

Git & GitHub para Desenvolvedores



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SECOM 2024

Apresentação

Git & GitHub para Desenvolvedores

Prof. Me. Raphael Lopes de Souza

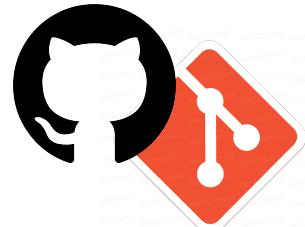
**Engenheiro de Software & Dev
Sistemas para gestão de sangue**

**Professor Universitário
USCS**

*20 anos de experiência na área de desenvolvimento de
software & 10 anos na área acadêmica*

Mestrado – UNIFACCAMP – Centro Universitário Campo Limpo Paulista
Mestrado em Ciência da Computação

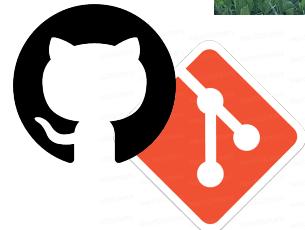
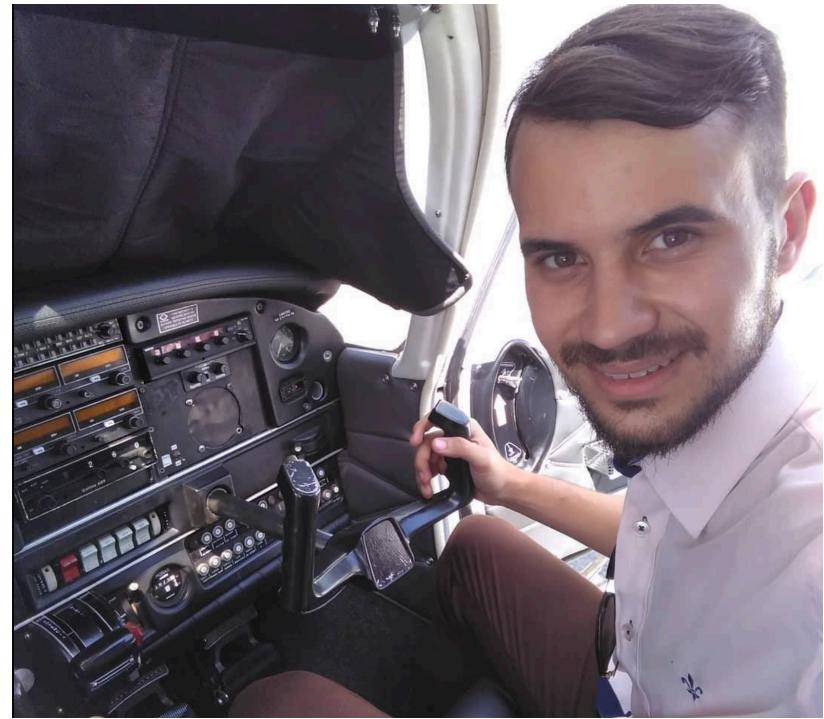
Graduação - USCS - Universidade Municipal de São Caetano do Sul
Ciência da Computação



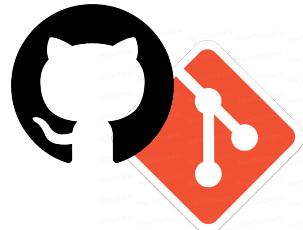
Apresentação

Git & GitHub para Desenvolvedores

Hobby



Você já teve algum problema com uma versão de qualquer tipo de arquivo?



Confesse, você já fez isso!



Trabalho Final.docx



Trabalho Final2.docx



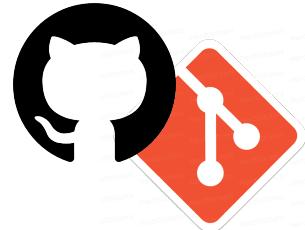
Trabalho Final – Agora Vai.docx



Trabalho Final –
Agora Vai Bkp.docx



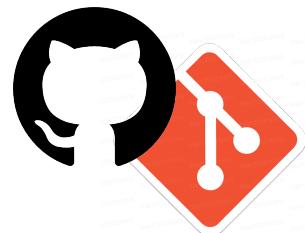
Trabalho Final –
Versão Correta.docx



Agenda

Git & GitHub para Desenvolvedores

- ❖ Motivação;
- ❖ Introdução Git;
- ❖ Introdução GitHub;
- ❖ Instalação Git & Criação de conta no GitHub;
- ❖ Integração com GitHub;
- ❖ Comandos básicos Git;
- ❖ Próximos passos.



1. Controle de Versão

- Histórico de Alterações
- Desenvolvimento Paralelo

2. Colaboração

- Trabalho em Equipe
- Pull Requests

3. Desenvolvimento Profissional

- Portfólio
- Mercado de Trabalho

4. Integração Contínua e Entrega Contínua (CI/CD)

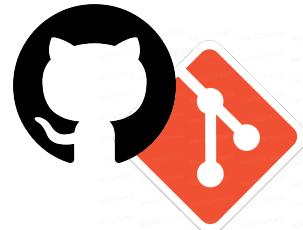
- Automatização

5. Gestão de Projetos

- Issues e Projetos
- Documentação

6. Comunidade e Aprendizado

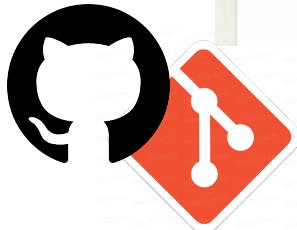
- Open Source
- Exemplos e Recursos



- **Git** é um sistema de controle de versão distribuído, criado por **Linus Torvalds** em 2005, inicialmente para ajudar no desenvolvimento do kernel do Linux.

<https://git-scm.com/downloads>

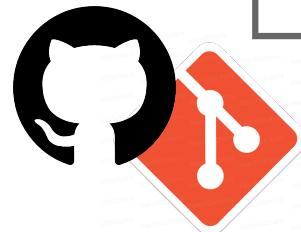
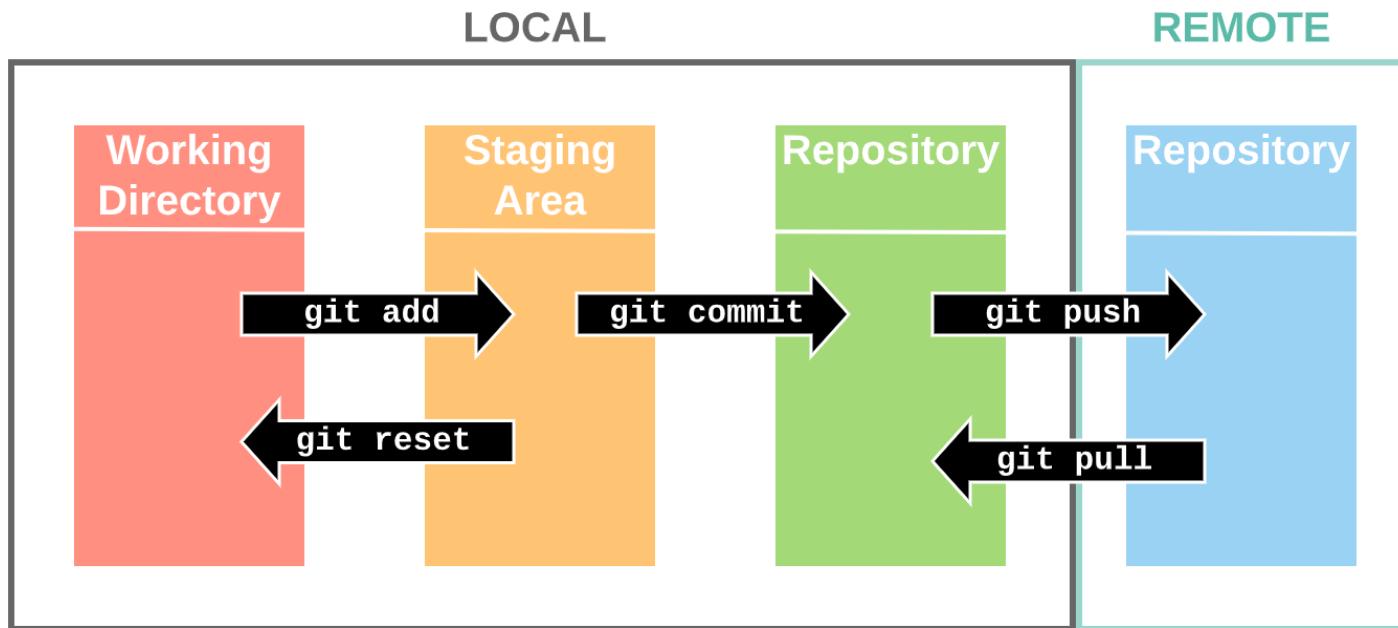
The image shows a screenshot of the official Git download page. The main heading is "Downloads". Below it are three icons: macOS, Windows, and Linux/Unix. A note below the icons states: "Older releases are available and the Git source repository is on GitHub." To the right, a monitor displays the "Latest source Release" which is "2.45.1". It also shows a link to "Release Notes (2024-04-29)" and a large "Download for Windows" button.



Introdução Git

Git & GitHub para Desenvolvedores

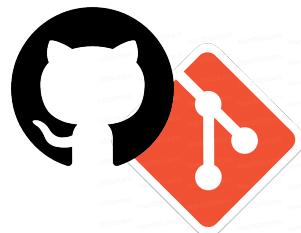
- O fluxo de trabalho do Git envolve 3 estados locais possíveis, onde cada arquivo deve transitar entre todos eles.
- O 4º estado é remoto e visa compartilhando dos arquivos com outras pessoas do time.



Introdução Git

Git & GitHub para Desenvolvedores

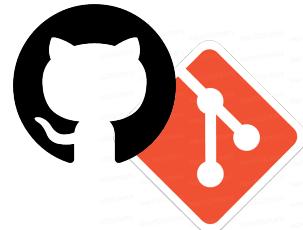
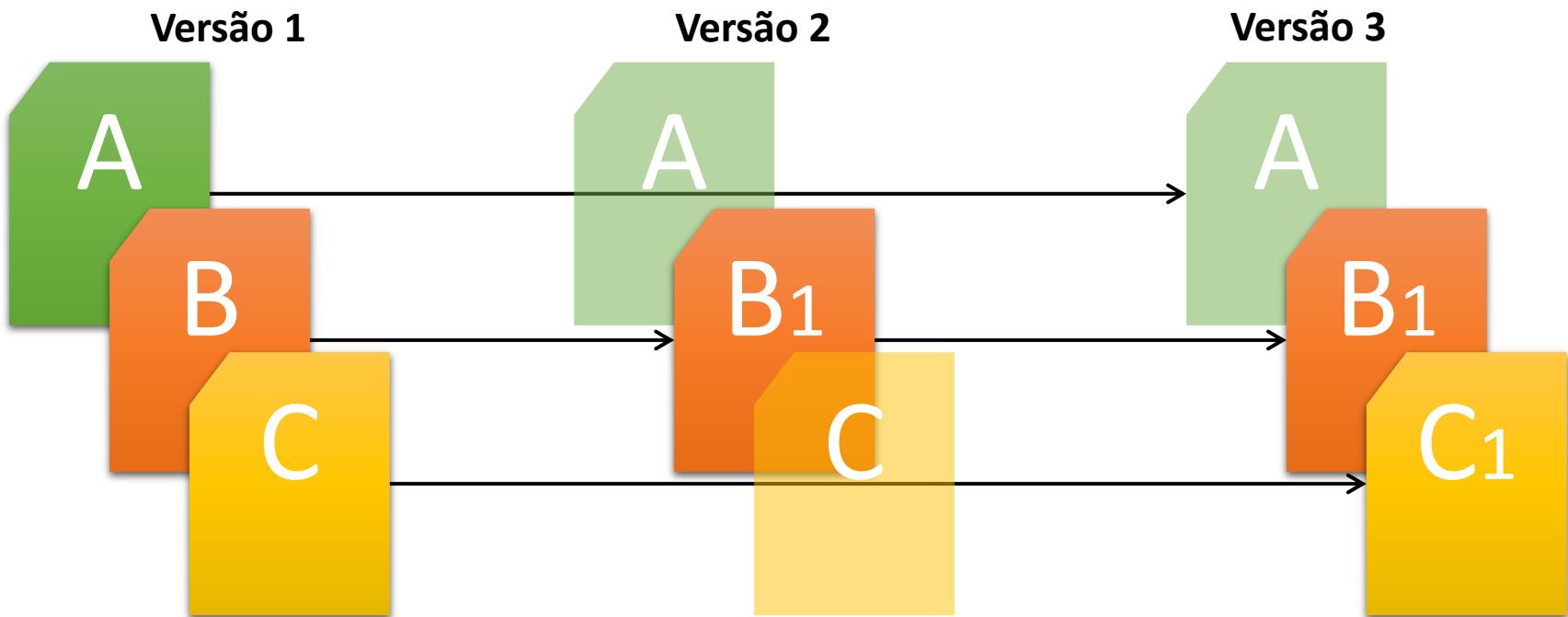
- Buscando eficiência o Git combina a utilização de duas técnicas:
 - **Commits & Snapshots**
 - Cada commit no Git representa um snapshot do estado de todos os arquivos no projeto no momento daquele commit.
 - O Git armazena uma referência a cada arquivo no repositório como ele era naquele ponto no tempo.
 - **Delta Compression**
 - Quando um arquivo não é alterado entre commits, o Git não armazena uma nova cópia completa do arquivo, mas sim uma referência ao arquivo anterior.
 - Quando um arquivo é alterado, Git armazena apenas as diferenças (deltas) entre as versões do arquivo.



Introdução Git

Git & GitHub para Desenvolvedores

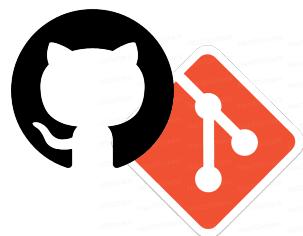
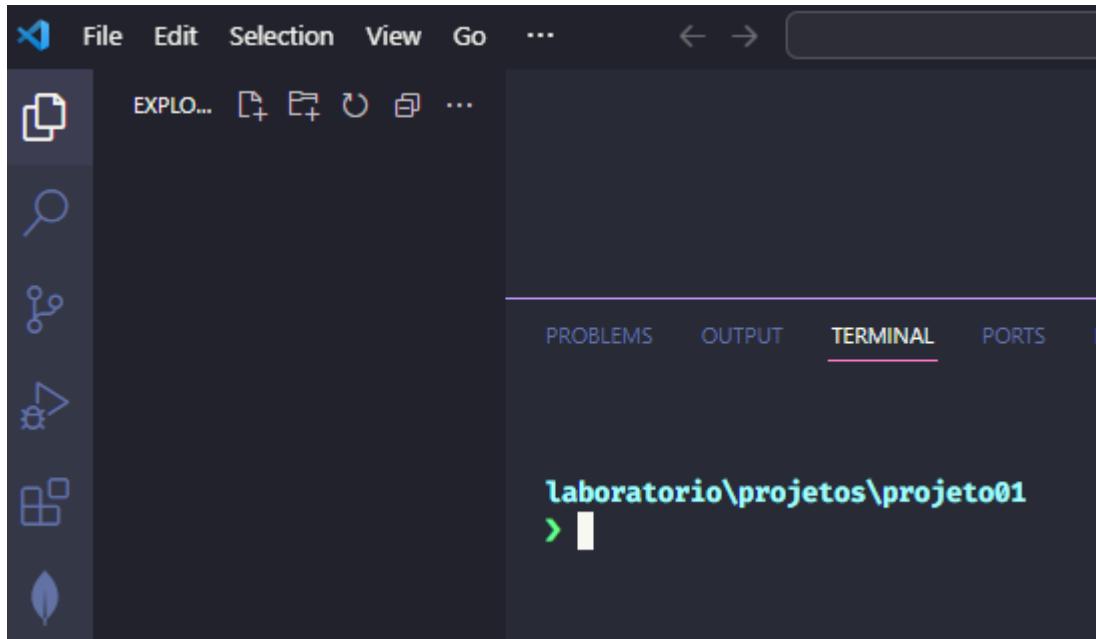
- Commits & Snapshots + Delta Compression



Introdução Git

Git & GitHub para Desenvolvedores

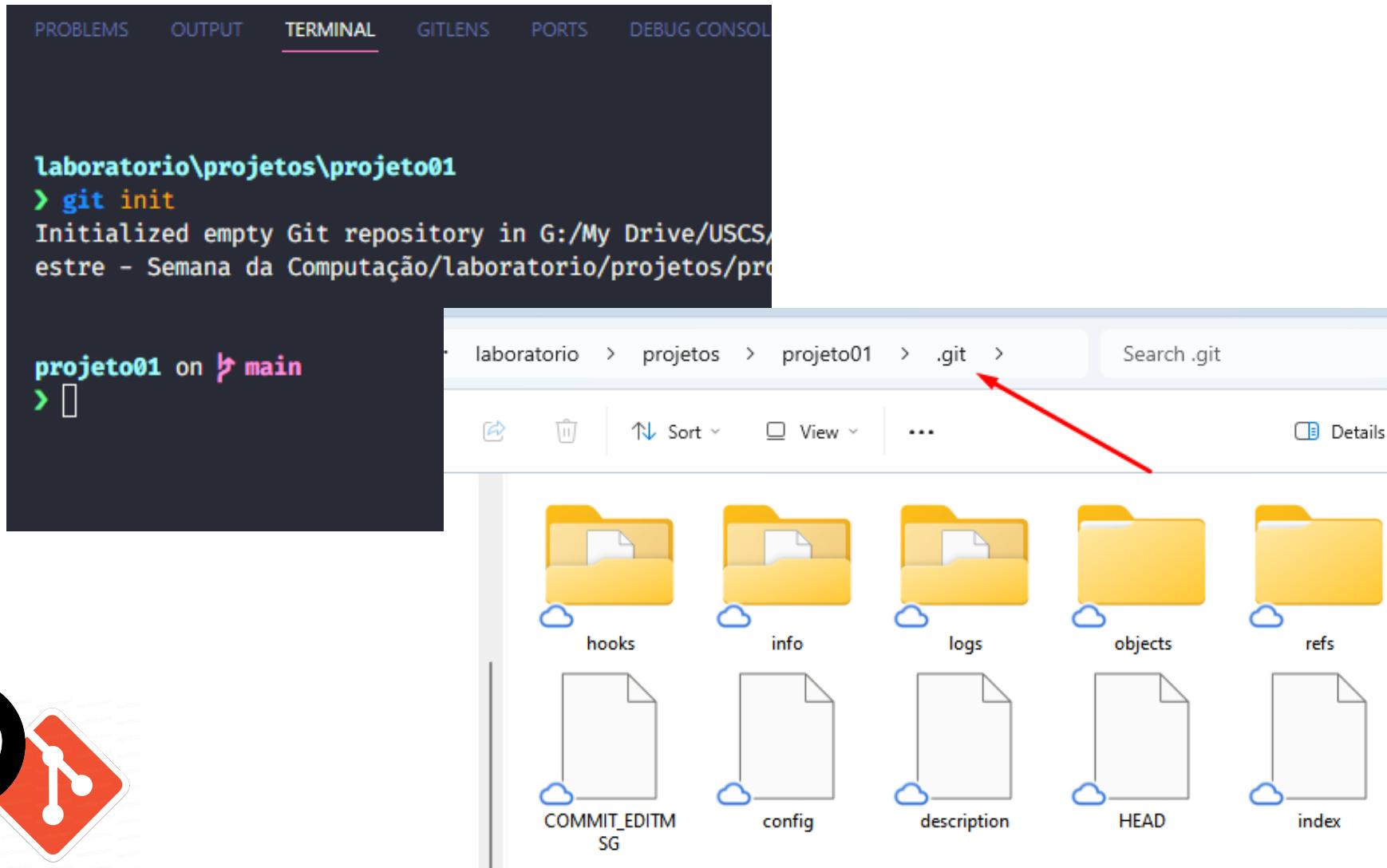
- Um repositório local (“*repo*”) no Git é um repositório que está em seu próprio computador ou em um diretório que você tenha acesso.
- Esse diretório contém todos os arquivos do seu projeto, juntamente com o histórico completo de todas as alterações feitas nesses arquivos.



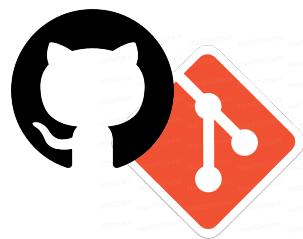
Introdução Git

Git & GitHub para Desenvolvedores

- Inicializando um repositório: `git init`



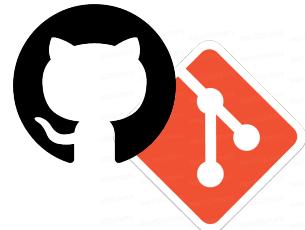
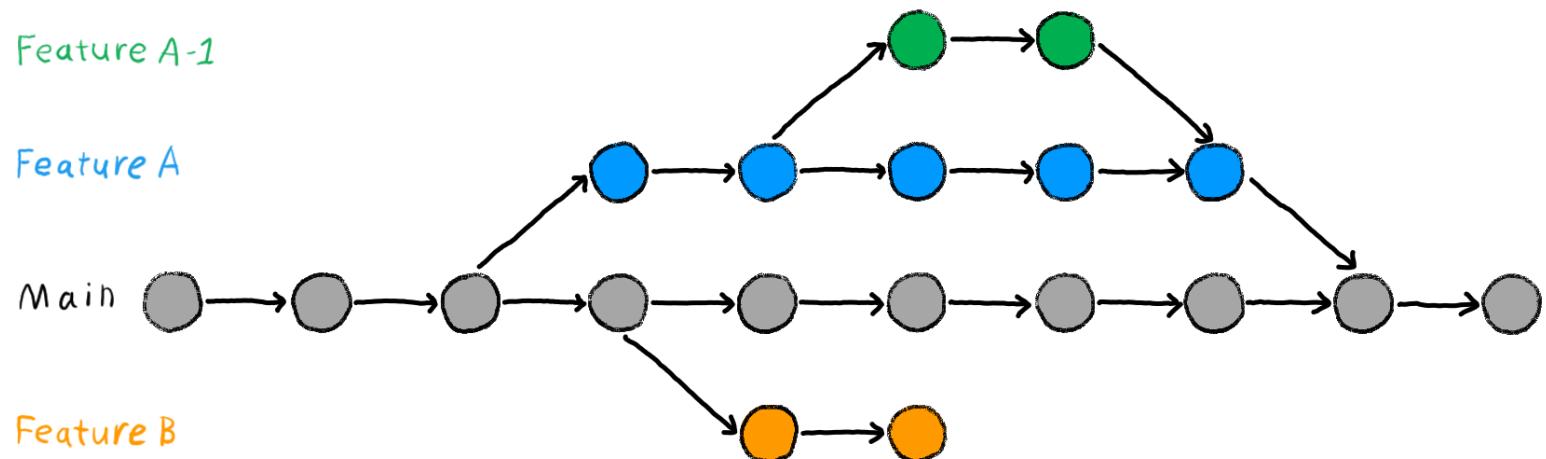
The image shows a screenshot of a terminal window and a file browser. The terminal window at the top has tabs for PROBLEMS, OUTPUT, TERMINAL (which is underlined), GITLENS, PORTS, and DEBUG CONSOL. The current directory is shown as `laboratorio\projetos\projeto01`. The command `> git init` is entered, followed by the output: `Initialized empty Git repository in G:/My Drive/USCS/estre - Semana da Computação/laboratorio/projetos/projeto01/.git/`. Below the terminal, a file browser window shows the contents of the `.git` folder. The folder structure includes `hooks`, `info`, `logs`, `objects`, `refs`, `COMMIT_EDITMSG`, `config`, `description`, `HEAD`, and `index`. A red arrow points from the terminal's output to the `.git` folder in the file browser, indicating the location of the newly initialized repository.



Introdução Git

Git & GitHub para Desenvolvedores

- **Branches** (ramificações) são dos recursos fundamentais do Git. Com elas é possível criar versões paralelas do seu repositório para desenvolver novas funcionalidades, corrigir bugs ou experimentar ideias, sem afetar a linha principal do desenvolvimento.



Introdução GitHub

Git & GitHub para Desenvolvedores

- **GitHub** é um serviço de hospedagem de código-fonte que utiliza o sistema de controle de versão **Git**. Lançado em 2008, ele tem se tornado um dos principais locais para colaboração em projetos de software, tanto de código aberto quanto privados.

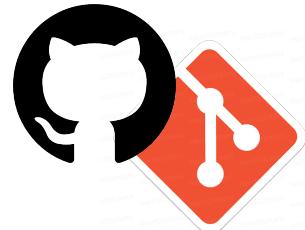
<https://github.com/>



Introdução GitHub

Git & GitHub para Desenvolvedores

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Introdução GitHub

Git & GitHub para Desenvolvedores

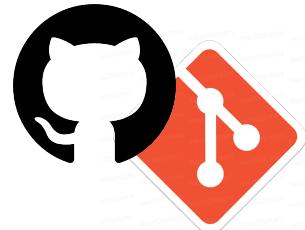
- Como os talentos são Contratados ?



Networking

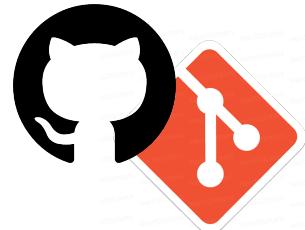


LinkedIn



- Portfólio Digital

Um desenvolvedor deve ter um portfólio público que demonstre sua evolução na carreira;



Introdução GitHub

Git & GitHub para Desenvolvedores

- Alguns repositórios relevantes no **GitHub**:

- Linux Kernel

<https://github.com/torvalds/linux>

- React

<https://github.com/facebook/react>

- Node.js

<https://github.com/nodejs/node>

- Vue.js

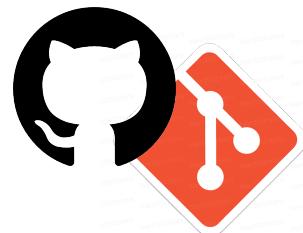
<https://github.com/vuejs/vue>

- Python

<https://github.com/python/cpython>

- OpenAI Gym

<https://github.com/openai/gym>



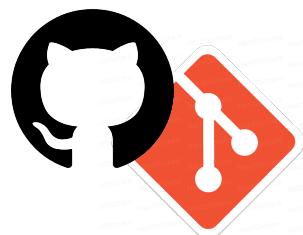
Introdução GitHub

Git & GitHub para Desenvolvedores

- Interface

The screenshot shows a GitHub profile page for the user `RaphaelSouza`. At the top, there's a navigation bar with links for Overview, Repositories (28), Projects, Packages, and Stars (10). Below the navigation is a search bar with placeholder text "Type ⌘ to search". On the left, there's a large circular profile picture of a man with a beard, identified as **Raphael Lopes de Souza** (`RaphaelSouza`). Below the profile picture, the bio reads "Write code, create the future." and there's a "Edit profile" button. To the right of the profile picture, there's a "README.md" section with the text "RaphaelSouza / README.md" and "Write Code, create the future. 🎉". There's also a "Customize your pins" link. The main content area displays a grid of popular repositories:

- ufolha** (Public) - Automatically exported from code.google.com/p/ufolha
- IonicApp1** (Public) - TypeScript
- raphaelsouza** (Public)
- bralandealmeida** (Public) - Forked from [bralandealmeida/bralandealmeida](#)
- algoritmoKmkNN** (Public)
- kMpluspluskNN** (Public) - Python



Introdução GitHub

Git & GitHub para Desenvolvedores

- Criando um repositório remoto

Create a new repository

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

Required fields are marked with an asterisk (*).

Owner *



ricardoresende ▾

Repository name *

/ secom2024

secom2024 is available.

Great repository names are short and memorable. Need inspiration? How about [ideal-spork](#) ?

Description (optional)

SECOM 2024 - Semana da Computação

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:

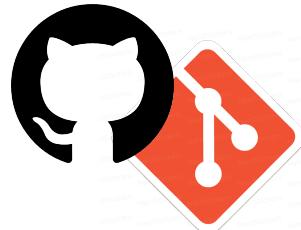
Add a README file

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

Add .gitignore

.gitignore template: None ▾

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



Introdução GitHub

Git & GitHub para Desenvolvedores

- Associando seu repositório local com o remoto

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

or <https://github.com/ricardoresende/secom2024.git>

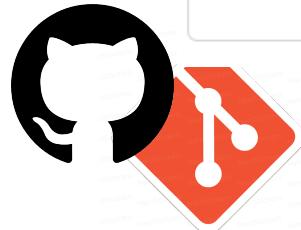
Get started by [creating a new file](#) or [uploading an existing file](#). We recommend every repository include a [README](#), [LICENSE](#), and [.gitignore](#).

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

```
echo "# secom2024" >> README.md  
git init  
git add README.md  
git commit -m "first commit"  
git branch -M main  
git remote add origin https://github.com/ricardoresende/secom2024.git  
git push -u origin main
```

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

```
git remote add origin https://github.com/ricardoresende/secom2024.git  
git branch -M main  
git push -u origin main
```

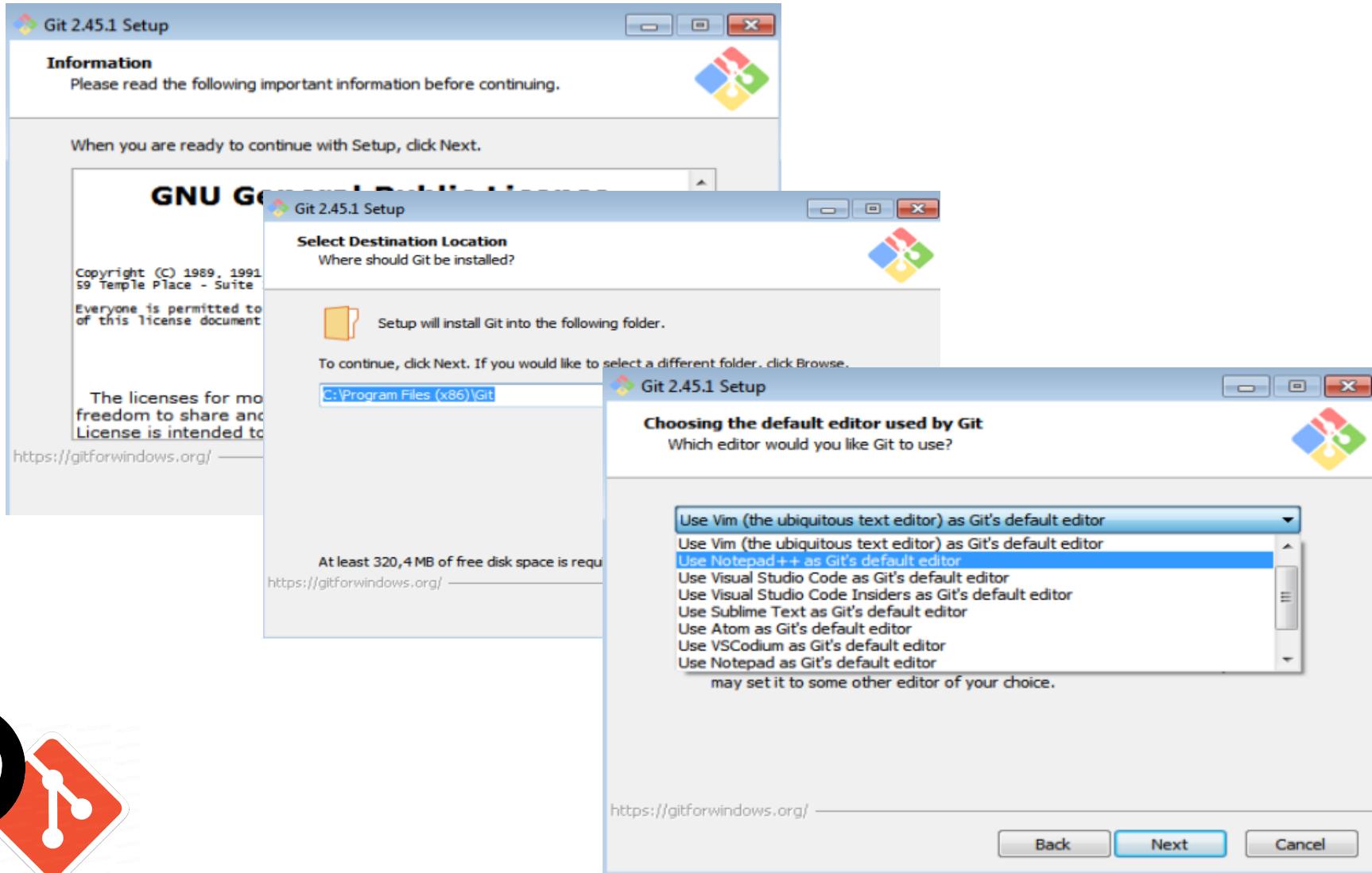


Não se desespere!!! Você não precisa decorar tudo isso...

Instalação Git & Conta GitHub

Git & GitHub para Desenvolvedores

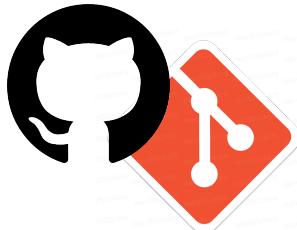
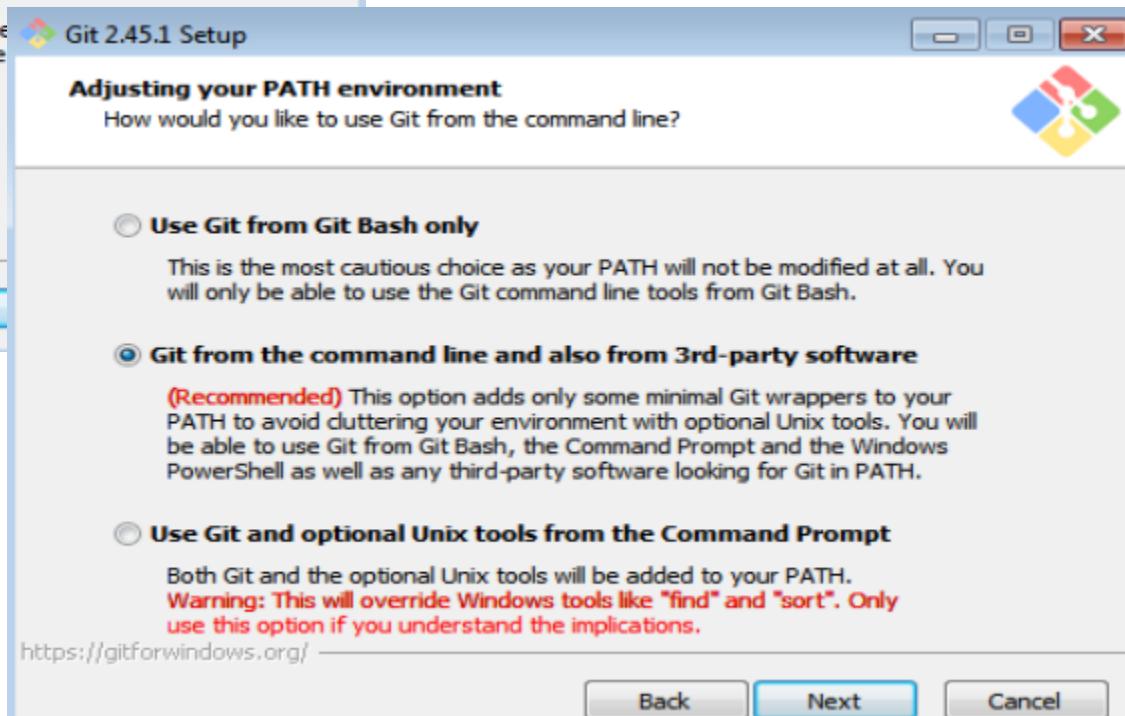
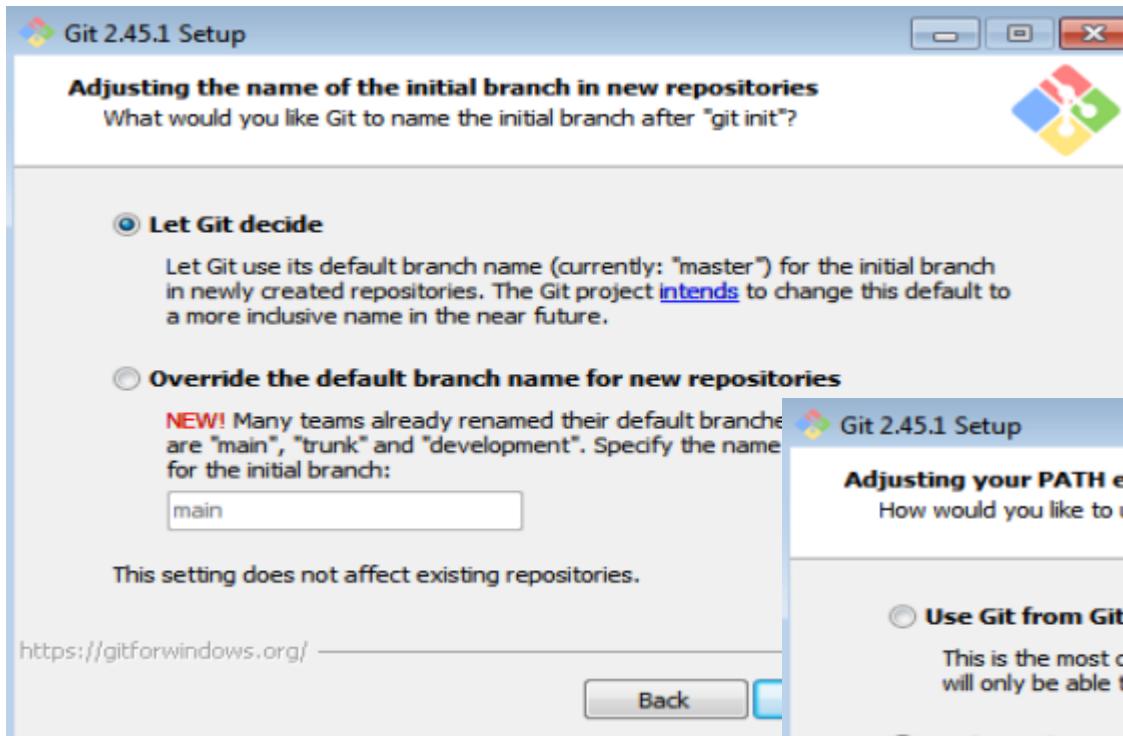
- Instalação do Git (Windows)



Instalação Git & Conta GitHub

Git & GitHub para Desenvolvedores

- Instalação do Git (Windows)



Instalação Git & Conta GitHub

Git & GitHub para Desenvolvedores

- Configuração inicial do Git

- ❖ **Configurando sua conta:**

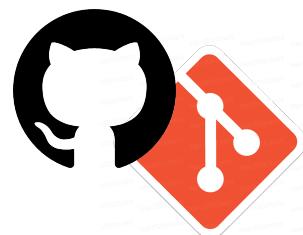
```
git config --global user.name "Ricardo Resende"
```

```
git config --global user.email ricardo.mendonca@online.uscs.edu.br
```

- ❖ **Conferindo as configurações:**

```
git config --global --list
```

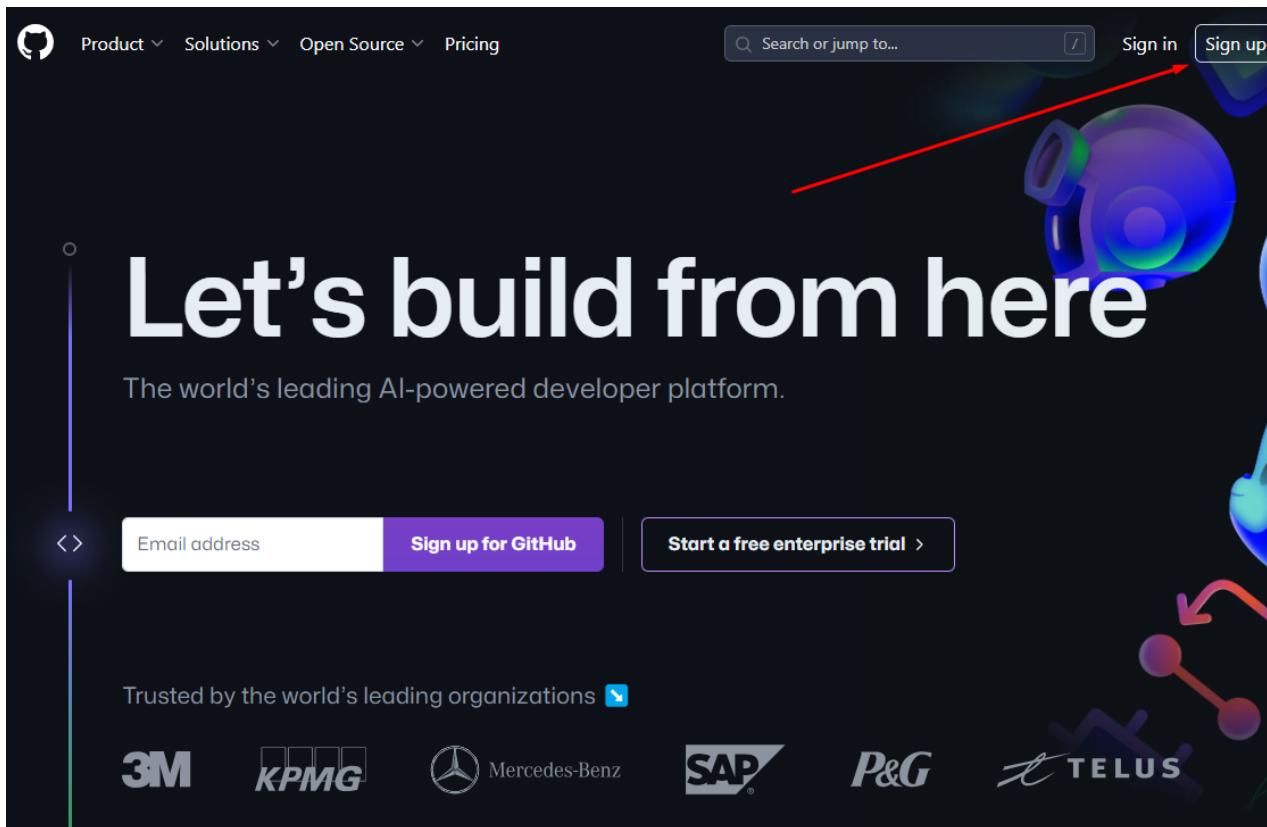
Configurar o seu nome de usuário e endereço de e-mail no Git é importante pois é por meio dessa configuração que os commits são identificados, permitindo a rastreabilidade e responsabilidade atribuída a cada alteração.



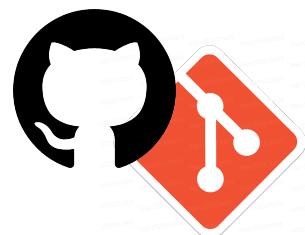
Instalação Git & Conta GitHub

Git & GitHub para Desenvolvedores

- Criando uma conta no GitHub



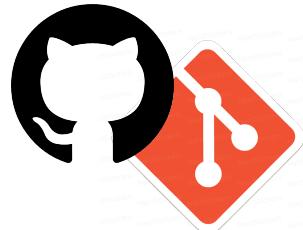
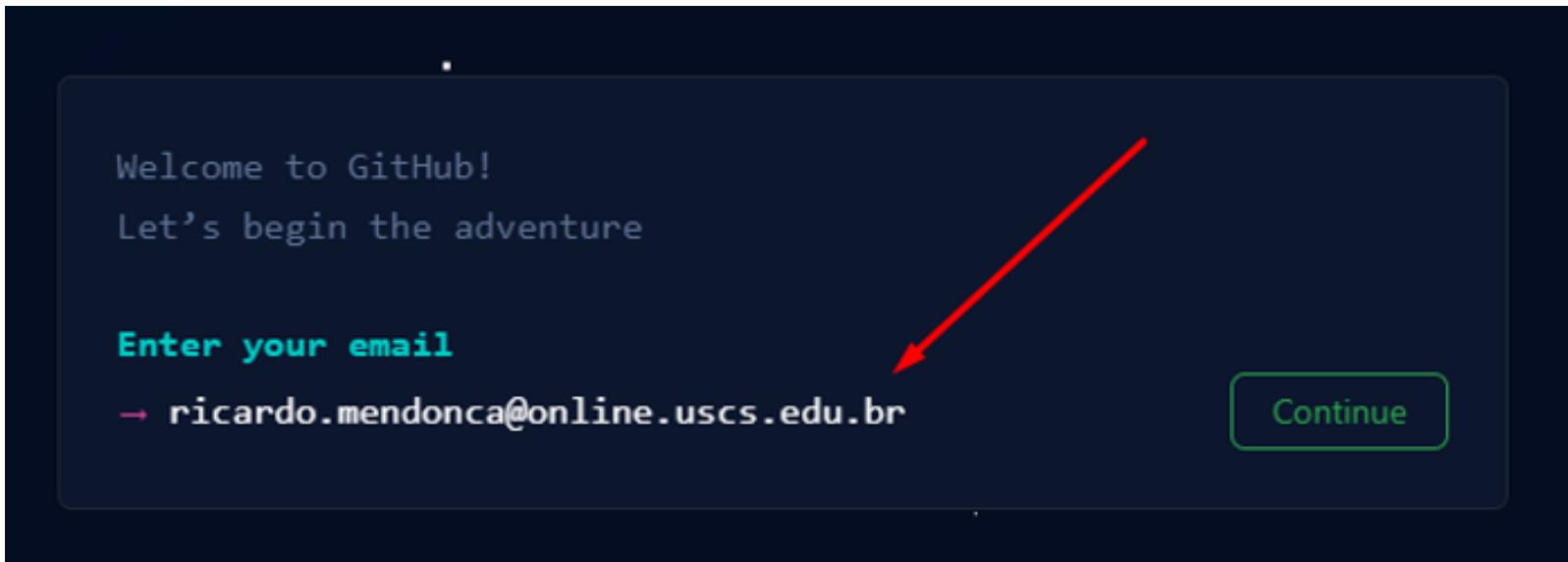
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Instalação Git & Conta GitHub

Git & GitHub para Desenvolvedores

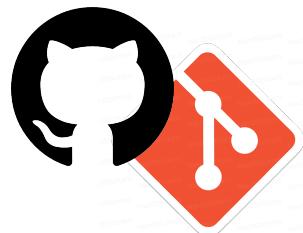
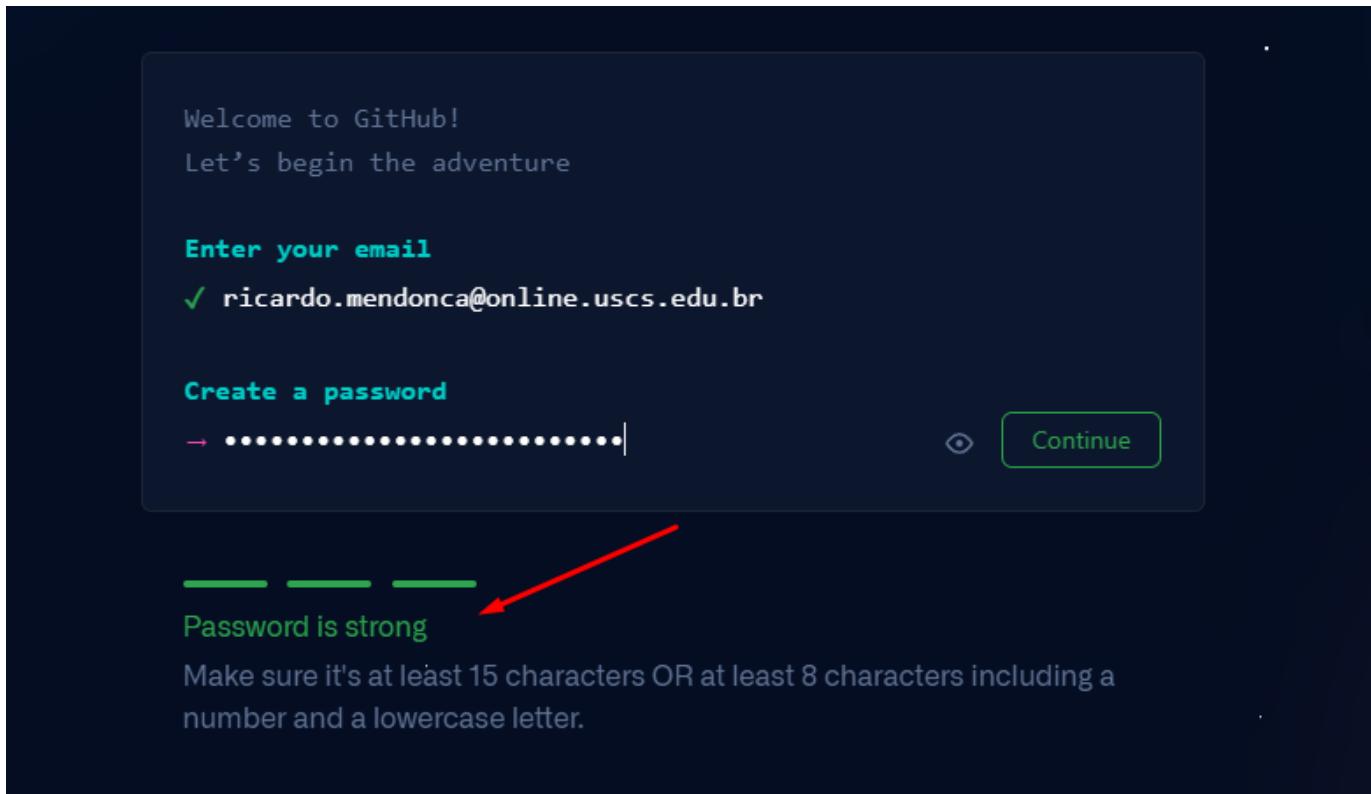
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Instalação Git & Conta GitHub

Git & GitHub para Desenvolvedores

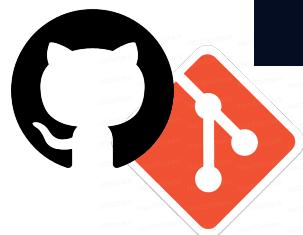
- Criando uma conta no GitHub



Instalação Git & Conta GitHub

Git & GitHub para Desenvolvedores

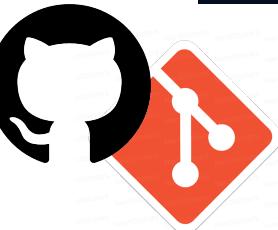
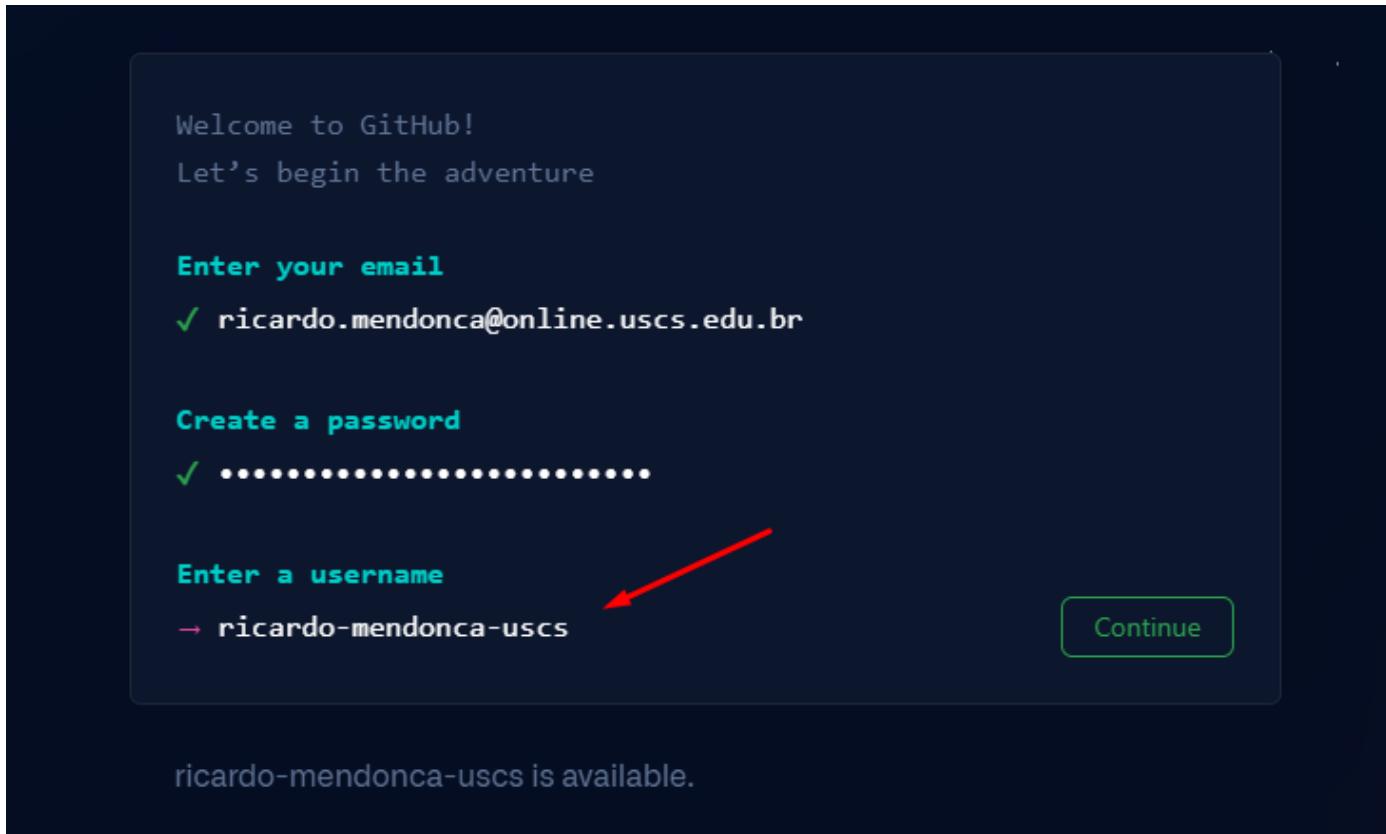
- Criando uma conta no GitHub



Instalação Git & Conta GitHub

Git & GitHub para Desenvolvedores

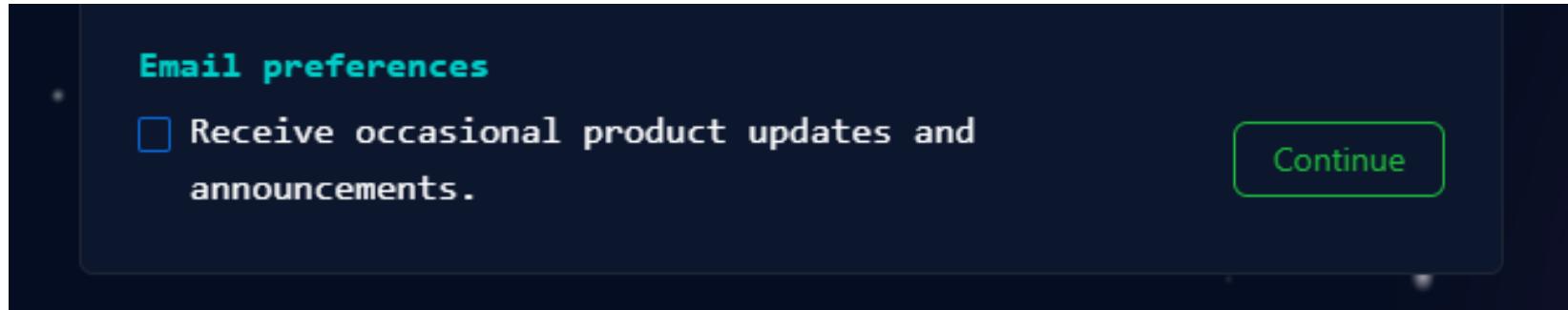
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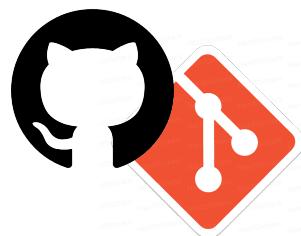
Instalação Git & Conta GitHub

Git & GitHub para Desenvolvedores

- Criando uma conta no GitHub



The image contains two side-by-side screenshots of GitHub's CAPTCHA verification process. Both screenshots show a "Welcome to GitHub! Let's begin the adventure" message and a "Verify your account" section. The left screenshot shows a "Protecting your account" section with a "Please solve this puzzle so we know you are a real person" message and a "Verify" button. The right screenshot shows a "Use the arrows to rotate the object to face in the direction of the hand. (1 of 1)" message. It displays two hands: one orange hand pointing right and one red hand pointing left. Below the hands are left and right arrow buttons, and a progress bar with three green dots and two grey dots. At the bottom are "Submit", "Audio", and "Restart" buttons.



Instalação Git & Conta GitHub

Git & GitHub para Desenvolvedores

- Confirmando sua conta no GitHub



Here's your GitHub launch code, @ricardo-mendonca-uscs!

Continue signing up for GitHub by entering the code below:

904

[Open GitHub](#)

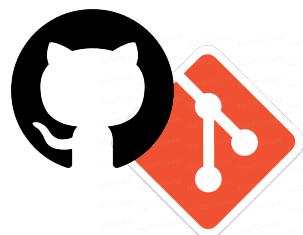
Once completed, you can start using all of GitHub's features to explore and share projects.

You're almost done!
We sent a launch code to
ricardo.mendonca@online.uscs.edu.br

→ Enter code

9 0

Didn't get your email? Resend the code or update your email address.



Instalação Git & Conta GitHub

Git & GitHub para Desenvolvedores

- Personalizando sua conta no GitHub

The image shows the GitHub welcome screen. On the left, there's a dark blue background with the GitHub logo at the top left. Below it is a white sidebar containing icons for user management and communication. The main area features a large "Welcome to GitHub" title in light blue, with a subtitle "We are glad you're here." underneath. A red arrow points from the bottom left towards a "Skip personalization" button at the bottom right. On the right side, a white modal window is open, asking questions about team size and role, with a "Continue" button at the bottom.

This will help us guide you to the tools that are best suited for your projects.

How many team members will be working with you?

Just me 2-5 5-10
 10-20 20-50 50+

Are you a student or teacher?

N/A Student Teacher

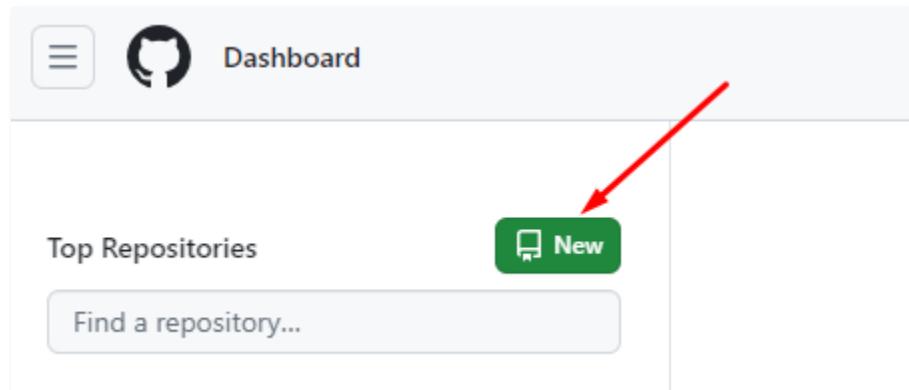
Continue

Skip personalization

Instalação Git & Conta GitHub

Git & GitHub para Desenvolvedores

- Criando seu primeiro e especial repositório no GitHub



Create a new repository

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

Required fields are marked with an asterisk ().*

Owner *



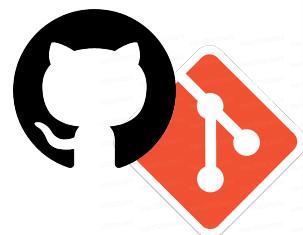
Repository name *

ricardo-mendonca-uscs

ricardo-mendonca-uscs is available.



ricardo-mendonca-uscs/ricardo-mendonca-uscs is a ✨ special ✨ repository that you can use to add a README.md to your GitHub profile. Make sure it's public and initialize it with a README to get started.



Instalação Git & Conta GitHub

Git & GitHub para Desenvolvedores

- O arquivo README.md geralmente é escrito usando Markdown. Markdown é uma linguagem de marcação leve que é comumente usada para formatar texto em plataformas de colaboração.

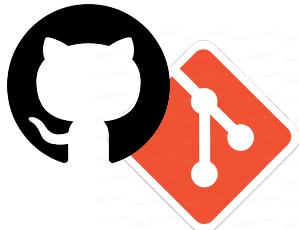
<https://docs.github.com/pt/get-started/writing-on-github/getting-started-with-writing-and-formatting-on-github/basic-writing-and-formatting-syntax>

- Sugestão para personalização do seu arquivo Readme.md

<https://gprm.itsvg.in/>



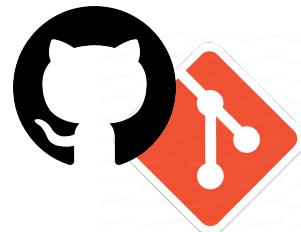
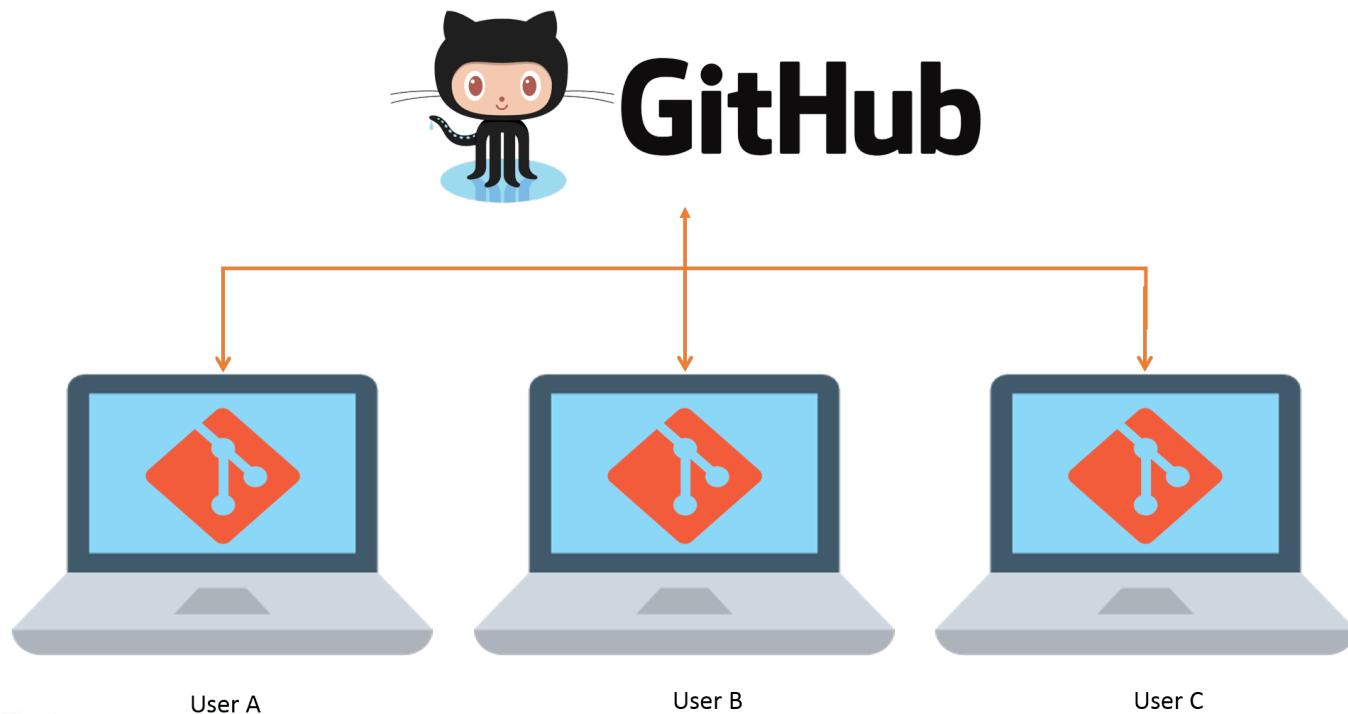
The image shows a screenshot of the GPRM Best Profile Generator website. The header features a green logo icon followed by the text "GPRM". Below it is the title "Best Profile Generator" in large, bold, gold-colored letters. Underneath the title is the website URL "gprm.itsvg.in". To the right of the text is a stylized illustration of a person in a red suit standing next to a large golden chess king piece. The background of the page is black, and at the bottom, there is a footer with the text "Modern • Perfect • Beautiful • Interactive".



Integração com GitHub

Git & GitHub para Desenvolvedores

1. Criando um repositório no GitHub;
2. Clonando um repositório existente.



1. Criando um repositório no GitHub:

<https://github.com/new>

Create a new repository

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

Required fields are marked with an asterisk ().*

Owner *



ricardoresende

Repository name *

secom1

secom1 is available.

Great repository names are short and memorable. Need inspiration? How about [ideal-barnacle](#) ?

Description (optional)

Semana da Computação



Public

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



Private

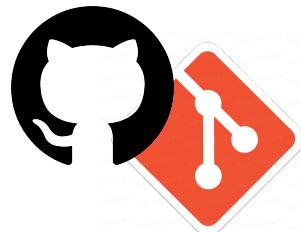
You choose who can see and commit to this repository.

Initialize this repository with:

Add a README file

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

[Create repository](#)



1. Criando um repositório no GitHub:

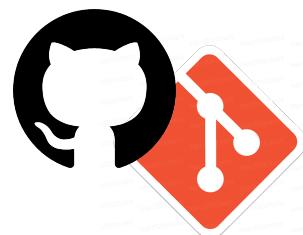
...or create a new repository on the command line

```
echo "# secom1" >> README.md  
git init  
git add README.md  
git commit -m "first commit"  
git branch -M main  
git remote add origin https://github.com/ricardoresende/secom1.git  
git push -u origin main
```



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

```
git remote add origin https://github.com/ricardoresende/secom1.git  
git branch -M main  
git push -u origin main
```



2. Clonando um repositório existente.

The screenshot shows a GitHub repository page for 'ricardoresende/secom1'. A red arrow points from the 'HTTPS' URL 'https://github.com/ricardoresende/secom1.git' in the 'Clone' menu to a terminal window below. The terminal window displays the command 'git clone https://github.com/ricardoresende/secom1.git'.

Go to file Add file Code

Local Codespaces

Clone

HTTPS SSH GitHub CLI

https://github.com/ricardoresende/secom1.git

Clone using the web URL.

Open with GitHub Desktop

Open with Visual Studio

Download ZIP

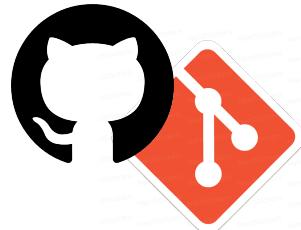
PROBLEMS OUTPUT TERMINAL GITLENS PORTS DEBUG CONSOLE

```
laboratorio\projetos\projeto05
> git clone https://github.com/ricardoresende/secom1.git
```

Comandos básicos Git

Git & GitHub para Desenvolvedores

- git add [nome_arquivo]
- git add .
- git commit -m “descricao”
- git status
- git log
- git push
- git pull
- git fetch
- git merge
- git checkout
- git diff
- git reset --soft HEAD~1
- git reset --soft HEAD~1
- git reset --hard HEAD~1
- git revert <commit-hash>



Comandos básicos Git

Git & GitHub para Desenvolvedores

<https://education.github.com/git-cheat-sheet-education.pdf>



Git is the free and open source distributed version control system that's responsible for everything GitHub related that happens locally on your computer. This cheat sheet features the most important and commonly used Git commands for easy reference.

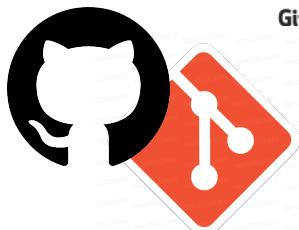
INSTALLATION & GUIs

With platform specific installers for Git, GitHub also provides the ease of staying up-to-date with the latest releases of the command line tool while providing a graphical user interface for day-to-day interaction, review, and repository synchronization.

GitHub for Windows

<https://windows.github.com>

GitHub for Mac



STAGE & SNAPSHOT

Working with snapshots and the Git staging area

git status

show modified files in working directory, staged for your next commit

git add [file]

add a file as it looks now to your next commit (stage)

Próximos passos

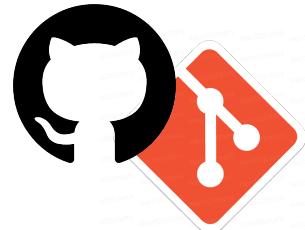
Git & GitHub para Desenvolvedores

- Continue estudando...

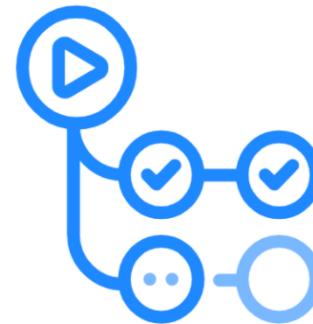
<https://www.udemy.com/course/git-e-github-para-iniciantes/>

<https://www.cursoemvideo.com/curso/curso-de-git-e-github/>

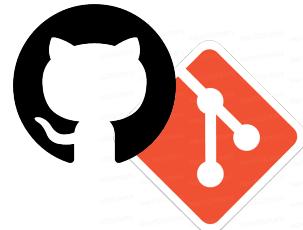
<https://cursa.com.br/home/course/curso-gratuito-git-e-github/95>



- Aprofunde seus conhecimentos em modelos de trabalho e recursos avançados...



GitHub Actions





Espaço para dúvidas

Muito obrigado!!!

<https://github.com/RaphaelSouza>

raphael.souza@online.uscs.edu.br

