

Recherche Reproductible

Module 1: Introduction à Git

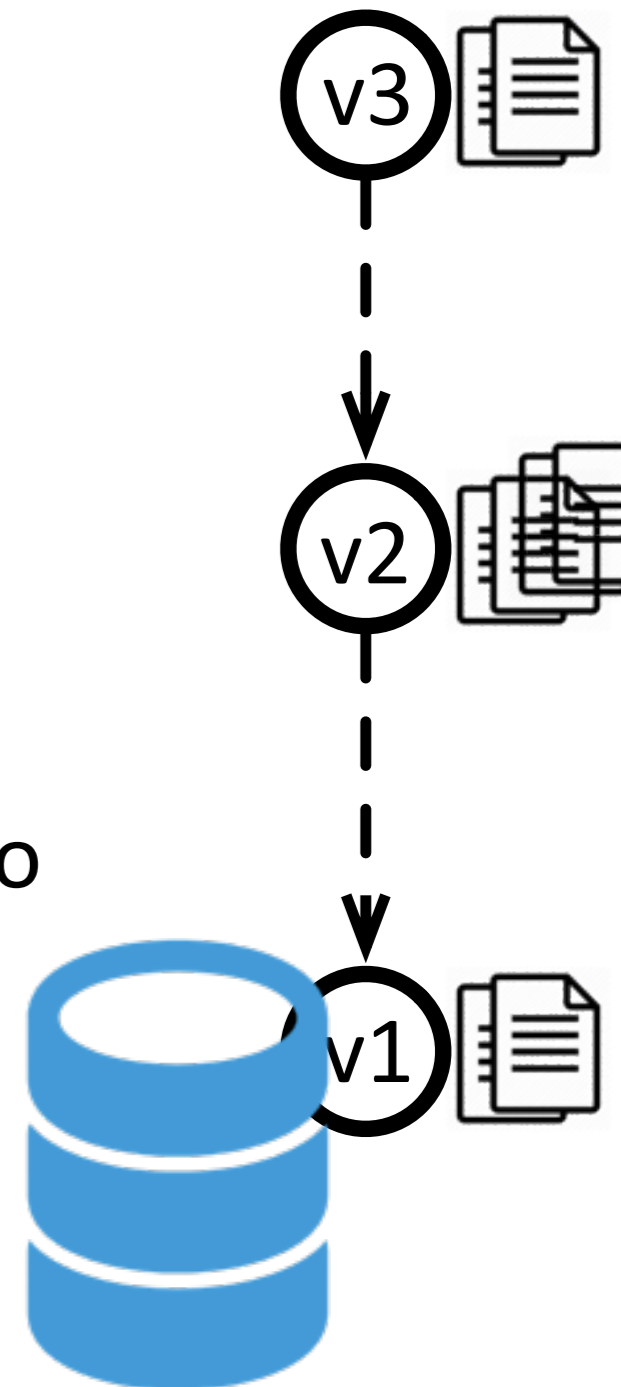
Git and Distributed VCSs

by Guille Polito
@GuillePolito



What is git ?

- Git is a Version Control System (VCS)
 - A database that manages changes to files
 - Changes are organised in versions (v1, v2...)
 - All the history is stored, and we can access it to work with it



Why using a VCS?

- Simplify team work:
 - share files
 - track changes done by multiple persons
- Not fear change: we can restore a previous version
- Ask questions: when did this change? why?

Why git ?

- Visibility
- Manage more than only code
- Lots of existing tools
- Good branch support, good diff
- ...

Where would you place
yourself?



git

Where would you place
yourself?



git

Where would you place yourself?



git

Where would you place yourself?



git

A Test

How do you ****clean**** your working copy?

\$



A Test

How do you ****clean**** your working copy?

```
$ git reset
```

This will reset your index



A Test

How do you ****clean**** your working copy?

```
$ git reset --hard
```

Well, yes, but not quite.

This will reset your working copy.
But not remove untracked files.



A Test

How do you ****clean**** your working copy?

```
$ git reset --hard
```

```
$ git clean -fd
```

FATALITY



git is not easy

- Lot of *new* terminology:
index, HEAD, pull, push, fetch
- False friends: merge, commit
- Command-line oriented
- Documentation is sometimes ambiguous, sometimes incomplete



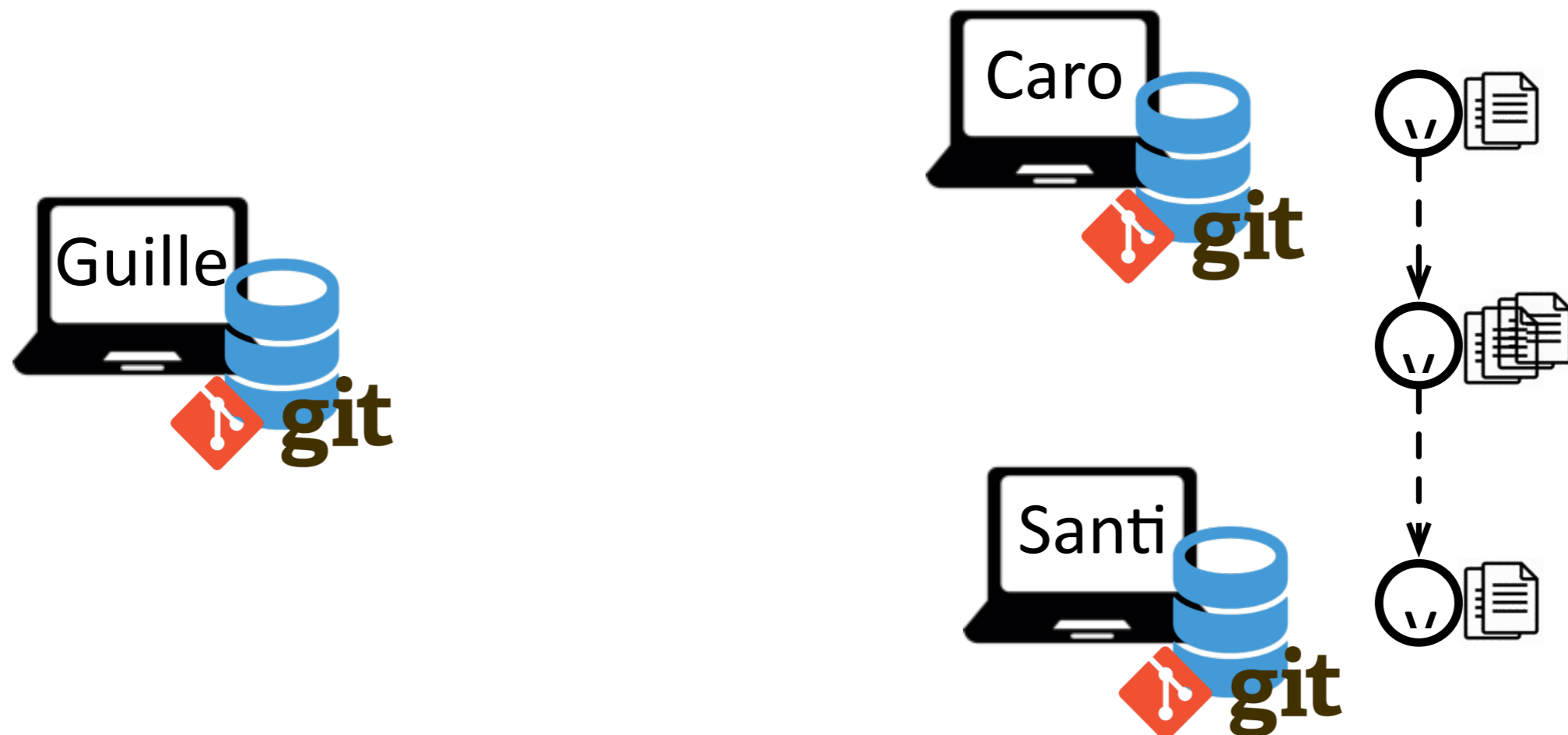
git is not easy (2)

- Multiple workflows are a two-edged machete
There is no **One, single ring to rule them all**
- People mix workflows, philosophy and technical solutions (try reading some blogs...)
- Graphical tools are too general or too specific



git is a distributed VCS (1)

- There is conceptually no central repository: Each user has her/his own copy



git is a distributed VCS (2)

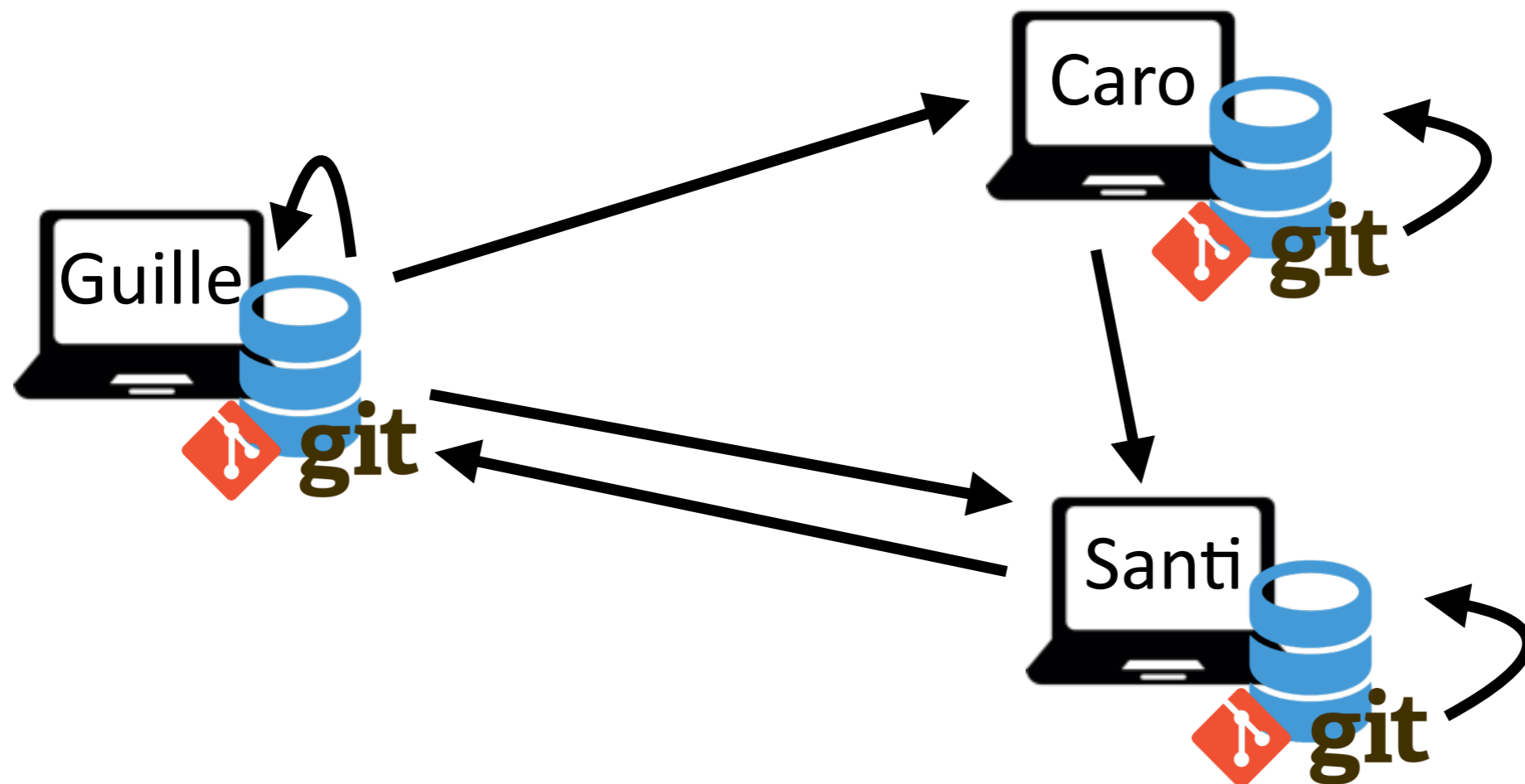
- We can work *locally*, without access to a network





git is a distributed VCS (3)

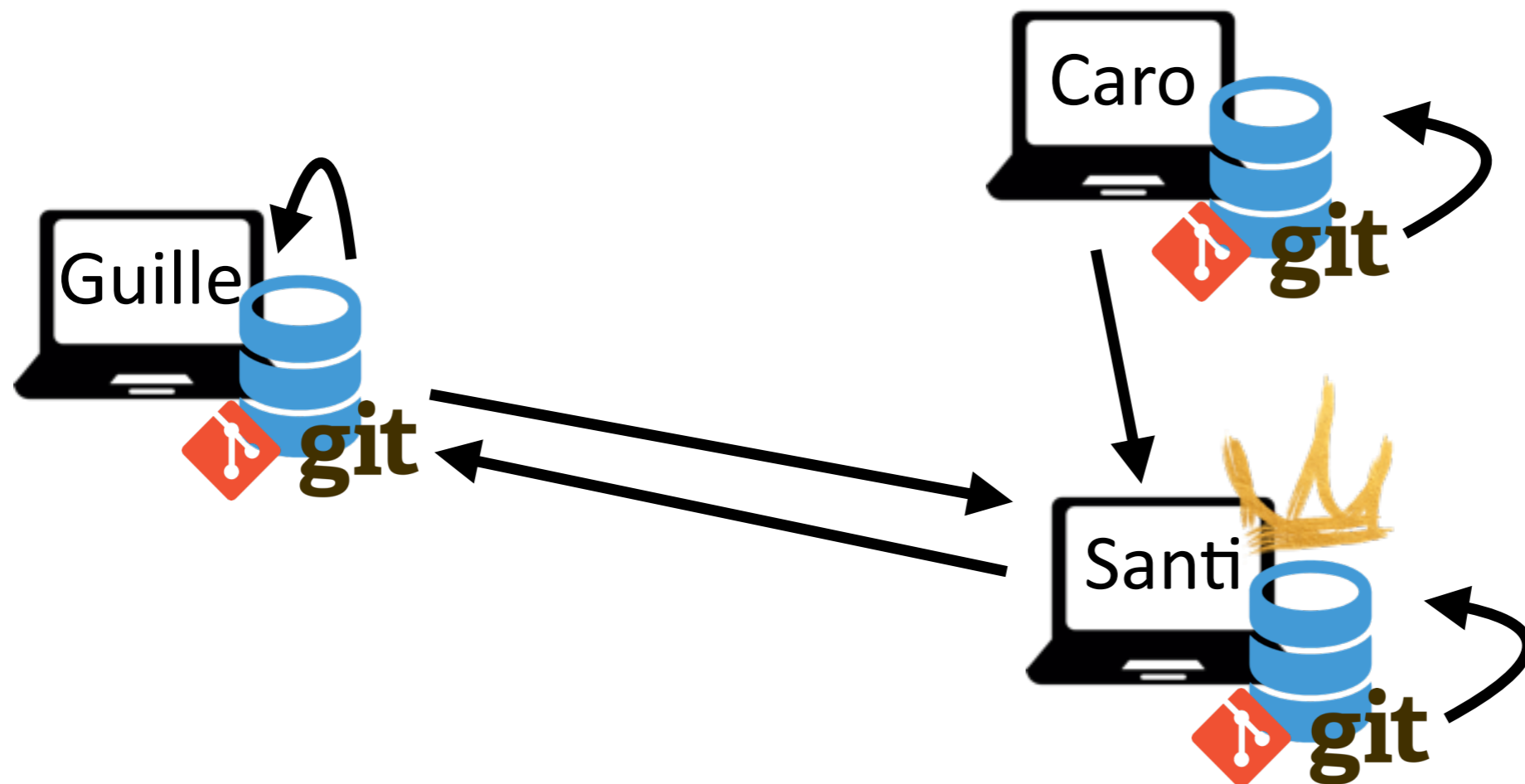
- We exchange work between them through a network





git is a distributed VCS (4)

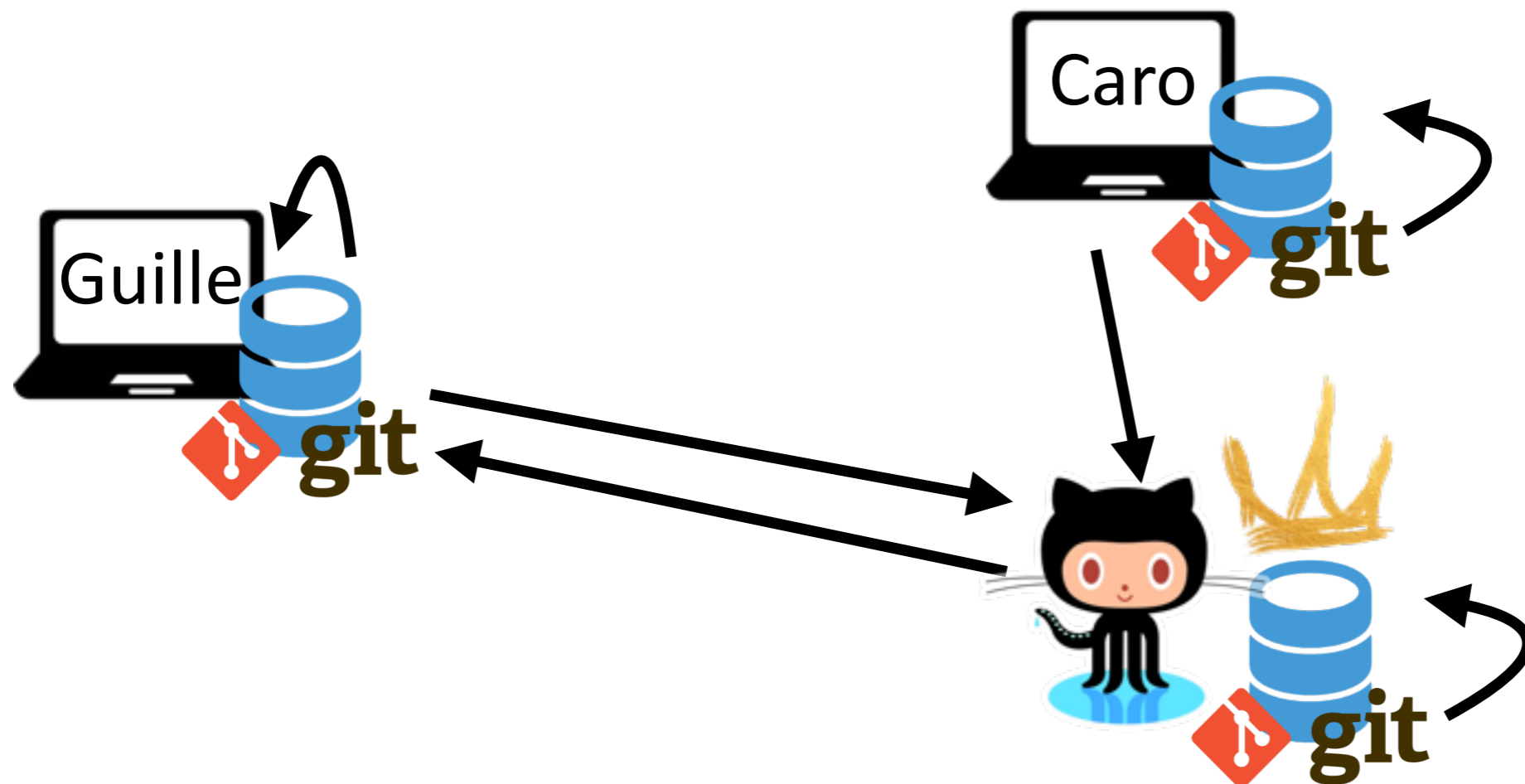
- Most of the times, one of them has the *role* of master and all exchanges are done through him



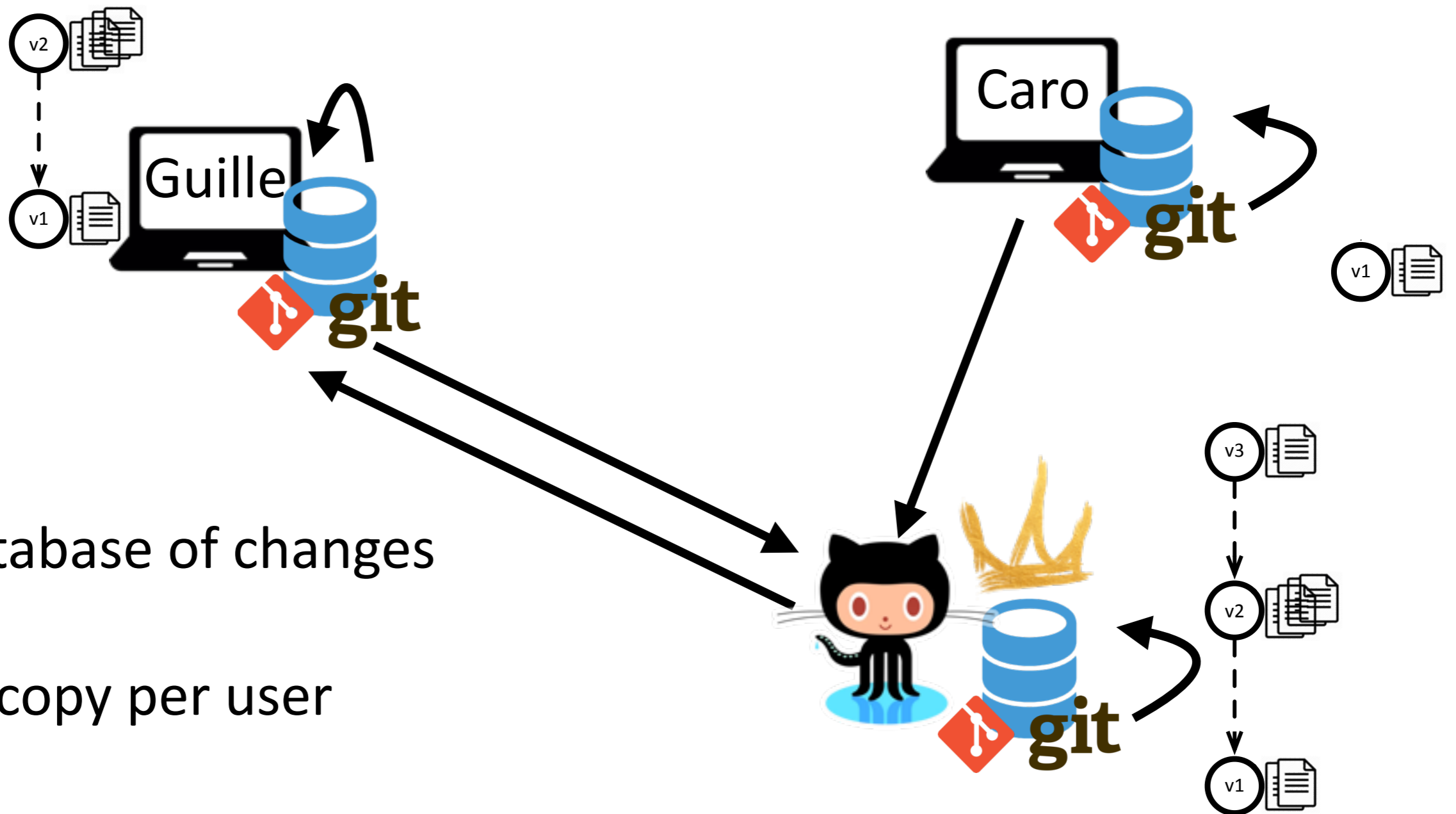


git is a distributed VCS (5)

- This master is usually in a forge like GitHub, Gitlab...



Summary



- A database of changes
- One copy per user
- Sometimes, one Master