Git 101

Amin Kasrou Aouam

Concepts

- Version control system (VCS)
- Distributed
- *De facto* standard for code collaboration

Reality

- Powerful system with hard to grasp concepts

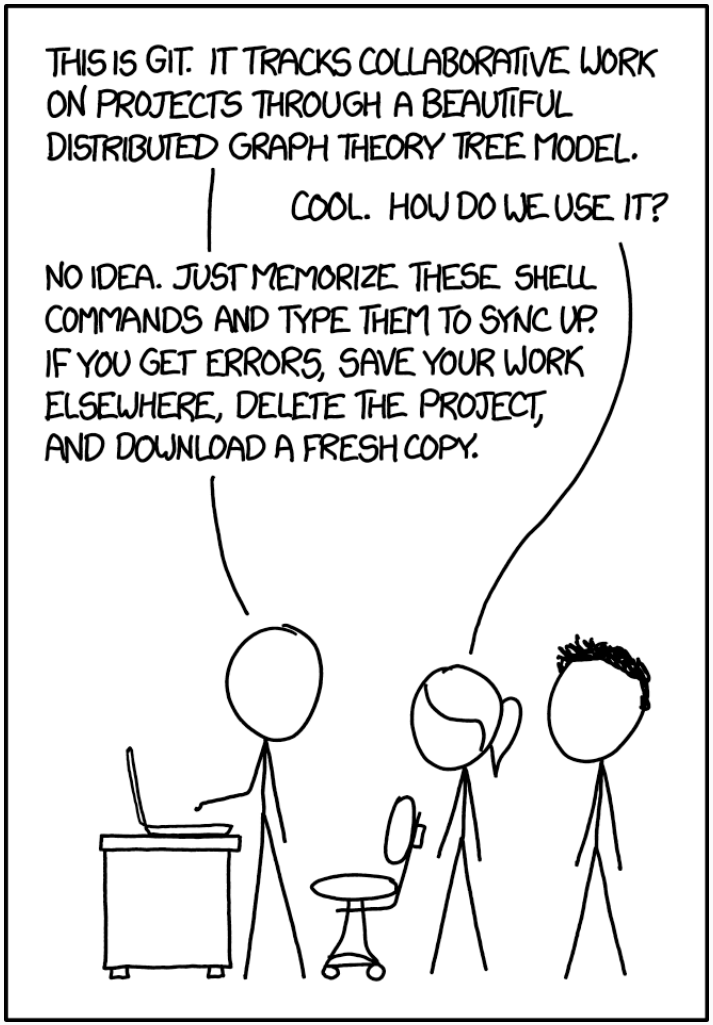


Figure 1: xkcd

Structure of a git project

- The working directory is the folder where we want to manage our project
- The index is an intermediary step between the files in the directory and the commits
- A commit is a full snapshot (i.e. copy) of the contents of the working directory at some point

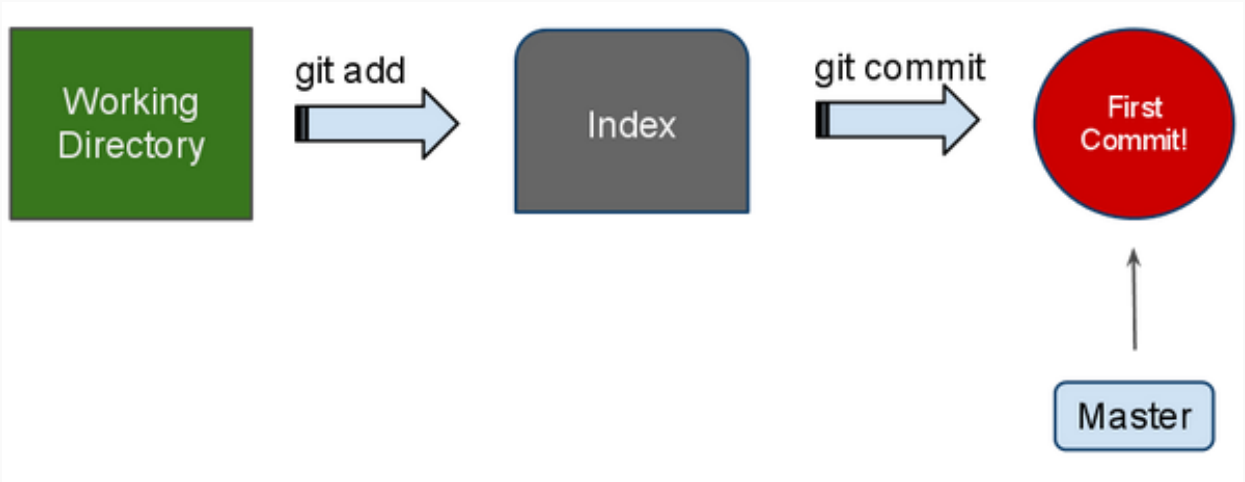
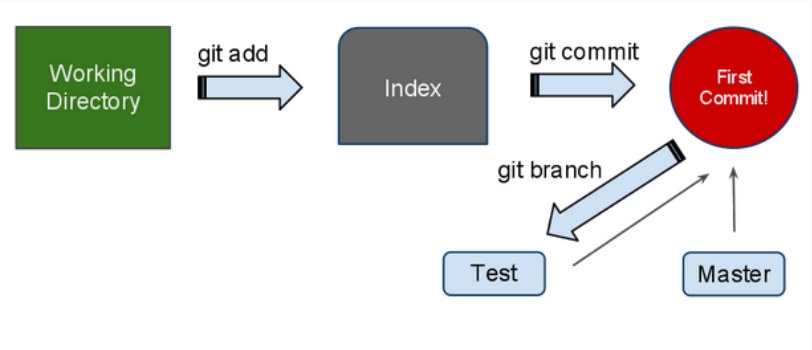
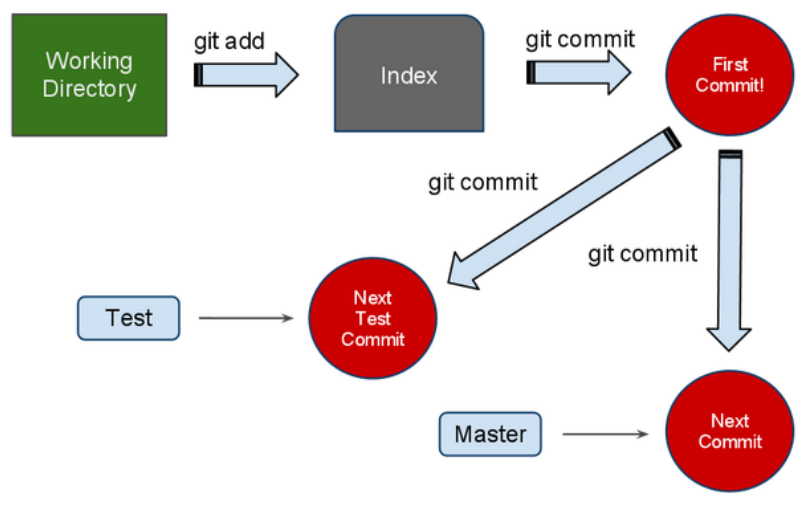


Figure 2: Structure of a project

Branches

- A branch is a way to diverge from the commits
- It allows multiple people to work on the same project without conflicts





Remotes

- The real advantage of git is allowing multiple people to work on the same project from different locations
- A server is used to synchronize the changes between the developers

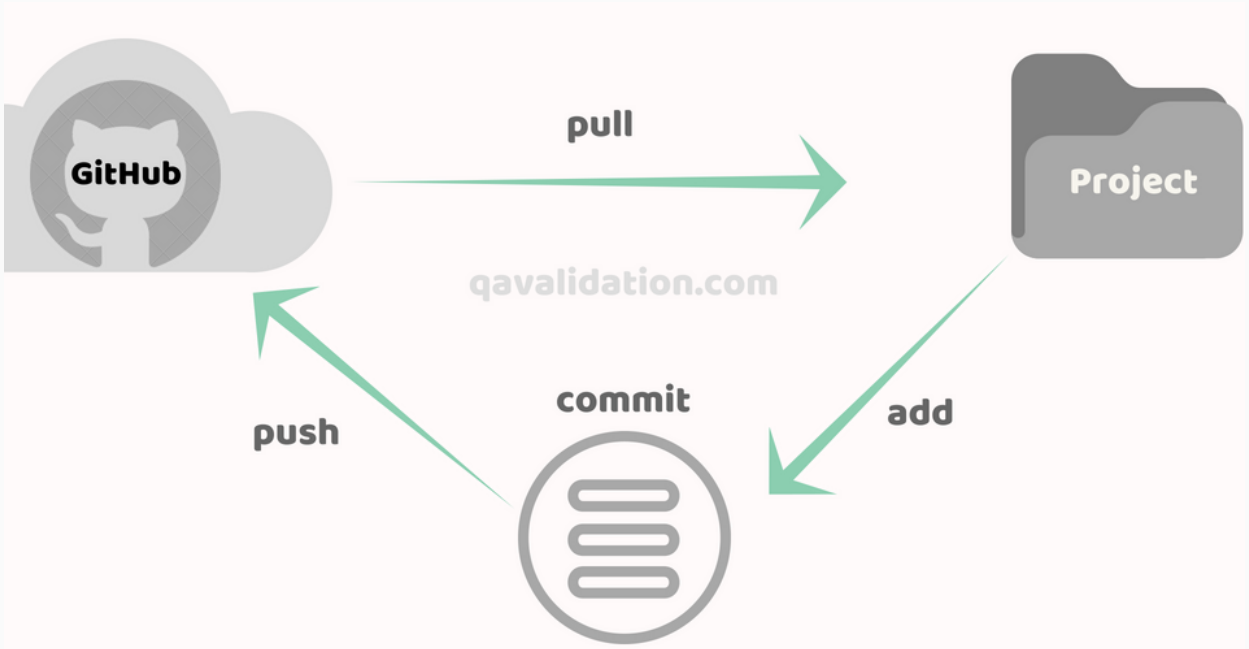
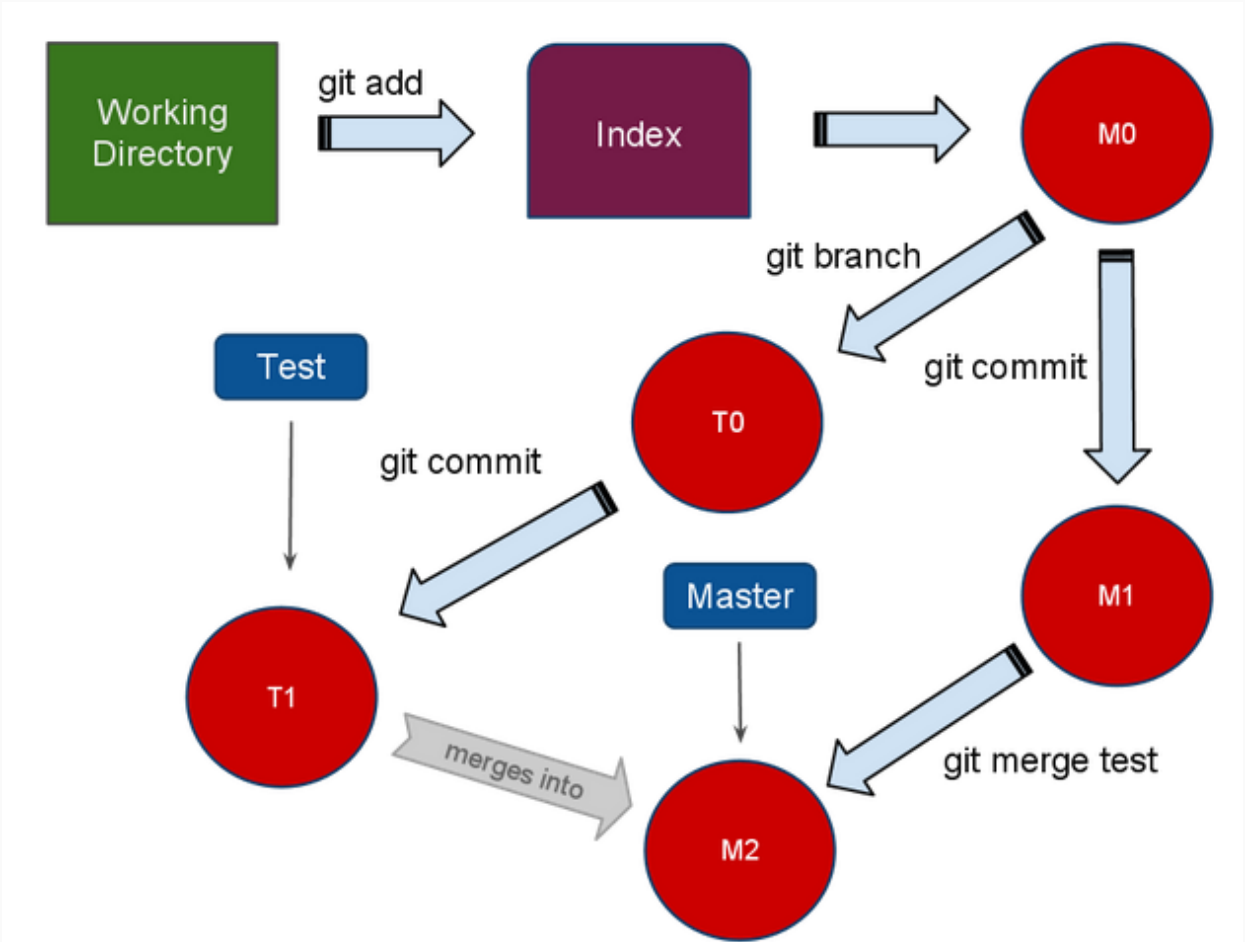


Figure 3: Remote repositories

Merges

- The development of the developers has to be combined at some point
- We can merge a branch on another, importing all the changes that were done



Cheatsheet

- Add a file to the index

```
git add file
```

- Commit the changes

```
git commit
```

- Change the branch

```
git checkout branch_name
```

- Send the changes to the server

```
git push
```

- Get the changes from the server

```
git pull
```