Git e GitHub

Benefícios

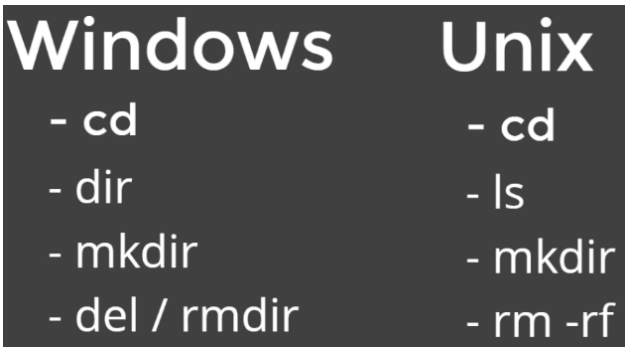
1. Controle de versão
2. Armazenamento em nuvem
3. Trabalho em equipe
4. Melhorar seu código
5. Reconhecimento

Git

- Serve essencialmente para fazer o versionamento do código a ser desenvolvido
- Criado em 2005 por *Linus Torvalds* por estar enfrentado problemas com o kernnel do Linux
    - Era necessário que houvesse versionamento e suportasse múltiplos acessos
- Open source

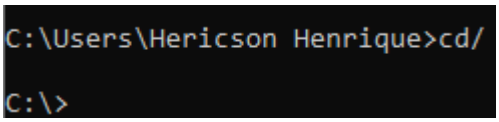
Comandos básicos de navegação no terminal e instalação

- Baseado CLI
    - Command line interface



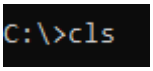
Mudar de pastas

- Cd no Linux e no Windows



Limpar tela

- No Windows cls
- No Linux clear



Listar pastas

- DIR no Windows
- Ls no Linux

```
C:\Users\Hericson Henrique>dir
 O volume na unidade C não tem nome.
 O Número de Série do Volume é CE9D-FC1D

 Pasta de C:\Users\Hericson Henrique

05/06/2022  09:41    <DIR>          .
04/06/2022  07:32    <DIR>          ..
02/06/2022  19:51    <DIR>          .android
02/06/2022  19:37    <DIR>          .vscode
04/06/2022  12:21    <DIR>          ansel
02/06/2022  19:15    <DIR>          Contacts
03/06/2022  08:07    <DIR>          Desktop
06/06/2022  16:29    <DIR>          Documents
06/06/2022  20:48    <DIR>          Downloads
02/06/2022  19:15    <DIR>          Favorites
02/06/2022  19:15    <DIR>          Links
02/06/2022  19:15    <DIR>          Music
06/06/2022  20:42    <DIR>          OneDrive
02/06/2022  19:17    <DIR>          Pictures
02/06/2022  19:15    <DIR>          Saved Games
02/06/2022  20:01    <DIR>          Searches
06/06/2022  20:42    <DIR>          Videos
               0 arquivo(s)              0 bytes
              17 pasta(s)   182.053.785.600 bytes disponíveis
```

Criar pastas

- Windows mkdir
- Linux mkdir

```
C:\>mkdir workspace
```

Deletar pastas

- Windows rmdir

```
C:\>rmdir workspace /S /Q
```

- Linux

```
root@perkles-desktop:/# rm -rf workspace/
```

Criar arquivos

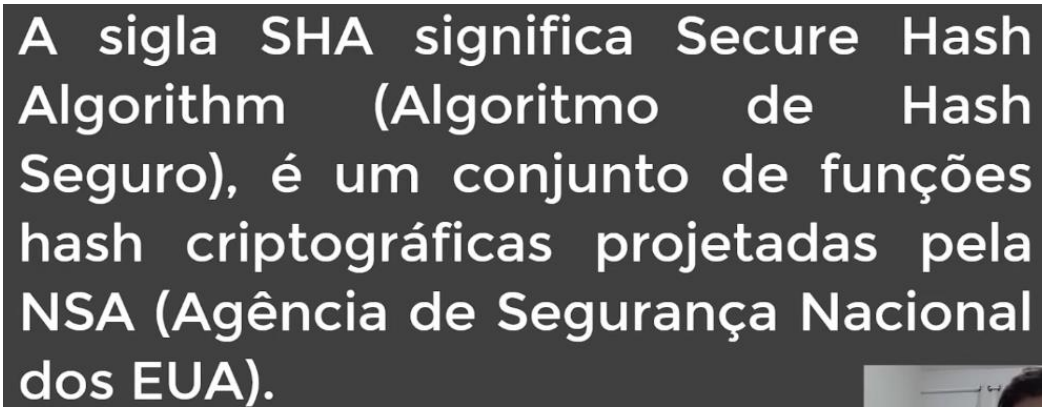
```
C:\workspace>echo hello> hello.txt
```

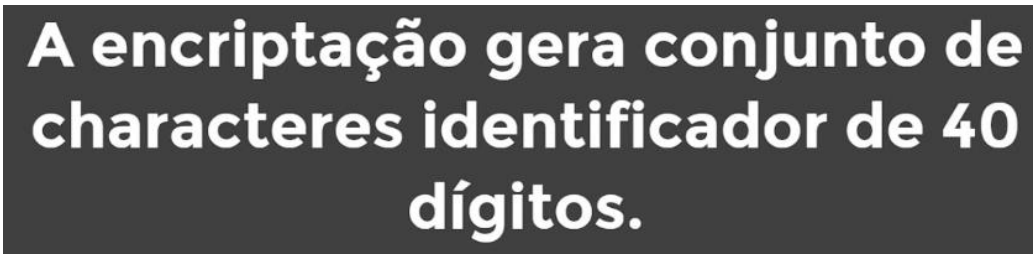
Deletar arquivos

```
C:\>del workspace
C:\workspace\*, Tem certeza (S/N)?
```

Entendendo como o GIT funciona

SHA1





Objetos fundamentais

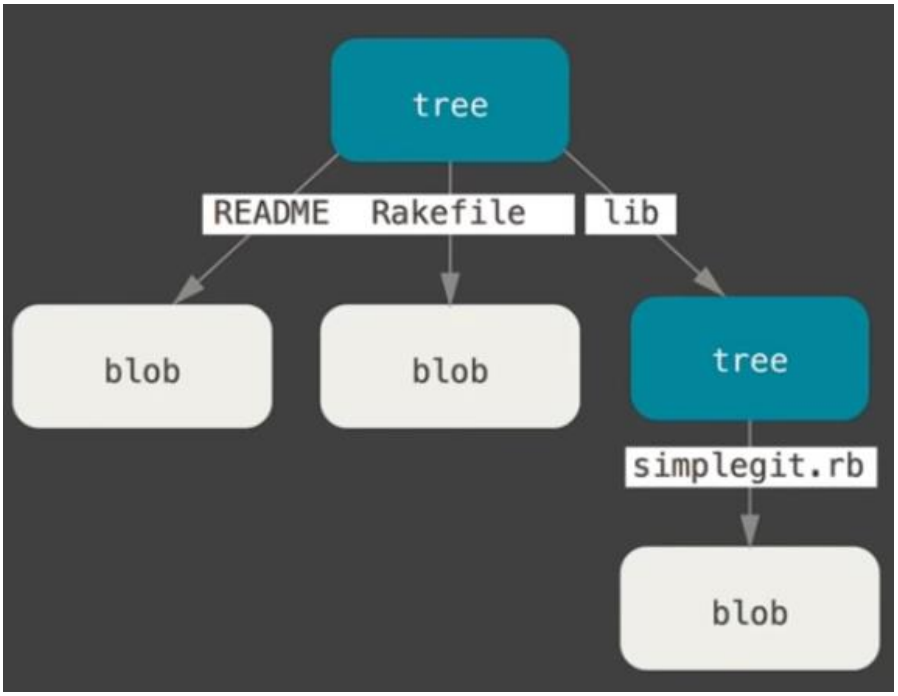
```
1 echo 'conteudo' | git hash-object --stdin
2 > fc31e91b26cf85a55e072476de7f263c89260eb1
3
4 echo -e 'conteudo' | openssl sha1
5 > 65b0d0dda479cc03cce59528e28961e498155f5c
```

BLOBS

- Tem um sha1 dos arquivos

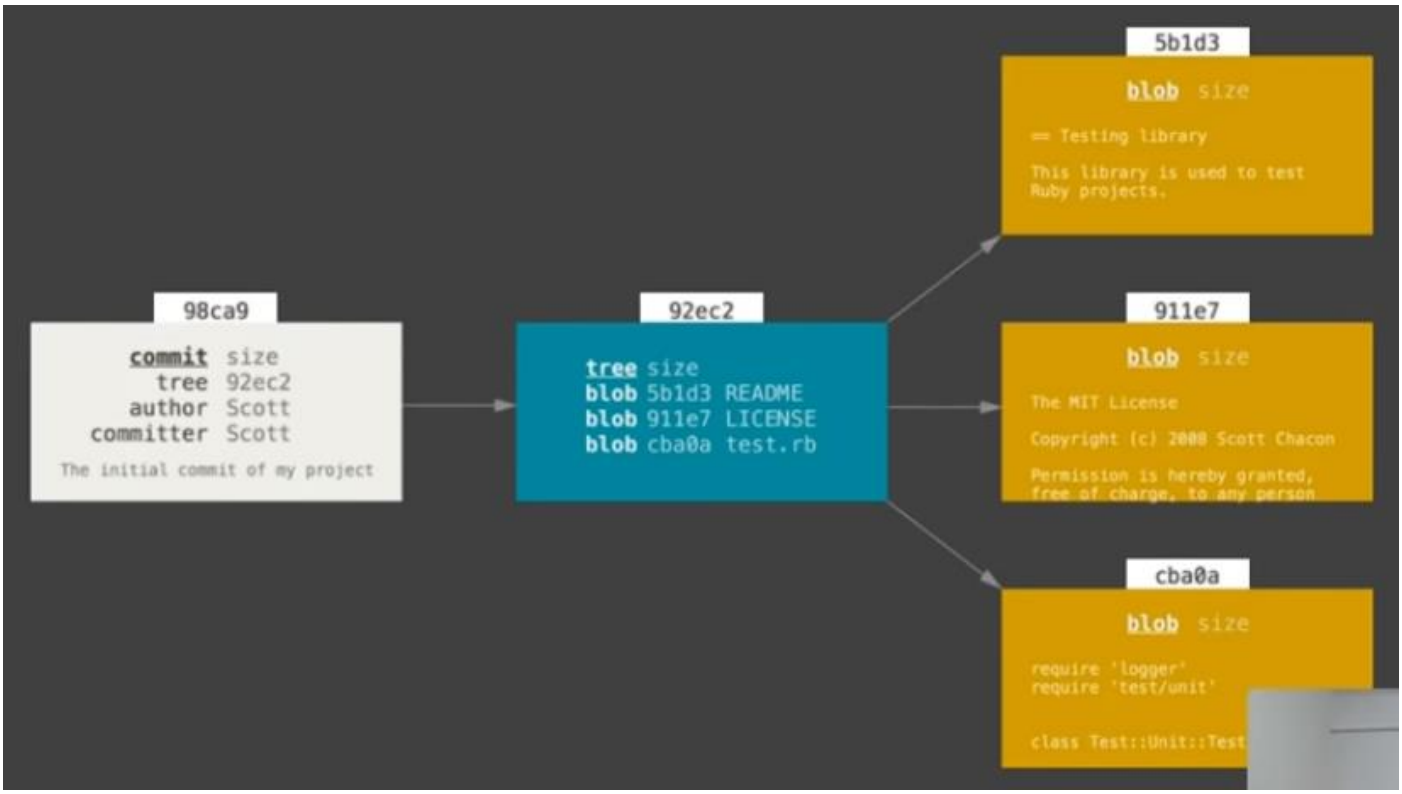
TREES

- Elas armazenam o blob
- Responsável por montar toda a estrutura dos arquivos



COMMINTS

- É o objeto que junta todos os arquivos



- Seu código quando rosteado representa o estado final do seu código
- Mesmo com a falta da rede o sistema de encriptação se mantem estável e seguro

Chave SSH e TOKEN

CHAVE SSH

- É uma forma de estabelece uma conexão segura e confiável entre servidor e maquina

Comandos para gerar chaves

```
$ ssh-keygen -t ed25519 -C hericson00@gmail.com
Generating public/private ed25519 key pair.
Enter file in which to save the key (/c/Users/Hericson Henrique/.ssh/id_ed25519)
:
Created directory '/c/Users/Hericson Henrique/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Passphrases do not match.  Try again.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Passphrases do not match.  Try again.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /c/Users/Hericson Henrique/.ssh/id_ed25519
Your public key has been saved in /c/Users/Hericson Henrique/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:i+rLMDpAiFe77KF+xXxeTuCICJG405Dm15nkTTvAOMA hericson00@gmail.com
The key's randomart image is:
+--[ED25519 256]--+
|o+. o            |
|*E o.+ .         |
|== .=.* .        |
|*oo..= +.        |
|.+.o = oS.       |
|. . = =.o.o      |
|. oo o.o.+       |
|...+o.  . .      |
|.o.o=.           |
+----[SHA256]-----+

Hericson Henrique@PC-HERICSON MINGW64 ~
$
```

Visualizar chave

```
$ cat id_ed25519.pub
```

Agente para gerenciar as chaves

```
Hericson Henrique@PC-HERICSON MINGW64 ~/.ssh
$ eval $(ssh-agent -s)
```

Entregar chave para o agente (privada)

```
Hericson Henrique@PC-HERICSON MINGW64 ~/.ssh
$ ssh-add id_ed25519
Identity added: id_ed25519 (hericson00@gmail.com)
```

TOKEN

- DEVELOPER SETTINGS
- PERSONAL ACCESS TOKENS -> GENERATE NEW TOKEN
- REPO -> GENERATE TOKEN

PRIMEIROS COMANDOS COM GIT

MOSTRAR PASTAS OCULTAS

```
$ ls -a
```

INICIAR I GIT

- GIT INIT

```
$ git init
Initialized empty Git repository in D:/workspace/livro-receitas/.git/
```

CONFIGURAR GIT INICIALMENTE

```
Hericson Henrique@PC-HERICSON MINGW64 /d/workspace/livro-receitas (master)
$ git config --global user.email "hericson00@gmail.com"

Hericson Henrique@PC-HERICSON MINGW64 /d/workspace/livro-receitas (master)
$ git config --global user.name hericson01
```

INICIAR O VERSIONAMENTO

GIT ADD

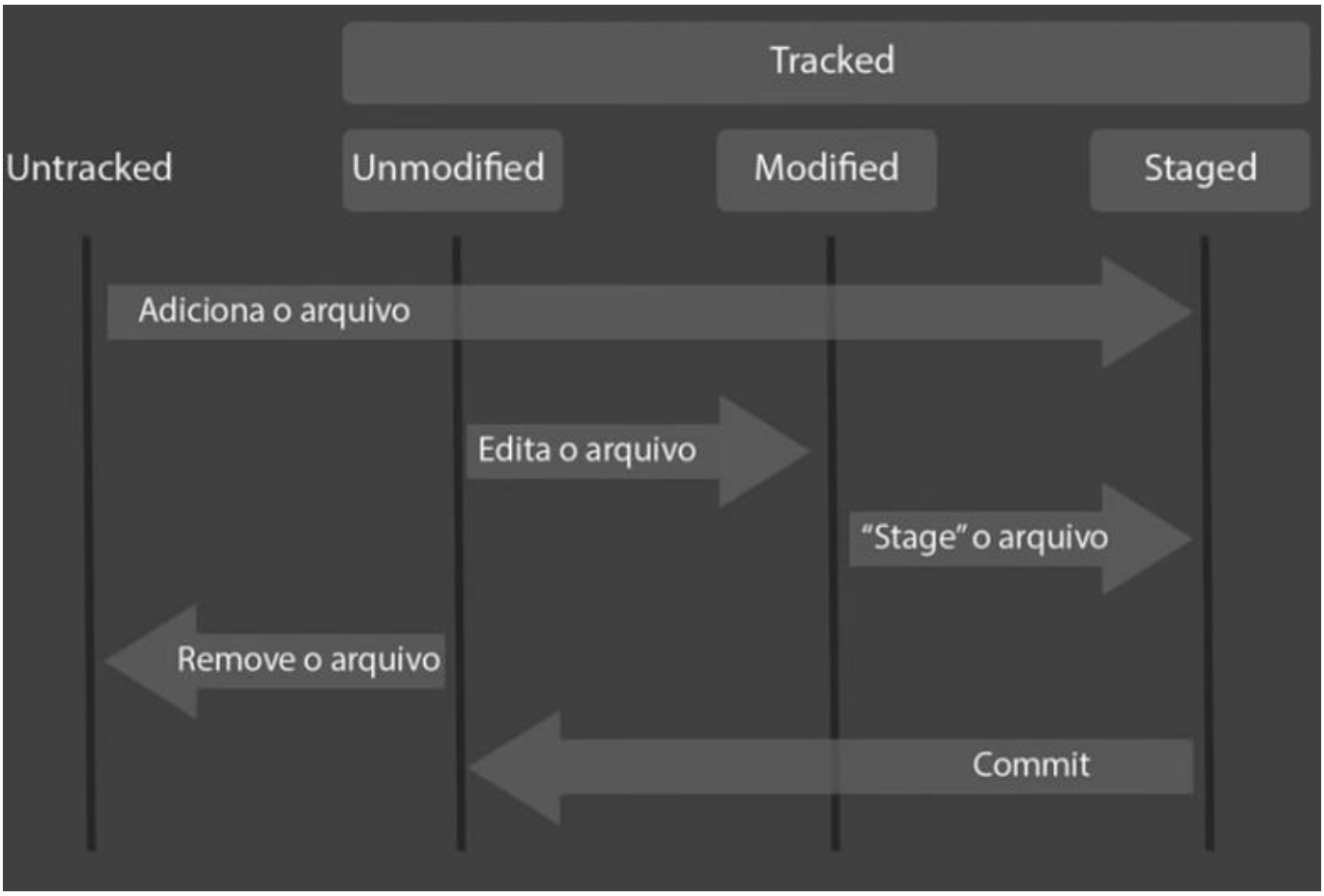
```
Hericson Henrique@PC-HERICSON MINGW64 /d/workspace/livro-receitas (master)
$ git add *
```

CRIAR UM COMMIT

GIT COMMIT

```
Hericson Henrique@PC-HERICSON MINGW64 /d/workspace/livro-receitas (master)
$ git commit -m "Commit inicial"
[master (root-commit) 7ad4d94] Commit inicial
 1 file changed, 24 insertions(+)
 create mode 100644 Strogonof de Frango.md
```

CICLO DE VIDA DOS ARQUIVOS



Linkar GIT com GITHUB (fazer push)

- Após criar o repositório faça:

```
git remote add origin https://github.com/hericson01/livro-receitas.git
git branch -M main
git push -u origin main
```

Resolvendo conflitos

```
$ git push origin master
To https://github.com/Perkles/livro-receitas.git
 ! [rejected]        master -> master (fetch first)
error: failed to push some refs to 'https://github.com/Perkles/livro-receitas.git'
hint: Updates were rejected because the remote contains work that you do
hint: not have locally. This is usually caused by another repository pushing
hint: to the same ref. You may want to first integrate the remote changes
hint: (e.g., 'git pull ...') before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.
```

```
$ git pull origin master
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 701 bytes | 50.00 KiB/s, done.
From https://github.com/Perkles/livro-receitas
 * branch            master     -> FETCH_HEAD
   54c6046..e1dee1e  master     -> origin/master
Auto-merging README.md
CONFLICT (content): Merge conflict in README.md
Automatic merge failed; fix conflicts and then commit the resu
```