Course: PHP from scratch

by Sergey Podgornyy

git basics

WEB ACADEMY
PROGRAMMING COURSES

About me

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Overview

- What is git?
- How to install git?
- Initialize repository
- Add remote repository
- Statuses and commits
- Push and Pull
- Branches
- Merging branches
- Logging changes
- Blame and Stash
- GitHub

What is git?

Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency

How to install git?

Download from official website - https://git-scm.com/downloads

Or via terminal

```
sudo apt-get install git (GNU/Linux)
brew install git (MacOS)
```

Global variables

List existing variables

```
git config --list
```

Set variables

```
git config --global user.name “FirstName LastName”
```

```
git config --global user.email “mail@example.com”
```

Initialize new repo

```
git init
```

This creates a new subdirectory named `.git` that contains all of your necessary repository files – a Git repository skeleton. At this point, nothing in your project is tracked yet

Cloning repositories

```
git clone <path_to_remote_repo> [<folder_name>]
```

That creates a directory for project, initializes a `.git` directory inside it, pulls down all the data for that repository, and checks out a working copy of the latest version

Working with Remotes

List remote repositories

```
git remote -v
```

Adding Remote Repositories

```
git remote add <shortname> <url>
```

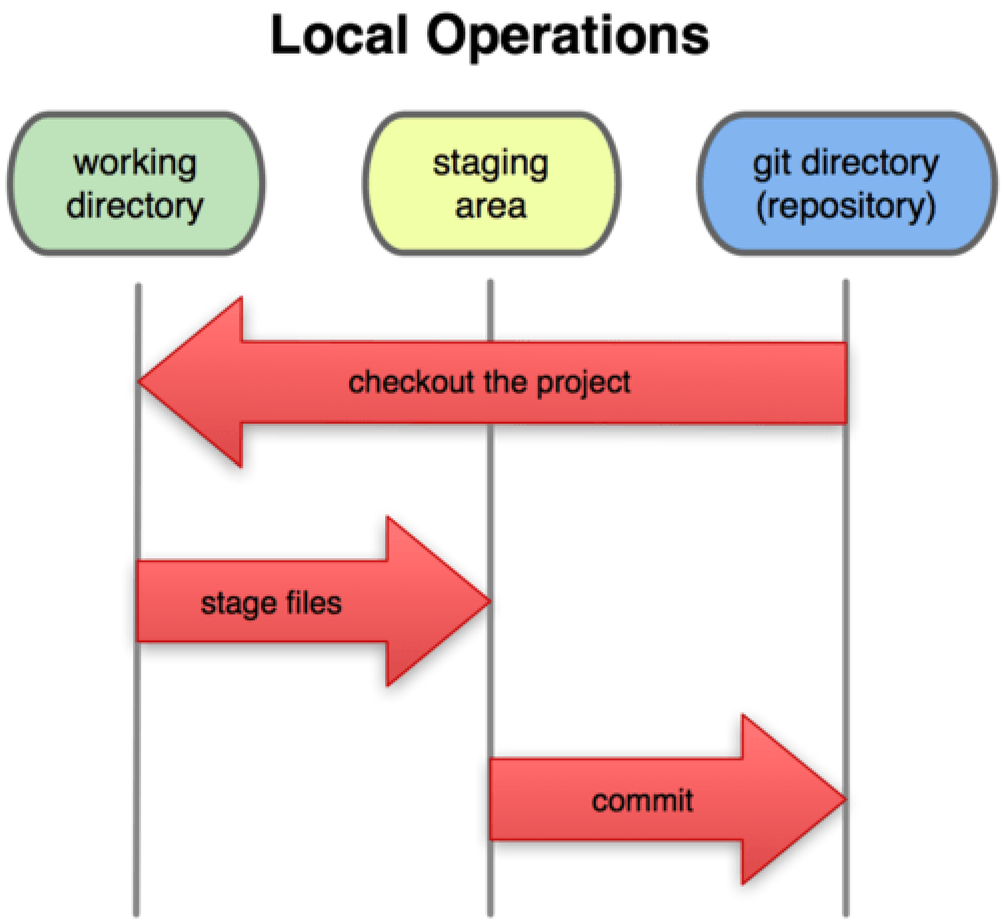
Inspecting a Remote

```
git remote show [remote-name]
```

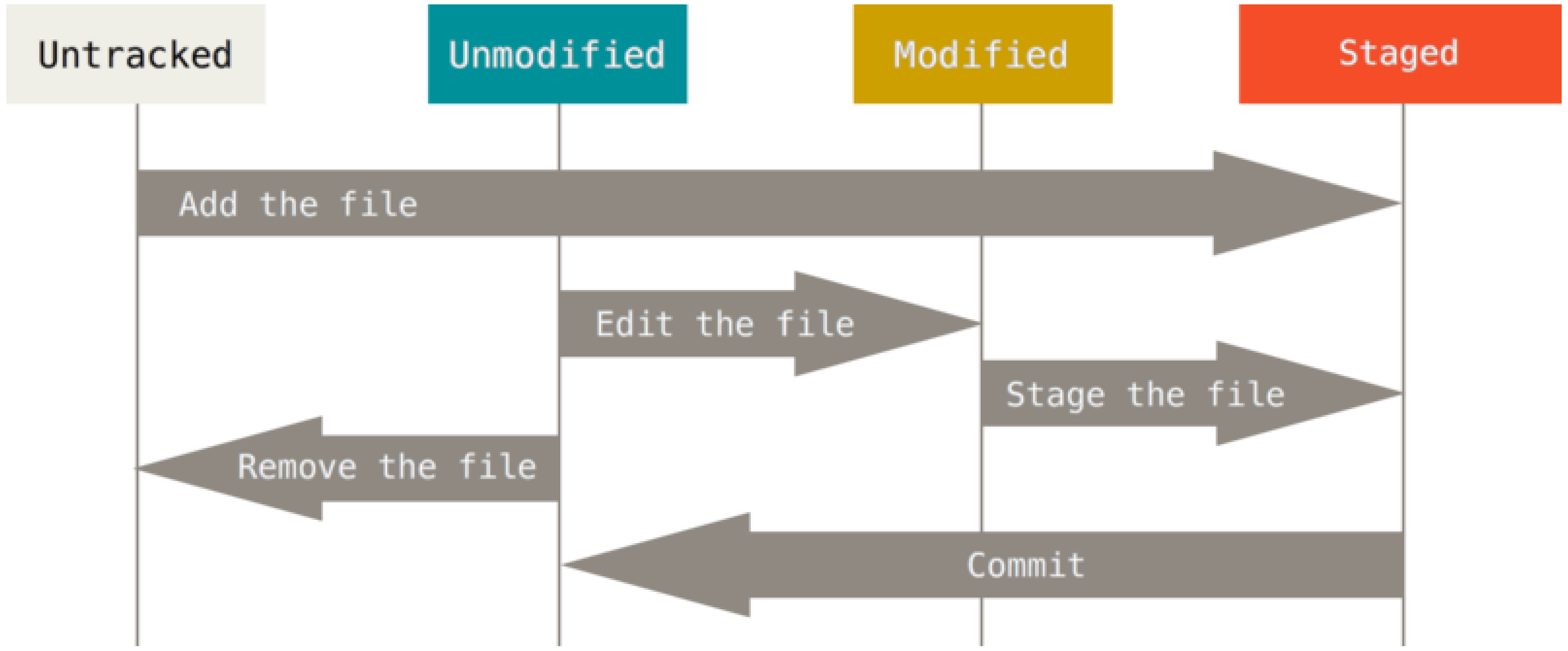
Removing and Renaming Remotes

```
git remote rename origin default
git remote remove default
```

Statuses


Local Operations
working directory
staging area
git directory (repository)
checkout the project
stage files
commit

Statuses



```
git status
```

Recording Changes to the Repository

List remote repositories

```
git add [<filename> | --all | -A | .]
```

Ignoring Files

```
Add them to .gitignore file
```

To see what you’ve changed but not yet staged:

```
git diff
```

Committing Changes

The simplest way to commit is to type:

```
git commit
```

Alternatively, you can type your commit message inline with the commit command by specifying it after a -m flag

```
git commit -m "Some commit message"
```

Removing Files

```
git rm <filename> [--cached]
```

to keep the file on your hard drive but not have Git track, use the --cached option

Pushing and Pulling

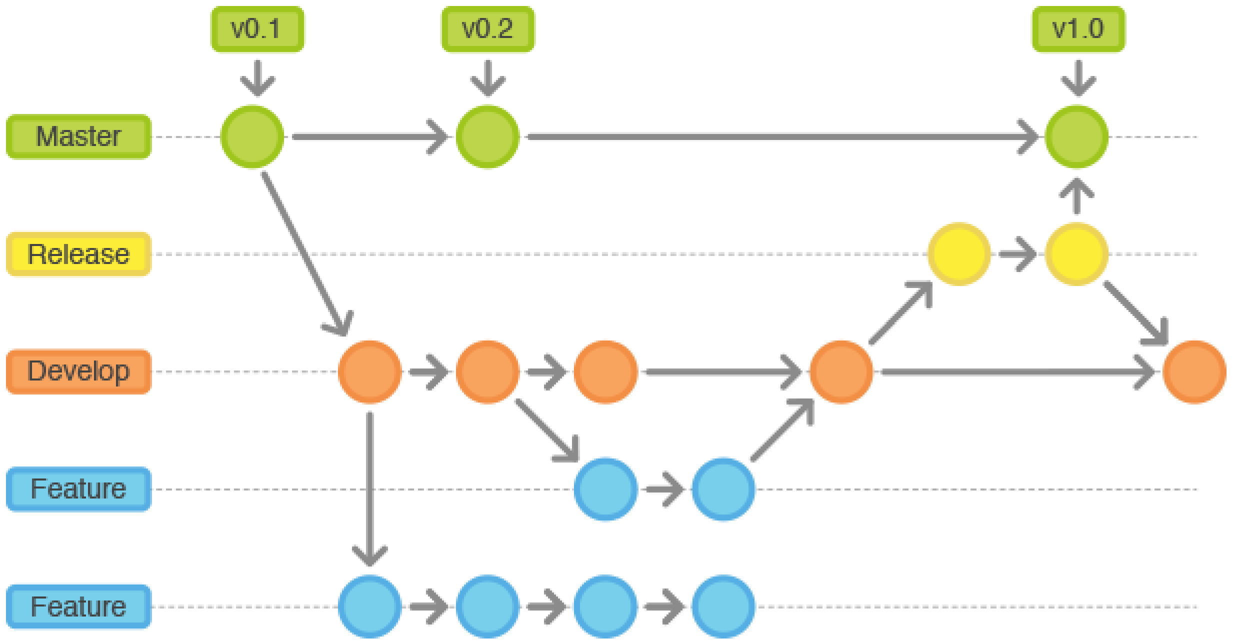
Pushing

```
git push <remote> <branch>
```

Pulling

```
git pull <remote> <branch>
```

Branches



List all branches

```
git branch
```

Working with branches

To switch to branch, type:

```
git checkout <branch_name>
```

To switch to a new branch, type:

```
git checkout -b <branch_name>
```

Merging and resolving conflicts

All you have to do is check out the branch you wish to merge into and then run the "`git merge`" command

```
git merge <source_branch>
```

Anything that has merge conflicts and hasn't been resolved is listed as unmerged. Git adds standard conflict-resolution markers to the files that have conflicts, so you can open them manually and resolve those conflicts

```
<<<<<<< HEAD:index.html
<div id="footer">contact : email.support@github.com</div>
=======
<div id="footer">please contact us at support@github.com</div>
>>>>>>> iss53:index.html
```

Viewing the Commit History

`git log` lists the commits made in that repository in reverse chronological order – that is, the most recent commits show up first

```
git log
```

One of the more helpful options is `-p`, which shows the difference introduced in each commit. You can also use `-<num>`, which limits the output

```
git log -p -2
```

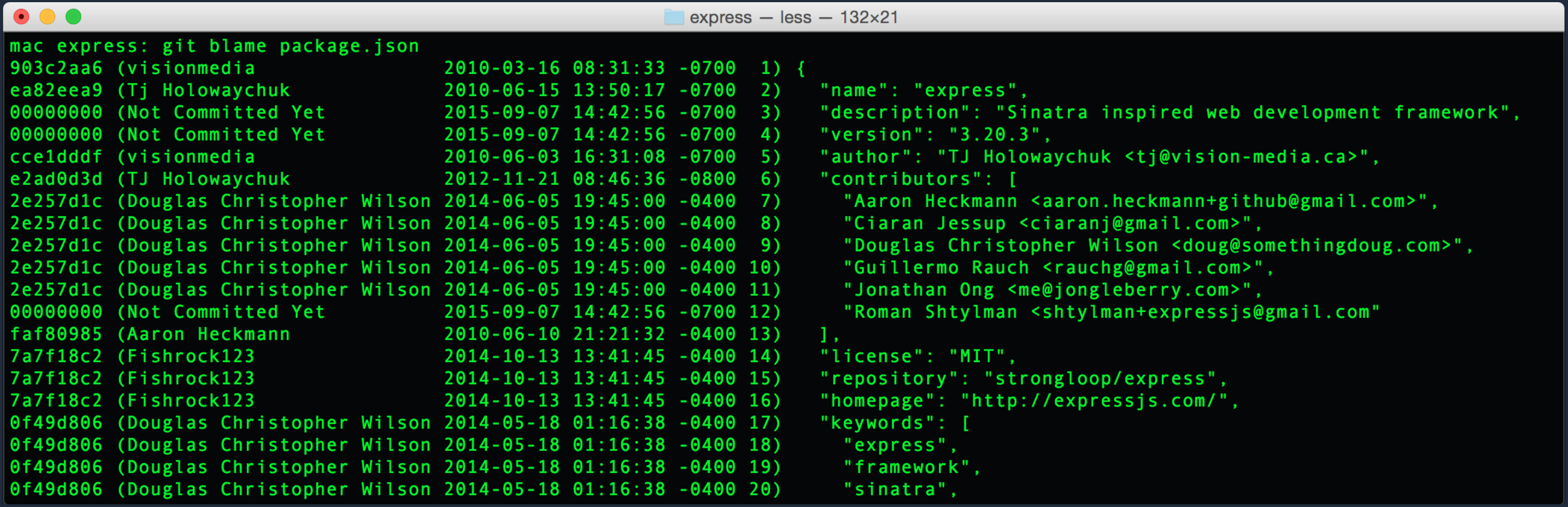
pretty format

```
git log --pretty=format:"%h - %an, %ar : %s" --graph
```

Blame

If you want to blame someone for some code, you can check who was the last who modify the string

```
git blame <file_name>
```



```
mac express: git blame package.json
903c2aa6 (visionmedia              2010-03-16 08:31:33 -0700  1) {
ea82eea9 (Tj Holowaychuk           2010-06-15 13:50:17 -0700  2)   "name": "express",
00000000 (Not Committed Yet        2015-09-07 14:42:56 -0700  3)   "description": "Sinatra inspired web development framework",
00000000 (Not Committed Yet        2015-09-07 14:42:56 -0700  4)   "version": "3.20.3",
cce1dddf (visionmedia              2010-06-03 16:31:08 -0700  5)   "author": "TJ Holowaychuk <tj@vision-media.ca>",
e2ad0d3d (TJ Holowaychuk           2012-11-21 08:46:36 -0800  6)   "contributors": [
2e257d1c (Douglas Christopher Wilson 2014-06-05 19:45:00 -0400  7)     "Aaron Heckmann <aaron.heckmann+github@gmail.com>",
2e257d1c (Douglas Christopher Wilson 2014-06-05 19:45:00 -0400  8)     "Ciaran Jessup <ciaranj@gmail.com>",
2e257d1c (Douglas Christopher Wilson 2014-06-05 19:45:00 -0400  9)     "Douglas Christopher Wilson <doug@somethingdoug.com>",
2e257d1c (Douglas Christopher Wilson 2014-06-05 19:45:00 -0400 10)     "Guillermo Rauch <rauchg@gmail.com>",
2e257d1c (Douglas Christopher Wilson 2014-06-05 19:45:00 -0400 11)     "Jonathan Ong <me@jongleberry.com>",
00000000 (Not Committed Yet        2015-09-07 14:42:56 -0700 12)     "Roman Shtylman <shtylman+expressjs@gmail.com"
faf80985 (Aaron Heckmann           2010-06-10 21:21:32 -0400 13)   ],
7a7f18c2 (Fishrock123              2014-10-13 13:41:45 -0400 14)   "license": "MIT",
7a7f18c2 (Fishrock123              2014-10-13 13:41:45 -0400 15)   "repository": "strongloop/express",
7a7f18c2 (Fishrock123              2014-10-13 13:41:45 -0400 16)   "homepage": "http://expressjs.com/",
0f49d806 (Douglas Christopher Wilson 2014-05-18 01:16:38 -0400 17)   "keywords": [
0f49d806 (Douglas Christopher Wilson 2014-05-18 01:16:38 -0400 18)     "express",
0f49d806 (Douglas Christopher Wilson 2014-05-18 01:16:38 -0400 19)     "framework",
0f49d806 (Douglas Christopher Wilson 2014-05-18 01:16:38 -0400 20)     "sinatra",
```

Stashing changes

Push changes to temporary storage

```
git status       # check if uncommited files exists
git stash        # stash this files
git status       # check that there is no more uncommited
files
git stash list   # See list of stashed data
git stash pop    # Remove a single stashed state from the
stash list and apply it on top of the current working tree
state
git stash clear # Remove all the stashed states
git stash drop <stash>  # Remove a single stashed state
from the stash list
git stash apply         # Apply files back from stash (do
not remove the state from the stash list)
git stash apply --index # Apply files back from stash with
saving index relations
```

GitHub

Useful resources

- Основы git (RU)
- Git basics (EN)
- Download git
- Git tutorials

Thanks for your attention

Q & A