TRIPTYK

# Formation GIT

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# C'est quoi GIT ?

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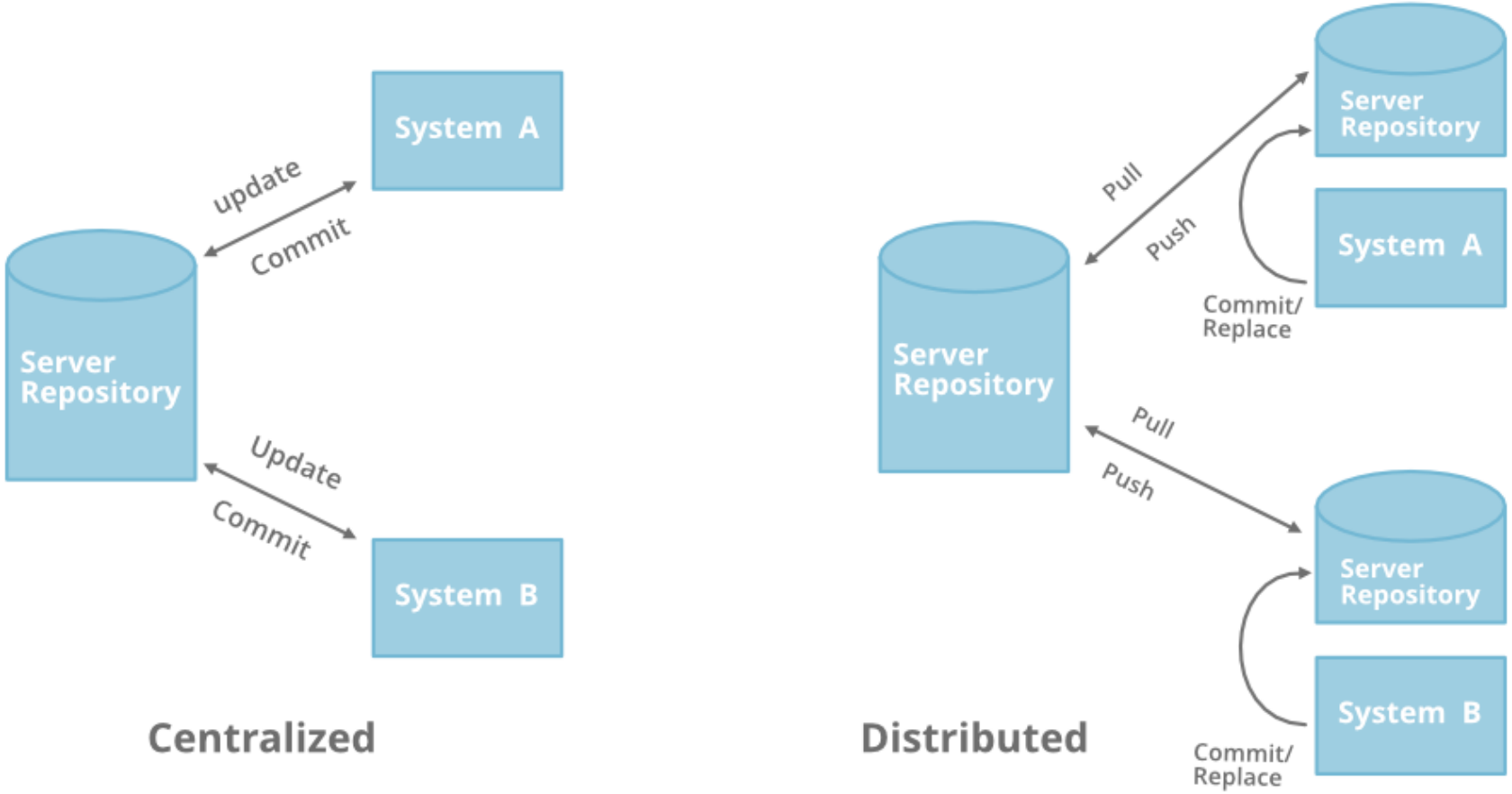
# Un système de contrôle de version distribué

# DVCS


System A
update
Commit
Server Repository
Update
Commit
System B
Centralized
Server Repository
Pull
Push
Commit/ Replace
Server Repository
System A
Pull
Push
Server Repository
System B
Commit/ Replace
Distributed

# Avant GIT

- 1990 : CVS
- 1994: Microsoft SourceSafe
- 2000: Subversion
- 2005: Git, Mercurial

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THIS IS GIT. IT TRACKS COLLABORATIVE WORK ON PROJECTS THROUGH A BEAUTIFUL DISTRIBUTED GRAPH THEORY TREE MODEL.
COOL. HOW DO WE USE IT?
NO IDEA. JUST MEMORIZE THESE SHELL COMMANDS AND TYPE THEM TO SYNC UP. IF YOU GET ERRORS, SAVE YOUR WORK ELSEWHERE, DELETE THE PROJECT, AND DOWNLOAD A FRESH COPY.

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# Installation

Pour linux

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

Pour mac osx

```
1 $ brew install git
```

Pour Windows

Il faut installer git for windows, si vous n'installez pas le sous système linux
https://gitforwindows.org/

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# A quoi cela sert ?

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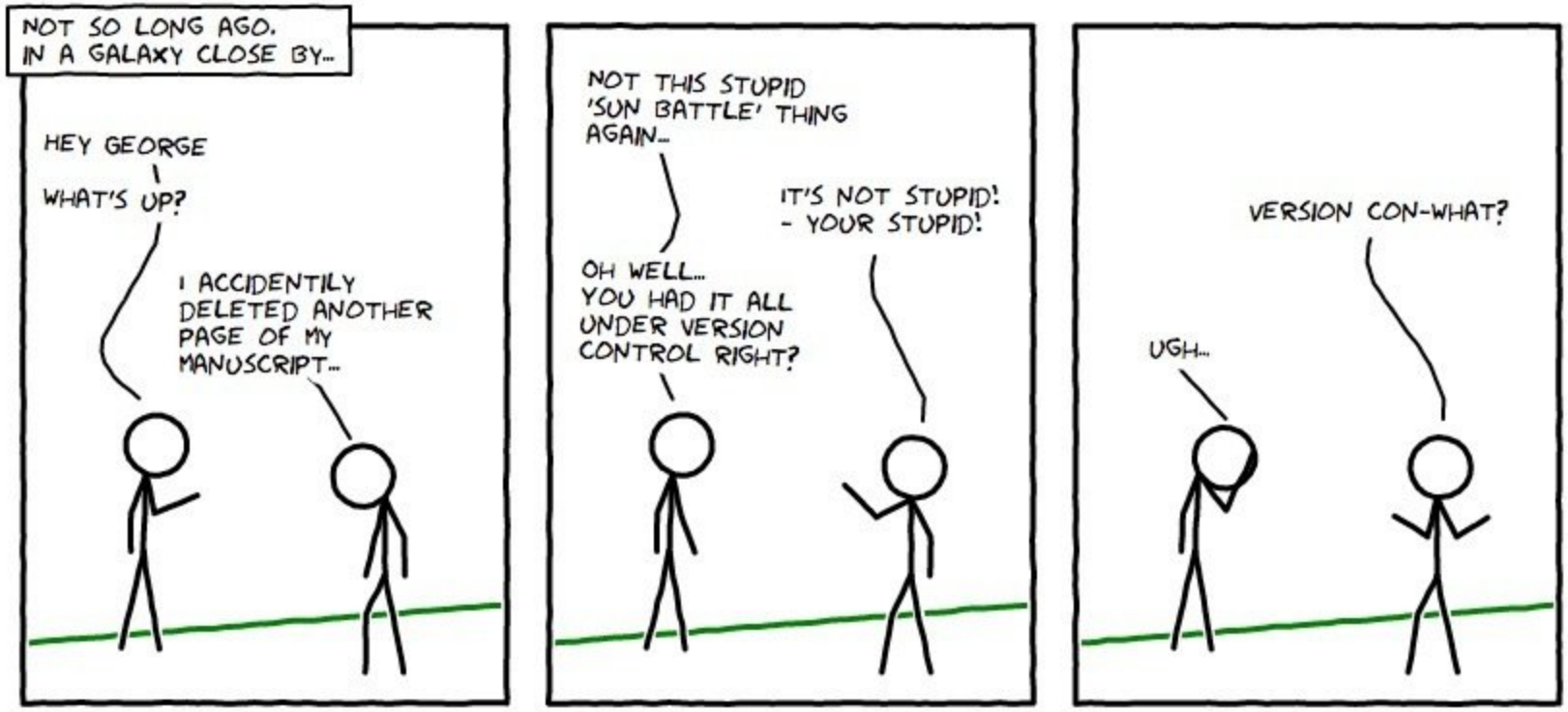
# A la gestion dans le temps de vos sources et de vos versions



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# A la gestion dans le temps de vos sources et de vos versions

```
➜  Project l
total 8.0K
drwxr-xr-x  2 gilles gilles 4.0K May 11 11:46 .
drwxr-xr-x 19 gilles gilles 4.0K May 11 11:45 ..
-rw-r--r--  1 gilles gilles    0 May 11 11:46 index.html
-rw-r--r--  1 gilles gilles    0 May 11 11:46 index.html.v1
-rw-r--r--  1 gilles gilles    0 May 11 11:46 index.html.v2
-rw-r--r--  1 gilles gilles    0 May 11 11:46 index.html.v3
-rw-r--r--  1 gilles gilles    0 May 11 11:46 index.html.v4
➜  Project
```

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# Le dépot git ?

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# Le dépot git ?

1. Contient l'entièreté des fichiers et dossiers ainsi que leurs version d'un même projet.
2. L'historique des fichiers est sous forme de 'snapshot' dont le nom est commit.
3. Parce que Git est un système décentralisé chaque utilisateur à sa copie.

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# La terminologie git ?

- Repository (dépôt)
- Staging (index)
- Commit
- Branch
- Merge (fusion)

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# Vision globale

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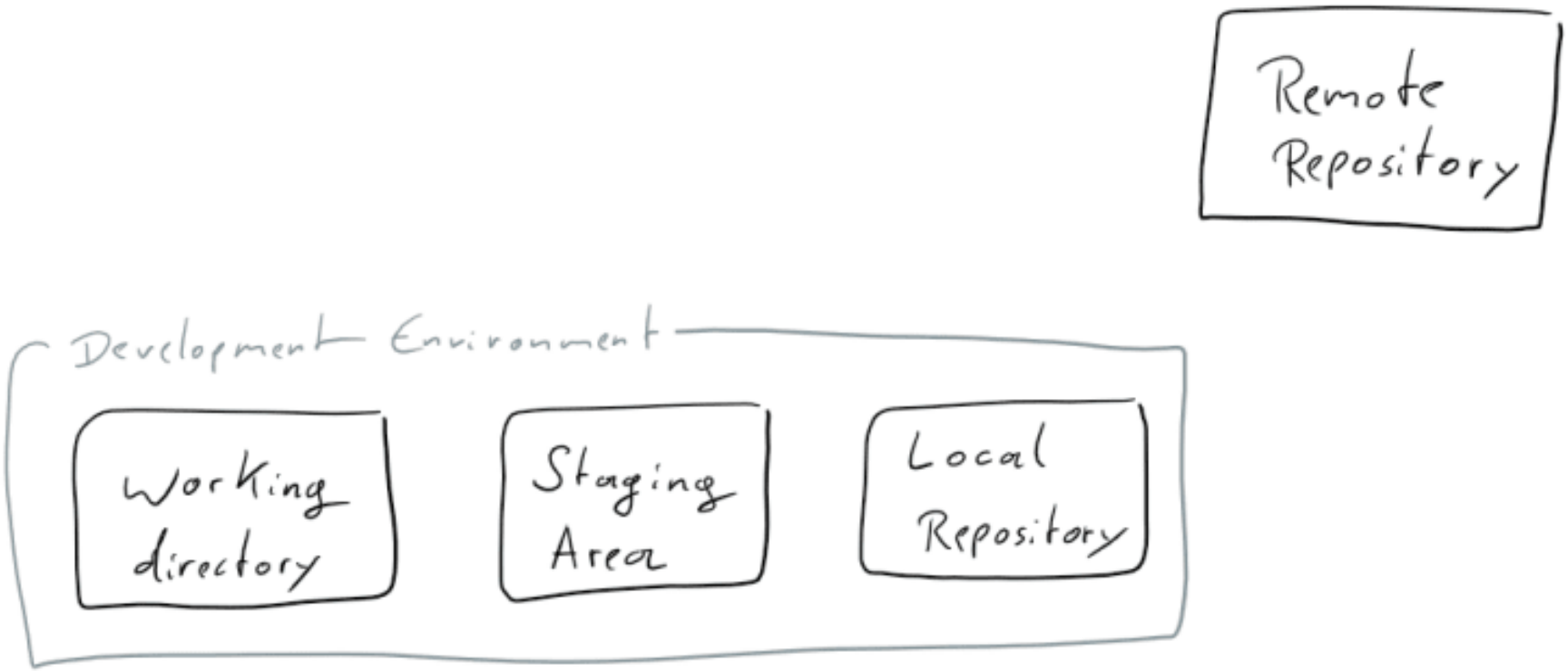
Remote Repository
Development Environment
Working directory
Staging Area
Local Repository

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# Récupération d'un git remote

```
1  ➜  www git clone git@github.com:TRIPTYK/git-training.git tpk-git-training
2  Cloning into 'tpk-git-training'...
3  remote: Enumerating objects: 3, done.
4  remote: Counting objects: 100% (3/3), done.
5  remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
6  Receiving objects: 100% (3/3), done.
7  ➜  www
8  ➜  tpk-git-training git:(master)
9  drwxr-xr-x  3 gilles gilles 4.0K Mar  6 10:28 .
10 drwxr-xr-x 15 gilles gilles 4.0K Mar  6 10:28 ..
11 drwxr-xr-x  8 gilles gilles 4.0K Mar  6 10:29 .git
12 -rw-r--r--  1 gilles gilles   14 Mar  6 10:28 README.md
```

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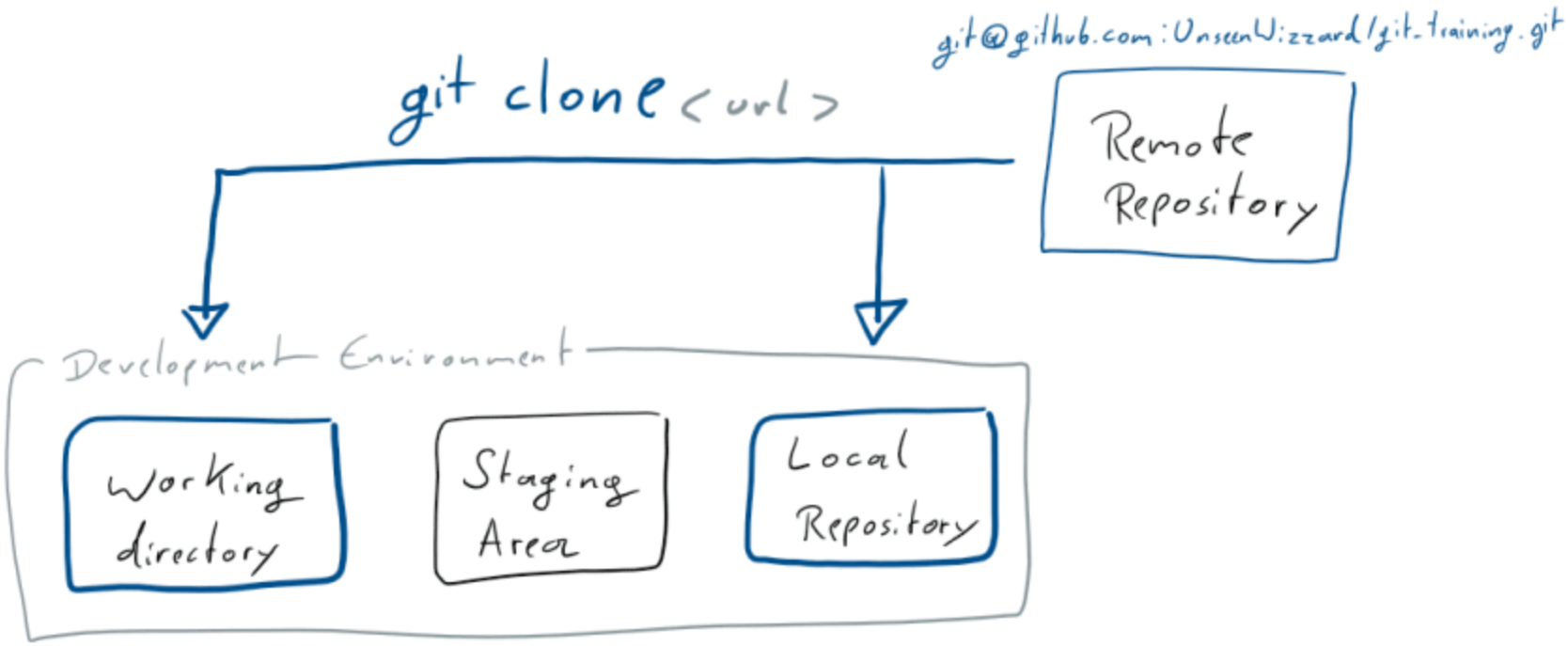
# Ceci copie le dépot distant localement



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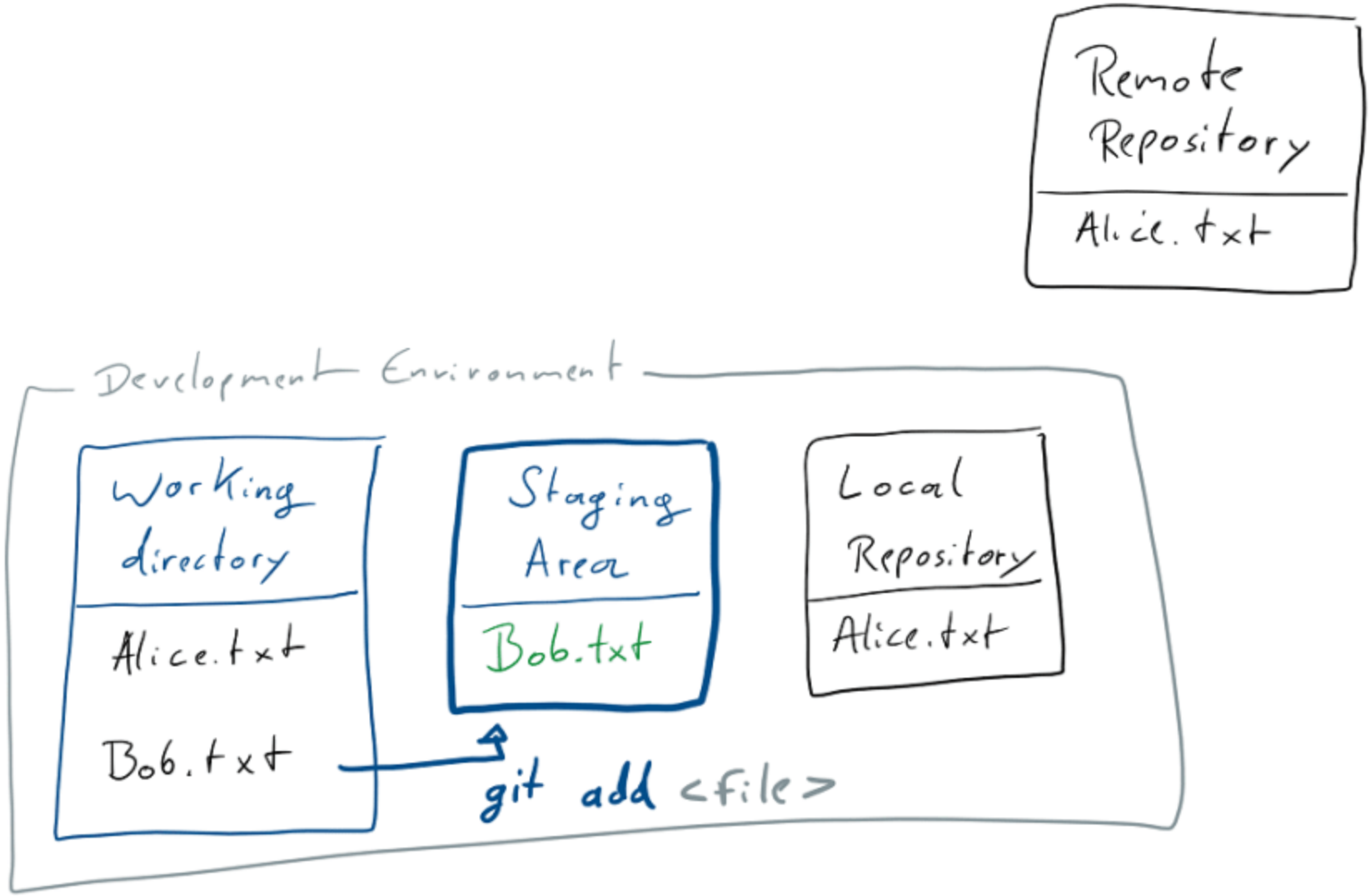
# Ajout d'un fichier au dépot



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# Ajout d'un fichier au dépot

```
1  ➜  tpk-git-training git:(master) ✗ git status
2  On branch master
3  Your branch is up-to-date with 'origin/master'.
4
5  Untracked files:
6    (use "git add <file>..." to include in what will be committed)
7
8          bob.txt
9
10 nothing added to commit but untracked files present (use "git add" to track)
11 ➜  tpk-git-training git:(master) ✗ git add bob.txt
12 ➜  tpk-git-training git:(master) ✗ git status
13 On branch master
14 Your branch is up-to-date with 'origin/master'.
15
16 Changes to be committed:
17   (use "git reset HEAD <file>..." to unstage)
18
19         new file:   bob.txt
```

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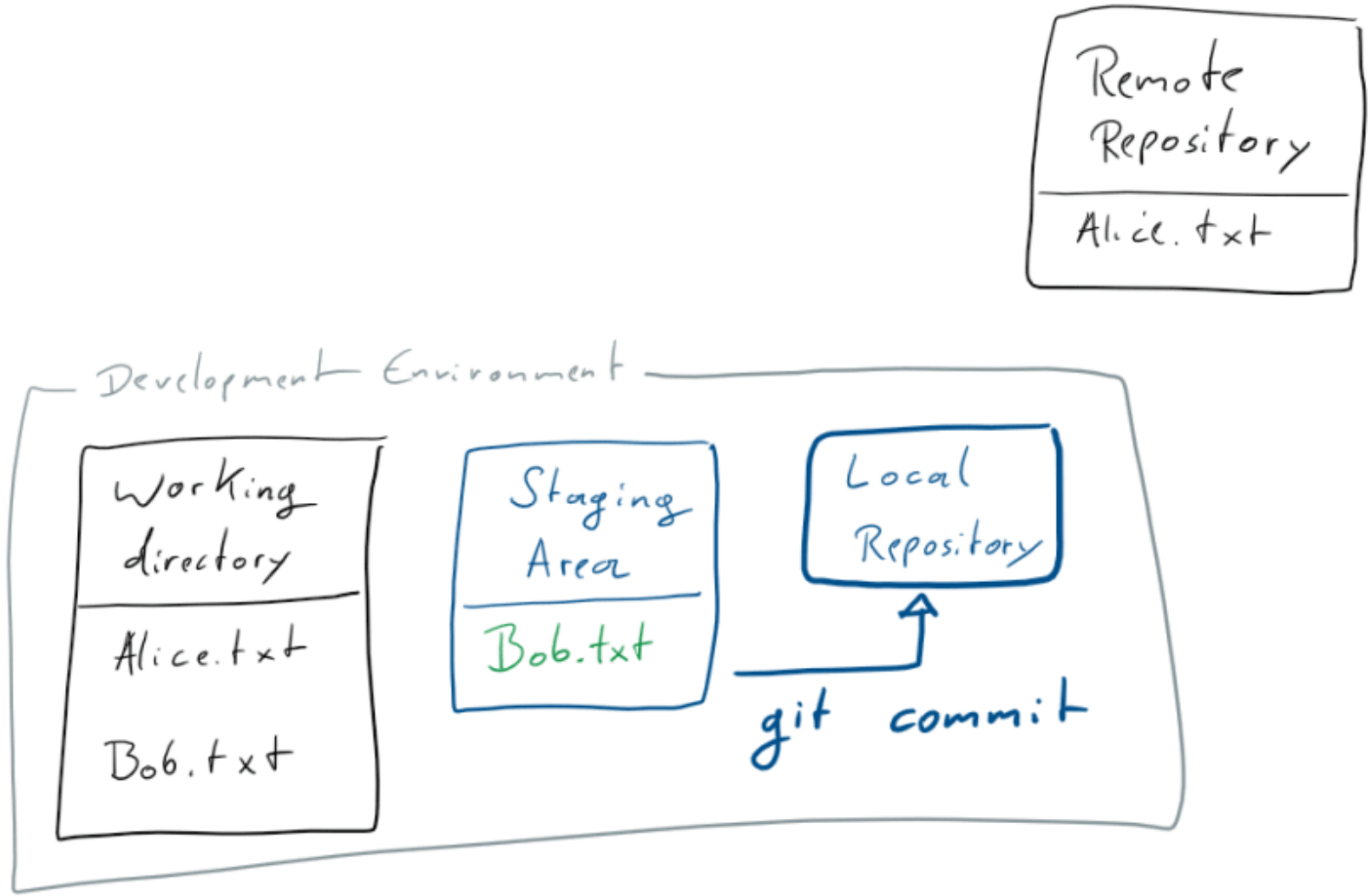
# Commit ou faire une version!



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# Commit ou faire une version!

```
1 ➜  git-training git:(master) ✗ git commit
2 [master ece711f] Add Bob file to repository
3  1 file changed, 0 insertions(+), 0 deletions(-)
4  create mode 100644 bob.txt
5 ➜  git-training git:(master)
```

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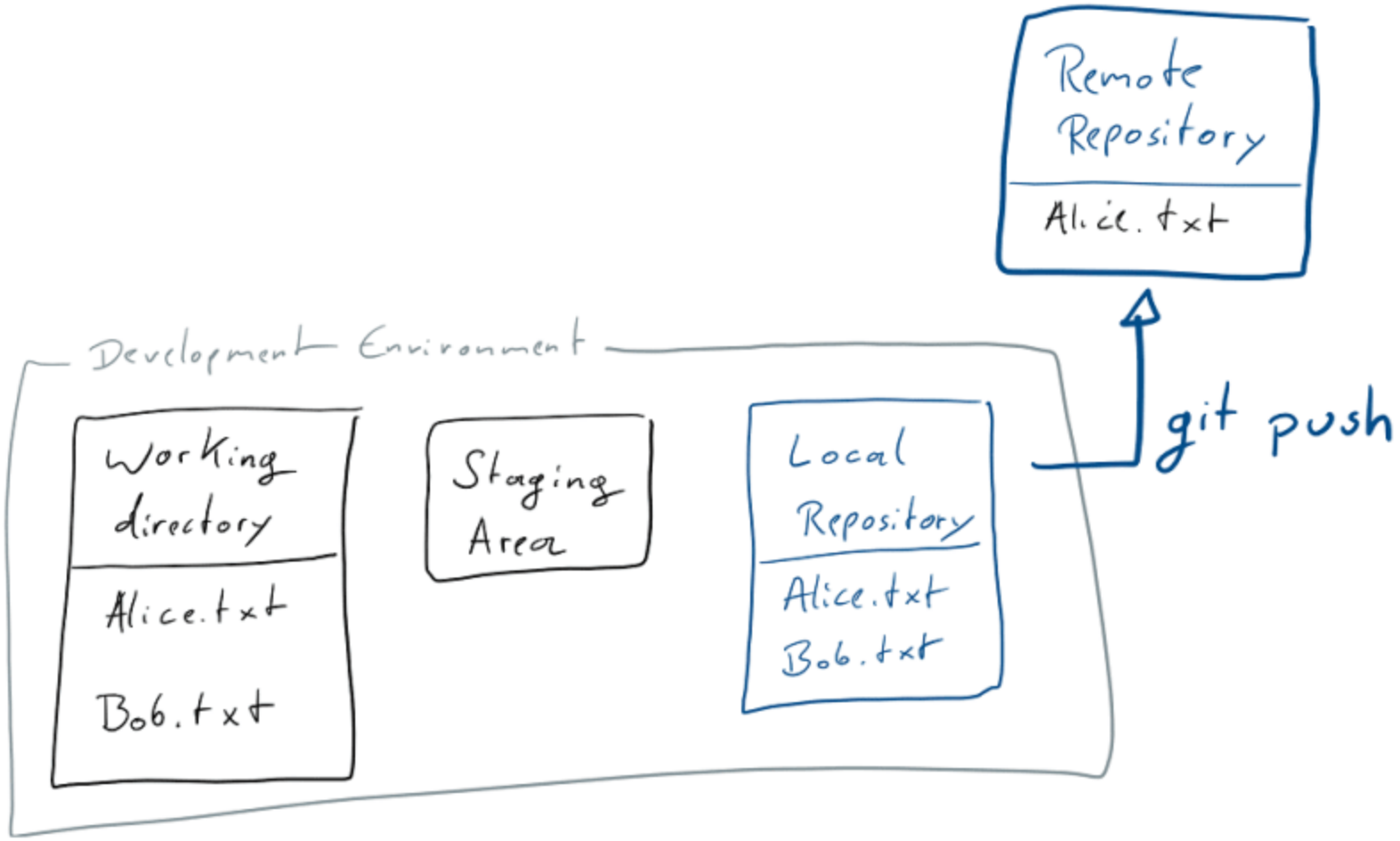
# Partager avec les autres



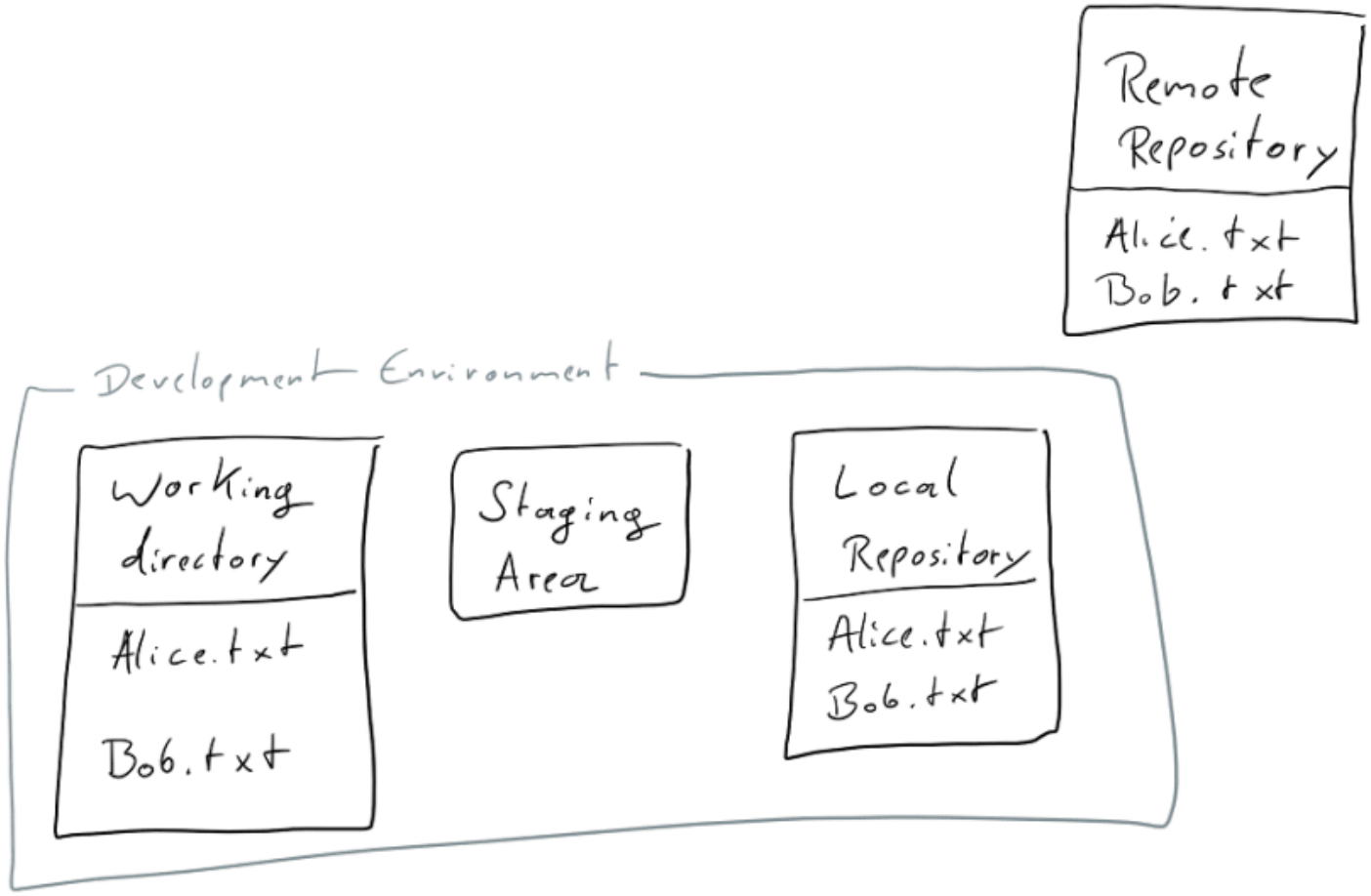
TRIPTYK

# Partager avec les autres

```
1 ➜  git-training git:(master) git push
2 Enumerating objects: 4, done.
3 Counting objects: 100% (4/4), done.
4 Delta compression using up to 28 threads
5 Compressing objects: 100% (2/2), done.
6 Writing objects: 100% (3/3), 292 bytes | 292.00 KiB/s, done.
7 Total 3 (delta 0), reused 0 (delta 0)
8 To github.com:TRIPTYK/git-training.git
9    059f54e..ece711f  master -> master
```

TRIPTYK

# Partager avec les autres



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# Git pull pour récupérer le travail des autres

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# Flow de travail

git add

git status

git commit

git status

git pull

git push

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# Initialisation d'un dépot local

```
1 git init
```

```
→  training-git git:(master) ls -la
total 12
drwxr-xr-x  3 gilles gilles 4096 Mar  6 09:37 .
drwxr-xr-x 14 gilles gilles 4096 Mar  6 09:36 ..
drwxr-xr-x  7 gilles gilles 4096 Mar  6 10:08 .git
→  training-git git:(master)
```

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# Voir les changements

```
1 git diff bob.txt bob.txt
2 ------------------------------------------------------------
3 diff --git a/bob.txt b/bob.txt
4 index e69de29..89fb941 100644
5 --- a/bob.txt
6 +++ b/bob.txt
7 @@ -0,0 +1 @@
8 +Test de chagement
9 \ No newline at end of file
```

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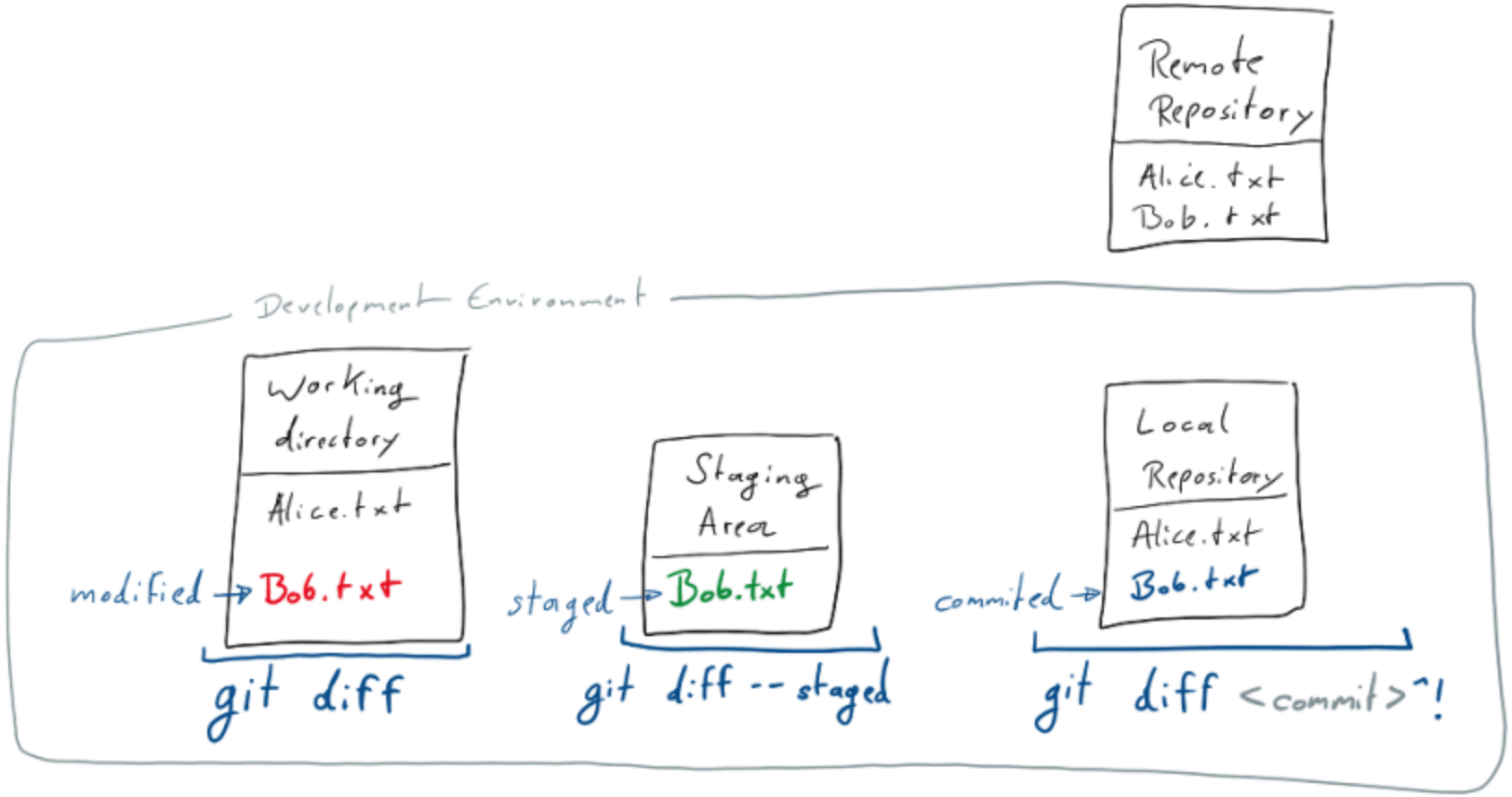
# Voir les changements



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# Voir l'historique

```
git log
------------------------------------------------------------
commit ece711f11678fb9faeec6a7df6b984a8628b5ff2 (HEAD -> master, origin/master, origin/HEAD)
Author: gilles BERTRAND <gilles@triptyk.eu>
Date:   Sat Mar 7 08:07:58 2020 +0100

    Add Bob file to repository

commit 059f54e1387a14f5f07998de0e923c2b5204fdd0
Author: Gilles Bertrand <gilles@triptyk.eu>
Date:   Fri Mar 6 10:27:48 2020 +0100

    Initial commit
(END)
```

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# Commandes GIT

Git Clone (ou git init)

Git Status

Git pull

Git add

Git Commit

Git push

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# Labo 1

Mettre en place un dépot local et y faire une mise à jour des fichiers en 2 étapes permettant de voir les modifications qui ont eu lieu sur le fichier

```
git log --graph --decorate --pretty=oneline --abbrev-commit --all
```

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# Labo 2

Déplacer le fichier du répertoire principal vers le répertoire lib et le faire pour GIT

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# GIT Config

```
git config --global user.name "Your Name"
git config --global user.email "your_email@whatever.com"
```

**Linux**

```
git config --global core.autocrlf input
git config --global core.safecrlf warn
```

**Windows**

```
git config --global core.autocrlf true
git config --global core.safecrlf warn
```

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# le répertoire .git

```
➜  angular-core-workshop git:(01-getting-started) ✗ ls -Cl .git
total 48
drwxr-xr-x 2 gilles gilles 4096 Feb  3 19:11 branches
-rw-r--r-- 1 gilles gilles  393 Feb  3 19:14 config
-rw-r--r-- 1 gilles gilles   73 Feb  3 19:11 description
-rw-r--r-- 1 gilles gilles   35 Feb  3 19:17 HEAD
drwxr-xr-x 2 gilles gilles 4096 Feb  3 19:11 hooks
-rw-r--r-- 1 gilles gilles 6202 Feb 10 08:53 index
drwxr-xr-x 2 gilles gilles 4096 Feb  3 19:11 info
drwxr-xr-x 3 gilles gilles 4096 Feb  3 19:11 logs
drwxr-xr-x 4 gilles gilles 4096 Feb  3 19:11 objects
-rw-r--r-- 1 gilles gilles  997 Feb  3 19:11 packed-refs
drwxr-xr-x 5 gilles gilles 4096 Feb  3 19:11 refs
```

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# Object Dabase

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# Branching

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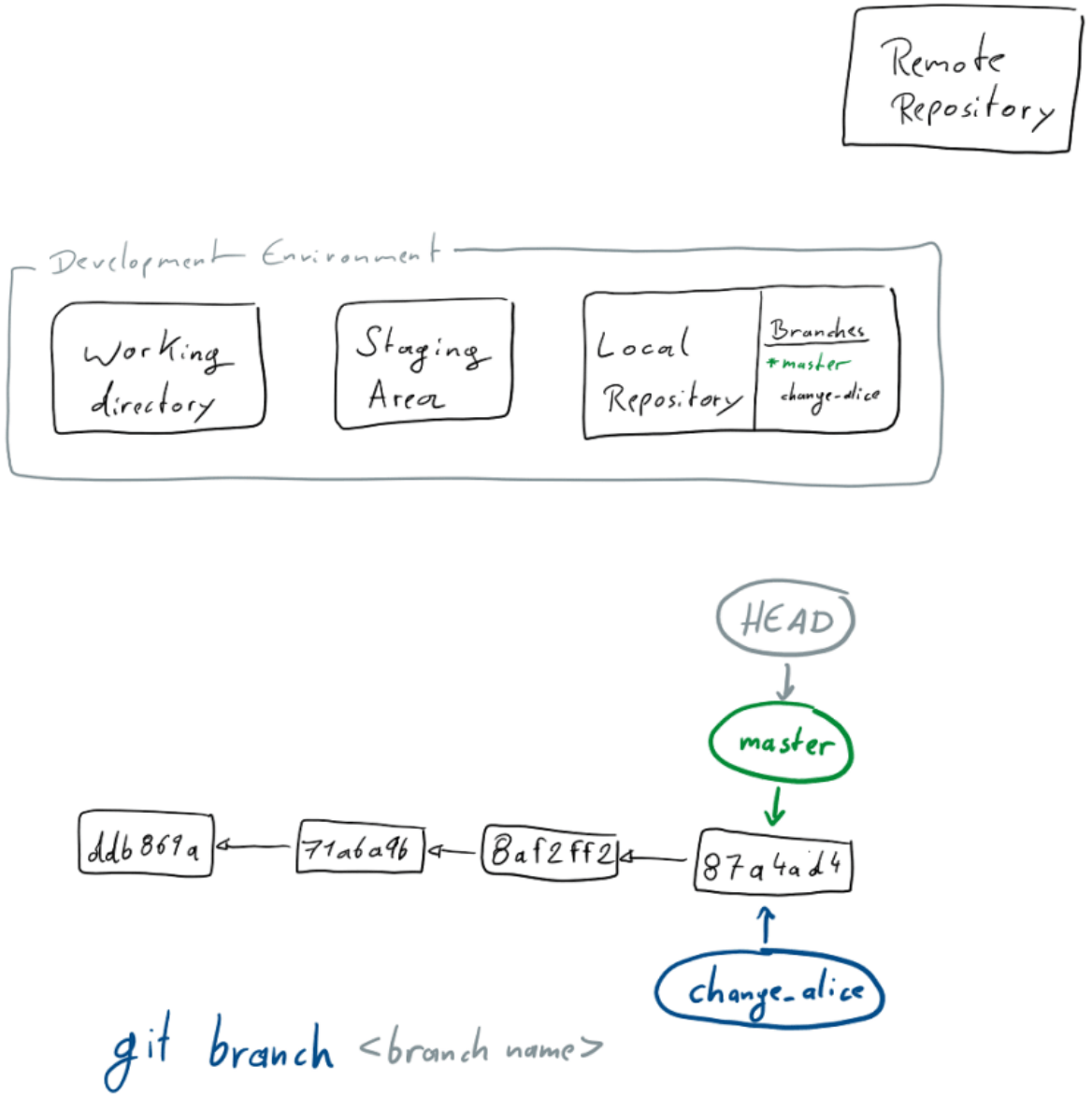
# Branching



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# Create branch

```
1 git branch change_bob
```

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# List branch

```
1 git branch
2 ------------------------------
3   change_bob
4 * master
```

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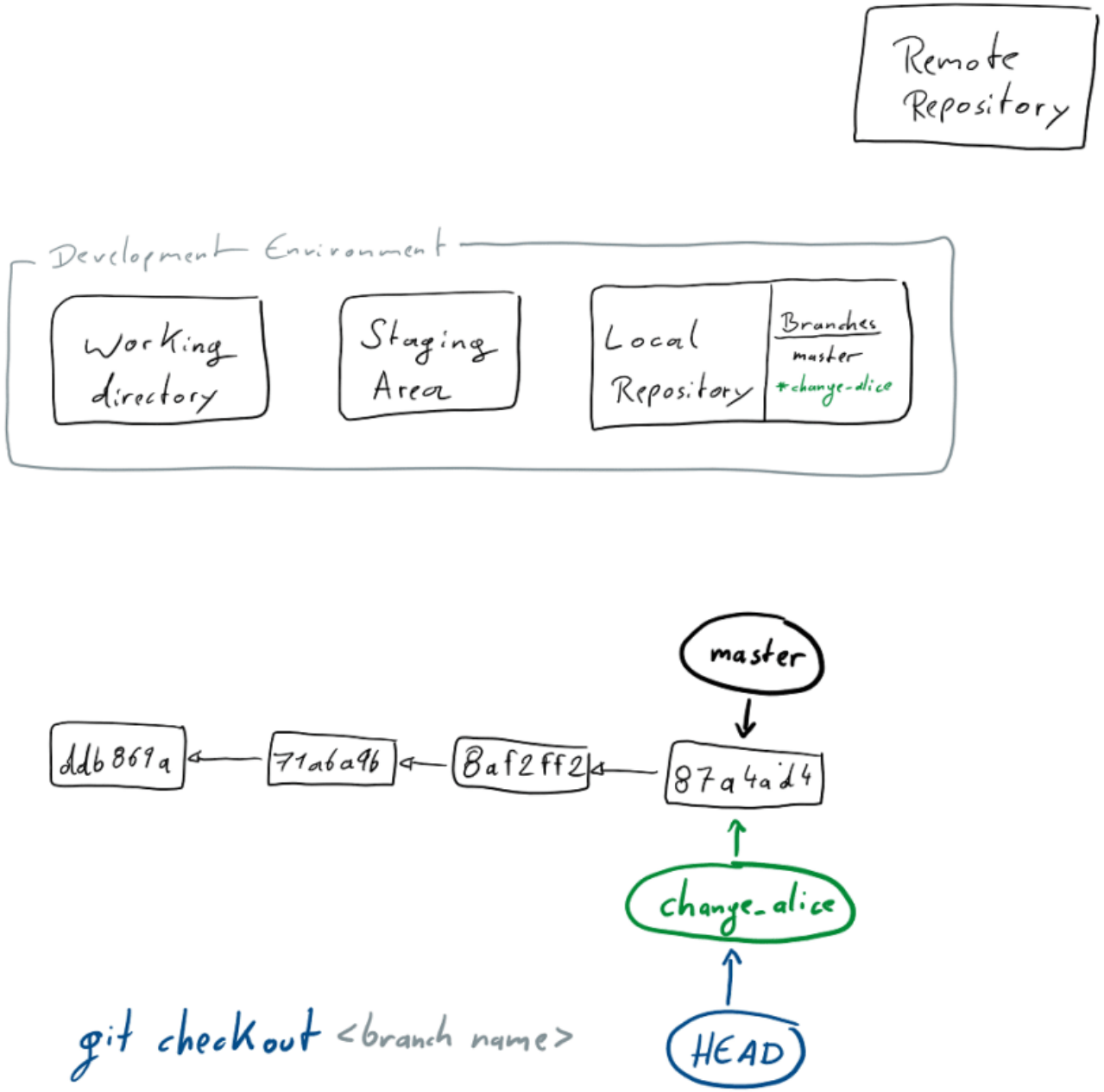
# Change branch

```
1 git checkout change_bob
2 M       bob.txt
3 Switched to branch 'change_bob'
4 ➜  git-training git:(change_bob) ✗
```

TRIPTYK

# Change branch



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# Push Branch

```
1  ➜  git-training git:(change_bob) ✗ git push
2  fatal: The current branch change_bob has no upstream branch.
3  To push the current branch and set the remote as upstream, use
4
5      git push --set-upstream origin change_bob
6  ----------------------------------------------------------
7  git push --set-upstream origin change_bob
8
9  Total 0 (delta 0), reused 0 (delta 0)
10 remote:
11 remote: Create a pull request for 'change_bob' on GitHub by visiting:
12 remote:      https://github.com/TRIPTYK/git-training/pull/new/change_bob
13 remote:
14 To github.com:TRIPTYK/git-training.git
15  * [new branch]      change_bob -> change_bob
16 Branch 'change_bob' set up to track remote branch 'change_bob' from 'origin'.
17 ➜  git-training git:(change_bob) ✗
```

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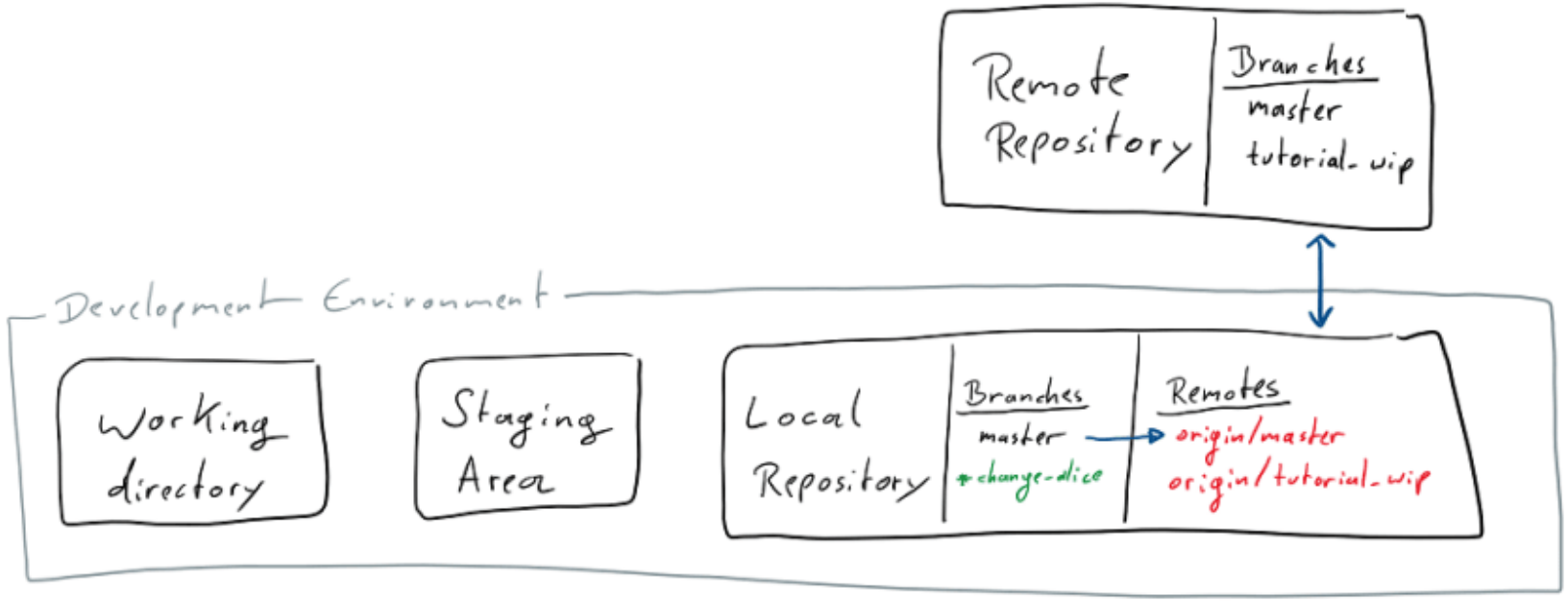
# Push Branch



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# Merging Branch

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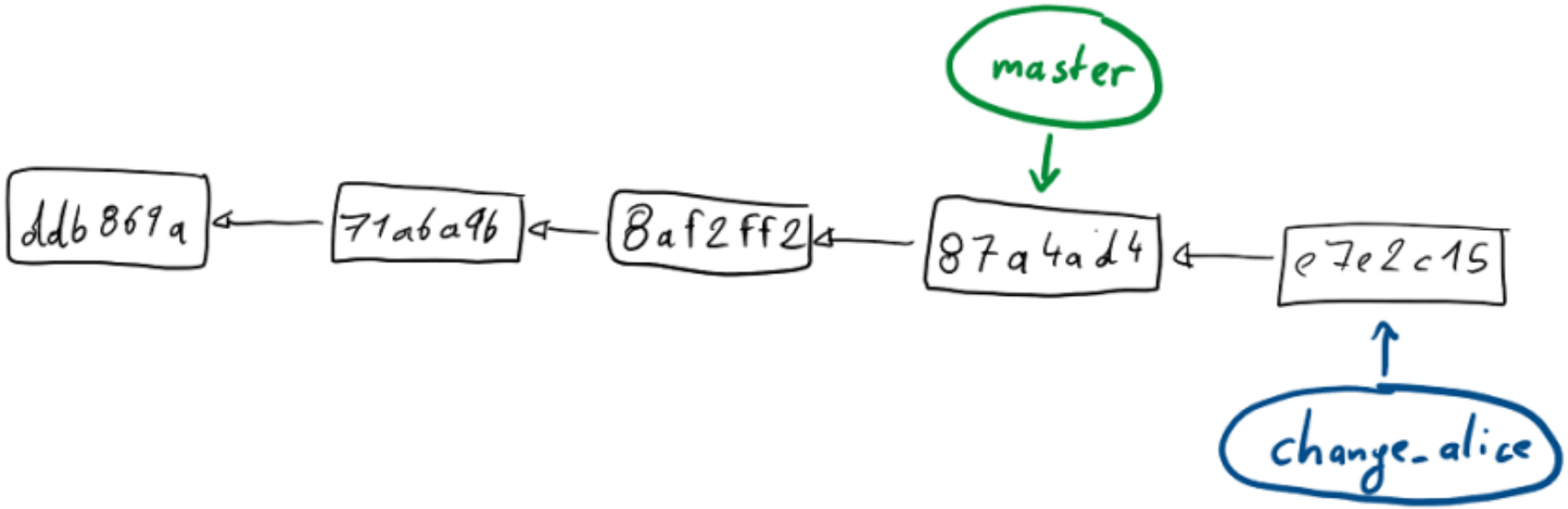
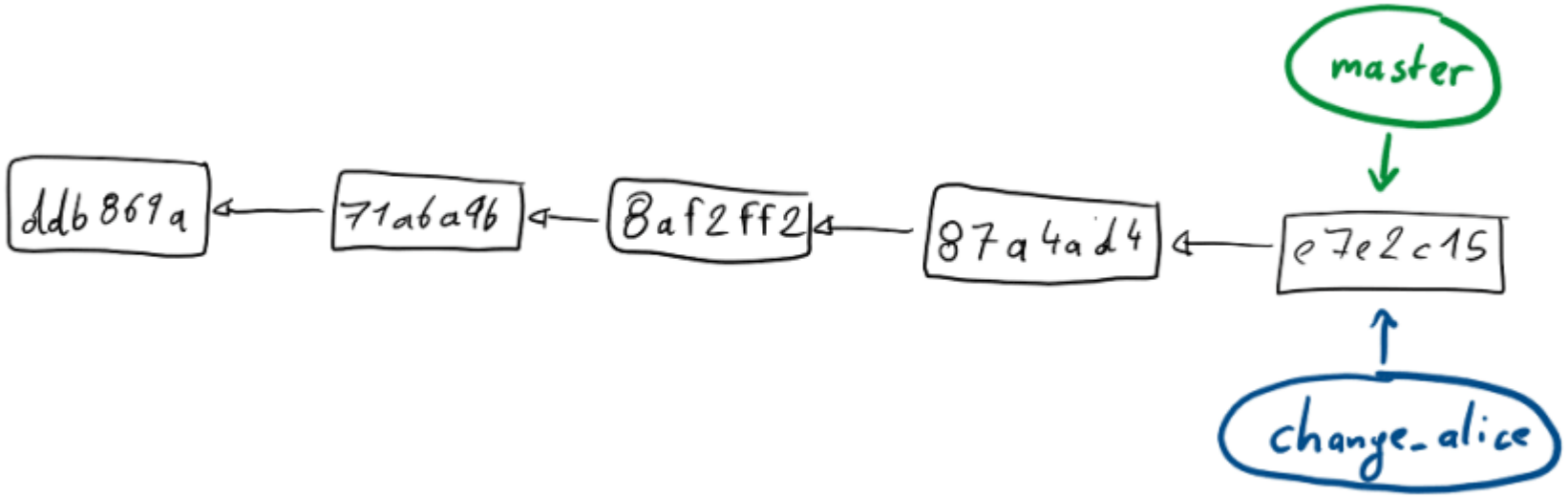
# Merging Branch



TRIPTYK

# Merging Branch



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# Merging Branch

```
1 Your branch is up-to-date with 'origin/master'.
2 ➜  git-training git:(master) ✗ git merge change_bob
```

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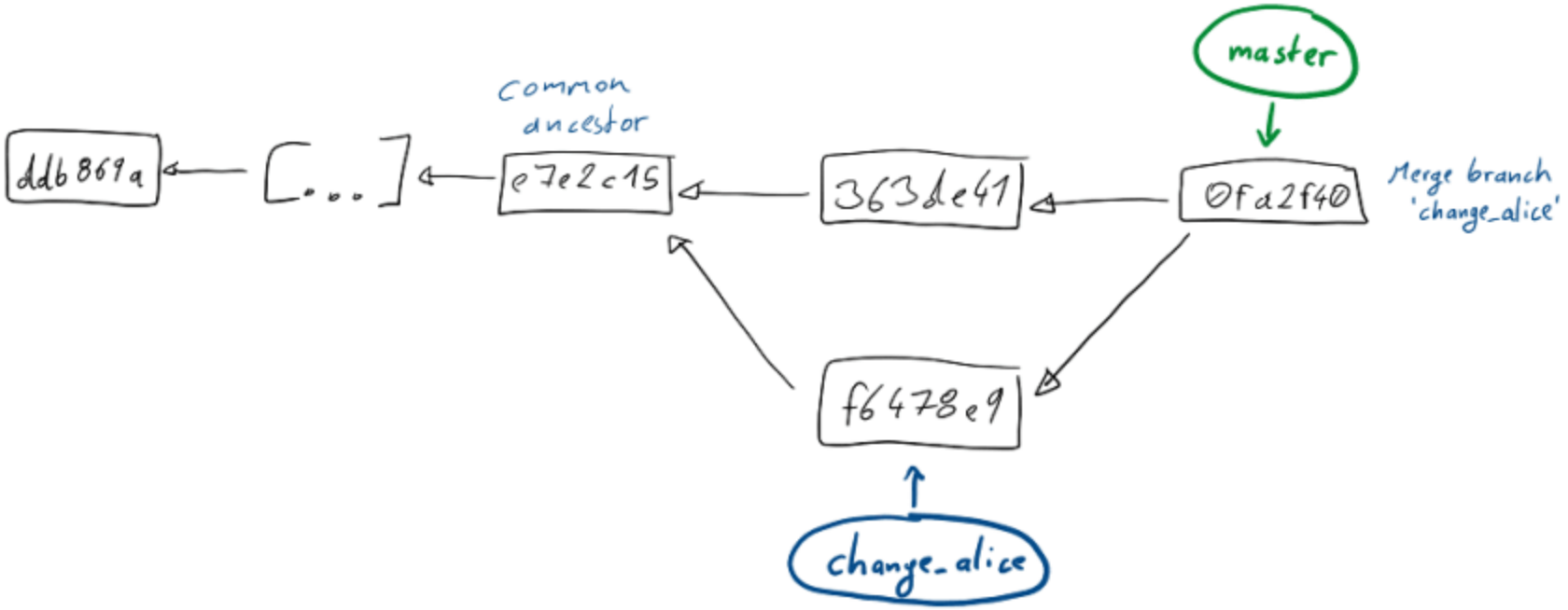
# Merging Branch



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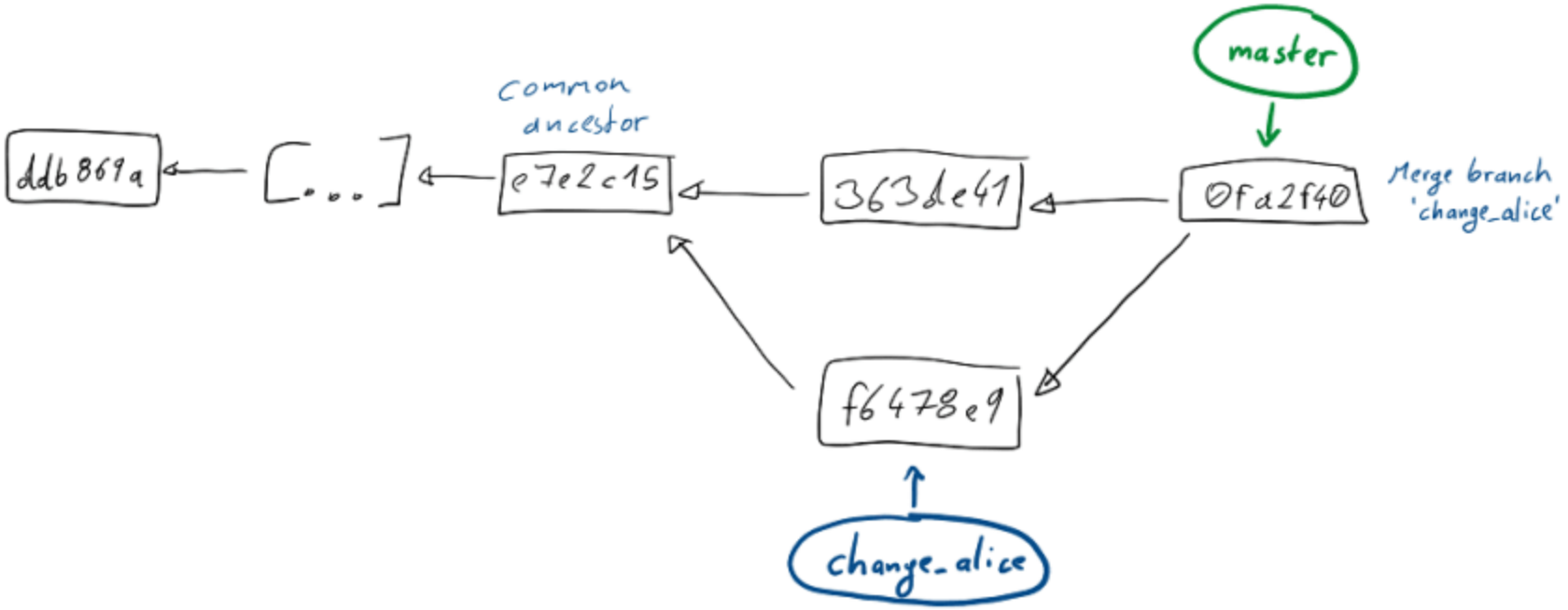
# Gérer les conflits



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# Gérer les conflits

```
1 ➜  git-training git:(master) ✗ git checkout -b bobby_branch
2 M       bob.txt
3 Switched to a new branch 'bobby_branch'
4 ➜  git-training git:(bobby_branch) ✗
```

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# Gérer les conflits

```
1 ➜  git-training git:(master) ✗ git checkout -b bobby_branch
2 M       bob.txt
3 Switched to a new branch 'bobby_branch'
4 ➜  git-training git:(bobby_branch) ✗
```

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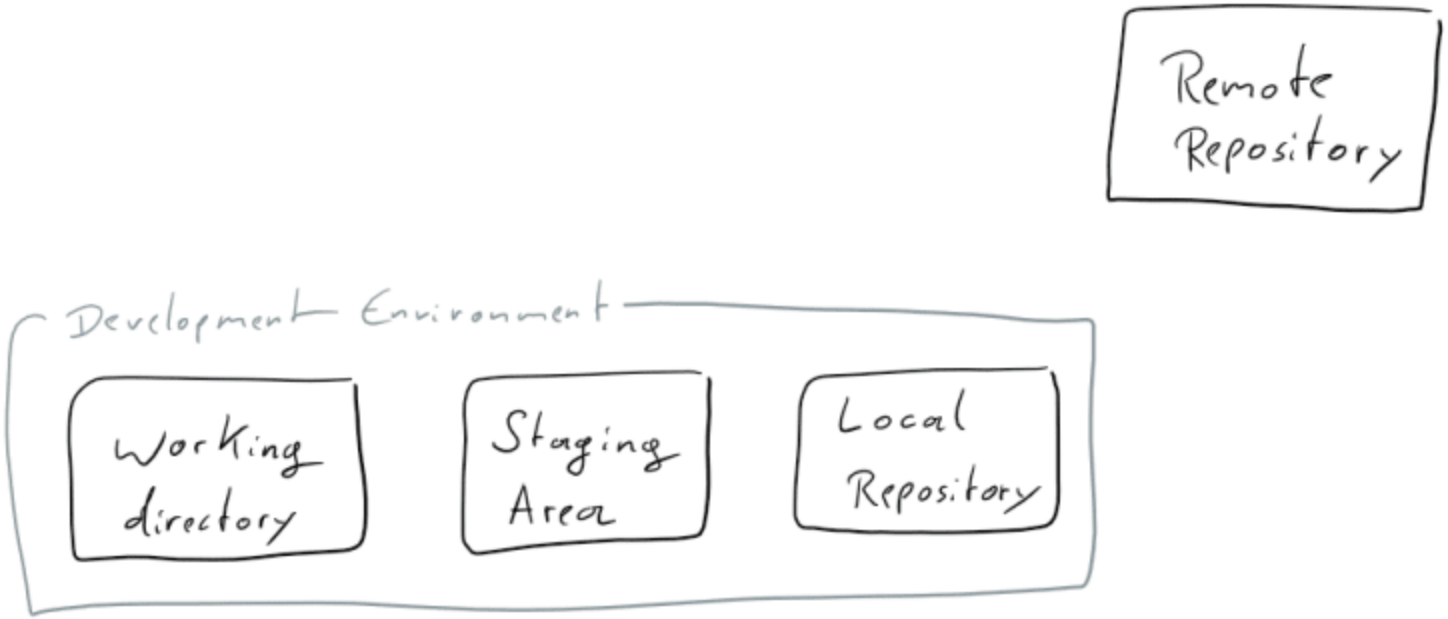
# Remote



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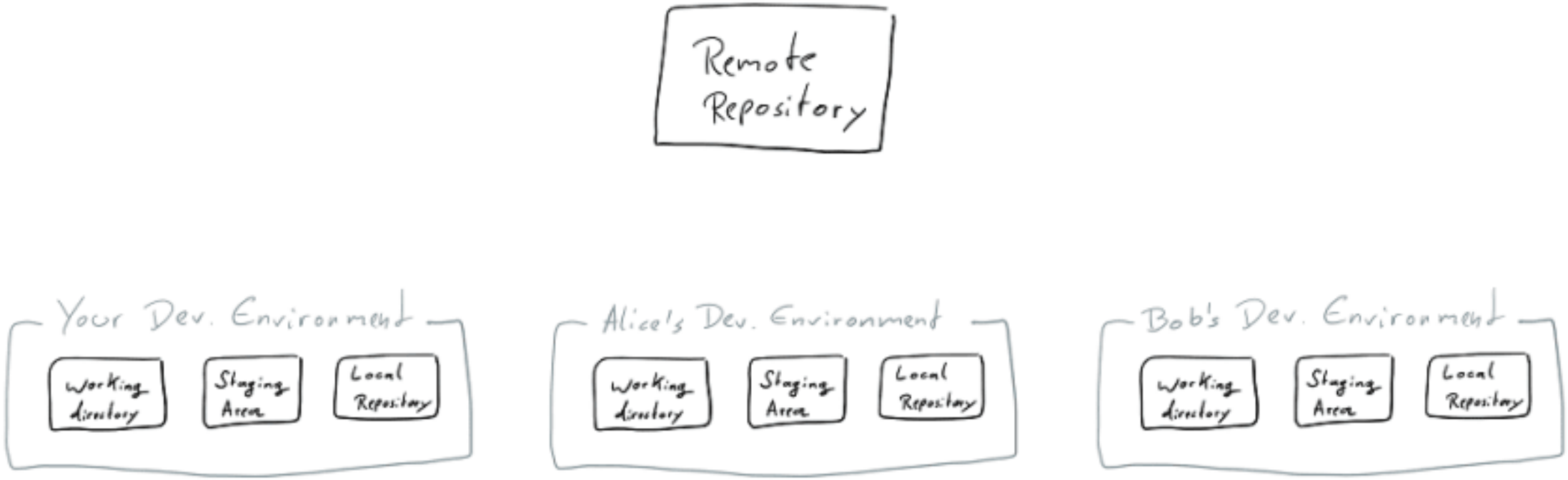
# Remote



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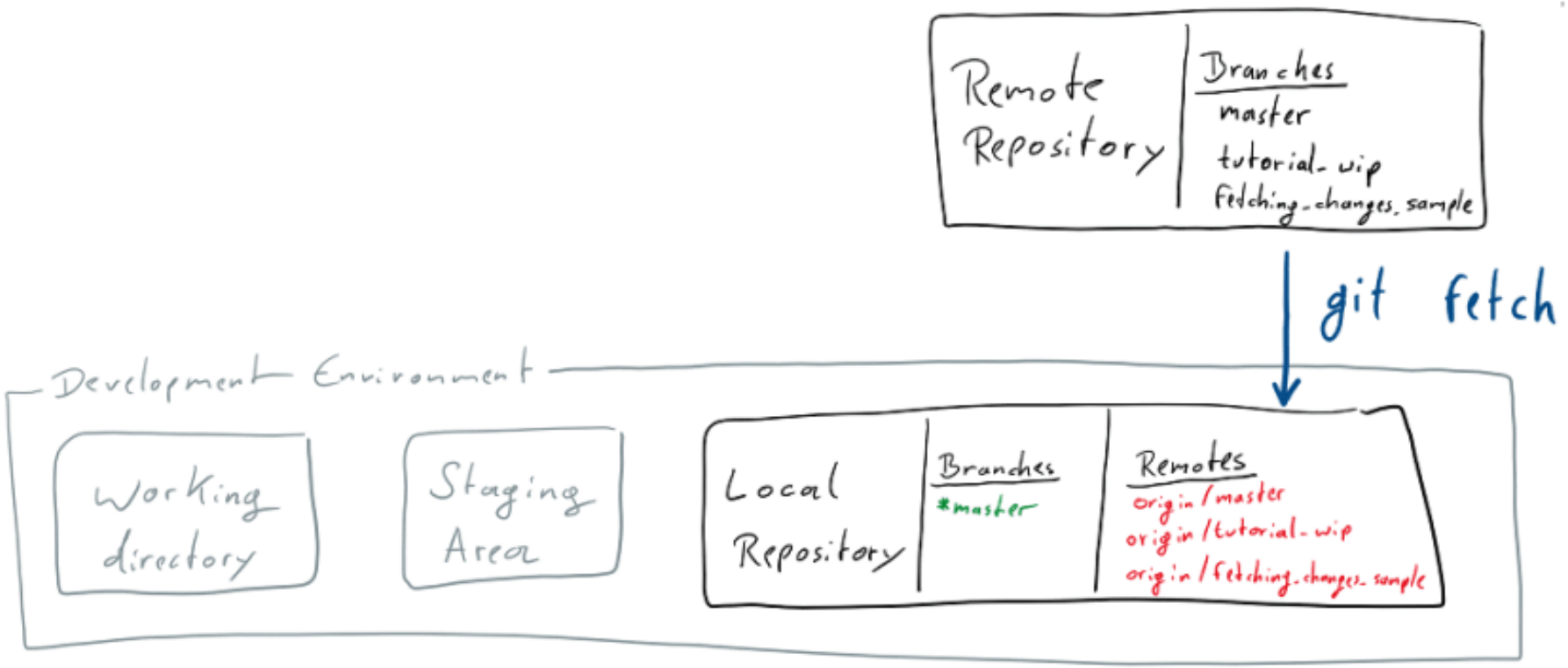
# Remote fetch branches



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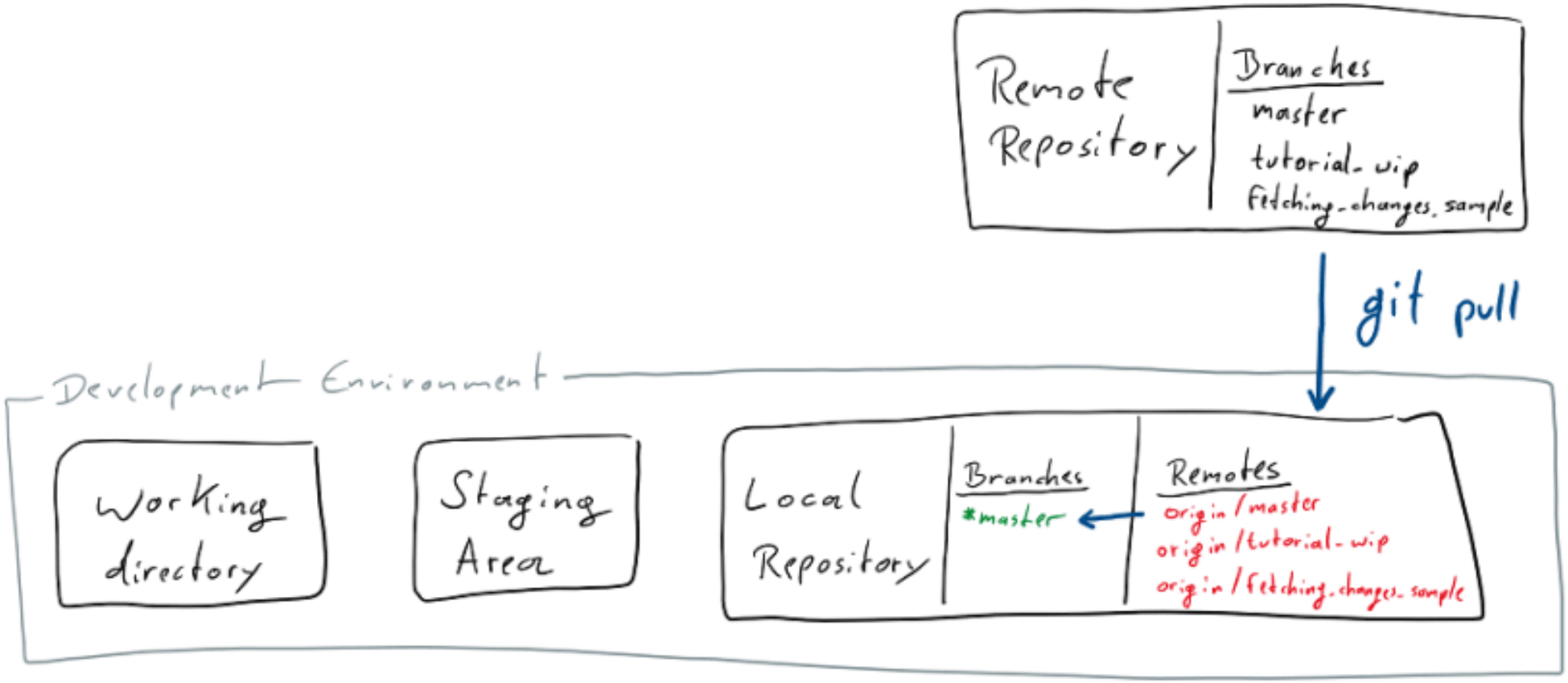
# Remote changes



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# Remote with github

- Créer un compte
- Créer un dépôt
- Cloner un dépôt

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# Remote with github

git remote

git remote show origin

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# Supprimer changes

```
1 git stash
```

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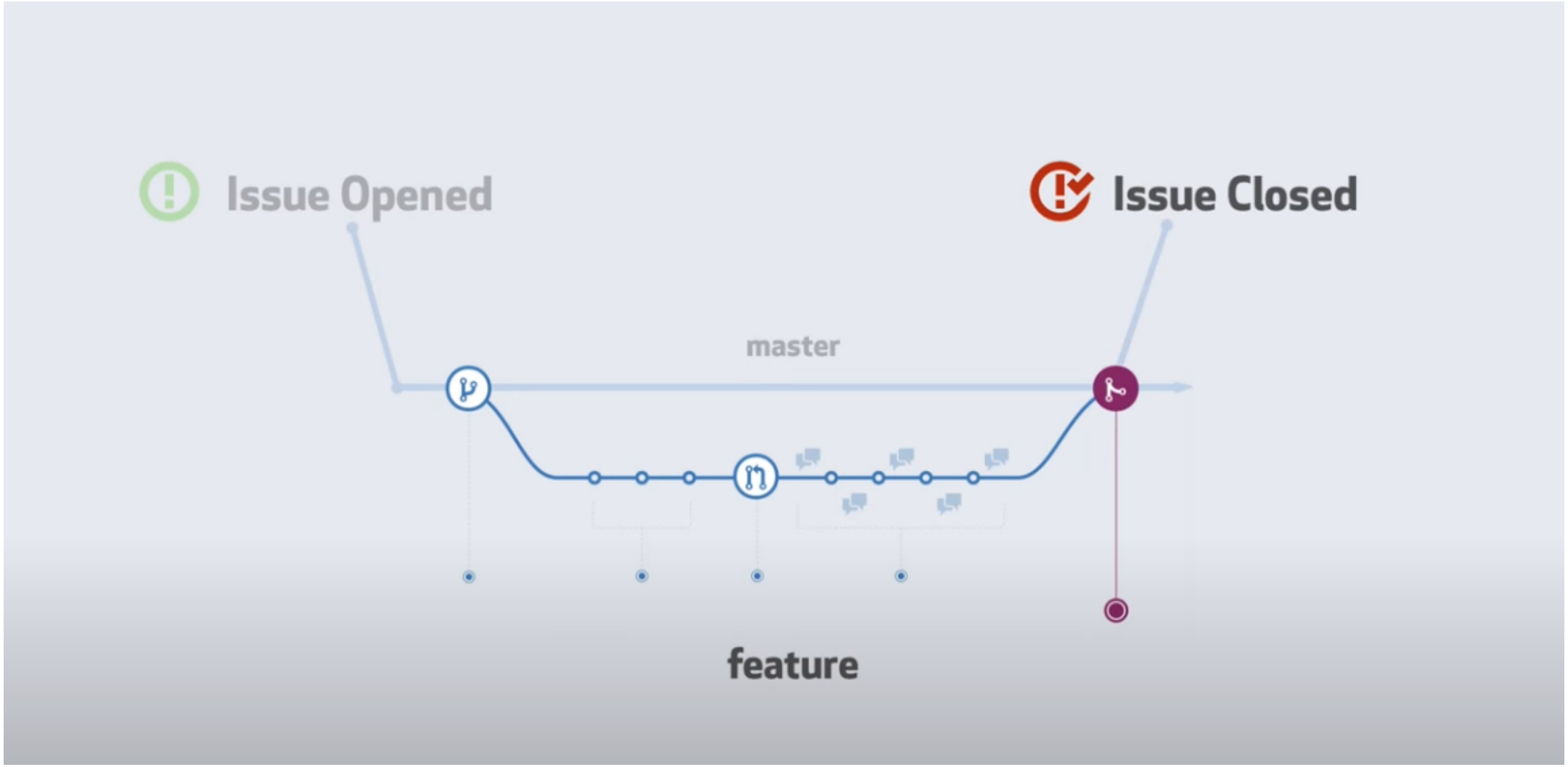
# Github flow



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# Git Flow ou stratégie d'utilisation de GIT

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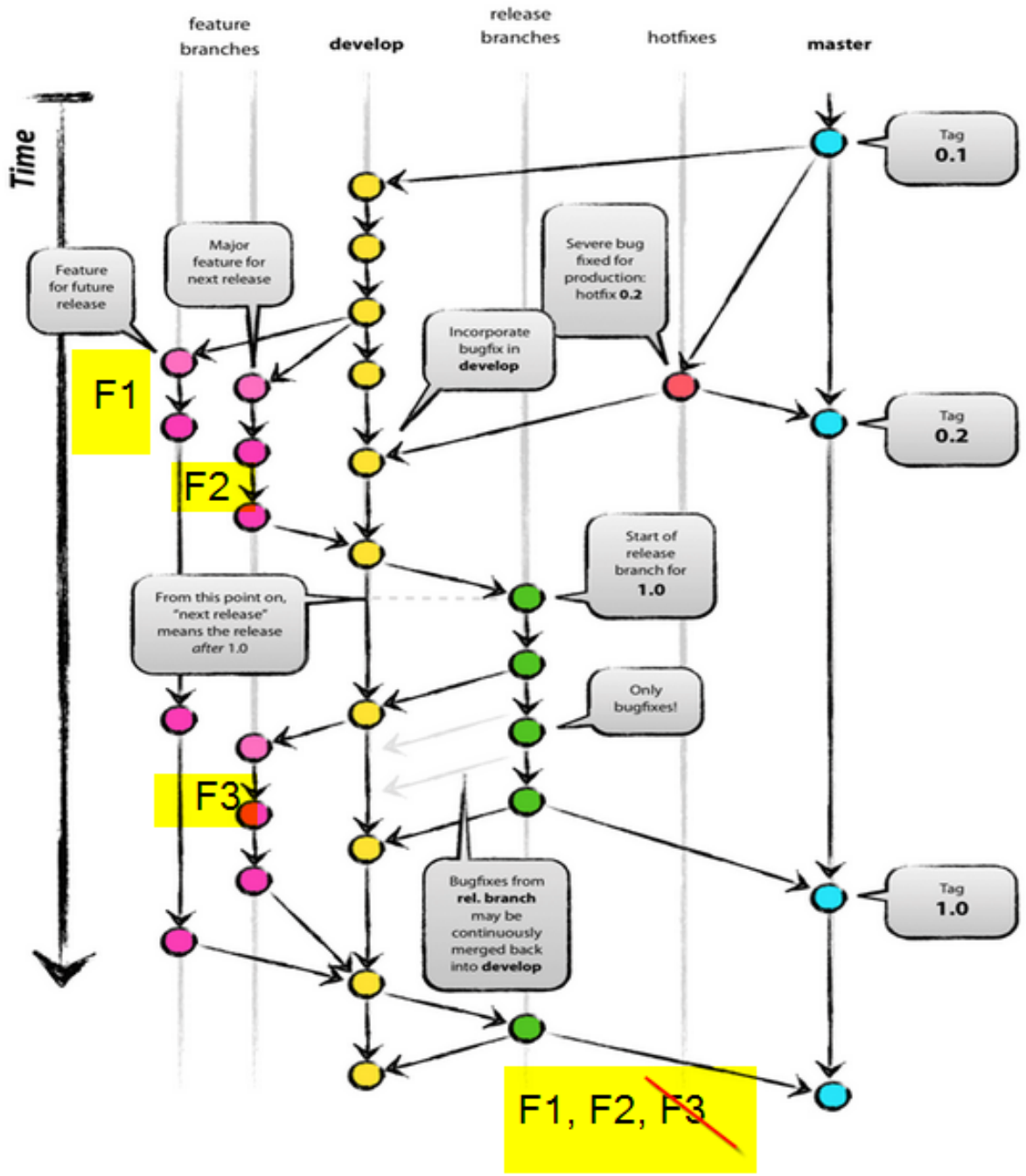
feature branches
develop
release branches
hotfixes
master
Time
Feature for future release
Major feature for next release
Severe bug fixed for production: hotfix 0.2
Incorporate bugfix in develop
Tag 0.1
Tag 0.2
F1
F2
Start of release branch for 1.0
From this point on, "next release" means the release after 1.0
Only bugfixes!
F3
Bugfixes from rel. branch may be continuously merged back into develop
Tag 1.0
F1, F2, F3

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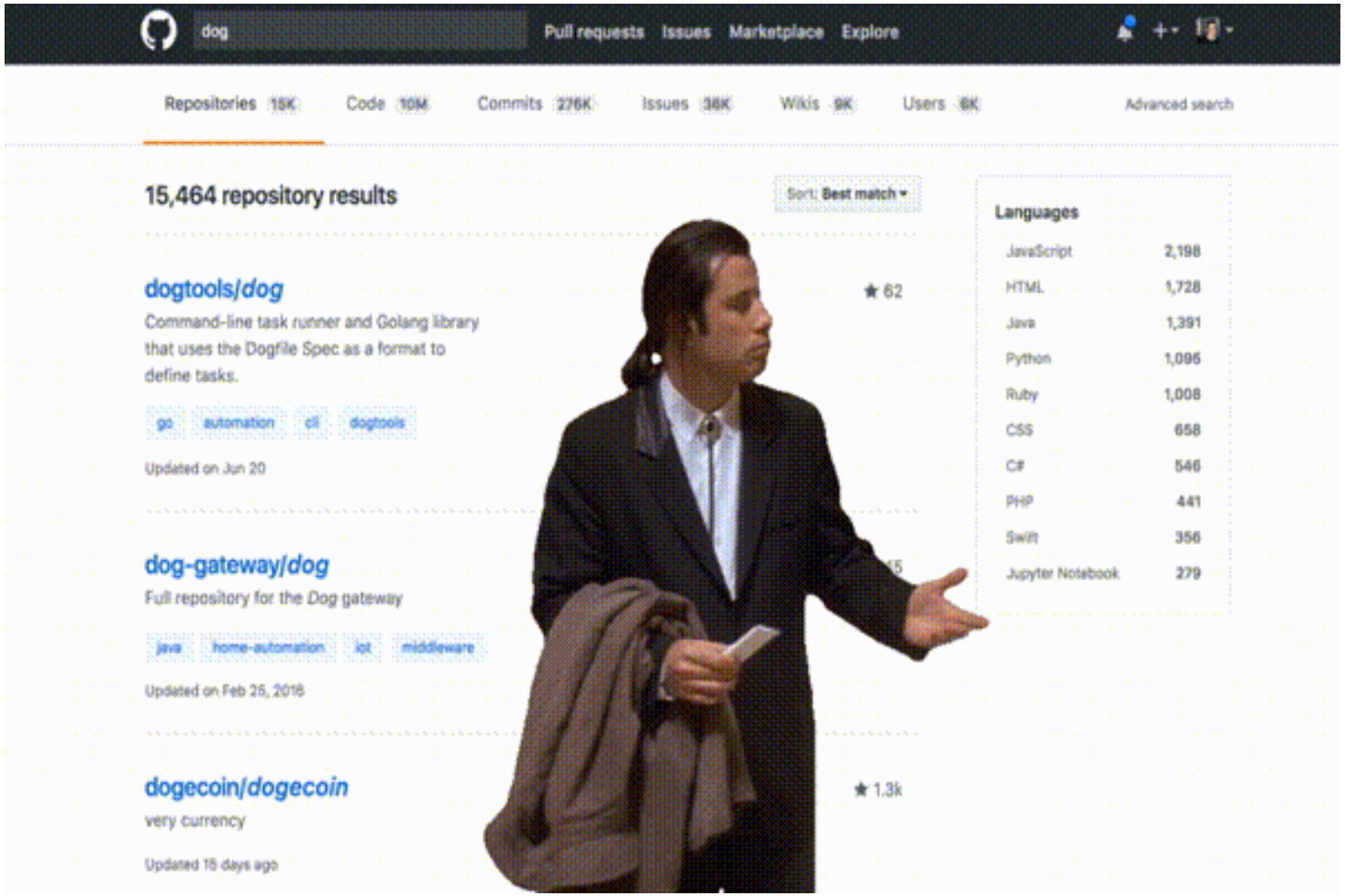
# Github pull requests



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# GIT Cheat Sheet

https://github.github.com/training-kit/downloads/fr/github-git-cheat-sheet/