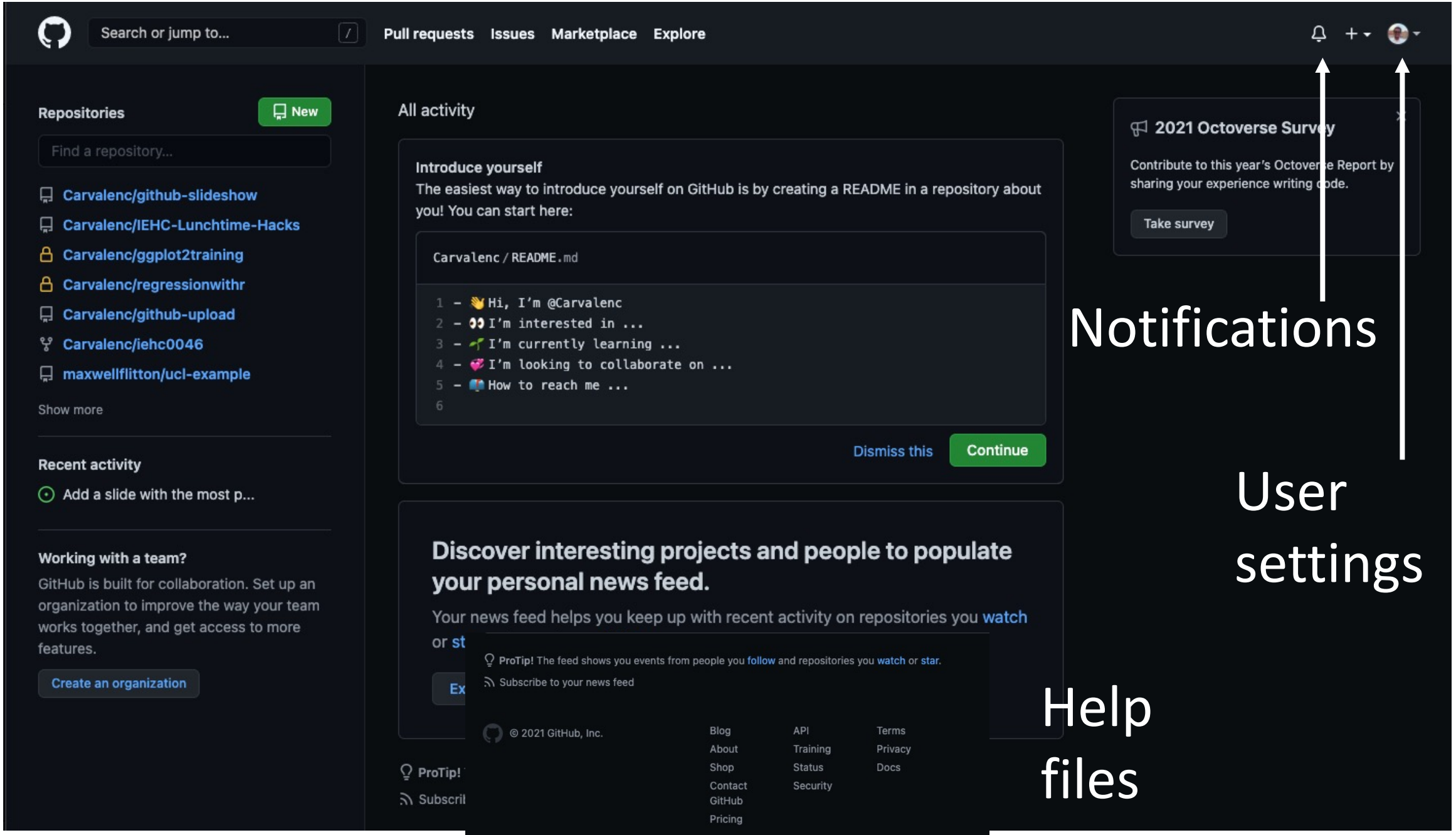
Sign in to GitHub

Username or email address

Password Forgot password?

Sign in

New to GitHub? Create an account.


Search or jump to...
Pull requests
Issues
Marketplace
Explore
Repositories
New
Find a repository...
Carvalenc/github-slideshow
Carvalenc/IEHC-Lunchtime-Hacks
Carvalenc/ggplot2training
Carvalenc/regressionwithr
Carvalenc/github-upload
Carvalenc/iehc0046
maxwellflitton/ucl-example
Show more
Recent activity
Add a slide with the most p...
Working with a team?
GitHub is built for collaboration. Set up an organization to improve the way your team works together, and get access to more features.
Create an organization
All activity
Introduce yourself
The easiest way to introduce yourself on GitHub is by creating a README in a repository about you! You can start here:
Carvalenc / README.md
1 - 👋 Hi, I'm @Carvalenc
2 - 👀 I'm interested in ...
3 - 🌱 I'm currently learning ...
4 - 💞 I'm looking to collaborate on ...
5 - 📫 How to reach me ...
6
Dismiss this
Continue
Discover interesting projects and people to populate your personal news feed.
Your news feed helps you keep up with recent activity on repositories you watch or st
Ex
ProTip! The feed shows you events from people you follow and repositories you watch or star.
Subscribe to your news feed
ProTip!
Subscril
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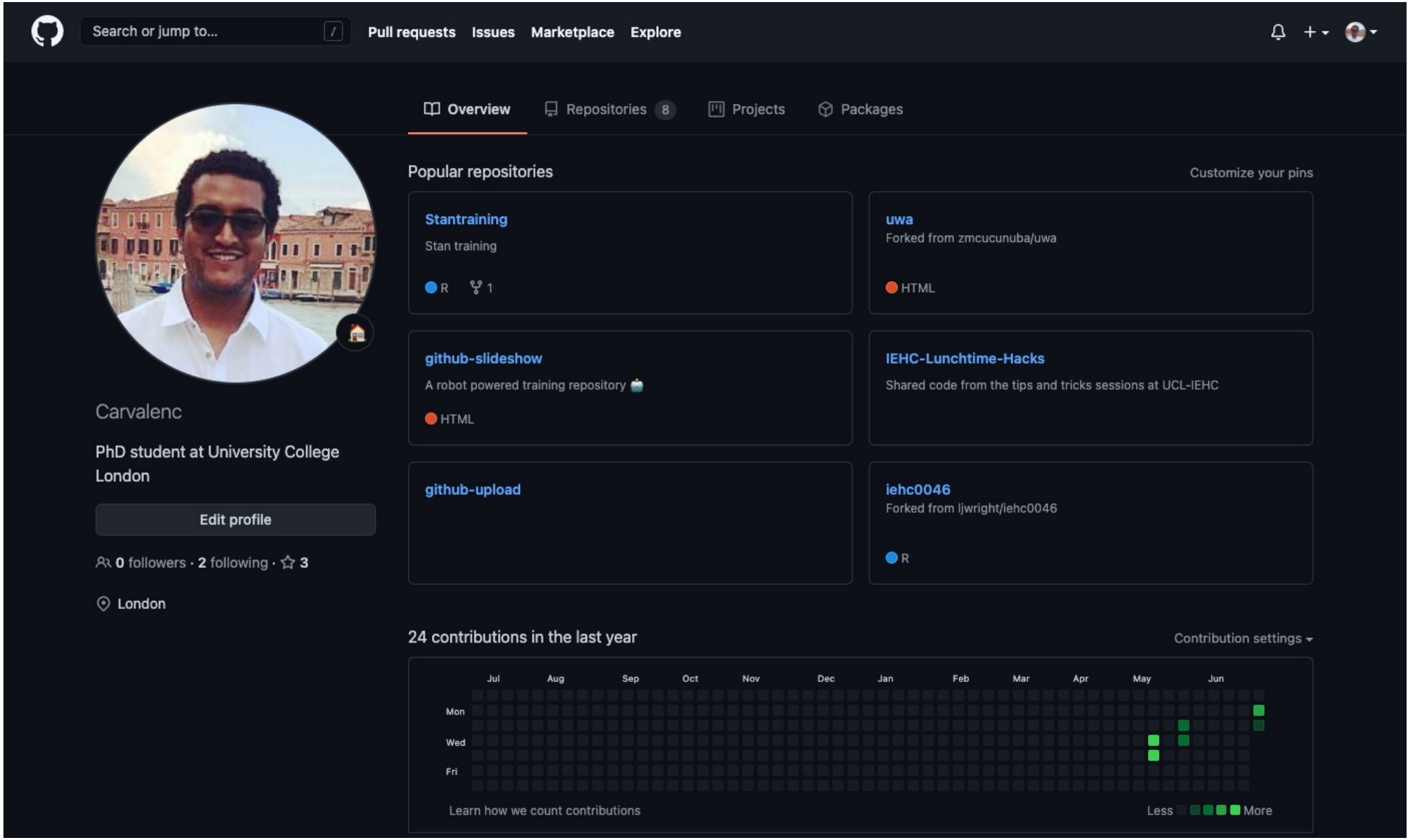
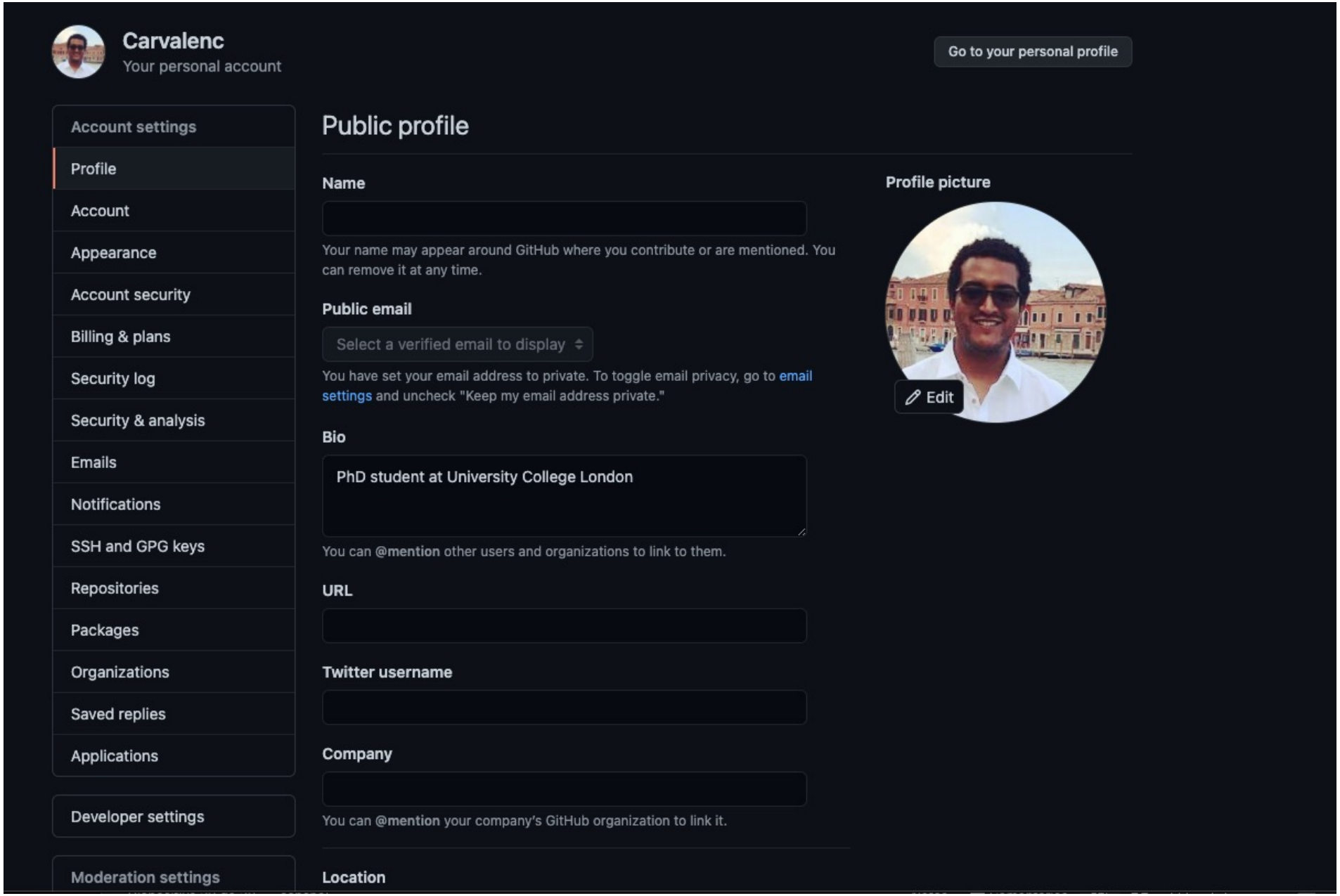
Status
Security
Terms
Privacy
Docs
2021 Octoverse Survey
Contribute to this year's Octoverse Report by sharing your experience writing code.
Take survey
Notifications
User settings
Help files


Search or jump to...
/
Pull requests
Issues
Marketplace
Explore
Overview
Repositories 8
Projects
Packages
Carvalenc
PhD student at University College London
Edit profile
0 followers · 2 following · 3
London
Popular repositories
Customize your pins
Stantraining
Stan training
R
1
uwa
Forked from zmcucunuba/uwa
HTML
github-slideshow
A robot powered training repository
HTML
IEHC-Lunchtime-Hacks
Shared code from the tips and tricks sessions at UCL-IEHC
github-upload
iehc0046
Forked from ljwright/iehc0046
R
24 contributions in the last year
Contribution settings
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Mon
Wed
Fri
Learn how we count contributions
Less
More


Carvalenc
Your personal account
Go to your personal profile
Account settings
Profile
Account
Appearance
Account security
Billing & plans
Security log
Security & analysis
Emails
Notifications
SSH and GPG keys
Repositories
Packages
Organizations
Saved replies
Applications
Developer settings
Moderation settings
Public profile
Name
Your name may appear around GitHub where you contribute or are mentioned. You can remove it at any time.
Public email
Select a verified email to display
You have set your email address to private. To toggle email privacy, go to email settings and uncheck "Keep my email address private."
Bio
PhD student at University College London
You can @mention other users and organizations to link to them.
URL
Twitter username
Company
You can @mention your company's GitHub organization to link it.
Location
Profile picture
Edit

lab.github.com

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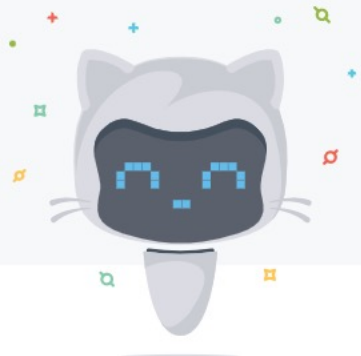


Our most popular courses

Introduction to GitHub

The GitHub Training Team

If you are looking for a quick and fun introduction to GitHub, you've found it. This class will get you started using GitHub in less than an hour.

Git · GitHub Pages · Branches · Commits · Pull Requests

GitHub Actions: Hello World

The GitHub Training Team

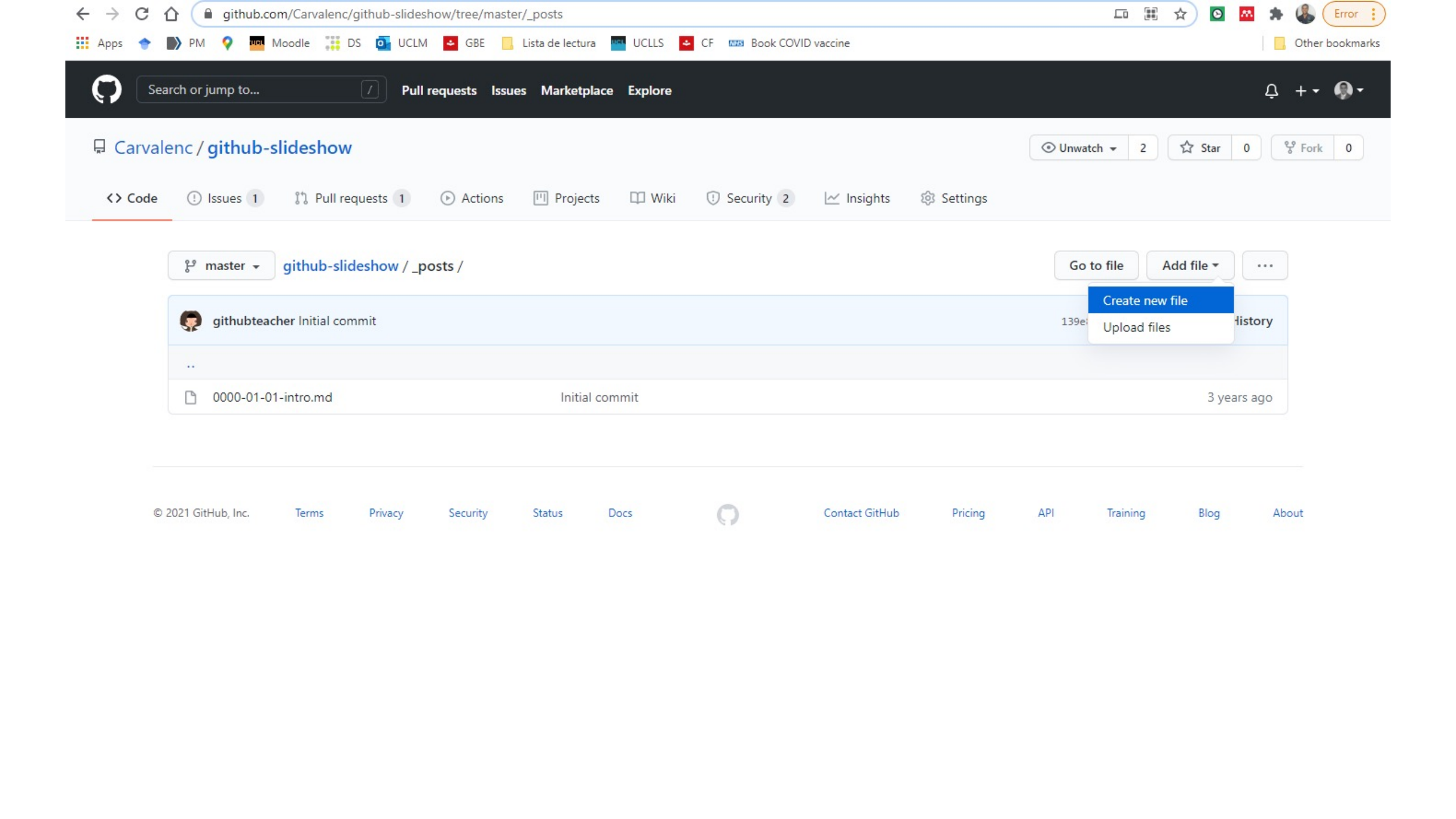
Create a GitHub Action and use it in a workflow.

GitHub Actions · Workflows · Hello World

Communicating using Markdown

The GitHub Training Team

This course will walk you through everything you need to start organizing ideas and collaborating using Markdown, a lightweight language for text formatting.


github.com/Carvalenc/github-slideshow/tree/master/_posts
Error
Apps
PM
Moodle
DS
UCLM
GBE
Lista de lectura
UCLLS
CF
Book COVID vaccine
Other bookmarks
Search or jump to...
Pull requests
Issues
Marketplace
Explore
Carvalenc / github-slideshow
Unwatch 2
Star 0
Fork 0
Code
Issues 1
Pull requests 1
Actions
Projects
Wiki
Security 2
Insights
Settings
master
github-slideshow / _posts /
Go to file
Add file
Create new file
Upload files
githubteacher Initial commit
139e
History
..
0000-01-01-intro.md
Initial commit
3 years ago
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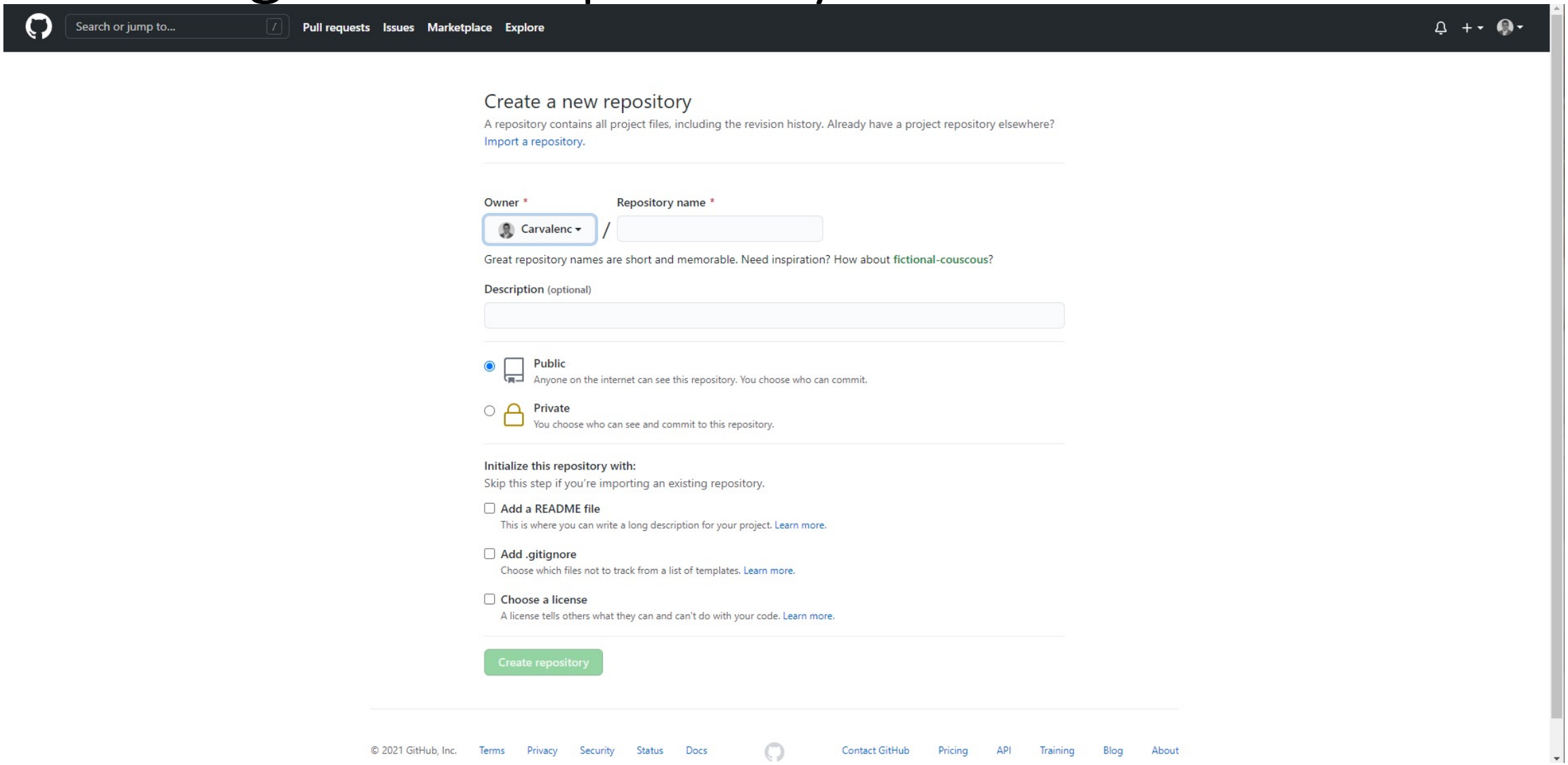
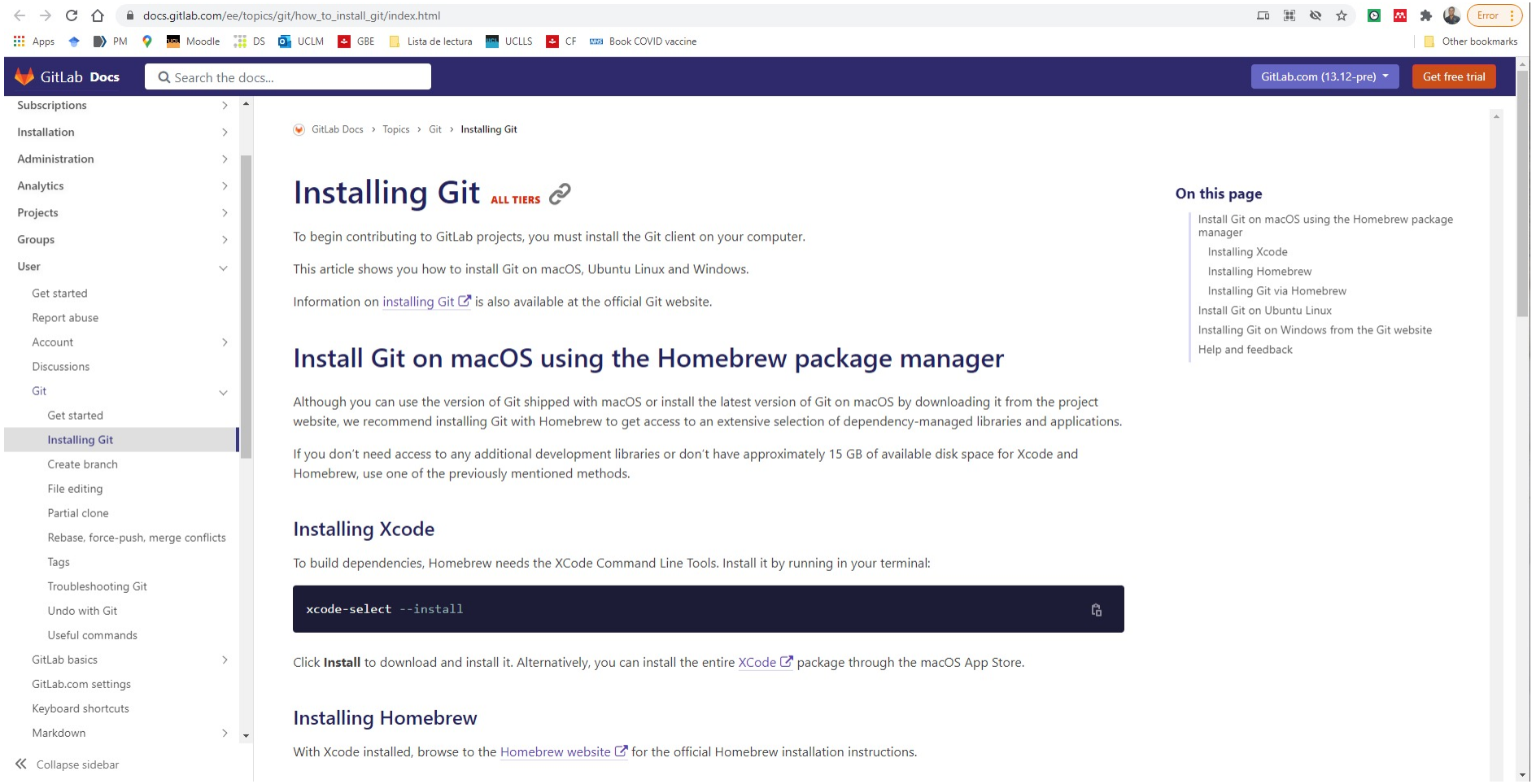
About

Pull request

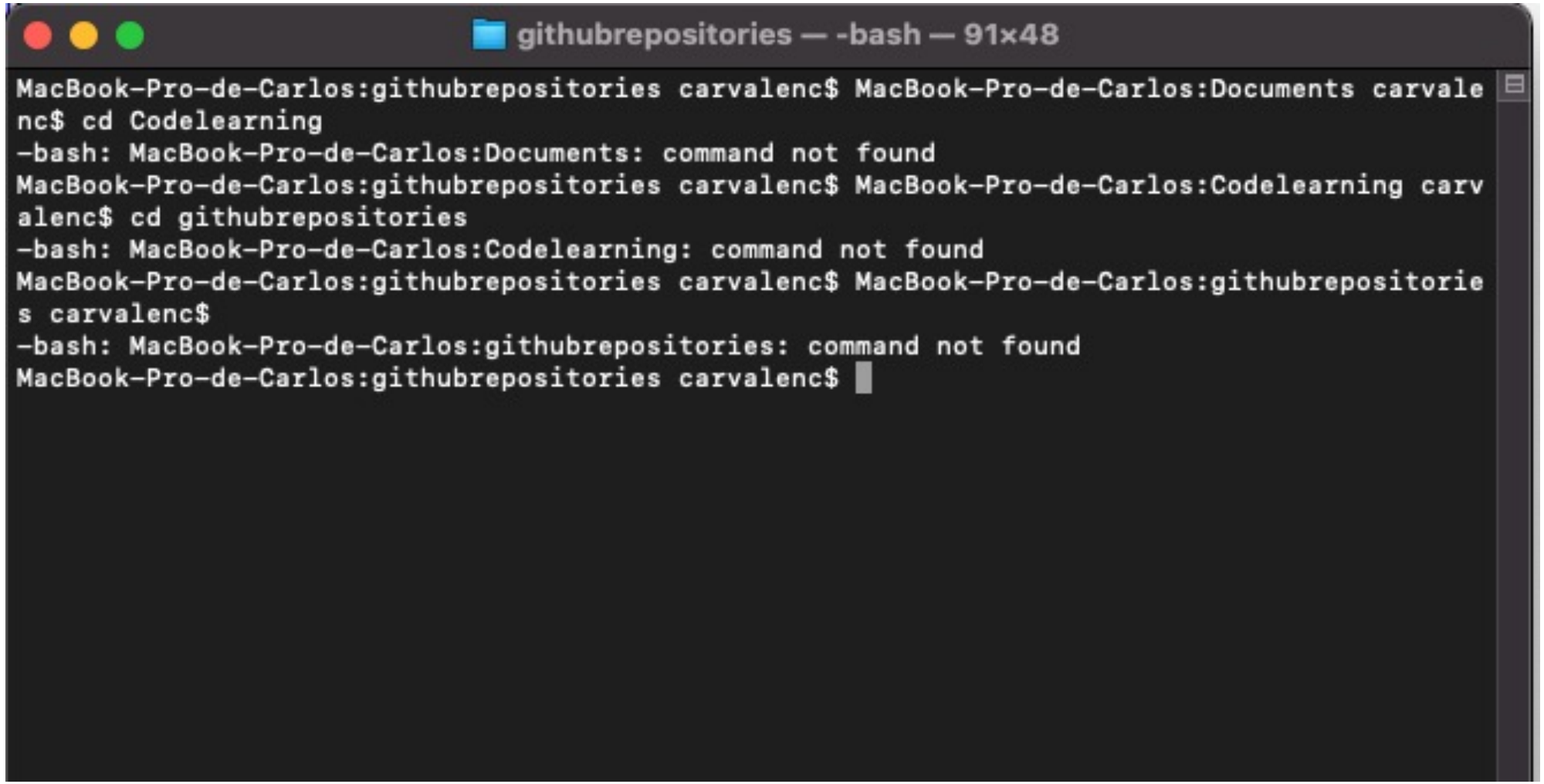
- Propose a work in progress to be pulled into the project

Creating a new repository

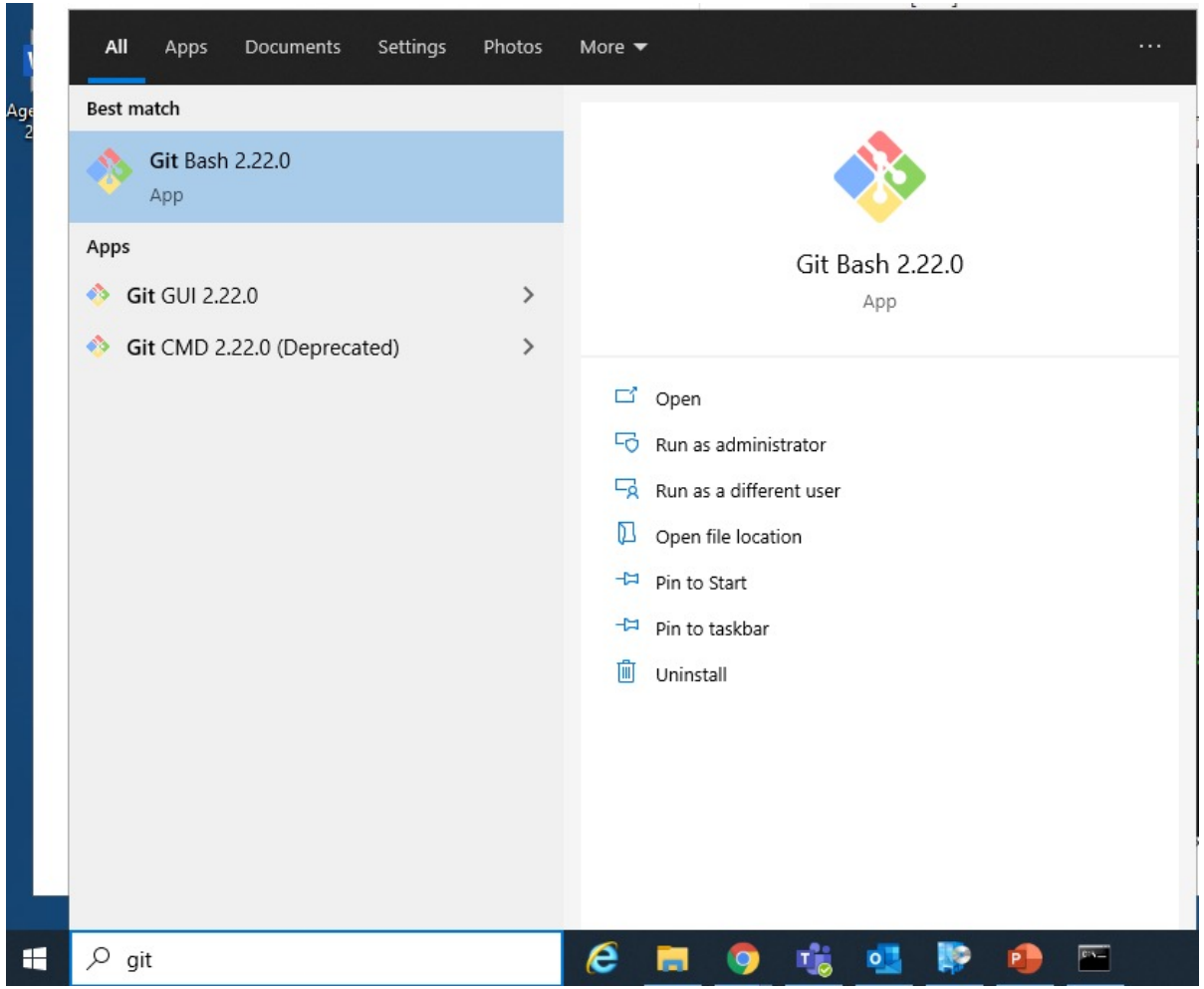



docs.gitlab.com/ee/topics/git/how_to_install_git/index.html
GitLab Docs
Search the docs...
GitLab.com (13.12-pre)
Get free trial
Subscriptions
Installation
Administration
Analytics
Projects
Groups
User
Get started
Report abuse
Account
Discussions
Git
Get started
Installing Git
Create branch
File editing
Partial clone
Rebase, force-push, merge conflicts
Tags
Troubleshooting Git
Undo with Git
Useful commands
GitLab basics
GitLab.com settings
Keyboard shortcuts
Markdown
Collapse sidebar
GitLab Docs › Topics › Git › Installing Git
Installing Git ALL TIERS
To begin contributing to GitLab projects, you must install the Git client on your computer.
This article shows you how to install Git on macOS, Ubuntu Linux and Windows.
Information on installing Git is also available at the official Git website.
Install Git on macOS using the Homebrew package manager
Although you can use the version of Git shipped with macOS or install the latest version of Git on macOS by downloading it from the project website, we recommend installing Git with Homebrew to get access to an extensive selection of dependency-managed libraries and applications.
If you don't need access to any additional development libraries or don't have approximately 15 GB of available disk space for Xcode and Homebrew, use one of the previously mentioned methods.
Installing Xcode
To build dependencies, Homebrew needs the XCode Command Line Tools. Install it by running in your terminal:
xcode-select --install
Click Install to download and install it. Alternatively, you can install the entire XCode package through the macOS App Store.
Installing Homebrew
With Xcode installed, browse to the Homebrew website for the official Homebrew installation instructions.
On this page
Install Git on macOS using the Homebrew package manager
Installing Xcode
Installing Homebrew
Installing Git via Homebrew
Install Git on Ubuntu Linux
Installing Git on Windows from the Git website
Help and feedback

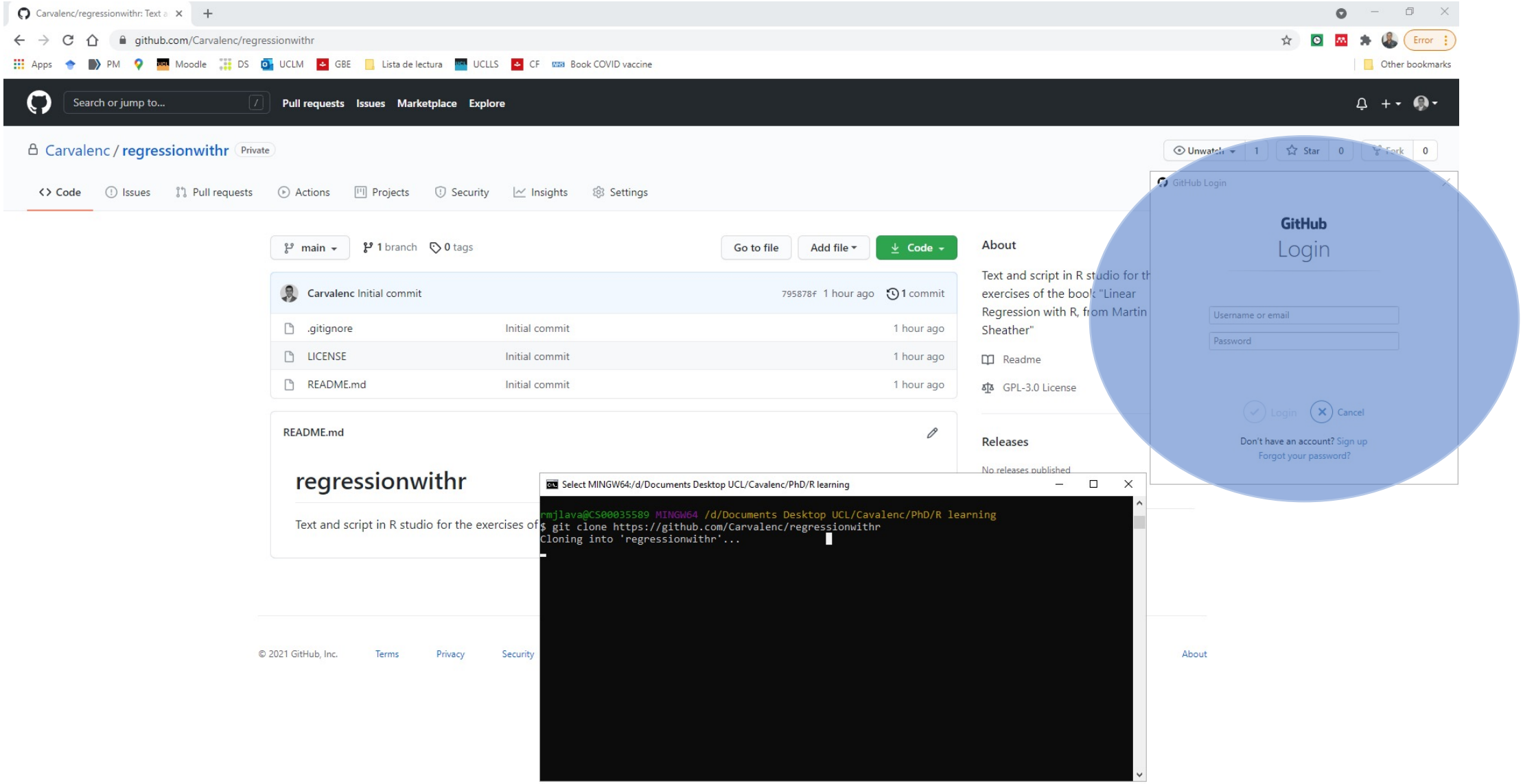
MAC terminal



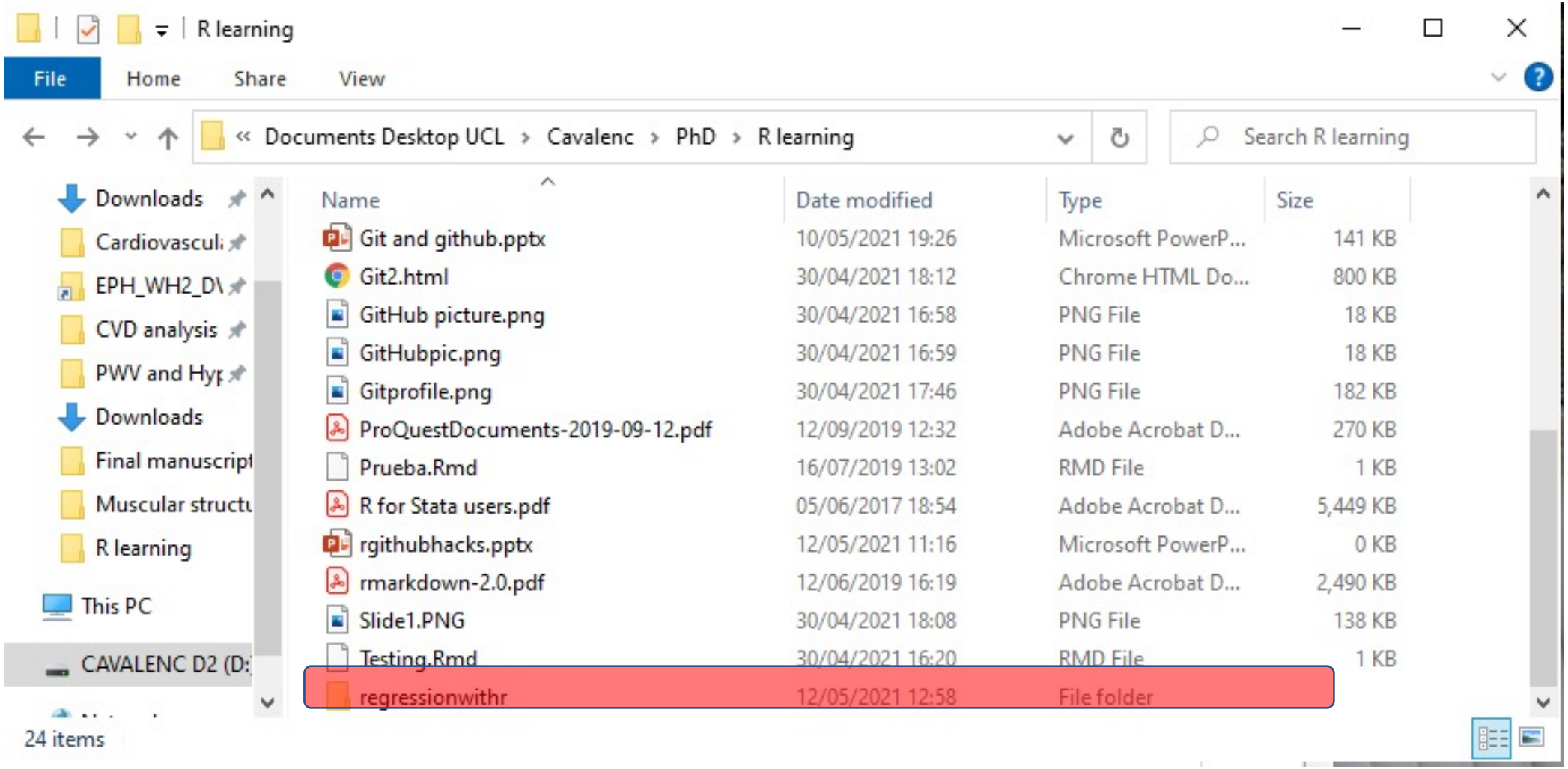
Windows on a UCL computer



Clone the repository



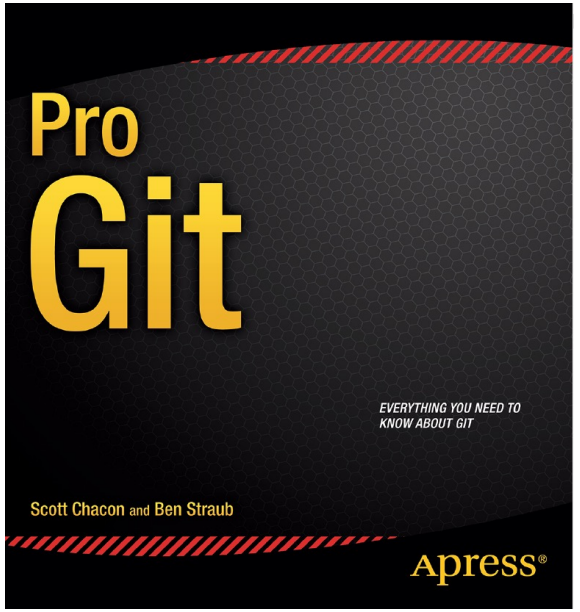
Now we can see the cloned repository



Useful resources:

- The Git book

https://git-scm.com/book/en/v2

- Set up Git course

https://docs.github.com/en/get-started/quickstart/set-up-git