

# Uma introdução ao git

---

Nelson Lago

CCSL-IME/USP

# git é o cara!

- **Desempenho excelente**
  - ▶ Piora com número  *muito* grande de arquivos (perto de 1M, segundo Torvalds em 2006)
- **Todas as funcionalidades imagináveis existem**
  - ▶ Mas subdiretórios não podem ser baixados/sincronizados separadamente
    - » *submodules, subtrees, partial clones e sparse checkouts podem quebrar o galho, mas são complexos*
- **Hoje em dia, multiplataforma**
- **Permite integrar fluxo de desenvolvimento e de implantação / operação**
  - ▶ Alguns pacotes sugerem esse processo
  - ▶ Alguns ambientes usam esse mecanismo (heroku, openshift...)
- **Viabiliza diversos fluxos de trabalho**
- **Projetos livres migraram em massa**
  - ▶ “Grife” Linus Torvalds
  - ▶ github/gitlab são excelentes e favorecem a colaboração
    - » *Funcionam como redes sociais e foram fundamentais na popularização*
- **Até a Microsoft está usando, além de ter comprado o github**

# git não é amigável

O básico é fácil, mas mesmo usos comuns não são óbvios, porque


- Os nomes dos comandos e suas opções são inconsistentes
  - ▶ O contrário de **git add arquivo** é **git reset arquivo** 😞
    - » mas **git reset** sem um nome de arquivo faz outra coisa 😞
  - ▶ **git checkout** faz várias coisas diferentes 😞
  - ▶ **head** é uma coisa, **HEAD** é outra 🤪
  - ▶ **repo-remoto/nome-do-ramo** é uma coisa, **repo-remoto nome-do-ramo** é outra 🤪
  - ▶ **--index**, **--cached** e **--staged** são sinônimos, mas às vezes não 💩
  - ▶ etc.
- A documentação é boa e completa, mas é preciso saber *onde* procurar
  - ▶ Em geral, a melhor resposta para “como fazer X” é “procure no google”!
- Para coisas simples, mas não-triviais, é preciso entender como git funciona

***Antes de começar***

# Quem sou eu?


- Várias pessoas podem trabalhar em conjunto com git
- Por isso, git sempre registra quem fez o quê
- Mas como git sabe quem é você?
  - ▶ Você precisa contar para ele :)
    - » `git config --global user.name "Seu Nome"`
    - » `git config --global user.email "email@algumlugar.com"`

```
lovelace@engine:~/lerolero$ git log
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd
Author: Ada Lovelace <ada@analyticalengine.com>
Date: Wed Nov 18 11:40:59 2020 -0300
```



Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
Author: Nelson Lago <lago@ime.usp.br>
Date: Mon Nov 16 13:53:13 2020 -0300
```



Initial commit

- Para git trabalhar via rede, é preciso haver algum mecanismo de *autenticação*
- O mais comum são as *chaves assimétricas* (através do protocolo ssh)
  - ▶ Você fornece para o servidor um “cadeado” para o qual só você tem a “chave”
  - ▶ Quando você solicita acesso a alguma coisa, o servidor envia para você uma mensagem secreta “trancada” com o “cadeado”
  - ▶ O acesso só é liberado quando você mostra que foi capaz de ler a mensagem (ou seja, abrir o “cadeado”)
- À primeira vista, a “chave” parece simplesmente uma senha bastante longa
  - ▶ Mas não é :)
  - » *Esse mecanismo tem diversas vantagens em termos de segurança, mas não vamos discutir isso aqui*

# Gerando as chaves assimétricas

- **Para gerar um par de chaves assimétricas (no Linux, é claro!), use o comando `ssh-keygen`**
  - ▶ De maneira geral, não é necessário inserir uma *passphrase*
- **O comando vai criar dois arquivos:**
  - ▶ `SEU_HOME/.ssh/id_rsa` → a “chave”
  - ▶ `SEU_HOME/.ssh/id_rsa.pub` → o “cadeado”
- **O arquivo `id_rsa.pub` não é secreto, você pode enviá-lo para qualquer pessoa que precisar dele**
  - ▶ Esse é o arquivo que você vai registrar como sua *chave pública* no github ou gitlab
- **O arquivo `id_rsa` é secreto!**
  - ▶ Se alguém tiver acesso a ele, poderá modificar seus repositórios no github/gitlab como se fosse você

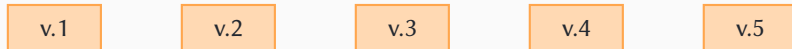
# Parte I

## O bê-a-bá do git

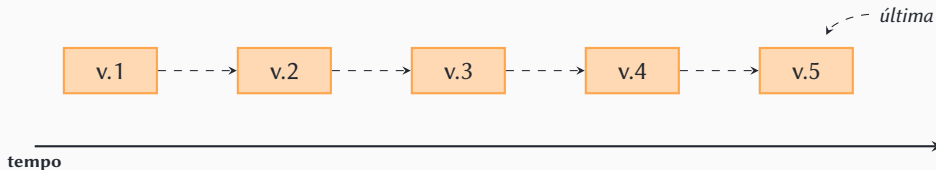


**Básico: álbum de fotos**

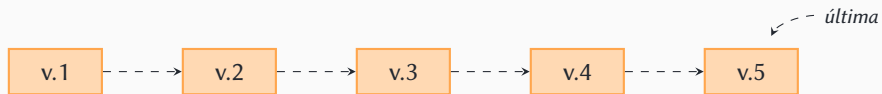
- git armazena o histórico de versões de um projeto



- git armazena o histórico de versões de um projeto
- Isso inclui a ordem das versões no tempo e quem é a “última”



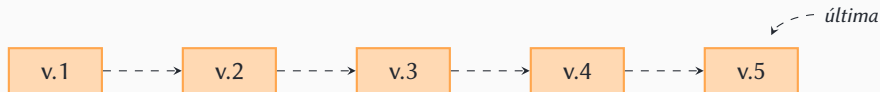
- De onde vêm as versões?



- De onde vêm as versões?

- ▶ São “fotografias” do diretório de trabalho

## Diretório de trabalho (*workdir*)



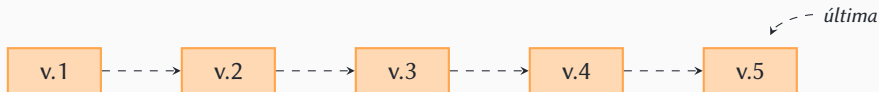
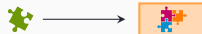
- De onde vêm as versões?

- ▶ São “fotografias” do diretório de trabalho
- ▶ O usuário seleciona “quem aparece” na foto

Diretório de trabalho (*workdir*)



Área de montagem (*staging area*)

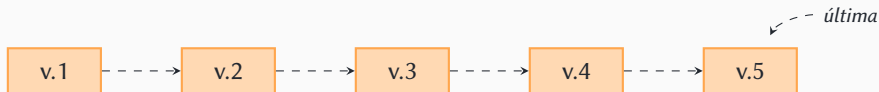
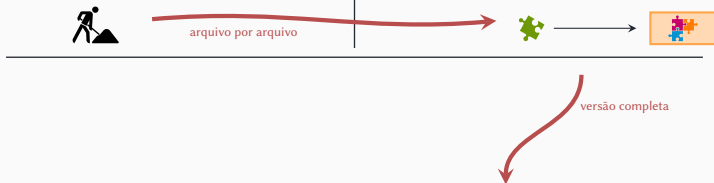


- De onde vêm as versões?

- ▶ São “fotografias” do diretório de trabalho
- ▶ O usuário seleciona “quem aparece” na foto

Diretório de trabalho (*workdir*)

Área de montagem (*staging area*)



- **git** permite colaborar via rede de várias maneiras
- A mais comum é utilizar plataformas como *github* ou *gitlab*
  - ▶ Ambas são bastante similares
  - ▶ Funcionam como redes sociais
  - ▶ Oferecem vários serviços agregados (gestão de *bugs*, wikis etc.)
  - ▶ github é mais popular
    - » *Pertence à Microsoft*
    - » *Não é software livre*
  - ▶ gitlab tem uma versão livre
    - » *usada, por exemplo, pelo GNOME*



# Criando um repositório

## Duas maneiras:

- **git init .**

- ▶ Cria um repositório no diretório atual
  - » *Talvez fosse melhor dizer que ele **transforma** o diretório atual em um repositório*
- ▶ Cria o diretório **.git** (o repositório de fato com as versões e a área de montagem)
- ▶ O diretório atual passa a ser a área de trabalho

- **git clone <URL> .**

- ▶ Executa **git init .**
- ▶ Registra **URL** como um repositório remoto chamado *origin*
- ▶ Copia o repositório *origin* para o repositório local

[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)[urrameu](#)

## Repositories

[New](#)[Show more](#)

## Your teams



© 2020 GitHub, Inc.

[Blog](#)[About](#)[Shop](#)[Contact](#)[GitHub](#)[API](#)[Training](#)[Status](#)[Security](#)[Terms](#)[Privacy](#)[Help](#)

## Explore repositories

### **citation-style-language/schema**

Citation Style Language schema

[Python](#)

109

### **reutenauer/polyglossia**

An alternative to Babel for XeLaTeX and LuaLaTeX

[TeX](#)

121

### **plk/biblatex**

biblatex is a sophisticated bibliography system for LaTeX users. It has considerably more features than traditional bibtex and supports UTF-8

[TeX](#)

291

[Explore more →](#)

[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)[urrameu](#)

## Repositories

[New](#)[Show more](#)

## Your teams



**ProTip!** The feed shows you events from people you [follow](#) and repositories you [watch](#).

[Subscribe to your news feed](#)

© 2020 GitHub, Inc.

[Blog](#)[About](#)[Shop](#)[Contact](#)[GitHub](#)[API](#)[Training](#)[Status](#)[Security](#)[Terms](#)[Privacy](#)[Help](#)

## Explore

### citation

Citation

Python

[New repository](#)[Import repository](#)[New gist](#)[New organization](#)[New project](#)

### reutenauer/polyglossia

An alternative to Babel for XeLaTeX and LuaLaTeX

TeX ☆ 121

### plk/biblatex

biblatex is a sophisticated bibliography system for LaTeX users. It has considerably more features than traditional bibtex and supports UTF-8

TeX ☆ 291

[Explore more →](#)



Search or jump to...



[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)



urrameu ▾

## Repositories



New

Find a repository...



Show more

## Your teams

Find a team...



**ProTip!** The feed shows you events from people you [follow](#) and repositories you [watch](#).



Subscribe to your news feed



© 2020 GitHub, Inc.

[Blog](#)

[About](#)

[Shop](#)

[Contact](#)

[GitHub](#)

[API](#)

[Training](#)

[Status](#)

[Security](#)

[Terms](#)

[Privacy](#)

[Help](#)

Explore

citation

Citation

Python

New repository

Import repository

New gist

New organization

New project

**reutenauer/polyglossia**

An alternative to Babel for XeLaTeX and LuaLaTeX

TeX ☆ 121

**plk/biblatex**

biblatex is a sophisticated bibliography system for LaTeX users. It has considerably more features than traditional bibtex and supports UTF-8

TeX ☆ 291

[Explore more →](#)

[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)

## Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere?

[Import a repository.](#)

Owner \*



urrameu ▾



Repository name \*

Great repository names are short and memorable. Need inspiration? How about **fantastic-octo-journey**?

Description (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**

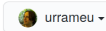
[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)

## Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere?

[Import a repository.](#)

Owner \*



urrameu ▾

/

Repository name \*

lerolero



Great repository names lerolero is available. prable. Need inspiration? How about **fantastic-octo-journey**?

Description (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**

Great repository names lerolero is available. prable. Need inspiration? How about **fantastic-octo-journey**?

#### Description (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.](#)
- ☐ **Choose a license**  
A license tells others what they can and can't do with your code. [Learn more.](#)

Create repository



Great repository names are short and memorable. Need inspiration? How about **fantastic-octo-journey**?

**Description** (optional)



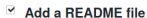
Anyone on the internet can see this repository. You choose who can commit.



You choose who can see and commit to this repository.

**Initialize this repository with:**

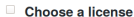
Skip this step if you're importing an existing repository.



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



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



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

This will set  `main` as the default branch. Change the default name in your [settings](#).

Create repository



Great repository names are short and memorable. Need inspiration? How about **fantastic-octo-journey**?

**Description** (optional)



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



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.](#)

☒ **Choose a license**

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

License: GNU General Public ... ▼

This will set  **main** as the default branch. Change the default name in your [settings](#).

Create repository

Great repository names are short and memorable. Need inspiration? How about **fantastic-octo-journey**?

**Description** (optional)



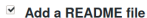
Anyone on the internet can see this repository. You choose who can commit.



You choose who can see and commit to this repository.

**Initialize this repository with:**

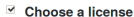
Skip this step if you're importing an existing repository.



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



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



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

License: GNU General Public ... ▼

This will set  **main** as the default branch. Change the default name in your [settings](#).

Create repository

[Pull requests](#)[Issues](#)[Marketplace](#)[Explore](#)[urrameu](#) / [lerolero](#)[Unwatch](#)

1



Star

0



Fork

0

[Code](#)[Issues](#)[Pull requests](#)[Actions](#)[Projects](#)[Wiki](#)[Security](#)[Insights](#)[Settings](#)[main](#)

1 branch



0 tags

[Go to file](#)[Add file](#)[Code](#)**urrameu** Initial commit

bc7de60 in 35 seconds



1 commits



LICENSE

Initial commit

now



README.md

Initial commit

now

README.md



# lerolero

## About



No description, website, or topics provided.

[Readme](#)

## Releases

No releases published

[Create a new release](#)

## Packages

No packages published

[Publish your first package](#)

[Pull requests](#)[Issues](#)[Marketplace](#)[Explore](#)[urrameu / lerolero](#)[Unwatch](#)**1**[Star](#)**0**[Fork](#)**0**[Code](#)[Issues](#)[Pull requests](#)[Actions](#)[Projects](#)[Wiki](#)[Security](#)[Insights](#)[Settings](#)[main](#)[1 branch](#)[0 tags](#)[Go to file](#)[Add file](#)[Code](#)**urrameu** Initial commit

bc7de60 in 35 seconds

[1 commits](#)

LICENSE

Initial commit

now



README.md

Initial commit

now

README.md



# lerolero

## About



No description, website, or topics provided.

[Readme](#)

## Releases

No releases published

[Create a new release](#)

## Packages

No packages published

[Publish your first package](#)

[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)[urrameu](#) / [lerolero](#)[Unwatch](#)

1



Star

0



Fork

0

[Code](#)[Issues](#)[Pull requests](#)[Actions](#)[Projects](#)[Wiki](#)[Security](#)[Insights](#)[Settings](#)

main



1 branch



0 tags

[Go to file](#)[Add file](#)[Code](#)**urrameu** Initial commit

LICENSE

Initial commit



README.md

Initial commit

README.md

# lerolero

**Clone**HTTPS SSH GitHub CLI

Use a password-protected SSH key.

**Download ZIP**

## About



No description, website, or topics provided.

[Readme](#)

## Releases

No releases published

[Create a new release](#)

## Packages

No packages published

[Publish your first package](#)

lovelace@engine:~\$

turing@machine:~\$

```
lovelace@engine:~$ git clone git@github.com:urrameu/lerolero.git
```



```
lovelace@engine:~$ git clone git@github.com:urrameu/lerolero.git
Cloning into 'lerolero'...
Warning: Permanently added the RSA host key for IP address '140.82.112.3' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), 12.46 KiB | 6.23 MiB/s, done.
lovelace@engine:~$
```

```
lovelace@engine:~$ git clone git@github.com:urrameu/lerolero.git
Cloning into 'lerolero'...
Warning: Permanently added the RSA host key for IP address '140.82.112.3' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), 12.46 KiB | 6.23 MiB/s, done.
lovelace@engine:~$ cd lerolero
```

```
lovelace@engine:~$ git clone git@github.com:urrameu/lerolero.git
Cloning into 'lerolero'...
Warning: Permanently added the RSA host key for IP address '140.82.112.3' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), 12.46 KiB | 6.23 MiB/s, done.
lovelace@engine:~$ cd lerolero
lovelace@engine:~/lerolero$ ls -l
```

```
lovelace@engine:~$ git clone git@github.com:urrameu/lerolero.git
Cloning into 'lerolero'...
Warning: Permanently added the RSA host key for IP address '140.82.112.3' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), 12.46 KiB | 6.23 MiB/s, done.
lovelace@engine:~$ cd lerolero
lovelace@engine:~/lerolero$ ls -l
total 40
-rw-r--r-- 1 lovelace lovelace 35149 nov 18 11:35 LICENSE
-rw-r--r-- 1 lovelace lovelace 10 nov 18 11:35 README.md
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~$ git clone git@github.com:urrameu/lerolero.git
Cloning into 'lerolero'...
Warning: Permanently added the RSA host key for IP address '140.82.112.3' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), 12.46 KiB | 6.23 MiB/s, done.
lovelace@engine:~$ cd lerolero
lovelace@engine:~/lerolero$ ls -l
total 40
-rw-r--r-- 1 lovelace lovelace 35149 nov 18 11:35 LICENSE
-rw-r--r-- 1 lovelace lovelace 10 nov 18 11:35 README.md
lovelace@engine:~/lerolero$ ls -la
```

Warning: Permanently added the RSA host key for IP address '140.82.112.3' to the list of known hosts.

Enter passphrase for key '/home/lovelace/.ssh/id\_rsa':

remote: Enumerating objects: 4, done.

remote: Counting objects: 100% (4/4), done.

remote: Compressing objects: 100% (3/3), done.

remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0

Receiving objects: 100% (4/4), 12.46 KiB | 6.23 MiB/s, done.

lovelace@engine:~\$ cd lerolero

lovelace@engine:~/lerolero\$ ls -l

total 40

-rw-r--r--	1	lovelace	lovelace	35149	nov	18	11:35	LICENSE
------------	---	----------	----------	-------	-----	----	-------	---------

-rw-r--r--	1	lovelace	lovelace	10	nov	18	11:35	README.md
------------	---	----------	----------	----	-----	----	-------	-----------

lovelace@engine:~/lerolero\$ ls -la

total 52

drwxr-xr-x	3	lovelace	lovelace	4096	nov	18	11:35	.
------------	---	----------	----------	------	-----	----	-------	---

drwxr-xr-x	4	lovelace	lovelace	4096	nov	18	11:35	..
------------	---	----------	----------	------	-----	----	-------	----

drwxr-xr-x	8	lovelace	lovelace	4096	nov	18	11:35	.git
------------	---	----------	----------	------	-----	----	-------	------

-rw-r--r--	1	lovelace	lovelace	35149	nov	18	11:35	LICENSE
------------	---	----------	----------	-------	-----	----	-------	---------

-rw-r--r--	1	lovelace	lovelace	10	nov	18	11:35	README.md
------------	---	----------	----------	----	-----	----	-------	-----------

lovelace@engine:~/lerolero\$

```
turing@machine:~$ git clone git@github.com:urrameu/lerolero.git
```

```
turing@machine:~$ git clone git@github.com:urrameu/lerolero.git
Cloning into 'lerolero'...
Warning: Permanently added the RSA host key for IP address '140.82.114.4' to the list of known hosts.
Enter passphrase for key '/home/turing/.ssh/id_rsa':
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), 12.46 KiB | 2.49 MiB/s, done.
turing@machine:~$
```



# Comandos cotidianos

- **git add arquivo**

- ▶ Copia **arquivo** da área de trabalho para a área de montagem
  - » Não é preciso fazer **git add** com arquivos que não mudaram, só o que efetivamente mudou!

- **git commit**

- ▶ Copia o **conteúdo completo** da área de montagem para uma nova versão no repositório
- ▶ Atualiza a indicação de quem é a “última” versão

- **git push**

- ▶ Atualiza o repositório remoto (*origin*)

- **git pull**

- ▶ Atualiza o repositório local (a partir de *origin*)

- **git log e git status**

- **Lição de casa**

- ▶ Aprenda a usar **.gitignore**

```
lovelace@engine:~/lerolero$ vi README.md
```

1,10

Tudo

10. *Journal of the American Medical Association*, 2000; 284: 2689-2695.

~

~~~~~

~

~

1000

2

~

~

~

~

~

~

~

1. *Journal of the American Medical Association*, 2000; 284: 2689-2695.

1. *Journal of Management Studies*, 1996, 33, 1, 1-14.

~ ~ ~ ~ ~

~

~

~

|  |      |      |
|--|------|------|
|  | 3,43 | Tudo |
|--|------|------|

\_\_\_\_\_

114

```
lovelace@engine:~/lerolero$ vi README.md
lovelace@engine:~/lerolero$ git status
```

```
lovelace@engine:~/lerolero$ vi README.md
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
Changes not staged for commit:
```

```
  (use "git add <file>..." to update what will be committed)
```

```
  (use "git restore <file>..." to discard changes in working directory)
```

```
    modified:   README.md
```

```
no changes added to commit (use "git add" and/or "git commit -a")
```

```
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~/lerolero$ vi README.md
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
Changes not staged for commit:
```

```
  (use "git add <file>..." to update what will be committed)
```

```
  (use "git restore <file>..." to discard changes in working directory)
```

```
    modified:   README.md
```

```
no changes added to commit (use "git add" and/or "git commit -a")
```

```
lovelace@engine:~/lerolero$ git add README.md
```

```
lovelace@engine:~/lerolero$ vi README.md
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
Changes not staged for commit:
```

```
  (use "git add <file>..." to update what will be committed)
```

```
  (use "git restore <file>..." to discard changes in working directory)
```

```
    modified:   README.md
```

```
no changes added to commit (use "git add" and/or "git commit -a")
```

```
lovelace@engine:~/lerolero$ git add README.md
```

```
lovelace@engine:~/lerolero$ git status
```



```
lovelace@engine:~/lerolero$ vi README.md
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
Changes not staged for commit:
```

```
(use "git add <file>..." to update what will be committed)
```

```
(use "git restore <file>..." to discard changes in working directory)
```

```
modified:   README.md
```

```
no changes added to commit (use "git add" and/or "git commit -a")
```

```
lovelace@engine:~/lerolero$ git add README.md
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
Changes to be committed:
```

```
(use "git restore --staged <file>..." to unstage)
```

```
modified:   README.md
```

```
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~/lerolero$ vi README.md
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
Changes not staged for commit:
```

```
(use "git add <file>..." to update what will be committed)
```

```
(use "git restore <file>..." to discard changes in working directory)
```

```
modified:   README.md
```

```
no changes added to commit (use "git add" and/or "git commit -a")
```

```
lovelace@engine:~/lerolero$ git add README.md
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
Changes to be committed:
```

```
(use "git restore --staged <file>..." to unstage)
```

```
modified:   README.md
```

```
lovelace@engine:~/lerolero$ git commit
```

```
# Please enter the commit message for your changes. Lines starting
# with '#' will be ignored, and an empty message aborts the commit.
```

#

```
# On branch main
```

```
# Your branch is up to date with 'origin/main'.
```

#

```
# Changes to be committed:
```

```
#       modified:   README.md
```

#

~

~

~

~

~

~

~

~

~

~

~

~

```
"~/lerolero/.git/COMMIT_EDITMSG" 10L, 258C
```

1,0-1

Tudo

## Acrescenta descrição do projeto ao README

```
# Please enter the commit message for your changes. Lines starting  
# with '#' will be ignored, and an empty message aborts the commit.
```

#

```
# On branch main
```

```
# Your branch is up to date with 'origin/main'.
```

#

```
# Changes to be committed:
```

```
#       modified:   README.md
```

#

~

~

~

~

~

~

~

~

~

~

~

~

Your branch is up to date with 'origin/main'.

Changes not staged for commit:

(use "git add <file>..." to update what will be committed)

(use "git restore <file>..." to discard changes in working directory)

modified: README.md

no changes added to commit (use "git add" and/or "git commit -a")

lovelace@engine:~/lerolero\$ git add README.md

lovelace@engine:~/lerolero\$ git status

On branch main

Your branch is up to date with 'origin/main'.

Changes to be committed:

(use "git restore --staged <file>..." to unstage)

modified: README.md

lovelace@engine:~/lerolero\$ git commit

[main 3df3233] Acrescenta descrição do projeto ao README

1 file changed, 3 insertions(+), 1 deletion(-)

lovelace@engine:~/lerolero\$

Your branch is up to date with 'origin/main'.

Changes not staged for commit:

(use "git add <file>..." to update what will be committed)

(use "git restore <file>..." to discard changes in working directory)

modified: README.md

no changes added to commit (use "git add" and/or "git commit -a")

lovelace@engine:~/lerolero\$ git add README.md

lovelace@engine:~/lerolero\$ git status

On branch main

Your branch is up to date with 'origin/main'.

Changes to be committed:

(use "git restore --staged <file>..." to unstage)

modified: README.md

lovelace@engine:~/lerolero\$ git commit

[main 3df3233] Acrescenta descrição do projeto ao README

1 file changed, 3 insertions(+), 1 deletion(-)

lovelace@engine:~/lerolero\$ git log

```
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   README.md
```

```
lovelace@engine:~/lerolero$ git commit
[main 3df3233] Acrescenta descrição do projeto ao README
 1 file changed, 3 insertions(+), 1 deletion(-)
lovelace@engine:~/lerolero$ git log
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (HEAD -> main)
Author: Ada Lovelace <ada@analyticalengine.com>
Date:   Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0 (origin/main, origin/HEAD)
Author: Nelson Lago <lago@ime.usp.br>
Date:   Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
lovelace@engine:~/lerolero$
```

```
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   README.md
```

```
lovelace@engine:~/lerolero$ git commit
[main 3df3233] Acrescenta descrição do projeto ao README
 1 file changed, 3 insertions(+), 1 deletion(-)
lovelace@engine:~/lerolero$ git log
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (HEAD -> main)
Author: Ada Lovelace <ada@analyticalengine.com>
Date:   Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0 (origin/main, origin/HEAD)
Author: Nelson Lago <lago@ime.usp.br>
Date:   Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
lovelace@engine:~/lerolero$ git status
```



```
[main 3df3233] Acrescenta descrição do projeto ao README
```

```
1 file changed, 3 insertions(+), 1 deletion(-)
```

```
lovelace@engine:~/lerolero$ git log
```

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (HEAD -> main)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 11:40:59 2020 -0300
```

```
Acrescenta descrição do projeto ao README
```

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0 (origin/main, origin/HEAD)
```

```
Author: Nelson Lago <lago@ime.usp.br>
```

```
Date: Mon Nov 16 13:53:13 2020 -0300
```

```
Initial commit
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is ahead of 'origin/main' by 1 commit.
```

```
(use "git push" to publish your local commits)
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$
```

```
[main 3df3233] Acrescenta descrição do projeto ao README
```

```
1 file changed, 3 insertions(+), 1 deletion(-)
```

```
lovelace@engine:~/lerolero$ git log
```

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (HEAD -> main)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 11:40:59 2020 -0300
```

```
Acrescenta descrição do projeto ao README
```

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0 (origin/main, origin/HEAD)
```

```
Author: Nelson Lago <lago@ime.usp.br>
```

```
Date: Mon Nov 16 13:53:13 2020 -0300
```

```
Initial commit
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is ahead of 'origin/main' by 1 commit.
```

```
(use "git push" to publish your local commits)
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git push
```

```
Author: Nelson Lago <lago@ime.usp.br>  
Date: Mon Nov 16 13:53:13 2020 -0300
```

```
Initial commit
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is ahead of 'origin/main' by 1 commit.
```

```
(use "git push" to publish your local commits)
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git push
```

```
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
```

```
Enumerating objects: 5, done.
```

```
Counting objects: 100% (5/5), done.
```

```
Delta compression using up to 8 threads
```

```
Compressing objects: 100% (3/3), done.
```

```
Writing objects: 100% (3/3), 363 bytes | 363.00 KiB/s, done.
```

```
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
```

```
To github.com:urrameu/lerolero.git
```

```
bc7de60..3df3233 main -> main
```

```
lovelace@engine:~/lerolero$
```

```
Author: Nelson Lago <lago@ime.usp.br>  
Date: Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
lovelace@engine:~/lerolero$ git status
```

On branch main

Your branch is ahead of 'origin/main' by 1 commit.

(use "git push" to publish your local commits)

nothing to commit, working tree clean

```
lovelace@engine:~/lerolero$ git push
```

Enter passphrase for key '/home/lovelace/.ssh/id\_rsa':

Enumerating objects: 5, done.

Counting objects: 100% (5/5), done.

Delta compression using up to 8 threads

Compressing objects: 100% (3/3), done.

Writing objects: 100% (3/3), 363 bytes | 363.00 KiB/s, done.

Total 3 (delta 0), reused 0 (delta 0), pack-reused 0

To github.com:urrameu/lerolero.git

bc7de60..3df3233 main -> main

```
lovelace@engine:~/lerolero$ git status
```

On branch main

Your branch is ahead of 'origin/main' by 1 commit.

(use "git push" to publish your local commits)

nothing to commit, working tree clean

**lovelace@engine:~/lerolero**\$ git push

Enter passphrase for key '/home/lovelace/.ssh/id\_rsa':

Enumerating objects: 5, done.

Counting objects: 100% (5/5), done.

Delta compression using up to 8 threads

Compressing objects: 100% (3/3), done.

Writing objects: 100% (3/3), 363 bytes | 363.00 KiB/s, done.

Total 3 (delta 0), reused 0 (delta 0), pack-reused 0

To github.com:urrameu/lerolero.git

bc7de60..3df3233 main -> main

**lovelace@engine:~/lerolero**\$ git status

On branch main

Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean

**lovelace@engine:~/lerolero**\$

turing@machine:~/lerolero\$

```
turing@machine:~/lerolero$ ls -l
```

```
turing@machine:~/lerolero$ ls -l
```

```
total 40
```

```
-rw-r--r-- 1 turing turing 35149 nov 18 11:36 LICENSE
```

```
-rw-r--r-- 1 turing turing    10 nov 18 11:36 README.md
```

```
turing@machine:~/lerolero$
```



```
turing@machine:~/lerolero$ ls -l
```

```
total 40
```

```
-rw-r--r-- 1 turing turing 35149 nov 18 11:36 LICENSE
```

```
-rw-r--r-- 1 turing turing    10 nov 18 11:36 README.md
```

```
turing@machine:~/lerolero$ git log
```

```
turing@machine:~/lerolero$ ls -l
```

```
total 40
```

```
-rw-r--r-- 1 turing turing 35149 nov 18 11:36 LICENSE
```

```
-rw-r--r-- 1 turing turing 10 nov 18 11:36 README.md
```

```
turing@machine:~/lerolero$ git log
```

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0 (HEAD -> main, origin/main, origin/HEAD)
```

```
Author: Nelson Lago <lago@ime.usp.br>
```

```
Date: Mon Nov 16 13:53:13 2020 -0300
```

```
Initial commit
```

```
turing@machine:~/lerolero$
```

```
turing@machine:~/lerolero$ ls -l
```

```
total 40
```

```
-rw-r--r-- 1 turing turing 35149 nov 18 11:36 LICENSE
```

```
-rw-r--r-- 1 turing turing 10 nov 18 11:36 README.md
```

```
turing@machine:~/lerolero$ git log
```

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0 (HEAD -> main, origin/main, origin/HEAD)
```

```
Author: Nelson Lago <lago@ime.usp.br>
```

```
Date: Mon Nov 16 13:53:13 2020 -0300
```

```
Initial commit
```

```
turing@machine:~/lerolero$ git pull
```

**gin/HEAD)**

Author: Nelson Lago &lt;lago@ime.usp.br&gt;

Date: Mon Nov 16 13:53:13 2020 -0300

Initial commit

**turing@machine:~/lerolero\$ git pull**

Warning: Permanently added the RSA host key for IP address '140.82.113.3' to the list of known hosts.

Enter passphrase for key '/home/turing/.ssh/id\_rsa':

remote: Enumerating objects: 5, done.

remote: Counting objects: 100% (5/5), done.

remote: Compressing objects: 100% (3/3), done.

Unpacking objects: 100% (3/3), 343 bytes | 171.00 KiB/s, done.

remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0

From github.com:urrameu/lerolero

bc7de60..3df3233 main -&gt; origin/main

Updating bc7de60..3df3233

Fast-forward

README.md | 4 +++-

1 file changed, 3 insertions(+), 1 deletion(-)

**turing@machine:~/lerolero\$**

**gin/HEAD)**

Author: Nelson Lago &lt;lago@ime.usp.br&gt;

Date: Mon Nov 16 13:53:13 2020 -0300

Initial commit

**turing@machine:~/lerolero\$ git pull**

Warning: Permanently added the RSA host key for IP address '140.82.113.3' to the list of known hosts.

Enter passphrase for key '/home/turing/.ssh/id\_rsa':

remote: Enumerating objects: 5, done.

remote: Counting objects: 100% (5/5), done.

remote: Compressing objects: 100% (3/3), done.

Unpacking objects: 100% (3/3), 343 bytes | 171.00 KiB/s, done.

remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0

From github.com:urrameu/lerolero

bc7de60..3df3233 main -&gt; origin/main

Updating bc7de60..3df3233

Fast-forward

README.md | 4 +++-

1 file changed, 3 insertions(+), 1 deletion(-)

**turing@machine:~/lerolero\$ git log**

```
remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0
```

```
From github.com:urrameu/lerolero
```

```
bc7de60..3df3233 main -> origin/main
```

```
Updating bc7de60..3df3233
```

```
Fast-forward
```

```
 README.md | 4 +++-
```

```
1 file changed, 3 insertions(+), 1 deletion(-)
```

```
turing@machine:~/lerolero$ git log
```

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (HEAD -> main, origin/main, origin/HEAD)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
```

```
Author: Nelson Lago <lago@ime.usp.br>
```

```
Date: Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
turing@machine:~/lerolero$
```

# Arqueologia: olhando para o passado

# O que mudou de uma versão para a outra?

**git diff** compara duas versões do projeto

- **git diff ID1 ID2**

- ▶ Mostra todas as alterações em todos os arquivos

- **git diff ID1 ID2 arquivo**

- ▶ Restringe a **arquivo**, mas ainda assim compara versões do projeto

- **git diff ID1 ID2** é diferente de **git diff ID2 ID1**

- ▶ Diferenças **de** uma versão **para** outra versão



# O que mudou de uma versão para a outra?

- **git diff** (sem parâmetros) funciona!
  - ▶ Diferenças da área montagem (*staging area/index*) para a área de trabalho (*workdir*)
- **git diff ID**
  - ▶ Diferenças da *revision/commit ID* para o *workdir*
- **git diff --staged**
  - ▶ Diferenças da última *revision/commit* para a *staging area*
- **git diff --staged ID**
  - ▶ Diferenças da *revision/commit ID* para a *staging area*

```
turing@machine:~/lerolero$ git log
```

```
turing@machine:~/lerolero$ git log
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (HEAD -> main, origin/main, ori
gin/HEAD)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
```

```
Author: Nelson Lago <lago@ime.usp.br>
```

```
Date: Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
turing@machine:~/lerolero$
```

```
turing@machine:~/lerolero$ git log
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (HEAD -> main, origin/main, ori
gin/HEAD)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
```

```
Author: Nelson Lago <lago@ime.usp.br>
```

```
Date: Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
turing@machine:~/lerolero$ git diff bc7de604 3df3233c
```

Date: Wed Nov 18 11:40:59 2020 -0300

Acrescenta descrição do projeto ao README

commit bc7de604e736c540ef06e71f1641b19c238ad3a0

Author: Nelson Lago <lago@ime.usp.br>

Date: Mon Nov 16 13:53:13 2020 -0300

Initial commit

turing@machine:~/lerolero\$ git diff bc7de604 3df3233c

diff --git a/README.md b/README.md

index d913469..55f6404 100644

--- a/README.md

+++ b/README.md

@@ -1 +1,3 @@

-# lerolero

\ No newline at end of file

+# lerolero

+

+Um gerador de frases de efeito sem sentido.

turing@machine:~/lerolero\$

Date: Wed Nov 18 11:40:59 2020 -0300

Acrescenta descrição do projeto ao README

commit bc7de604e736c540ef06e71f1641b19c238ad3a0

Author: Nelson Lago <lago@ime.usp.br>

Date: Mon Nov 16 13:53:13 2020 -0300

Initial commit

turing@machine:~/lerolero\$ git diff bc7de604 3df3233c

diff --git a/README.md b/README.md

index d913469..55f6404 100644

--- a/README.md

+++ b/README.md

@@ -1 +1,3 @@

-# lerolero

\ No newline at end of file

+# lerolero

+

+Um gerador de frases de efeito sem sentido.

turing@machine:~/lerolero\$ git diff 3df3233c bc7de604

```
index d913469..55f6404 100644
--- a/README.md
+++ b/README.md
@@ -1,3 @@
-# lerolero
\ No newline at end of file
+# lerolero
+
+Um gerador de frases de efeito sem sentido.
turing@machine:~/lerolero$ git diff 3df3233c bc7de604
diff --git a/README.md b/README.md
index 55f6404..d913469 100644
--- a/README.md
+++ b/README.md
@@ -1,3 +1 @@
-# lerolero
-
-Um gerador de frases de efeito sem sentido.
+# lerolero
\ No newline at end of file
turing@machine:~/lerolero$
```

```
index d913469..55f6404 100644
--- a/README.md
+++ b/README.md
@@ -1,3 @@
-# lerolero
\ No newline at end of file
+# lerolero
+
+Um gerador de frases de efeito sem sentido.
turing@machine:~/lerolero$ git diff 3df3233c bc7de604
diff --git a/README.md b/README.md
index 55f6404..d913469 100644
--- a/README.md
+++ b/README.md
@@ -1,3 +1 @@
-# lerolero
-
-Um gerador de frases de efeito sem sentido.
+# lerolero
\ No newline at end of file
turing@machine:~/lerolero$ vi lerolero.py
```



~~~~~

 $\sim$ 

—

 $\sim$ 

1

~

1

1

~

1

1

 $\sim$ 

1

 $\sim$ 

~~~~~

~

~

 $\sim$ 

~~~~~

~

~

 $0, 0-1$ 

Tudo

```
#!/usr/bin/python3
```

```
"""Gerador de lero-lero.
```

```
Gera frases de efeito sem significado real."""
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
--- a/README.md
+++ b/README.md
@@ -1,3 @@
-# lerolero
\ No newline at end of file
+# lerolero
+
+Um gerador de frases de efeito sem sentido.
turing@machine:~/lerolero$ git diff 3df3233c bc7de604
diff --git a/README.md b/README.md
index 55f6404..d913469 100644
--- a/README.md
+++ b/README.md
@@ -1,3 +1 @@
-# lerolero
-
-Um gerador de frases de efeito sem sentido.
+# lerolero
\ No newline at end of file
turing@machine:~/lerolero$ vi lerolero.py
turing@machine:~/lerolero$ git status
```

```
diff --git a/README.md b/README.md
```

```
index 55f6404..d913469 100644
```

```
--- a/README.md
```

```
+++ b/README.md
```

```
@@ -1,3 +1 @@
```

```
-# lerolero
```

```
-
```

```
-Um gerador de frases de efeito sem sentido.
```

```
+# lerolero
```

```
\ No newline at end of file
```

```
turing@machine:~/lerolero$ vi lerolero.py
```

```
turing@machine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
Untracked files:
```

```
(use "git add <file>..." to include in what will be committed)
```

```
lerolero.py
```

```
nothing added to commit but untracked files present (use "git add" to track)
```

```
turing@machine:~/lerolero$
```

```
diff --git a/README.md b/README.md
```

```
index 55f6404..d913469 100644
```

```
--- a/README.md
```

```
+++ b/README.md
```

```
@@ -1,3 +1 @@
```

```
-# lerolero
```

```
-
```

```
-Um gerador de frases de efeito sem sentido.
```

```
+# lerolero
```

```
\ No newline at end of file
```

```
turing@machine:~/lerolero$ vi lerolero.py
```

```
turing@machine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
Untracked files:
```

```
(use "git add <file>..." to include in what will be committed)
```

```
lerolero.py
```

```
nothing added to commit but untracked files present (use "git add" to track)
```

```
turing@machine:~/lerolero$ git add lerolero.py
```

```
index 55f6404..d913469 100644
```

```
--- a/README.md
```

```
+++ b/README.md
```

```
@@ -1,3 +1 @@
```

```
-# lerolero
```

```
-
```

```
-Um gerador de frases de efeito sem sentido.
```

```
+# lerolero
```

```
\ No newline at end of file
```

```
turing@machine:~/lerolero$ vi lerolero.py
```

```
turing@machine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
Untracked files:
```

```
(use "git add <file>..." to include in what will be committed)
```

```
lerolero.py
```

```
nothing added to commit but untracked files present (use "git add" to track)
```

```
turing@machine:~/lerolero$ git add lerolero.py
```

```
turing@machine:~/lerolero$ git commit
```

```
# Please enter the commit message for your changes. Lines starting
# with '#' will be ignored, and an empty message aborts the commit.
```

#

```
# On branch main
```

```
# Your branch is up to date with 'origin/main'.
```

#

```
# Changes to be committed:
```

```
#       new file:   lerolero.py
```

#

~

~

~

~

~

~

~

~

~

~

~

~

~

```
"~/lerolero/.git/COMMIT_EDITMSG" 10L, 260C
```

1,0-1

Tudo

Cria arquivo inicial do programa

```
# Please enter the commit message for your changes. Lines starting  
# with '#' will be ignored, and an empty message aborts the commit.
```

```
#
```

```
# On branch main
```

```
# Your branch is up to date with 'origin/main'.
```

```
#
```

```
# Changes to be committed:
```

```
#       new file:   lerolero.py
```

```
#
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```



```
-# lerolero
```

```
-
```

```
-Um gerador de frases de efeito sem sentido.
```

```
+# lerolero
```

```
\ No newline at end of file
```

```
turing@machine:~/lerolero$ vi lerolero.py
```

```
turing@machine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
Untracked files:
```

```
(use "git add <file>..." to include in what will be committed)
```

```
lerolero.py
```

```
nothing added to commit but untracked files present (use "git add" to track)
```

```
turing@machine:~/lerolero$ git add lerolero.py
```

```
turing@machine:~/lerolero$ git commit
```

```
[main 7e749a8] Cria arquivo inicial do programa
```

```
1 file changed, 4 insertions(+)
```

```
create mode 100644 lerolero.py
```

```
turing@machine:~/lerolero$
```

```
-# lerolero
```

```
-
```

```
-Um gerador de frases de efeito sem sentido.
```

```
+# lerolero
```

```
\ No newline at end of file
```

```
turing@machine:~/lerolero$ vi lerolero.py
```

```
turing@machine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
Untracked files:
```

```
(use "git add <file>..." to include in what will be committed)
```

```
lerolero.py
```

```
nothing added to commit but untracked files present (use "git add" to track)
```

```
turing@machine:~/lerolero$ git add lerolero.py
```

```
turing@machine:~/lerolero$ git commit
```

```
[main 7e749a8] Cria arquivo inicial do programa
```

```
1 file changed, 4 insertions(+)
```

```
create mode 100644 lerolero.py
```

```
turing@machine:~/lerolero$ git log
```

```
1 file changed, 4 insertions(+)
create mode 100644 lerolero.py
turing@machine:~/lerolero$ git log
commit 7e749a8a2c040a91d644f05f895568129b622241 (HEAD -> main)
Author: Alan Turing <turing@machine.com>
Date: Wed Nov 18 12:00:50 2020 -0300
```

Cria arquivo inicial do programa

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (origin/main, origin/HEAD)
Author: Ada Lovelace <ada@analyticalengine.com>
Date: Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
Author: Nelson Lago <lago@ime.usp.br>
Date: Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
turing@machine:~/lerolero$
```

```
1 file changed, 4 insertions(+)
create mode 100644 lerolero.py
turing@machine:~/lerolero$ git log
commit 7e749a8a2c040a91d644f05f895568129b622241 (HEAD -> main)
Author: Alan Turing <turing@machine.com>
Date:   Wed Nov 18 12:00:50 2020 -0300
```

Cria arquivo inicial do programa

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (origin/main, origin/HEAD)
Author: Ada Lovelace <ada@analyticalengine.com>
Date:   Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
Author: Nelson Lago <lago@ime.usp.br>
Date:   Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
turing@machine:~/lerolero$ git status
```

Cria arquivo inicial do programa

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (origin/main, origin/HEAD)
Author: Ada Lovelace <ada@analyticalengine.com>
Date: Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
Author: Nelson Lago <lago@ime.usp.br>
Date: Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
turing@machine:~/lerolero$ git status
```

On branch main

Your branch is ahead of 'origin/main' by 1 commit.

(use "git push" to publish your local commits)

nothing to commit, working tree clean

```
turing@machine:~/lerolero$
```

Cria arquivo inicial do programa

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (origin/main, origin/HEAD)
Author: Ada Lovelace <ada@analyticalengine.com>
Date: Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
Author: Nelson Lago <lago@ime.usp.br>
Date: Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
turing@machine:~/lerolero$ git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
(use "git push" to publish your local commits)
```

nothing to commit, working tree clean

```
turing@machine:~/lerolero$ vi lerolero.py
```

```
#!/usr/bin/python3
```

```
"""Gerador de lero-lero.
```

```
Gera frases de efeito sem significado real."""
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
"lerolero.py" 4L, 92C
```

```
4,46
```

```
Tudo
```

```
#!/usr/bin/python3
"""Gerador de lero-lero.

Gera frases de efeito sem significado real."""

import random

# Cada frase é composta por três partes aleatórias; aqui,
# listas de possibilidades para cada uma das partes.

parte1 = []
parte2 = []
parte3 = []

# Combina as partes aleatoriamente
print (random.choice(parte1), random.choice(parte2), random.choice(parte3))
```

~  
~  
~  
~



Cria arquivo inicial do programa

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (origin/main, origin/HEAD)
Author: Ada Lovelace <ada@analyticalengine.com>
Date: Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
Author: Nelson Lago <lago@ime.usp.br>
Date: Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
turing@machine:~/lerolero$ git status
```

On branch main

Your branch is ahead of 'origin/main' by 1 commit.

(use "git push" to publish your local commits)

nothing to commit, working tree clean

```
turing@machine:~/lerolero$ vi lerolero.py
```

```
turing@machine:~/lerolero$ git status
```

Initial commit

turing@machine:~/lerolero\$ git status

On branch main

Your branch is ahead of 'origin/main' by 1 commit.

(use "git push" to publish your local commits)

nothing to commit, working tree clean

turing@machine:~/lerolero\$ vi lerolero.py

turing@machine:~/lerolero\$ git status

On branch main

Your branch is ahead of 'origin/main' by 1 commit.

(use "git push" to publish your local commits)

Changes not staged for commit:

(use "git add <file>..." to update what will be committed)

(use "git restore <file>..." to discard changes in working directory)

modified: lerolero.py

no changes added to commit (use "git add" and/or "git commit -a")

turing@machine:~/lerolero\$

Initial commit

turing@machine:~/lerolero\$ git status

On branch main

Your branch is ahead of 'origin/main' by 1 commit.

(use "git push" to publish your local commits)

nothing to commit, working tree clean

turing@machine:~/lerolero\$ vi lerolero.py

turing@machine:~/lerolero\$ git status

On branch main

Your branch is ahead of 'origin/main' by 1 commit.

(use "git push" to publish your local commits)

Changes not staged for commit:

(use "git add <file>..." to update what will be committed)

(use "git restore <file>..." to discard changes in working directory)

modified: lerolero.py

no changes added to commit (use "git add" and/or "git commit -a")

turing@machine:~/lerolero\$ git diff

```
diff --git a/lerolero.py b/lerolero.py
```

```
index d845a8c..2af78d8 100644
```

```
--- a/lerolero.py
```

```
+++ b/lerolero.py
```

```
@@ -2,3 +2,15 @@
```

```
"""Gerador de lero-lero.
```

```
    Gera frases de efeito sem significado real."""
```

```
+
```

```
+import random
```

```
+
```

```
+# Cada frase é composta por três partes aleatórias; aqui,
```

```
+# listas de possibilidades para cada uma das partes.
```

```
+
```

```
+partel = []
```

```
+parte2 = []
```

```
+parte3 = []
```

```
+
```

```
+# Combina as partes aleatoriamente
```

```
+print (random.choice(partel), random.choice(parte2), random.choice(parte3))
```

```
+:  
|
```

```
diff --git a/lerolero.py b/lerolero.py
```

```
index d845a8c..2af78d8 100644
```

```
--- a/lerolero.py
```

```
+++ b/lerolero.py
```

```
@@ -2,3 +2,15 @@
```

```
"""Gerador de lero-lero.
```

```
    Gera frases de efeito sem significado real."""
```

```
+
```

```
+import random
```

```
+
```

```
+# Cada frase é composta por três partes aleatórias; aqui,
```

```
+# listas de possibilidades para cada uma das partes.
```

```
+
```

```
+partel = []
```

```
+parte2 = []
```

```
+parte3 = []
```

```
+
```

```
+# Combina as partes aleatoriamente
```

```
+print (random.choice(partel), random.choice(parte2), random.choice(parte3))
```

```
turing@machine:~/lerolero$ git add lerolero.py
```

```
--- a/lerolero.py
+++ b/lerolero.py
@@ -2,3 +2,15 @@
"""Gerador de lero-lero.

Gera frases de efeito sem significado real."""
+
+import random
+
+# Cada frase é composta por três partes aleatórias; aqui,
+# listas de possibilidades para cada uma das partes.
+
+partel = []
+parte2 = []
+parte3 = []
+
+# Combina as partes aleatoriamente
+print (random.choice(partel), random.choice(parte2), random.choice(parte3))
turing@machine:~/lerolero$ git add lerolero.py
turing@machine:~/lerolero$ git diff
turing@machine:~/lerolero$
```

```
--- a/lerolero.py
+++ b/lerolero.py
@@ -2,3 +2,15 @@
"""Gerador de lero-lero.

Gera frases de efeito sem significado real."""
+
+import random
+
+# Cada frase é composta por três partes aleatórias; aqui,
+# listas de possibilidades para cada uma das partes.
+
+partel = []
+parte2 = []
+parte3 = []
+
+# Combina as partes aleatoriamente
+print (random.choice(partel), random.choice(parte2), random.choice(parte3))
turing@machine:~/lerolero$ git add lerolero.py
turing@machine:~/lerolero$ git diff
turing@machine:~/lerolero$ git diff --staged
```

```
diff --git a/lerolero.py b/lerolero.py
```

```
index d845a8c..2af78d8 100644
```

```
--- a/lerolero.py
```

```
+++ b/lerolero.py
```

```
@@ -2,3 +2,15 @@
```

```
"""Gerador de lero-lero.
```

```
    Gera frases de efeito sem significado real."""
```

```
+
```

```
+import random
```

```
+
```

```
+# Cada frase é composta por três partes aleatórias; aqui,
```

```
+# listas de possibilidades para cada uma das partes.
```

```
+
```

```
+partel = []
```

```
+parte2 = []
```

```
+parte3 = []
```

```
+
```

```
+# Combina as partes aleatoriamente
```

```
+print (random.choice(partel), random.choice(parte2), random.choice(parte3))
```

```
:  
□
```



```
diff --git a/lerolero.py b/lerolero.py
```

```
index d845a8c..2af78d8 100644
```

```
--- a/lerolero.py
```

```
+++ b/lerolero.py
```

```
@@ -2,3 +2,15 @@
```

```
"""Gerador de lero-lero.
```

```
    Gera frases de efeito sem significado real."""
```

```
+
```

```
+import random
```

```
+
```

```
+# Cada frase é composta por três partes aleatórias; aqui,
```

```
+# listas de possibilidades para cada uma das partes.
```

```
+
```

```
+partel = []
```

```
+parte2 = []
```

```
+parte3 = []
```

```
+
```

```
+# Combina as partes aleatoriamente
```

```
+print (random.choice(partel), random.choice(parte2), random.choice(parte3))
```

```
turing@machine:~/lerolero$ git commit
```

## Implementa esqueleto do programa

```
# Please enter the commit message for your changes. Lines starting  
# with '#' will be ignored, and an empty message aborts the commit.
```

```
#
```

```
# On branch main
```

```
# Your branch is ahead of 'origin/main' by 1 commit.
```

```
# (use "git push" to publish your local commits)
```

```
#
```

```
# Changes to be committed:
```

```
#       modified:   lerolero.py
```

```
#
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
+++ b/lerolero.py
@@ -2,3 +2,15 @@
"""Gerador de lero-lero.

Gera frases de efeito sem significado real."""
+
+import random
+
+# Cada frase é composta por três partes aleatórias; aqui,
+# listas de possibilidades para cada uma das partes.
+
+partel = []
+parte2 = []
+parte3 = []
+
+# Combina as partes aleatoriamente
+print (random.choice(partel), random.choice(parte2), random.choice(parte3))
turing@machine:~/lerolero$ git commit
[main 45caee3] Implementa esqueleto do programa
1 file changed, 12 insertions(+)
turing@machine:~/lerolero$
```

```
+++ b/lerolero.py
@@ -2,3 +2,15 @@
"""Gerador de lero-lero.

Gera frases de efeito sem significado real."""
+
+import random
+
+# Cada frase é composta por três partes aleatórias; aqui,
+# listas de possibilidades para cada uma das partes.
+
+partel = []
+parte2 = []
+parte3 = []
+
+# Combina as partes aleatoriamente
+print (random.choice(partel), random.choice(parte2), random.choice(parte3))
turing@machine:~/lerolero$ git commit
[main 45caee3] Implementa esqueleto do programa
1 file changed, 12 insertions(+)
turing@machine:~/lerolero$ git diff
```

```
@@ -2,3 +2,15 @@
```

```
"""Gerador de lero-lero.
```

```
Gera frases de efeito sem significado real."""
```

```
+
```

```
+import random
```

```
+
```

```
+# Cada frase é composta por três partes aleatórias; aqui,
```

```
+# listas de possibilidades para cada uma das partes.
```

```
+
```

```
+partel = []
```

```
+parte2 = []
```

```
+parte3 = []
```

```
+
```

```
+# Combina as partes aleatoriamente
```

```
+print (random.choice(partel), random.choice(parte2), random.choice(parte3))
```

```
turing@machine:~/lerolero$ git commit
```

```
[main 45caee3] Implementa esqueleto do programa
```

```
1 file changed, 12 insertions(+)
```

```
turing@machine:~/lerolero$ git diff
```

```
turing@machine:~/lerolero$ git diff --staged
```

```
"""Gerador de lero-lero.

Gera frases de efeito sem significado real."""

+
+import random
+
+# Cada frase é composta por três partes aleatórias; aqui,
+# listas de possibilidades para cada uma das partes.
+
+partel = []
+parte2 = []
+parte3 = []
+
+# Combina as partes aleatoriamente
+print (random.choice(partel), random.choice(parte2), random.choice(parte3))
turing@machine:~/lerolero$ git commit
[main 45caee3] Implementa esqueleto do programa
1 file changed, 12 insertions(+)
turing@machine:~/lerolero$ git diff
turing@machine:~/lerolero$ git diff --staged
turing@machine:~/lerolero$
```

```
"""Gerador de lero-lero.

Gera frases de efeito sem significado real."""

+
+import random
+
+# Cada frase é composta por três partes aleatórias; aqui,
+# listas de possibilidades para cada uma das partes.
+
+partel = []
+parte2 = []
+parte3 = []
+
+# Combina as partes aleatoriamente
+print (random.choice(partel), random.choice(parte2), random.choice(parte3))
turing@machine:~/lerolero$ git commit
[main 45caee3] Implementa esqueleto do programa
1 file changed, 12 insertions(+)
turing@machine:~/lerolero$ git diff
turing@machine:~/lerolero$ git diff --staged
turing@machine:~/lerolero$ git status
```

```
+# Cada frase é composta por três partes aleatórias; aqui,  
+# listas de possibilidades para cada uma das partes.  
+  
+partel = []  
+parte2 = []  
+parte3 = []  
+  
+# Combina as partes aleatoriamente  
+print (random.choice(partel), random.choice(parte2), random.choice(parte3))  
turing@machine:~/lerolero$ git commit  
[main 45caee3] Implementa esqueleto do programa  
1 file changed, 12 insertions(+)  
turing@machine:~/lerolero$ git diff  
turing@machine:~/lerolero$ git diff --staged  
turing@machine:~/lerolero$ git status  
On branch main  
Your branch is ahead of 'origin/main' by 2 commits.  
  (use "git push" to publish your local commits)  
  
nothing to commit, working tree clean  
turing@machine:~/lerolero$
```



```
+# Cada frase é composta por três partes aleatórias; aqui,  
+# listas de possibilidades para cada uma das partes.  
+  
+partel = []  
+parte2 = []  
+parte3 = []  
+  
+# Combina as partes aleatoriamente  
+print (random.choice(partel), random.choice(parte2), random.choice(parte3))  
turing@machine:~/lerolero$ git commit  
[main 45caee3] Implementa esqueleto do programa  
1 file changed, 12 insertions(+)  
turing@machine:~/lerolero$ git diff  
turing@machine:~/lerolero$ git diff --staged  
turing@machine:~/lerolero$ git status  
On branch main  
Your branch is ahead of 'origin/main' by 2 commits.  
  (use "git push" to publish your local commits)  
  
nothing to commit, working tree clean  
turing@machine:~/lerolero$ git push
```

```
1 file changed, 12 insertions(+)
turing@machine:~/lerolero$ git diff
turing@machine:~/lerolero$ git diff --staged
turing@machine:~/lerolero$ git status
On branch main
Your branch is ahead of 'origin/main' by 2 commits.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
turing@machine:~/lerolero$ git push
Enter passphrase for key '/home/turing/.ssh/id_rsa':
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 773 bytes | 386.00 KiB/s, done.
Total 6 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), done.
To github.com:urrameu/lerolero.git
   3df3233..45caee3  main -> main
turing@machine:~/lerolero$
```

```
1 file changed, 12 insertions(+)
turing@machine:~/lerolero$ git diff
turing@machine:~/lerolero$ git diff --staged
turing@machine:~/lerolero$ git status
On branch main
Your branch is ahead of 'origin/main' by 2 commits.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
turing@machine:~/lerolero$ git push
Enter passphrase for key '/home/turing/.ssh/id_rsa':
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 773 bytes | 386.00 KiB/s, done.
Total 6 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), done.
To github.com:urrameu/lerolero.git
   3df3233..45caee3  main -> main
turing@machine:~/lerolero$ git status
```

```
Your branch is ahead of 'origin/main' by 2 commits.  
(use "git push" to publish your local commits)
```

```
nothing to commit, working tree clean
```

```
turing@machine:~/lerolero$ git push
```

```
Enter passphrase for key '/home/turing/.ssh/id_rsa':
```

```
Enumerating objects: 7, done.
```

```
Counting objects: 100% (7/7), done.
```

```
Delta compression using up to 8 threads
```

```
Compressing objects: 100% (6/6), done.
```

```
Writing objects: 100% (6/6), 773 bytes | 386.00 KiB/s, done.
```

```
Total 6 (delta 2), reused 0 (delta 0), pack-reused 0
```

```
remote: Resolving deltas: 100% (2/2), done.
```

```
To github.com:urrameu/lerolero.git
```

```
3df3233..45caee3 main -> main
```

```
turing@machine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
turing@machine:~/lerolero$
```

lovelace@engine:~/lerolero\$

```
lovelace@engine:~/lerolero$ git log
```

```
lovelace@engine:~/lerolero$ git log
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (HEAD -> main, origin/main, ori
gin/HEAD)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
```

```
Author: Nelson Lago <lago@ime.usp.br>
```

```
Date: Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~/lerolero$ git log
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (HEAD -> main, origin/main, ori
gin/HEAD)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
```

```
Author: Nelson Lago <lago@ime.usp.br>
```

```
Date: Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
lovelace@engine:~/lerolero$ git status
```



```
lovelace@engine:~/lerolero$ git log
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (HEAD -> main, origin/main, ori
gin/HEAD)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
```

```
Author: Nelson Lago <lago@ime.usp.br>
```

```
Date: Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~/lerolero$ git log
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd (HEAD -> main, origin/main, ori
gin/HEAD)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
```

```
Author: Nelson Lago <lago@ime.usp.br>
```

```
Date: Mon Nov 16 13:53:13 2020 -0300
```

Initial commit

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git pull
```

On branch main

Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean

**lovelace@engine:~/lerolero**\$ git pull

Warning: Permanently added the RSA host key for IP address '140.82.114.3' to the list of known hosts.

Enter passphrase for key '/home/lovelace/.ssh/id\_rsa':

remote: Enumerating objects: 7, done.

remote: Counting objects: 100% (7/7), done.

remote: Compressing objects: 100% (4/4), done.

remote: Total 6 (delta 2), reused 6 (delta 2), pack-reused 0

Unpacking objects: 100% (6/6), 753 bytes | 150.00 KiB/s, done.

From github.com:urrameu/lerolero

3df3233..45caee3 main -> origin/main

Updating 3df3233..45caee3

Fast-forward

lerolero.py | 16 ++++++

1 file changed, 16 insertions(+)

create mode 100644 lerolero.py

**lovelace@engine:~/lerolero**\$

On branch main

Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean

**lovelace@engine:~/lerolero**\$ git pull

Warning: Permanently added the RSA host key for IP address '140.82.114.3' to the list of known hosts.

Enter passphrase for key '/home/lovelace/.ssh/id\_rsa':

remote: Enumerating objects: 7, done.

remote: Counting objects: 100% (7/7), done.

remote: Compressing objects: 100% (4/4), done.

remote: Total 6 (delta 2), reused 6 (delta 2), pack-reused 0

Unpacking objects: 100% (6/6), 753 bytes | 150.00 KiB/s, done.

From github.com:urrameu/lerolero

3df3233..45caee3 main -> origin/main

Updating 3df3233..45caee3

Fast-forward

lerolero.py | 16 ++++++

1 file changed, 16 insertions(+)

create mode 100644 lerolero.py

**lovelace@engine:~/lerolero**\$ git log

```
commit 45caee3b26815b513b0098878fea500e45793c30 (HEAD -> main, origin/main, ori  
gin/HEAD)
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 12:05:19 2020 -0300
```

Implementa esqueleto do programa

```
commit 7e749a8a2c040a91d644f05f895568129b622241
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 12:00:50 2020 -0300
```

Cria arquivo inicial do programa

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 11:40:59 2020 -0300
```

Acrescenta descrição do projeto ao README

```
commit bc7de604e736c540ef06e71f1641b19c238ad3a0
```

```
:  
□
```

- **Com várias pessoas trabalhando ao mesmo tempo...**
  - ▶ Como salvar e compartilhar o trabalho em andamento?
  - ▶ Como discutir suas alterações?
  - ▶ Como testar suas alterações?
- **A solução são *branches* (ramos)**
- **Um *branch* é uma derivação em um ponto do histórico**
  - ▶ Do seu ponto de vista, ninguém está fazendo outras alterações no código
  - ▶ Todos podem trabalhar em paralelo sem “pisar no pé” um do outro
- **Um *branch* para cada conserto ou nova funcionalidade**
- **Quando está pronto (e testado!)**
  - ▶ Mescla alterações recentes do projeto principal ao seu *branch* e **testa novamente**
  - ▶ Mescla o *branch* ao projeto principal

Veja também [www.atlassian.com/git/tutorials/comparing-workflows](http://www.atlassian.com/git/tutorials/comparing-workflows)

- **git branch <NOME>**

- ▶ Cria um novo *branch* (ramo) **NOME** a partir do *branch* atual

- **git switch <NOME>** (antigamente: **git checkout <NOME>**)

- ▶ Faz o *branch* **NOME** ser o *branch* atual

- » Atualiza o *workdir* e a *staging area*

- » O próximo **commit** atualiza o *branch* **NOME**

- **git branch**

- ▶ Lista os *branches*

- » O repositório “nasce” com um *branch* pronto: **main** (antigamente, **master**)

```
lovelace@engine:~/lerolero$ git status
```



```
lovelace@engine:~/lerolero$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~/lerolero$ git status
On branch main
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git branch
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* main
```

```
lovelace@engine:~/lerolero$ git branch ingles
```

```
lovelace@engine:~/lerolero$ git status
On branch main
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* main
```

```
lovelace@engine:~/lerolero$ git branch ingles
```

```
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* main
```

```
lovelace@engine:~/lerolero$ git branch ingles
```

```
lovelace@engine:~/lerolero$ git branch
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* main
```

```
lovelace@engine:~/lerolero$ git branch ingles
```

```
lovelace@engine:~/lerolero$ git branch
```

```
  ingles
```

```
* main
```

```
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* main
```

```
lovelace@engine:~/lerolero$ git branch ingles
```

```
lovelace@engine:~/lerolero$ git branch
```

```
ingles
```

```
* main
```

```
lovelace@engine:~/lerolero$ git switch ingles
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* main
```

```
lovelace@engine:~/lerolero$ git branch ingles
```

```
lovelace@engine:~/lerolero$ git branch
```

```
  ingles
```

```
* main
```

```
lovelace@engine:~/lerolero$ git switch ingles
```

```
Switched to branch 'ingles'
```

```
lovelace@engine:~/lerolero$
```



```
lovelace@engine:~/lerolero$ git status
On branch main
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* main
```

```
lovelace@engine:~/lerolero$ git branch ingles
```

```
lovelace@engine:~/lerolero$ git branch
```

```
  ingles
```

```
* main
```

```
lovelace@engine:~/lerolero$ git switch ingles
```

```
Switched to branch 'ingles'
```

```
lovelace@engine:~/lerolero$ git branch
```

```
lovelace@engine:~/lerolero$ git status
On branch main
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* main
```

```
lovelace@engine:~/lerolero$ git branch ingles
```

```
lovelace@engine:~/lerolero$ git branch
```

```
  ingles
```

```
* main
```

```
lovelace@engine:~/lerolero$ git switch ingles
```

```
Switched to branch 'ingles'
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* ingles
```

```
  main
```

```
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~/lerolero$ git status
On branch main
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* main
```

```
lovelace@engine:~/lerolero$ git branch ingles
```

```
lovelace@engine:~/lerolero$ git branch
```

```
  ingles
```

```
* main
```

```
lovelace@engine:~/lerolero$ git switch ingles
```

```
Switched to branch 'ingles'
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* ingles
```

```
  main
```

```
lovelace@engine:~/lerolero$ vi lerolero.py
```

```
#!/usr/bin/python3
"""Gerador de lero-lero.

Gera frases de efeito sem significado real."""

import random

# Cada frase é composta por três partes aleatórias; aqui,
# listas de possibilidades para cada uma das partes.

parte1 = []
parte2 = []
parte3 = []

# Combina as partes aleatoriamente
print (random.choice(parte1), random.choice(parte2), random.choice(parte3))
~
~
~
~
~
```

```
Gera frases de efeito sem significado real."""
```

```
import random
```

```
# Cada frase é composta por três partes aleatórias; aqui,  
# listas de possibilidades para cada uma das partes.
```

```
parte1 = []  
parte2 = []  
parte3 = []
```

```
lingua = int(input("Escolha a língua: 1 - português; 2 - inglês\n "))
```

```
if lingua == 2:  
    parte1 = []  
    parte2 = []  
    parte3 = []
```

```
# Combina as partes aleatoriamente
```

```
print (random.choice(parte1), random.choice(parte2), random.choice(parte3))
```

```
7 more lines
```

```
14,0-1
```

```
Fim
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* main
```

```
lovelace@engine:~/lerolero$ git branch ingles
```

```
lovelace@engine:~/lerolero$ git branch
```

```
  ingles
```

```
* main
```

```
lovelace@engine:~/lerolero$ git switch ingles
```

```
Switched to branch 'ingles'
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* ingles
```

```
  main
```

```
lovelace@engine:~/lerolero$ vi lerolero.py
```

```
lovelace@engine:~/lerolero$ git add lerolero.py
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is up to date with 'origin/main'.
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* main
```

```
lovelace@engine:~/lerolero$ git branch ingles
```

```
lovelace@engine:~/lerolero$ git branch
```

```
  ingles
```

```
* main
```

```
lovelace@engine:~/lerolero$ git switch ingles
```

```
Switched to branch 'ingles'
```

```
lovelace@engine:~/lerolero$ git branch
```

```
* ingles
```

```
  main
```

```
lovelace@engine:~/lerolero$ vi lerolero.py
```

```
lovelace@engine:~/lerolero$ git add lerolero.py
```

```
lovelace@engine:~/lerolero$ git commit
```

## Cria esqueleto da versão multi-línguas

```
# Please enter the commit message for your changes. Lines starting  
# with '#' will be ignored, and an empty message aborts the commit.
```

```
#
```

```
# On branch ingles
```

```
# Changes to be committed:
```

```
#       modified:   lerolero.py
```

```
#
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```



On branch main

Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean

lovelace@engine:~/lerolero\$ git branch

\* main

lovelace@engine:~/lerolero\$ git branch ingles

lovelace@engine:~/lerolero\$ git branch

ingles

\* main

lovelace@engine:~/lerolero\$ git switch ingles

Switched to branch 'ingles'

lovelace@engine:~/lerolero\$ git branch

\* ingles

main

lovelace@engine:~/lerolero\$ vi lerolero.py

lovelace@engine:~/lerolero\$ git add lerolero.py

lovelace@engine:~/lerolero\$ git commit

[ingles laaa004] Cria esqueleto da versão multi-línguas

1 file changed, 7 insertions(+)

lovelace@engine:~/lerolero\$

turing@machine:~/lerolero\$ vi lerolero.py

```
#!/usr/bin/python3
"""Gerador de lero-lero.

Gera frases de efeito sem significado real."""

import random

# Cada frase é composta por três partes aleatórias; aqui,
# listas de possibilidades para cada uma das partes.

parte1 = []
parte2 = []
parte3 = []

# Combina as partes aleatoriamente
print (random.choice(parte1), random.choice(parte2), random.choice(parte3))
```

```
# listas de possibilidades para cada uma das partes.
```

```
parte1 = [  
    "0 sistema em desenvolvimento",  
    "0 novo protocolo de comunicação",  
    "0 algoritmo otimizado"  
]
```

```
parte2 = [  
    "possui excelente desempenho",  
    "oferece garantias de precisão acima da média",  
    "preenche uma lacuna significativa"  
]
```

```
parte3 = [  
    "nas aplicações a que se destina",  
    "em relação às opções disponíveis no mercado",  
    "e provê ampla vantagem competitiva a seus usuários"  
]
```

```
turing@machine:~/lerolero$ vi lerolero.py
```

```
turing@machine:~/lerolero$ git add lerolero.py
```

```
turing@machine:~/lerolero$ vi lerolero.py
turing@machine:~/lerolero$ git add lerolero.py
turing@machine:~/lerolero$ git commit
```

Inserir os trechos das frases

```
# Please enter the commit message for your changes. Lines starting  
# with '#' will be ignored, and an empty message aborts the commit.
```

```
#
```

```
# On branch main
```

```
# Your branch is up to date with 'origin/main'.
```

```
#
```

```
# Changes to be committed:
```

```
#       modified:   lerolero.py
```

```
#
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
turing@machine:~/lerolero$ vi lerolero.py
turing@machine:~/lerolero$ git add lerolero.py
turing@machine:~/lerolero$ git commit
[main a46a562] Insere os trechos das frases
1 file changed, 17 insertions(+), 3 deletions(-)
turing@machine:~/lerolero$
```



```
turing@machine:~/lerolero$ vi lerolero.py
turing@machine:~/lerolero$ git add lerolero.py
turing@machine:~/lerolero$ git commit
[main a46a562] Insere os trechos das frases
1 file changed, 17 insertions(+), 3 deletions(-)
turing@machine:~/lerolero$ git log
```

```
commit a46a56226109f8793061d81736fa2a497907cdd4 (HEAD -> main)
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 14:02:38 2020 -0300
```

Insere os trechos das frases

```
commit 45caee3b26815b513b0098878fea500e45793c30 (origin/main, origin/HEAD)
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 12:05:19 2020 -0300
```

Implementa esqueleto do programa

```
commit 7e749a8a2c040a91d644f05f895568129b622241
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 12:00:50 2020 -0300
```

Cria arquivo inicial do programa

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
:  
□
```

```
commit a46a56226109f8793061d81736fa2a497907cdd4 (HEAD -> main)
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 14:02:38 2020 -0300
```

Insere os trechos das frases

```
commit 45caee3b26815b513b0098878fea500e45793c30 (origin/main, origin/HEAD)
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 12:05:19 2020 -0300
```

Implementa esqueleto do programa

```
commit 7e749a8a2c040a91d644f05f895568129b622241
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 12:00:50 2020 -0300
```

Cria arquivo inicial do programa

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
turing@machine:~/lerolero$ git push
```

Author: Alan Turing <turing@machine.com>

Date: Wed Nov 18 12:00:50 2020 -0300

Cria arquivo inicial do programa

commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd

Author: Ada Lovelace <ada@analyticalengine.com>

turing@machine:~/lerolero\$ git push

Warning: Permanently added the RSA host key for IP address '140.82.112.4' to the list of known hosts.

Enter passphrase for key '/home/turing/.ssh/id\_rsa':

Enumerating objects: 5, done.

Counting objects: 100% (5/5), done.

Delta compression using up to 8 threads

Compressing objects: 100% (3/3), done.

Writing objects: 100% (3/3), 693 bytes | 693.00 KiB/s, done.

Total 3 (delta 1), reused 0 (delta 0), pack-reused 0

remote: Resolving deltas: 100% (1/1), completed with 1 local object.

To github.com:urrameu/lerolero.git

45caee3..a46a562 main -> main

turing@machine:~/lerolero\$

- **git merge <NOME>**

- ▶ Mescla o *branch* **NOME** na área de trabalho
- ▶ Faz **commit** do resultado no *branch* atual

```
lovelace@engine:~/lerolero$ git log
```

```
commit 1aaa00495786bd75d33b4510747da0b2ebd413ac (HEAD -> ingles)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 13:57:47 2020 -0300
```

Cria esqueleto da versão multi-línguas

```
commit 45caee3b26815b513b0098878fea500e45793c30 (origin/main, origin/HEAD, main)
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 12:05:19 2020 -0300
```

Implementa esqueleto do programa

```
commit 7e749a8a2c040a91d644f05f895568129b622241
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 12:00:50 2020 -0300
```

Cria arquivo inicial do programa

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd
```

```
:  
█
```

```
commit 1aaa00495786bd75d33b4510747da0b2ebd413ac (HEAD -> ingles)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 13:57:47 2020 -0300
```

Cria esqueleto da versão multi-línguas

```
commit 45caee3b26815b513b0098878fea500e45793c30 (origin/main, origin/HEAD, main)
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 12:05:19 2020 -0300
```

Implementa esqueleto do programa

```
commit 7e749a8a2c040a91d644f05f895568129b622241
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 12:00:50 2020 -0300
```

Cria arquivo inicial do programa

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd
```

```
lovelace@engine:~/lerolero$ git switch main
```



Cria esqueleto da versão multi-línguas

```
commit 45caee3b26815b513b0098878fea500e45793c30 (origin/main, origin/HEAD, main)
Author: Alan Turing <turing@machine.com>
Date: Wed Nov 18 12:05:19 2020 -0300
```

Implementa esqueleto do programa

```
commit 7e749a8a2c040a91d644f05f895568129b622241
Author: Alan Turing <turing@machine.com>
Date: Wed Nov 18 12:00:50 2020 -0300
```

Cria arquivo inicial do programa

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd
lovelace@engine:~/lerolero$ git switch main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
lovelace@engine:~/lerolero$
```

Cria esqueleto da versão multi-línguas

```
commit 45caee3b26815b513b0098878fea500e45793c30 (origin/main, origin/HEAD, main)
Author: Alan Turing <turing@machine.com>
Date: Wed Nov 18 12:05:19 2020 -0300
```

Implementa esqueleto do programa

```
commit 7e749a8a2c040a91d644f05f895568129b622241
Author: Alan Turing <turing@machine.com>
Date: Wed Nov 18 12:00:50 2020 -0300
```

Cria arquivo inicial do programa

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd
lovelace@engine:~/lerolero$ git switch main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
lovelace@engine:~/lerolero$ git pull
```

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd
```

```
lovelace@engine:~/lerolero$ git switch main
```

```
Switched to branch 'main'
```

```
Your branch is up to date with 'origin/main'.
```

```
lovelace@engine:~/lerolero$ git pull
```

```
Warning: Permanently added the RSA host key for IP address '140.82.113.3' to the list of known hosts.
```

```
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
```

```
remote: Enumerating objects: 5, done.
```

```
remote: Counting objects: 100% (5/5), done.
```

```
remote: Compressing objects: 100% (2/2), done.
```

```
remote: Total 3 (delta 1), reused 3 (delta 1), pack-reused 0
```

```
Unpacking objects: 100% (3/3), 673 bytes | 336.00 KiB/s, done.
```

```
From github.com:urrameu/lerolero
```

```
45caee3..a46a562 main -> origin/main
```

```
Updating 45caee3..a46a562
```

```
Fast-forward
```

```
lerolero.py | 20 ++++++++-----
```

```
1 file changed, 17 insertions(+), 3 deletions(-)
```

```
lovelace@engine:~/lerolero$
```

```
commit 3df3233c8cc6a81f0499ff1768d775ac9682f1bd
```

```
lovelace@engine:~/lerolero$ git switch main
```

```
Switched to branch 'main'
```

```
Your branch is up to date with 'origin/main'.
```

```
lovelace@engine:~/lerolero$ git pull
```

```
Warning: Permanently added the RSA host key for IP address '140.82.113.3' to the list of known hosts.
```

```
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
```

```
remote: Enumerating objects: 5, done.
```

```
remote: Counting objects: 100% (5/5), done.
```

```
remote: Compressing objects: 100% (2/2), done.
```

```
remote: Total 3 (delta 1), reused 3 (delta 1), pack-reused 0
```

```
Unpacking objects: 100% (3/3), 673 bytes | 336.00 KiB/s, done.
```

```
From github.com:urrameu/lerolero
```

```
45caee3..a46a562 main -> origin/main
```

```
Updating 45caee3..a46a562
```

```
Fast-forward
```

```
lerolero.py | 20 ++++++++-----
```

```
1 file changed, 17 insertions(+), 3 deletions(-)
```

```
lovelace@engine:~/lerolero$ git merge ingles
```

Merge branch 'ingles' into main

# Please enter a commit message to explain why this merge is necessary,  
# especially if it merges an updated upstream into a topic branch.

#

# Lines starting with '#' will be ignored, and an empty message aborts  
# the commit.

~

~

~

~

~

~

~

~

~

~

~

~

~

~

~

~

"~/lerolero/.git/MERGE\_MSG" 6L, 258C

1,1

Tudo

```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.3' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 1), reused 3 (delta 1), pack-reused 0
Unpacking objects: 100% (3/3), 673 bytes | 336.00 KiB/s, done.
From github.com:urrameu/lerolero
   45caee3..a46a562  main      -> origin/main
Updating 45caee3..a46a562
Fast-forward
 lerolero.py | 20 ++++++++-----
 1 file changed, 17 insertions(+), 3 deletions(-)
lovelace@engine:~/lerolero$ git merge ingles
Auto-merging lerolero.py
Merge made by the 'recursive' strategy.
 lerolero.py | 7 ++++++
 1 file changed, 7 insertions(+)
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.3' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 1), reused 3 (delta 1), pack-reused 0
Unpacking objects: 100% (3/3), 673 bytes | 336.00 KiB/s, done.
From github.com:urrameu/lerolero
   45caee3..a46a562  main      -> origin/main
Updating 45caee3..a46a562
Fast-forward
 lerolero.py | 20 ++++++++-----
 1 file changed, 17 insertions(+), 3 deletions(-)
lovelace@engine:~/lerolero$ git merge ingles
Auto-merging lerolero.py
Merge made by the 'recursive' strategy.
 lerolero.py | 7 ++++++
 1 file changed, 7 insertions(+)
lovelace@engine:~/lerolero$ git log
```

```
commit b881c34ec250751bfff927235b3634bb8d913a9cb (HEAD -> main)
```

```
Merge: a46a562 laaa004
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 14:07:57 2020 -0300
```

Merge branch 'ingles' into main

```
commit a46a56226109f8793061d81736fa2a497907cdd4 (origin/main, origin/HEAD)
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 14:02:38 2020 -0300
```

Insere os trechos das frases

```
commit laaa00495786bd75d33b4510747da0b2ebd413ac (ingles)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 13:57:47 2020 -0300
```

Cria esqueleto da versão multi-línguas

```
commit 45caee3b26815b513b0098878fea500e45793c30
```

```
:
```



```
commit b881c34ec250751bfff927235b3634bb8d913a9cb (HEAD -> main)
```

```
Merge: a46a562 1aaa004
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 14:07:57 2020 -0300
```

```
Merge branch 'ingles' into main
```

```
commit a46a56226109f8793061d81736fa2a497907cdd4 (origin/main, origin/HEAD)
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 14:02:38 2020 -0300
```

```
Inserere os trechos das frases
```

```
commit 1aaa00495786bd75d33b4510747da0b2ebd413ac (ingles)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 13:57:47 2020 -0300
```

```
Cria esqueleto da versão multi-línguas
```

```
commit 45caee3b26815b513b0098878fea500e45793c30
```

```
:  
□
```

```
commit b881c34ec250751bff927235b3634bb8d913a9cb (HEAD -> main)
```

```
Merge: a46a562 laaa004
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 14:07:57 2020 -0300
```

Merge branch 'ingles' into main

```
commit a46a56226109f8793061d81736fa2a497907cdd4 (origin/main, origin/HEAD)
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 14:02:38 2020 -0300
```

Insere os trechos das frases

```
commit laaa00495786bd75d33b4510747da0b2ebd413ac (ingles)
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 13:57:47 2020 -0300
```

Cria esqueleto da versão multi-línguas

```
commit 45caee3b26815b513b0098878fea500e45793c30
```

```
lovelace@engine:~/lerolero$ git status
```

```
commit a46a56226109f8793061d81736fa2a497907cdd4 (origin/main, origin/HEAD)
Author: Alan Turing <turing@machine.com>
Date: Wed Nov 18 14:02:38 2020 -0300
```

Insere os trechos das frases

```
commit 1aaa00495786bd75d33b4510747da0b2ebd413ac (ingles)
Author: Ada Lovelace <ada@analyticalengine.com>
Date: Wed Nov 18 13:57:47 2020 -0300
```

Cria esqueleto da versão multi-línguas

```
commit 45caee3b26815b513b0098878fea500e45793c30
lovelace@engine:~/lerolero$ git status
On branch main
Your branch is ahead of 'origin/main' by 2 commits.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
lovelace@engine:~/lerolero$
```

```
commit a46a56226109f8793061d81736fa2a497907cdd4 (origin/main, origin/HEAD)
Author: Alan Turing <turing@machine.com>
Date: Wed Nov 18 14:02:38 2020 -0300
```

Insere os trechos das frases

```
commit laaa00495786bd75d33b4510747da0b2ebd413ac (ingles)
Author: Ada Lovelace <ada@analyticalengine.com>
Date: Wed Nov 18 13:57:47 2020 -0300
```

Cria esqueleto da versão multi-línguas

```
commit 45caee3b26815b513b0098878fea500e45793c30
lovelace@engine:~/lerolero$ git status
On branch main
Your branch is ahead of 'origin/main' by 2 commits.
(use "git push" to publish your local commits)

nothing to commit, working tree clean
lovelace@engine:~/lerolero$ git push
```

Cria esqueleto da versão multi-línguas

```
commit 45caee3b26815b513b0098878fea500e45793c30
```

```
lovelace@engine:~/lerolero$ git status
```

```
On branch main
```

```
Your branch is ahead of 'origin/main' by 2 commits.
```

```
(use "git push" to publish your local commits)
```

```
nothing to commit, working tree clean
```

```
lovelace@engine:~/lerolero$ git push
```

```
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
```

```
Enumerating objects: 10, done.
```

```
Counting objects: 100% (10/10), done.
```

```
Delta compression using up to 8 threads
```

```
Compressing objects: 100% (6/6), done.
```

```
Writing objects: 100% (6/6), 715 bytes | 715.00 KiB/s, done.
```

```
Total 6 (delta 4), reused 0 (delta 0), pack-reused 0
```

```
remote: Resolving deltas: 100% (4/4), completed with 2 local objects.
```

```
To github.com:urrameu/lerolero.git
```

```
a46a562..b881c34 main -> main
```

```
lovelace@engine:~/lerolero$
```

# Branches e merges

- **git merge <NOME>**

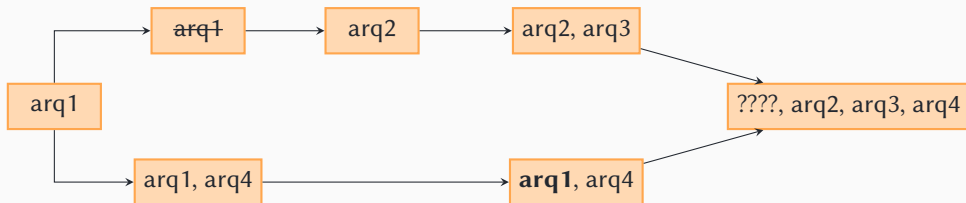
- ▶ Mescla o *branch* **NOME** na área de trabalho
- ▶ Faz **commit** do resultado no *branch* atual

# Branches e merges

- **git merge <NOME>**

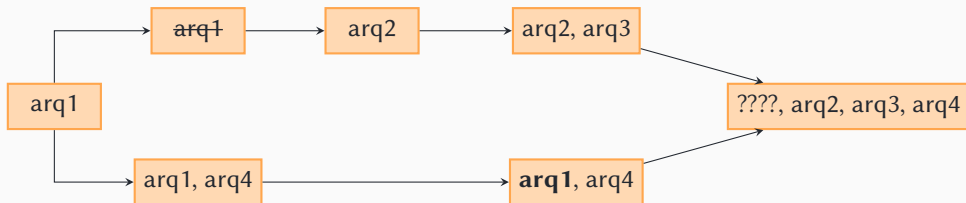
- ▶ Mescla o *branch* **NOME** na área de trabalho
- ▶ Faz **commit** do resultado no *branch* atual

- E se dois *branches* fizerem modificações incompatíveis?



# Branches e merges

- **git merge <NOME>**
  - ▶ Mescla o *branch* **NOME** na área de trabalho
  - ▶ Faz **commit** do resultado no *branch* atual
- E se dois *branches* fizerem modificações incompatíveis?



- git vai indicar que houve um *conflito*

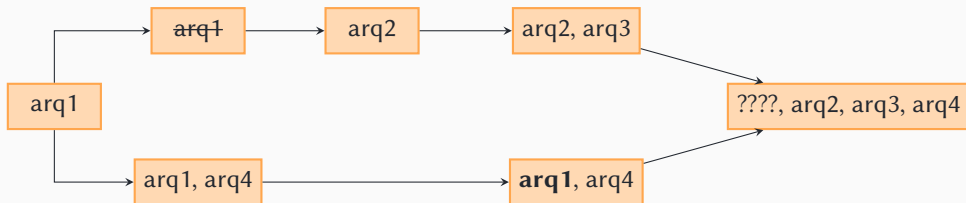


# Branches e merges

- **git merge <NOME>**

- ▶ Mescla o *branch* **NOME** na área de trabalho
- ▶ Faz **commit** do resultado no *branch* atual

- E se dois *branches* fizerem modificações incompatíveis?



- **git** vai indicar que houve um *conflito*

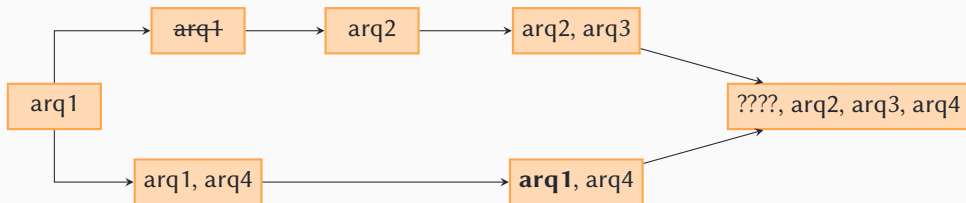
- ▶ **git** mescla o que é possível

# Branches e merges

- **git merge <NOME>**

- ▶ Mescla o *branch* **NOME** na área de trabalho
- ▶ Faz **commit** do resultado no *branch* atual

- E se dois *branches* fizerem modificações incompatíveis?



- **git** vai indicar que houve um *conflito*

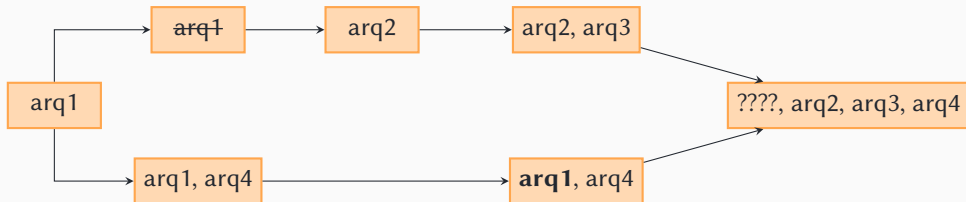
- ▶ **git** mescla o que é possível
- ▶ O usuário soluciona manualmente os conflitos restantes

# Branches e merges

- **git merge <NOME>**

- ▶ Mescla o *branch* **NOME** na área de trabalho
- ▶ Faz **commit** do resultado no *branch* atual

- E se dois *branches* fizerem modificações incompatíveis?



- **git** vai indicar que houve um *conflito*

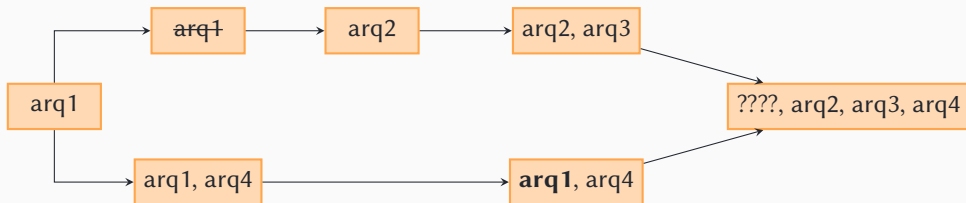
- ▶ git mescla o que é possível
- ▶ O usuário soluciona manualmente os conflitos restantes
- ▶ **git add** (informa que o conflito foi resolvido)

# Branches e merges

- **git merge <NOME>**

- ▶ Mescla o *branch* **NOME** na área de trabalho
- ▶ Faz **commit** do resultado no *branch* atual

- E se dois *branches* fizerem modificações incompatíveis?



- **git** vai indicar que houve um *conflito*

- ▶ **git** mescla o que é possível
- ▶ O usuário soluciona manualmente os conflitos restantes
- ▶ **git add** (informa que o conflito foi resolvido)
- ▶ **git merge --continue** / **git merge --abort**

turing@machine:~/lerolero\$ git pull

```
turing@machine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.114.3' to th
e list of known hosts.
Enter passphrase for key '/home/turing/.ssh/id_rsa':
remote: Enumerating objects: 10, done.
remote: Counting objects: 100% (10/10), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 6 (delta 4), reused 6 (delta 4), pack-reused 0
Unpacking objects: 100% (6/6), 695 bytes | 173.00 KiB/s, done.
From github.com:urrameu/lerolero
   a46a562..b881c34  main      -> origin/main
Updating a46a562..b881c34
Fast-forward
 lerolero.py | 7 +++++++
 1 file changed, 7 insertions(+)
turing@machine:~/lerolero$
```

```
turing@machine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.114.3' to the list of known hosts.
Enter passphrase for key '/home/turing/.ssh/id_rsa':
remote: Enumerating objects: 10, done.
remote: Counting objects: 100% (10/10), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 6 (delta 4), reused 6 (delta 4), pack-reused 0
Unpacking objects: 100% (6/6), 695 bytes | 173.00 KiB/s, done.
From github.com:urrameu/lerolero
   a46a562..b881c34  main      -> origin/main
Updating a46a562..b881c34
Fast-forward
 lerolero.py | 7 +++++++
 1 file changed, 7 insertions(+)
turing@machine:~/lerolero$ git branch estilo
```

```
turing@machine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.114.3' to th
e list of known hosts.
Enter passphrase for key '/home/turing/.ssh/id_rsa':
remote: Enumerating objects: 10, done.
remote: Counting objects: 100% (10/10), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 6 (delta 4), reused 6 (delta 4), pack-reused 0
Unpacking objects: 100% (6/6), 695 bytes | 173.00 KiB/s, done.
From github.com:urrameu/lerolero
   a46a562..b881c34  main      -> origin/main
Updating a46a562..b881c34
Fast-forward
 lerolero.py | 7 +++++++
 1 file changed, 7 insertions(+)
turing@machine:~/lerolero$ git branch estilo
turing@machine:~/lerolero$ git switch estilo
```



```
turing@machine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.114.3' to the list of known hosts.
Enter passphrase for key '/home/turing/.ssh/id_rsa':
remote: Enumerating objects: 10, done.
remote: Counting objects: 100% (10/10), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 6 (delta 4), reused 6 (delta 4), pack-reused 0
Unpacking objects: 100% (6/6), 695 bytes | 173.00 KiB/s, done.
From github.com:urrameu/lerolero
   a46a562..b881c34  main      -> origin/main
Updating a46a562..b881c34
Fast-forward
 lerolero.py | 7 +++++++
 1 file changed, 7 insertions(+)
turing@machine:~/lerolero$ git branch estilo
turing@machine:~/lerolero$ git switch estilo
Switched to branch 'estilo'
turing@machine:~/lerolero$
```

```
turing@machine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.114.3' to the
list of known hosts.
Enter passphrase for key '/home/turing/.ssh/id_rsa':
remote: Enumerating objects: 10, done.
remote: Counting objects: 100% (10/10), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 6 (delta 4), reused 6 (delta 4), pack-reused 0
Unpacking objects: 100% (6/6), 695 bytes | 173.00 KiB/s, done.
From github.com:urrameu/lerolero
   a46a562..b881c34  main      -> origin/main
Updating a46a562..b881c34
Fast-forward
 lerolero.py | 7 +++++++
 1 file changed, 7 insertions(+)
turing@machine:~/lerolero$ git branch estilo
turing@machine:~/lerolero$ git switch estilo
Switched to branch 'estilo'
turing@machine:~/lerolero$ vi lerolero.py
```

```
# Cada frase é composta por três partes aleatórias; aqui,  
# listas de possibilidades para cada uma das partes.
```

```
parte1 = [  
    "0 sistema em desenvolvimento",  
    "0 novo protocolo de comunicação",  
    "0 algoritmo otimizado"  
]
```

```
parte2 = [  
    "possui excelente desempenho",  
    "oferece garantias de precisão acima da média",  
    "preenche uma lacuna significativa"  
]
```

```
parte3 = [  
    "nas aplicações a que se destina",  
    "em relação às opções disponíveis no mercado",  
    "e provê ampla vantagem competitiva a seus usuários"  
]
```

```
"lerolero.py" 37L, 918C
```

```
22,0-1
```

```
41%
```

```
# Cada frase é composta por três partes aleatórias; aqui,  
# listas de possibilidades para cada uma das partes.
```

```
parte1 = [  
    "0 sistema em desenvolvimento",  
    "0 novo protocolo de comunicação",  
    "0 algoritmo de otimização"  
]
```

```
parte2 = [  
    "possui excelente desempenho",  
    "oferece garantias de precisão acima da média",  
    "preenche uma lacuna significativa"  
]
```

```
parte3 = [  
    "nas aplicações a que se destina",  
    "em relação às opções disponíveis no mercado",  
    "e provê ampla vantagem competitiva a seus usuários"  
]
```

```
turing@machine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.114.3' to the list of known hosts.
Enter passphrase for key '/home/turing/.ssh/id_rsa':
remote: Enumerating objects: 10, done.
remote: Counting objects: 100% (10/10), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 6 (delta 4), reused 6 (delta 4), pack-reused 0
Unpacking objects: 100% (6/6), 695 bytes | 173.00 KiB/s, done.
From github.com:urrameu/lerolero
   a46a562..b881c34  main      -> origin/main
Updating a46a562..b881c34
Fast-forward
 lerolero.py | 7 +++++++
 1 file changed, 7 insertions(+)
turing@machine:~/lerolero$ git branch estilo
turing@machine:~/lerolero$ git switch estilo
Switched to branch 'estilo'
turing@machine:~/lerolero$ vi lerolero.py
turing@machine:~/lerolero$ git add lerolero.py
```

```
turing@machine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.114.3' to the list of known hosts.
Enter passphrase for key '/home/turing/.ssh/id_rsa':
remote: Enumerating objects: 10, done.
remote: Counting objects: 100% (10/10), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 6 (delta 4), reused 6 (delta 4), pack-reused 0
Unpacking objects: 100% (6/6), 695 bytes | 173.00 KiB/s, done.
From github.com:urrameu/lerolero
   a46a562..b881c34  main      -> origin/main
Updating a46a562..b881c34
Fast-forward
 lerolero.py | 7 +++++++
 1 file changed, 7 insertions(+)
turing@machine:~/lerolero$ git branch estilo
turing@machine:~/lerolero$ git switch estilo
Switched to branch 'estilo'
turing@machine:~/lerolero$ vi lerolero.py
turing@machine:~/lerolero$ git add lerolero.py
turing@machine:~/lerolero$ git commit
```

Melhora um dos textos

```
# Please enter the commit message for your changes. Lines starting  
# with '#' will be ignored, and an empty message aborts the commit.
```

```
#
```

```
# On branch estilo
```

```
# Changes to be committed:
```

```
#       modified:   lerolero.py
```

```
#
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
Enter passphrase for key '/home/turing/.ssh/id_rsa':
remote: Enumerating objects: 10, done.
remote: Counting objects: 100% (10/10), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 6 (delta 4), reused 6 (delta 4), pack-reused 0
Unpacking objects: 100% (6/6), 695 bytes | 173.00 KiB/s, done.
From github.com:urrameu/lerolero
   a46a562..b881c34  main      -> origin/main
Updating a46a562..b881c34
Fast-forward
 lerolero.py | 7 +++++++
 1 file changed, 7 insertions(+)
turing@machine:~/lerolero$ git branch estilo
turing@machine:~/lerolero$ git switch estilo
Switched to branch 'estilo'
turing@machine:~/lerolero$ vi lerolero.py
turing@machine:~/lerolero$ git add lerolero.py
turing@machine:~/lerolero$ git commit
[estilo b29477a] Melhora um dos textos
 1 file changed, 1 insertion(+), 1 deletion(-)
turing@machine:~/lerolero$
```



```
lovelace@engine:~/lerolero$ git pull
```

```
lovelace@engine:~/lerolero$ git pull
```

```
Warning: Permanently added the RSA host key for IP address '140.82.113.4' to the list of known hosts.
```

```
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
```

```
Already up to date.
```

```
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.4' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.
lovelace@engine:~/lerolero$ git branch revisao
```

```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.4' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.
lovelace@engine:~/lerolero$ git branch revisao
lovelace@engine:~/lerolero$ git switch revisao
```

```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.4' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.
lovelace@engine:~/lerolero$ git branch revisao
lovelace@engine:~/lerolero$ git switch revisao
Switched to branch 'revisao'
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.4' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.
lovelace@engine:~/lerolero$ git branch revisao
lovelace@engine:~/lerolero$ git switch revisao
Switched to branch 'revisao'
lovelace@engine:~/lerolero$ vi lerolero.py
```

```
#!/usr/bin/python3
"""Gerador de lero-lero.

Gera frases de efeito sem significado real."""

import random

# Cada frase é composta por três partes aleatórias; aqui,
# listas de possibilidades para cada uma das partes.

parte1 = [
    "O sistema em desenvolvimento",
    "O novo protocolo de comunicação",
    "O algoritmo otimizado"
]

parte2 = [
    "possui excelente desempenho",
    "oferece garantias de precisão acima da média",
    "preenche uma lacuna significativa"
```

"lerolero.py" 37L, 918C

14,1

Topo

```
#!/usr/bin/python3
"""Gerador de lero-lero.

Gera frases de efeito sem significado real."""

import random

# Cada frase é composta por três partes aleatórias; aqui,
# listas de possibilidades para cada uma das partes.

parte1 = [
    "O sistema em desenvolvimento",
    "O novo protocolo de comunicação",
    "O algoritmo foi otimizado e"
]

parte2 = [
    "possui excelente desempenho",
    "oferece garantias de precisão acima da média",
    "preenche uma lacuna significativa"
```



```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.4' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.
lovelace@engine:~/lerolero$ git branch revisao
lovelace@engine:~/lerolero$ git switch revisao
Switched to branch 'revisao'
lovelace@engine:~/lerolero$ vi lerolero.py
lovelace@engine:~/lerolero$ git add lerolero.py
```

```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.4' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.
lovelace@engine:~/lerolero$ git branch revisao
lovelace@engine:~/lerolero$ git switch revisao
Switched to branch 'revisao'
lovelace@engine:~/lerolero$ vi lerolero.py
lovelace@engine:~/lerolero$ git add lerolero.py
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.4' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.
lovelace@engine:~/lerolero$ git branch revisao
lovelace@engine:~/lerolero$ git switch revisao
Switched to branch 'revisao'
lovelace@engine:~/lerolero$ vi lerolero.py
lovelace@engine:~/lerolero$ git add lerolero.py
lovelace@engine:~/lerolero$ git commit
```

Modifica frase sobre otimizaçã

```
# Please enter the commit message for your changes. Lines starting  
# with '#' will be ignored, and an empty message aborts the commit.
```

```
#
```

```
# On branch revisao
```

```
# Changes to be committed:
```

```
#       modified:   lerolero.py
```

```
#
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```

```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.4' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.
lovelace@engine:~/lerolero$ git branch revisao
lovelace@engine:~/lerolero$ git switch revisao
Switched to branch 'revisao'
lovelace@engine:~/lerolero$ vi lerolero.py
lovelace@engine:~/lerolero$ git add lerolero.py
lovelace@engine:~/lerolero$ git commit
[revisao b4a4468] Modifica frase sobre otimização
1 file changed, 1 insertion(+), 1 deletion(-)
lovelace@engine:~/lerolero$
```

```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.4' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.
lovelace@engine:~/lerolero$ git branch revisao
lovelace@engine:~/lerolero$ git switch revisao
Switched to branch 'revisao'
lovelace@engine:~/lerolero$ vi lerolero.py
lovelace@engine:~/lerolero$ git add lerolero.py
lovelace@engine:~/lerolero$ git commit
[revisao b4a4468] Modifica frase sobre otimização
1 file changed, 1 insertion(+), 1 deletion(-)
lovelace@engine:~/lerolero$ git switch main
```

```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.4' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.
lovelace@engine:~/lerolero$ git branch revisao
lovelace@engine:~/lerolero$ git switch revisao
Switched to branch 'revisao'
lovelace@engine:~/lerolero$ vi lerolero.py
lovelace@engine:~/lerolero$ git add lerolero.py
lovelace@engine:~/lerolero$ git commit
[revisao b4a4468] Modifica frase sobre otimização
1 file changed, 1 insertion(+), 1 deletion(-)
lovelace@engine:~/lerolero$ git switch main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
lovelace@engine:~/lerolero$ git pull
```

```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.4' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.

lovelace@engine:~/lerolero$ git branch revisao
lovelace@engine:~/lerolero$ git switch revisao
Switched to branch 'revisao'

lovelace@engine:~/lerolero$ vi lerolero.py
lovelace@engine:~/lerolero$ git add lerolero.py
lovelace@engine:~/lerolero$ git commit
[revisao b4a4468] Modifica frase sobre otimização
 1 file changed, 1 insertion(+), 1 deletion(-)

lovelace@engine:~/lerolero$ git switch main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

lovelace@engine:~/lerolero$ git pull
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.

lovelace@engine:~/lerolero$
```



```
lovelace@engine:~/lerolero$ git pull
Warning: Permanently added the RSA host key for IP address '140.82.113.4' to the list of known hosts.
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.

lovelace@engine:~/lerolero$ git branch revisao
lovelace@engine:~/lerolero$ git switch revisao
Switched to branch 'revisao'

lovelace@engine:~/lerolero$ vi lerolero.py
lovelace@engine:~/lerolero$ git add lerolero.py
lovelace@engine:~/lerolero$ git commit
[revisao b4a4468] Modifica frase sobre otimização
1 file changed, 1 insertion(+), 1 deletion(-)

lovelace@engine:~/lerolero$ git switch main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

lovelace@engine:~/lerolero$ git pull
Enter passphrase for key '/home/lovelace/.ssh/id_rsa':
Already up to date.

lovelace@engine:~/lerolero$ git merge revisao
```

Already up to date.

**lovelace@engine:**~/lerolero\$ git branch revisao

**lovelace@engine:**~/lerolero\$ git switch revisao

Switched to branch 'revisao'

**lovelace@engine:**~/lerolero\$ vi lerolero.py

**lovelace@engine:**~/lerolero\$ git add lerolero.py

**lovelace@engine:**~/lerolero\$ git commit

[revisao b4a4468] Modifica frase sobre otimização

1 file changed, 1 insertion(+), 1 deletion(-)

**lovelace@engine:**~/lerolero\$ git switch main

Switched to branch 'main'

Your branch is up to date with 'origin/main'.

**lovelace@engine:**~/lerolero\$ git pull

Enter passphrase for key '/home/lovelace/.ssh/id\_rsa':

Already up to date.

**lovelace@engine:**~/lerolero\$ git merge revisao

Updating b881c34..b4a4468

Fast-forward

lerolero.py | 2 +-  
1 file changed, 1 insertion(+), 1 deletion(-)

**lovelace@engine:**~/lerolero\$

Already up to date.

**lovelace@engine**:~/lerolero\$ git branch revisao

**lovelace@engine**:~/lerolero\$ git switch revisao

Switched to branch 'revisao'

**lovelace@engine**:~/lerolero\$ vi lerolero.py

**lovelace@engine**:~/lerolero\$ git add lerolero.py

**lovelace@engine**:~/lerolero\$ git commit

[revisao b4a4468] Modifica frase sobre otimização

1 file changed, 1 insertion(+), 1 deletion(-)

**lovelace@engine**:~/lerolero\$ git switch main

Switched to branch 'main'

Your branch is up to date with 'origin/main'.

**lovelace@engine**:~/lerolero\$ git pull

Enter passphrase for key '/home/lovelace/.ssh/id\_rsa':

Already up to date.

**lovelace@engine**:~/lerolero\$ git merge revisao

Updating b881c34..b4a4468

Fast-forward

lerolero.py | 2 +-  
1 file changed, 1 insertion(+), 1 deletion(-)

**lovelace@engine**:~/lerolero\$ git push

Your branch is up to date with 'origin/main'.

**lovelace@engine**:~/lerolero\$ git pull

Enter passphrase for key '/home/lovelace/.ssh/id\_rsa':

Already up to date.

**lovelace@engine**:~/lerolero\$ git merge revisao

Updating b881c34..b4a4468

Fast-forward

lerolero.py | 2 +-  
1 file changed, 1 insertion(+), 1 deletion(-)

**lovelace@engine**:~/lerolero\$ git push

Enter passphrase for key '/home/lovelace/.ssh/id\_rsa':

Enumerating objects: 5, done.

Counting objects: 100% (5/5), done.

Delta compression using up to 8 threads

Compressing objects: 100% (3/3), done.

Writing objects: 100% (3/3), 329 bytes | 329.00 KiB/s, done.

Total 3 (delta 2), reused 0 (delta 0), pack-reused 0

remote: Resolving deltas: 100% (2/2), completed with 2 local objects.

To github.com:urrameu/lerolero.git

b881c34..b4a4468 main -> main

**lovelace@engine**:~/lerolero\$

```
turing@machine:~/lerolero$ git status
```

```
turing@machine:~/lerolero$ git status
On branch estilo
nothing to commit, working tree clean
turing@machine:~/lerolero$
```

```
turing@machine:~/lerolero$ git status
```

```
On branch estilo
```

```
nothing to commit, working tree clean
```

```
turing@machine:~/lerolero$ git switch main
```

```
turing@machine:~/lerolero$ git status
```

```
On branch estilo
```

```
nothing to commit, working tree clean
```

```
turing@machine:~/lerolero$ git switch main
```

```
Switched to branch 'main'
```

```
Your branch is up to date with 'origin/main'.
```

```
turing@machine:~/lerolero$
```



```
turing@machine:~/lerolero$ git status
```

```
On branch estilo
```

```
nothing to commit, working tree clean
```

```
turing@machine:~/lerolero$ git switch main
```

```
Switched to branch 'main'
```

```
Your branch is up to date with 'origin/main'.
```

```
turing@machine:~/lerolero$ git pull
```

```
turing@machine:~/lerolero$ git status
On branch estilo
nothing to commit, working tree clean
turing@machine:~/lerolero$ git switch main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
turing@machine:~/lerolero$ git pull
Enter passphrase for key '/home/turing/.ssh/id_rsa':
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (1/1), done.
remote: Total 3 (delta 2), reused 3 (delta 2), pack-reused 0
Unpacking objects: 100% (3/3), 309 bytes | 154.00 KiB/s, done.
From github.com:urrameu/lerolero
   b881c34..b4a4468  main       -> origin/main
Updating b881c34..b4a4468
Fast-forward
 lerolero.py | 2 +-
 1 file changed, 1 insertion(+), 1 deletion(-)
turing@machine:~/lerolero$
```

```
turing@machine:~/lerolero$ git status
On branch estilo
nothing to commit, working tree clean
turing@machine:~/lerolero$ git switch main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
turing@machine:~/lerolero$ git pull
Enter passphrase for key '/home/turing/.ssh/id_rsa':
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (1/1), done.
remote: Total 3 (delta 2), reused 3 (delta 2), pack-reused 0
Unpacking objects: 100% (3/3), 309 bytes | 154.00 KiB/s, done.
From github.com:urrameu/lerolero
   b881c34..b4a4468  main       -> origin/main
Updating b881c34..b4a4468
Fast-forward
 lerolero.py | 2 +-
 1 file changed, 1 insertion(+), 1 deletion(-)
turing@machine:~/lerolero$ git switch estilo
```

```
On branch estilo
nothing to commit, working tree clean
turing@machine:~/lerolero$ git switch main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
turing@machine:~/lerolero$ git pull
Enter passphrase for key '/home/turing/.ssh/id_rsa':
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (1/1), done.
remote: Total 3 (delta 2), reused 3 (delta 2), pack-reused 0
Unpacking objects: 100% (3/3), 309 bytes | 154.00 KiB/s, done.
From github.com:urrameu/lerolero
   b881c34..b4a4468  main      -> origin/main
Updating b881c34..b4a4468
Fast-forward
 lerolero.py | 2 +-
 1 file changed, 1 insertion(+), 1 deletion(-)
turing@machine:~/lerolero$ git switch estilo
Switched to branch 'estilo'
turing@machine:~/lerolero$
```

```
On branch estilo
nothing to commit, working tree clean
turing@machine:~/lerolero$ git switch main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
turing@machine:~/lerolero$ git pull
Enter passphrase for key '/home/turing/.ssh/id_rsa':
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (1/1), done.
remote: Total 3 (delta 2), reused 3 (delta 2), pack-reused 0
Unpacking objects: 100% (3/3), 309 bytes | 154.00 KiB/s, done.
From github.com:urrameu/lerolero
   b881c34..b4a4468  main      -> origin/main
Updating b881c34..b4a4468
Fast-forward
 lerolero.py | 2 +-
 1 file changed, 1 insertion(+), 1 deletion(-)
turing@machine:~/lerolero$ git switch estilo
Switched to branch 'estilo'
turing@machine:~/lerolero$ git merge main
```

Your branch is up to date with 'origin/main'.

**turing@machine**:~/lerolero\$ git pull

Enter passphrase for key '/home/turing/.ssh/id\_rsa':

remote: Enumerating objects: 5, done.

remote: Counting objects: 100% (5/5), done.

remote: Compressing objects: 100% (1/1), done.

remote: Total 3 (delta 2), reused 3 (delta 2), pack-reused 0

Unpacking objects: 100% (3/3), 309 bytes | 154.00 KiB/s, done.

From github.com:urrameu/lerolero

b881c34..b4a4468 main -> origin/main

Updating b881c34..b4a4468

Fast-forward

lerolero.py | 2 +-  
1 file changed, 1 insertion(+), 1 deletion(-)

**turing@machine**:~/lerolero\$ git switch estilo

Switched to branch 'estilo'

**turing@machine**:~/lerolero\$ git merge main

Auto-merging lerolero.py

CONFLICT (content): Merge conflict in lerolero.py

Automatic merge failed; fix conflicts and then commit the result.

**turing@machine**:~/lerolero\$

Your branch is up to date with 'origin/main'.

**turing@machine**:~/lerolero\$ git pull

Enter passphrase for key '/home/turing/.ssh/id\_rsa':

remote: Enumerating objects: 5, done.

remote: Counting objects: 100% (5/5), done.

remote: Compressing objects: 100% (1/1), done.

remote: Total 3 (delta 2), reused 3 (delta 2), pack-reused 0

Unpacking objects: 100% (3/3), 309 bytes | 154.00 KiB/s, done.

From github.com:urrameu/lerolero

b881c34..b4a4468 main -> origin/main

Updating b881c34..b4a4468

Fast-forward

lerolero.py | 2 +-  
1 file changed, 1 insertion(+), 1 deletion(-)

**turing@machine**:~/lerolero\$ git switch estilo

Switched to branch 'estilo'

**turing@machine**:~/lerolero\$ git merge main

Auto-merging lerolero.py

CONFLICT (content): Merge conflict in lerolero.py

Automatic merge failed; fix conflicts and then commit the result.

**turing@machine**:~/lerolero\$ git status

Fast-forward

```
lerolero.py | 2 +-
```

1 file changed, 1 insertion(+), 1 deletion(-)

```
turing@machine:~/lerolero$ git switch estilo
```

Switched to branch 'estilo'

```
turing@machine:~/lerolero$ git merge main
```

Auto-merging lerolero.py

CONFLICT (content): Merge conflict in lerolero.py

Automatic merge failed; fix conflicts and then commit the result.

```
turing@machine:~/lerolero$ git status
```

On branch estilo

You have unmerged paths.

(fix conflicts and run "git commit")

(use "git merge --abort" to abort the merge)

Unmerged paths:

(use "git add <file>..." to mark resolution)

both modified: lerolero.py

no changes added to commit (use "git add" and/or "git commit -a")

```
turing@machine:~/lerolero$
```



Fast-forward

```
lerolero.py | 2 +-
```

1 file changed, 1 insertion(+), 1 deletion(-)

```
turing@machine:~/lerolero$ git switch estilo
```

Switched to branch 'estilo'

```
turing@machine:~/lerolero$ git merge main
```

Auto-merging lerolero.py

CONFLICT (content): Merge conflict in lerolero.py

Automatic merge failed; fix conflicts and then commit the result.

```
turing@machine:~/lerolero$ git status
```

On branch estilo

You have unmerged paths.

(fix conflicts and run "git commit")

(use "git merge --abort" to abort the merge)

Unmerged paths:

(use "git add <file>..." to mark resolution)

both modified: lerolero.py

no changes added to commit (use "git add" and/or "git commit -a")

```
turing@machine:~/lerolero$ vi lerolero.py
```

```
#!/usr/bin/python3
"""Gerador de lero-lero.

Gera frases de efeito sem significado real."""

import random

# Cada frase é composta por três partes aleatórias; aqui,
# listas de possibilidades para cada uma das partes.

partel = [
    "0 sistema em desenvolvimento",
    "0 novo protocolo de comunicação",
<<<<<< HEAD
    "0 algoritmo de otimização"
=====
    "0 algoritmo foi otimizado e"
>>>>>> main
]
```

```
#!/usr/bin/python3
"""Gerador de lero-lero.

Gera frases de efeito sem significado real."""

import random

# Cada frase é composta por três partes aleatórias; aqui,
# listas de possibilidades para cada uma das partes.

parte1 = [
    "O sistema em desenvolvimento",
    "O novo protocolo de comunicação",
    "O algoritmo foi otimizado e"
]

parte2 = [
    "possui excelente desempenho",
    "oferece garantias de precisão acima da média",
    "preenche uma lacuna significativa"
```

```
lerolero.py | 2 +-  
1 file changed, 1 insertion(+), 1 deletion(-)  
turing@machine:~/lerolero$ git switch estilo  
Switched to branch 'estilo'  
turing@machine:~/lerolero$ git merge main  
Auto-merging lerolero.py  
CONFLICT (content): Merge conflict in lerolero.py  
Automatic merge failed; fix conflicts and then commit the result.  
turing@machine:~/lerolero$ git status  
On branch estilo  
You have unmerged paths.  
  (fix conflicts and run "git commit")  
  (use "git merge --abort" to abort the merge)  
  
Unmerged paths:  
  (use "git add <file>..." to mark resolution)  
      both modified:   lerolero.py  
  
no changes added to commit (use "git add" and/or "git commit -a")  
turing@machine:~/lerolero$ vi lerolero.py  
turing@machine:~/lerolero$
```

```
lerolero.py | 2 +-
1 file changed, 1 insertion(+), 1 deletion(-)
turing@machine:~/lerolero$ git switch estilo
Switched to branch 'estilo'
turing@machine:~/lerolero$ git merge main
Auto-merging lerolero.py
CONFLICT (content): Merge conflict in lerolero.py
Automatic merge failed; fix conflicts and then commit the result.
turing@machine:~/lerolero$ git status
On branch estilo
You have unmerged paths.
  (fix conflicts and run "git commit")
  (use "git merge --abort" to abort the merge)

Unmerged paths:
  (use "git add <file>..." to mark resolution)
    both modified:   lerolero.py

no changes added to commit (use "git add" and/or "git commit -a")
turing@machine:~/lerolero$ vi lerolero.py
turing@machine:~/lerolero$ git status
```

```
(fix conflicts and run "git commit")
(use "git merge --abort" to abort the merge)
```

Unmerged paths:

```
(use "git add <file>..." to mark resolution)
    both modified:   lerolero.py
```

no changes added to commit (use "git add" and/or "git commit -a")

```
turing@machine:~/lerolero$ vi lerolero.py
```

```
turing@machine:~/lerolero$ git status
```

On branch estilo

You have unmerged paths.

```
(fix conflicts and run "git commit")
(use "git merge --abort" to abort the merge)
```

Unmerged paths:

```
(use "git add <file>..." to mark resolution)
    both modified:   lerolero.py
```

no changes added to commit (use "git add" and/or "git commit -a")

```
turing@machine:~/lerolero$
```

```
(fix conflicts and run "git commit")  
(use "git merge --abort" to abort the merge)
```

Unmerged paths:

```
(use "git add <file>..." to mark resolution)  
    both modified:   lerolero.py
```

no changes added to commit (use "git add" and/or "git commit -a")

```
turing@machine:~/lerolero$ vi lerolero.py
```

```
turing@machine:~/lerolero$ git status
```

On branch estilo

You have unmerged paths.

```
(fix conflicts and run "git commit")  
(use "git merge --abort" to abort the merge)
```

Unmerged paths:

```
(use "git add <file>..." to mark resolution)  
    both modified:   lerolero.py
```

no changes added to commit (use "git add" and/or "git commit -a")

```
turing@machine:~/lerolero$ git add lerolero.py
```

(use "git merge --abort" to abort the merge)

Unmerged paths:

(use "git add <file>..." to mark resolution)

both modified: lerolero.py

no changes added to commit (use "git add" and/or "git commit -a")

turing@machine:~/lerolero\$ vi lerolero.py

turing@machine:~/lerolero\$ git status

On branch estilo

You have unmerged paths.

(fix conflicts and run "git commit")

(use "git merge --abort" to abort the merge)

Unmerged paths:

(use "git add <file>..." to mark resolution)

both modified: lerolero.py

no changes added to commit (use "git add" and/or "git commit -a")

turing@machine:~/lerolero\$ git add lerolero.py

turing@machine:~/lerolero\$ git status



```
turing@machine:~/lerolero$ git status
```

```
On branch estilo
```

```
You have unmerged paths.
```

```
  (fix conflicts and run "git commit")
```

```
  (use "git merge --abort" to abort the merge)
```

```
Unmerged paths:
```

```
  (use "git add <file>..." to mark resolution)
```

```
    both modified:   lerolero.py
```

```
no changes added to commit (use "git add" and/or "git commit -a")
```

```
turing@machine:~/lerolero$ git add lerolero.py
```

```
turing@machine:~/lerolero$ git status
```

```
On branch estilo
```

```
All conflicts fixed but you are still merging.
```

```
  (use "git commit" to conclude merge)
```

```
Changes to be committed:
```

```
    modified:   lerolero.py
```

```
turing@machine:~/lerolero$
```

```
turing@machine:~/lerolero$ git status
```

```
On branch estilo
```

```
You have unmerged paths.
```

```
(fix conflicts and run "git commit")
```

```
(use "git merge --abort" to abort the merge)
```

```
Unmerged paths:
```

```
(use "git add <file>..." to mark resolution)
```

```
both modified:   lerolero.py
```

```
no changes added to commit (use "git add" and/or "git commit -a")
```

```
turing@machine:~/lerolero$ git add lerolero.py
```

```
turing@machine:~/lerolero$ git status
```

```
On branch estilo
```

```
All conflicts fixed but you are still merging.
```

```
(use "git commit" to conclude merge)
```

```
Changes to be committed:
```

```
modified:   lerolero.py
```

```
turing@machine:~/lerolero$ git merge --continue
```

Merge branch 'main' into estilo

# Conflicts:

#  
#     lerolero.py

#

# It looks like you may be committing a merge.

# If this is not correct, please remove the file

#     .git/MERGE\_HEAD

# and try again.

# Please enter the commit message for your changes. Lines starting

# with '#' will be ignored, and an empty message aborts the commit.

#

# On branch estilo

# All conflicts fixed but you are still merging.

#

# Changes to be committed:

#     modified:   lerolero.py

#

"~/lerolero/.git/COMMIT\_EDITMSG" 20L, 457C

1,1

Tudo

```
You have unmerged paths.  
  (fix conflicts and run "git commit")  
  (use "git merge --abort" to abort the merge)
```

```
Unmerged paths:  
  (use "git add <file>..." to mark resolution)  
      both modified:   lerolero.py
```

```
no changes added to commit (use "git add" and/or "git commit -a")
```

```
turing@machine:~/lerolero$ git add lerolero.py
```

```
turing@machine:~/lerolero$ git status
```

```
On branch estilo
```

```
All conflicts fixed but you are still merging.  
  (use "git commit" to conclude merge)
```

```
Changes to be committed:  
      modified:   lerolero.py
```

```
turing@machine:~/lerolero$ git merge --continue  
[estilo f14f2df] Merge branch 'main' into estilo
```

```
turing@machine:~/lerolero$
```

```
You have unmerged paths.  
  (fix conflicts and run "git commit")  
  (use "git merge --abort" to abort the merge)
```

```
Unmerged paths:  
  (use "git add <file>..." to mark resolution)  
      both modified:   lerolero.py
```

```
no changes added to commit (use "git add" and/or "git commit -a")
```

```
turing@machine:~/lerolero$ git add lerolero.py
```

```
turing@machine:~/lerolero$ git status
```

```
On branch estilo
```

```
All conflicts fixed but you are still merging.  
  (use "git commit" to conclude merge)
```

```
Changes to be committed:  
      modified:   lerolero.py
```

```
turing@machine:~/lerolero$ git merge --continue  
[estilo f14f2df] Merge branch 'main' into estilo
```

```
turing@machine:~/lerolero$ git switch main
```

Unmerged paths:

(use "git add <file>..." to mark resolution)

both modified: lerolero.py

no changes added to commit (use "git add" and/or "git commit -a")

turing@machine:~/lerolero\$ git add lerolero.py

turing@machine:~/lerolero\$ git status

On branch estilo

All conflicts fixed but you are still merging.

(use "git commit" to conclude merge)

Changes to be committed:

modified: lerolero.py

turing@machine:~/lerolero\$ git merge --continue

[estilo f14f2df] Merge branch 'main' into estilo

turing@machine:~/lerolero\$ git switch main

Switched to branch 'main'

Your branch is up to date with 'origin/main'.

turing@machine:~/lerolero\$

Unmerged paths:

(use "git add <file>..." to mark resolution)

both modified: lerolero.py

no changes added to commit (use "git add" and/or "git commit -a")

turing@machine:~/lerolero\$ git add lerolero.py

turing@machine:~/lerolero\$ git status

On branch estilo

All conflicts fixed but you are still merging.

(use "git commit" to conclude merge)

Changes to be committed:

modified: lerolero.py

turing@machine:~/lerolero\$ git merge --continue

[estilo f14f2df] Merge branch 'main' into estilo

turing@machine:~/lerolero\$ git switch main

Switched to branch 'main'

Your branch is up to date with 'origin/main'.

turing@machine:~/lerolero\$ git merge estilo

```
both modified:  lerolero.py
```

no changes added to commit (use "git add" and/or "git commit -a")

```
turing@machine:~/lerolero$ git add lerolero.py
```

```
turing@machine:~/lerolero$ git status
```

## On branch estilo

All conflicts fixed but you are still merging.

```
(use "git commit" to conclude merge)
```

Changes to be committed:

```
modified:  lerolero.py
```

```
turing@machine:~/lerolero$ git merge --continue
```

```
[estilo f14f2df] Merge branch 'main' into estilo
```

```
turing@machine:~/lerolero$ git switch main
```

Switched to branch 'main'

```
Your branch is up to date with 'origin/main'.
```

```
turing@machine:~/lerolero$ git merge estilo
```

```
Updating b4a4468..f14f2df
```

## Fast-forward

```
turing@machine:~/lerolero$
```



```
no changes added to commit (use "git add" and/or "git commit -a")
```

```
turing@machine:~/lerolero$ git status
```

## On branch estilo

All conflicts fixed but you are still merging.

```
(use "git commit" to conclude merge)
```

Changes to be committed:

```
modified:  lerolero.py
```

```
turing@machine:~/lerolero$ git merge --continue
```

```
[estilo f14f2df] Merge branch 'main' into estilo
```

```
turing@machine:~/lerolero$ git switch main
```

Switched to branch 'main'

Your branch is up to date with 'origin/main'.

```
turing@machine:~/lerolero$ git merge estilo
```

```
Updating b4a4468..f14f2df
```

## Fast-forward

```
turing@machine:~/lerolero$ git push
```

```
[estilo f14f2df] Merge branch 'main' into estilo
turing@machine:~/lerolero$ git switch main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
turing@machine:~/lerolero$ git merge estilo
Updating b4a4468..f14f2df
Fast-forward
turing@machine:~/lerolero$ git push
Warning: Permanently added the RSA host key for IP address '140.82.112.3' to the list of known hosts.
Enter passphrase for key '/home/turing/.ssh/id_rsa':
Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 506 bytes | 506.00 KiB/s, done.
Total 4 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To github.com:urrameu/lerolero.git
   b4a4468..f14f2df  main -> main
turing@machine:~/lerolero$
```

```
[estilo f14f2df] Merge branch 'main' into estilo
turing@machine:~/lerolero$ git switch main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
turing@machine:~/lerolero$ git merge estilo
Updating b4a4468..f14f2df
Fast-forward
turing@machine:~/lerolero$ git push
Warning: Permanently added the RSA host key for IP address '140.82.112.3' to the list of known hosts.
Enter passphrase for key '/home/turing/.ssh/id_rsa':
Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 506 bytes | 506.00 KiB/s, done.
Total 4 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To github.com:urrameu/lerolero.git
   b4a4468..f14f2df  main -> main
turing@machine:~/lerolero$ git log
```

```
commit f14f2df7a751e09c40eb133e2428af499277aac2 (HEAD -> main, origin/main, ori  
gin/HEAD, estilo)
```

```
Merge: b29477a b4a4468
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 14:25:53 2020 -0300
```

Merge branch 'main' into estilo

```
commit b4a4468b1df6ac128d1c38a67167cff44ea7009f
```

```
Author: Ada Lovelace <ada@analyticalengine.com>
```

```
Date: Wed Nov 18 14:19:12 2020 -0300
```

Modifica frase sobre otimização

```
commit b29477a43216310d205e4927c2cb1a3ce52ff38c
```

```
Author: Alan Turing <turing@machine.com>
```

```
Date: Wed Nov 18 14:15:29 2020 -0300
```

Melhora um dos textos

```
:[]
```

[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)[urrameu](#) / [lerolero](#)[Unwatch](#)

1



Star

0



Fork

0

[Code](#)[Issues](#)[Pull requests](#)[Actions](#)[Projects](#)[Wiki](#)[Security](#)[Insights](#)[Settings](#)[main](#)[1 branch](#)[0 tags](#)[Go to file](#)[Add file](#)[Code](#)

Alan Turing Merge branch 'main' into estilo

f14f2df 2 minutes ago

10 commits



LICENSE

Initial commit

2 days ago



README.md

Acrescenta descrição do projeto ao README

3 hours ago



lerolero.py

Modifica frase sobre otimização

9 minutes ago

README.md



# lerolero

Um gerador de frases de efeito sem sentido.

## About



No description, website, or topics provided.

[Readme](#)[GPL-3.0 License](#)

## Releases

No releases published

[Create a new release](#)

## Packages

No packages published

[Publish your first package](#)

Aplicativos

Gitk

qua 18 de nov 14:29

pt

100%

lerolero: --all - gitk

Arquivo

Editar

Exibir

Ajuda

main

remotes/origin/main

Merge branch 'main' into estilo

Modifica frase sobre otimização

Melhora um dos textos

Merge branch 'ingles' into main

Cria esqueleto da versão multi-línguas

Insere os trechos das frases

Implementa esqueleto do programa

Cria arquivo inicial do programa

Acrescenta descrição do projeto ao README

Initial commit

SHA1 ID: f14f2df7a751e09c40eb133e2428af499277aac2

Linha 1/ 10

Encontrar

Revisão

contendo:

Exatamente

Todos os campos

Buscar

Diferenças

Árvore

Diferenças

Versão antiga

Versão nova

Número de

Descrição da revisão

Autor: Alan Turing <turing@machine.com> 2020-11-18 14:25:53

Revisor: Alan Turing <turing@machine.com> 2020-11-18 14:19:12

Antecessor: [b29477a43216310d205e4927c2cb1a3ce52](#)

Antecessor: [b4a4468b1df6ac128d1c38a67167cfff44ea](#)

Ramo: [main](#), [remotes/origin/main](#)

Segue:

Precede:

Merge branch 'main' into estilo

Alan Turing <turing@machine.com> 2020-11-18 14:25:53

Ada Lovelace <ada@analyticalengir> 2020-11-18 14:19:12

Alan Turing <turing@machine.com> 2020-11-18 14:15:29

Ada Lovelace <ada@analyticalengir> 2020-11-18 14:07:57

Ada Lovelace <ada@analyticalengir> 2020-11-18 13:57:47

Alan Turing <turing@machine.com> 2020-11-18 14:02:38

Alan Turing <turing@machine.com> 2020-11-18 12:05:19

Alan Turing <turing@machine.com> 2020-11-18 12:00:50

Ada Lovelace <ada@analyticalengir> 2020-11-18 11:40:59

Nelson Lago <lago@ime.usp.br> 2020-11-16 13:53:13

- **git possui *hooks* (“ganchos”)**
  - ▶ *hooks* permitem que você “pendure” ações adicionais em algum comando
    - » *gitlab e github possuem outros mecanismos de automação, mas a ideia é similar*
- **Por exemplo, você pode “pendurar” um script em **git commit****
  - ▶ Esse script pode notificar outros usuários sobre a nova versão, verificar se há erros etc.
    - » *Uma ideia interessante é garantir que todo **commit** execute os testes do programa*
    - » *Em caso de falha nos testes, o script pode notificar o usuário de diversas maneiras*

# Recursos avançados: histórico de conteúdo

- **Você refatora seu código e**

- ▶ Renomeia um arquivo
- ▶ Divide o conteúdo de um arquivo em dois
- ▶ Mescla o conteúdo de dois arquivos em um só
- ▶ Muda uma função/método de lugar/classe/arquivo

- **Como entender esse histórico depois?**

- **git vê o histórico do repositório como um todo, não de arquivos individuais**

- ▶ **git blame -C**

- ▶ **git log --follow**

- ▶ Arquivos renomeados etc. são detectados pela similaridade entre arquivos, não armazenados como um “evento” parte de uma *revision*

- » *É por isso que o desempenho com muitos arquivos sofre*



## Recursos avançados: *commits* parciais

- **Você está corrigindo um bug e encontra um outro defeito**
  - ▶ Como salvar suas alterações sem que ambas as correções estejam em uma única *revision*?
- **Você corrigiu um bug, mas acha que pode encontrar uma solução melhor**
  - ▶ Como salvar suas alterações entre um passo e o outro sem gerar duas *revisions* (uma com a correção “ruim”, outra com a correção “boa”)?
- **`git add -p` permite copiar apenas parte das modificações para a *staging area***
  - ▶ Permite dividir as modificações do `workdir` em mais de um `commit`
  - ▶ Permite guardar o estado atual do `workdir` temporariamente até o próximo `commit`

## Recursos avançados: mocó (esconderijo)

- Você está corrigindo um bug complicado mas, no meio do caminho, surge um bug de segurança urgente
  - ▶ Como corrigir esse bug
    - » *Sem perder suas alterações atuais do workdir*
    - » *Sem criar uma revision com a correção atual incompleta*
    - » *Sem criar uma revision misturando as duas correções?*
- **git** permite “esconder” o estado atual da árvore de trabalho (**git stash**)
  - ▶ Com isso, a árvore volta à última versão do repositório (**HEAD**)
  - ▶ Após corrigir o bug de segurança e fazer **commit**, recupera o trabalho anterior (**git stash pop**)
    - » *git mescla a versão escondida com a versão atual no workdir*
- **git stash** é equivalente a
  - ▶ Gerar uma nova *revision* que não pertence a nenhum *branch*
  - ▶ **git restore --worktree --staged .**
- **git stash pop** é equivalente a mesclar essa *revision* com o workdir

- **Você gostaria de compilar duas versões do seu projeto ao mesmo tempo**
  - ▶ Ou compilar uma enquanto corrige um bug em outra
  - ▶ Ou trabalhar em dois *branches* ao mesmo tempo
  - ▶ Ou não quer usar **git stash**
  - ▶ ...
- **git worktree** permite ter duas áreas de trabalho simultâneas
  - ▶ Em dois diretórios diferentes, claro!

- Algum **commit** recente introduziu um bug, você quer saber qual
- git automatiza uma busca binária entre *revisions* (**git bisect**)
  - ▶ git faz **switch** para uma versão do histórico
  - ▶ Usuário indica se a versão inclui ou não o bug (**git bisect good/bad**)
    - » *Após compilar a versão ou rodar um teste etc.*
  - ▶ git faz **switch** para uma outra versão do histórico
  - ▶ ...
  - ▶ Até identificar a versão em que o problema aparece

# Recursos avançados: limpeza de histórico

- **Você fez vários commits**
  - ▶ Alguns errados, outros irrelevantes, alguns merges...
- **e gostaria que o histórico não incluísse todos os passos separadamente**
  - ▶ mas agregasse o material nas etapas relevantes
- **Você criou um novo *branch* e aplicou diversas modificações a ele**
- **Ao fazer *merge*, você acrescenta a informação sobre o *branch* ao histórico**
  - ▶ O histórico fica mais complexo
    - » *Pode haver vários branches em paralelo*
- **Entender a evolução do código fica mais difícil**
  - ▶ Seria melhor se a história fosse linear
- **git permite reescrever a história de um ramo (*git rebase*)**

O livro com “tudo” sobre git (em inglês):

[\*\*https://git-scm.com/docs\*\*](https://git-scm.com/docs)

Uma boa introdução (em português):

[\*\*https://www.youtube.com/playlist?list=PLInBAd9OZCzzHBjJLFZzRl6DgUmOeG3H0\*\*](https://www.youtube.com/playlist?list=PLInBAd9OZCzzHBjJLFZzRl6DgUmOeG3H0)