

# Free Software and Version Control 101

A introductory course on FOSS, git, curl and web integrations

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## Section 1

### Version control?

# What is version control?

Version control is the practice of managing and documenting *data* (code, schematics, etc.) iterations.

It is particularly important in our context of Free and Open Source software, as a careful documentation of alterations between versions and the ability to inspect older or deprecated sources can make issue resolution and feature integration much more agile.

## Section 2

### Tools

# git?

Git is a version control software created by Linus Torvalds (which also created the Linux Kernel). Its free software under the GPL v2.0.

Git allows cloning, pulling, pushing, etc. of data stored in git instances.

# curl?

Curl (short for client-url), is the command line tool that makes use of libcurl, a data transfer library that supports a array of network protocols such as FTP, HTTP, etc.

We will use curl to communicate with the GitHub API in the next sections.

Curl and libcurl are FOSS licensed under the curl license, based on the MIT License, and compatible with the GPL v3.0

## Section 3

### How does git instance work?

# Repositories and actions

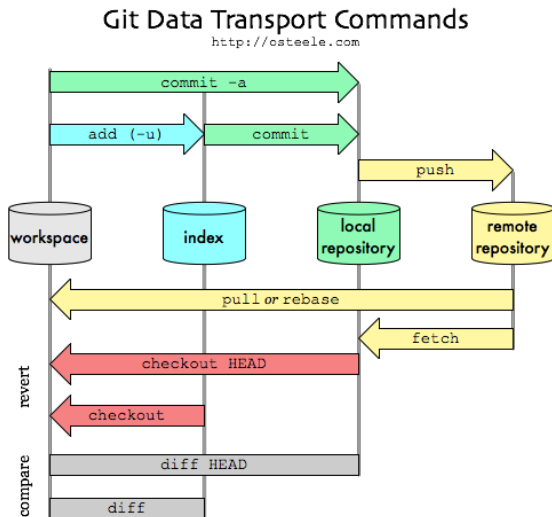


Figure 1: Actions and interactions between repositories



# A practical example: hackerschool.io

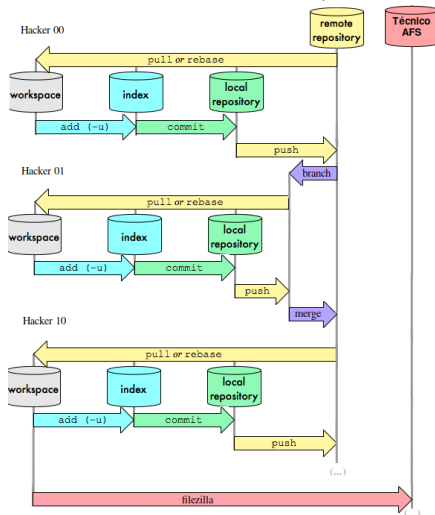


Figure 2: Git/GitHub flow of the hackerschool.io repository

## Section 4

### Tying our work with freedom

# On FOSS

# Licenses

## Section 5

Let's Start!

# Setting up your git/GitHub environment

- Create a GitHub account (using your institutional e-mail is often valuable).
- Get the git and curl packages.
- Generate a OAuth key, ssh key, or any mean of remote authentication.
- Save it somewhere safe (encrypt it with gpg, or use a password manager (for example: keepass)).

Let's waddle back to the terminal

```
git config --global user.name "@user.name"
```

```
git config --global user.email @user.email
```

# Setting up a GitHub repository with curl and git

Let's start with creating a remote and local repository

```
curl -u @user https://api.github.com/user/repos -d \  
'{"name":"@string","private":false}'
```

```
mkdir @string && cd @string
```

Now we can initialize our local repo and link it to the remote one

```
git init
```

```
git remote add origin https://github.com/@name/@string.git
```

## Section 6

### Your first commit!



# Add

# Commit

# Push

## Section 7

Working together!

# Cloning

# Pulling

# Forking with the web

# Merging with the web



# Other Actions!