### The very basics of Git

git for the non-programmer

Xavier Sánchez Díaz mail@tec.mx

Research Group with Strategic Focus on Intelligent Systems Tecnológico de Monterrey, Campus Monterrey

#### **Outline**

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The UNIX Philosophy

What is Git?

git is not GitHub

2 The Git workflow

How does Git work?

The distributed architecture

Branches and merges

git commands in the shell

3 Recap

The UNIX philosophy

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### Everything is a file.

## Everything is a file The UNIX philosophy

Since everything is a file, it makes sense to keep track of the changes of your projects using git, no matter what you're working on!

Changes are labeled with a unique identifier, a message and then linked to the user (both name and email) who submitted the modification.

A user can also look and revisit any state of the project throughout its lifetime, and see the differences between two versions of a file at a given state.

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#### Free and Open Source

Git is distributed according to a GPLv2 License.

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Git is free software since it respects the four essential freedoms of the user:

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- Freedom to share or redistribute copies of your modified versions to others.

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So you can avoid having filenames like Projectfinal3lastrev18.doc Or Projectfinal(this\_is\_the\_one).pdf.

#### git is not GitHub I Let's get it right



**Git** is the software: a technology and a workflow methodology.

## git is not GitHub II Let's get it right



**GitHub** is a website that offers 'free' (as in free beer) hosting of open source projects. GitHub uses the Git methodology. There are plenty of alternatives to GitHub.

The Git workflow

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Assume you're in charge of a feature. Then, the process would be similar to the following:

Make some changes

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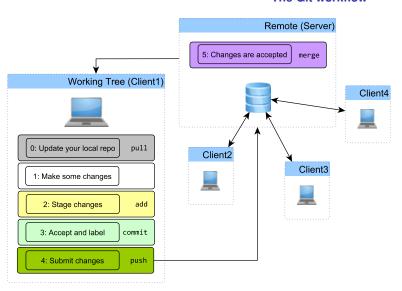
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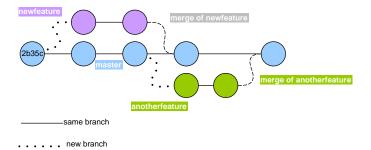
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#### What and where?

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# Branching The Git workflow



---- merge branch

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# Now with commands!

Recap

- Update your copy to the newest version with git pull
   <repository> [branch].
- **Make some changes** by editing and saving your work. You have some **unstaged** changes by now.
- **Stage those changes** using git add <file>. Your files are now **staged** and ready to be labeled.
- **Label the changes** by using git commit [options], your work is now **committed** with a hash (SHA-1) and linked to your user.
- Submit your labeled changes to the master repository by using git push [options].
- Your changes are incorporated to the project by merging the branch you worked on, with git merge [options]. This is usually done by an administrator.

# That's it!

# For more information

Be sure to check out the documentation for git in its official webpage. They also have a free book!

You can also take a look at the GitHub, GitLab and Bitbucket git tutorials.