

# Local Development

*with Version Control*



*presented by The Fake Group*

# Mark Jaquith says...

*Lead Developer, WordPress Core*



**Mark Jaquith**  
*"JAKE-with"*

@markjaquith  
mark@jaquith.me  
markjaquith.com

**Coding**  
**Scaling**  
*and*  
**Deploys**

**OH MY!**

# What is local dev?

- ✦ *Working on an isolated copy of a site on a single computer*
- ✦ *Not accessible to/by the public*
- ✦ *Not live on a server*

# Why local?

- ✿ *Local is faster.*
- ✿ *Local is safer.*
- ✿ *Local is easier.*
- ✿ *Local is cheaper.*
- ✿ *Local is more collaborative.*

# Local is faster.

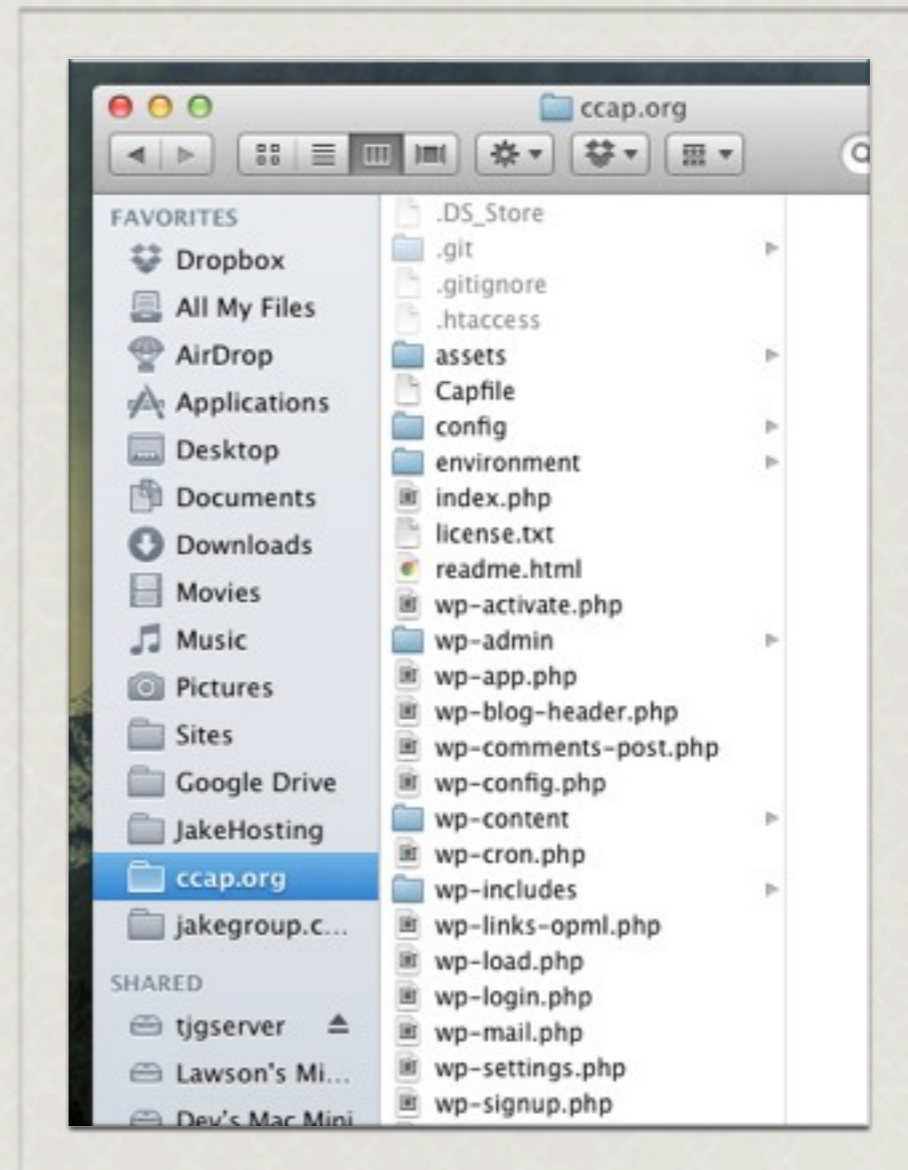
- ✿ *No uploads*
- ✿ *No downloads*
- ✿ *No loading remote resources during testing*
- ✿ *Internet down? Keep working*
- ✿ *On an airplane? Keep working*

# Local is safer.

- ✦ *Less file confusion/overwriting*
- ✦ *Safer to go live (you always have a private test version)*
- ✦ *Fewer launch-time edits (dupe your local DNS)*
- ✦ *Less FTP (which is inherently insecure)*
- ✦ *No worrying about search engines stumbling upon your ultra-secret site*
- ✦ *Extra accountability*
- ✦ *Find bugs more quickly*

# Local is easier.

- ✦ *Stop commuting: work from the comfort of your own file system*
- ✦ *Find and replace easily*
- ✦ *Use tools not available on a server (LiveReload)*
- ✦ *Freedom to experiment*



# Local is cheaper.

- ✦ *Saves bandwidth and production server resources*
- ✦ *Saves time, and time is money*



# Downside?

- ✿ *I would suggest that there are none*
- ✿ *But for the sake of argument...*

# Disk Space

- ✦ *The full site exists on each development machine, so two developers means two copies of the site*
- ✦ *But... space is cheap. Time isn't.*
- ✦ *Conservatively: the size of a site is worth 3 seconds  
(\$0.07 per GB. 10 sites per GB. Developer paid minimum wage.)*



# Learning Curve

- ◆ *Yes, but true of anything new*

# Collaboration

- ✿ *Local dev sounds good for a lone freelancer*
- ✿ *How could it possibly be good for a team?*

# Local is MORE collaborative.

- ✿ *Counterintuitive, but true*
- ✿ *Work on the same file, at the same time*
- ✿ *Lawson's missing semicolon doesn't crash the site Tyler is trying to theme*
- ✿ *But the true power lies in .....*

# Version Control

*a crash course*

# Why version control?

Pretty-Kitty / app / models / kitty.rb 

 100644 | 64 lines (50 sloc) | 2.939 kb

raw

<a href="#">8983dfd1</a> » ltk 2012-06-12 kitties scaffolded	1	<code>class Kitty &lt; ActiveRecord::Base</code>
	2	<code>attr_accessible :battles, :image_url, :strength_of_schedu</code>
<a href="#">8549991e</a> » hpowers 2012-06-16 Enfornce one kitty per image...	3	<code>validates :image_url, :uniqueness =&gt; true, :presence =&gt; t</code>
<a href="#">2516f0fc</a> » hanibash 2012-06-16 Add nicknames to cats	4	<code>before_save :give_nickname</code>
	5	

✦ *See who changed what, when, and why*

# Why version control?

## History for [Pretty-Kitty](#) / [app](#) / [controllers](#) / [kitties\\_picker\\_controller.rb](#)

Jun 16, 2012



**kittie\_picker methods now require authentication and authorization**

itk authored 4 months ago

c93880108f +

[Browse code](#) →



**Comments out authorization**

hpowers authored 4 months ago



609872c3f9 +

[Browse code](#) →



**Implements form\_for in kitties picker**

hpowers authored 4 months ago

abe46da8fc +

[Browse code](#) →



**added authorization to kitty picker, added pick new cats link to admi...** ...

itk authored 4 months ago


d70c08f45f +

[Browse code](#) →

- ✦ *Track the history of your project's files  
(and take a trip back in time if you need to)*



# Why version control?

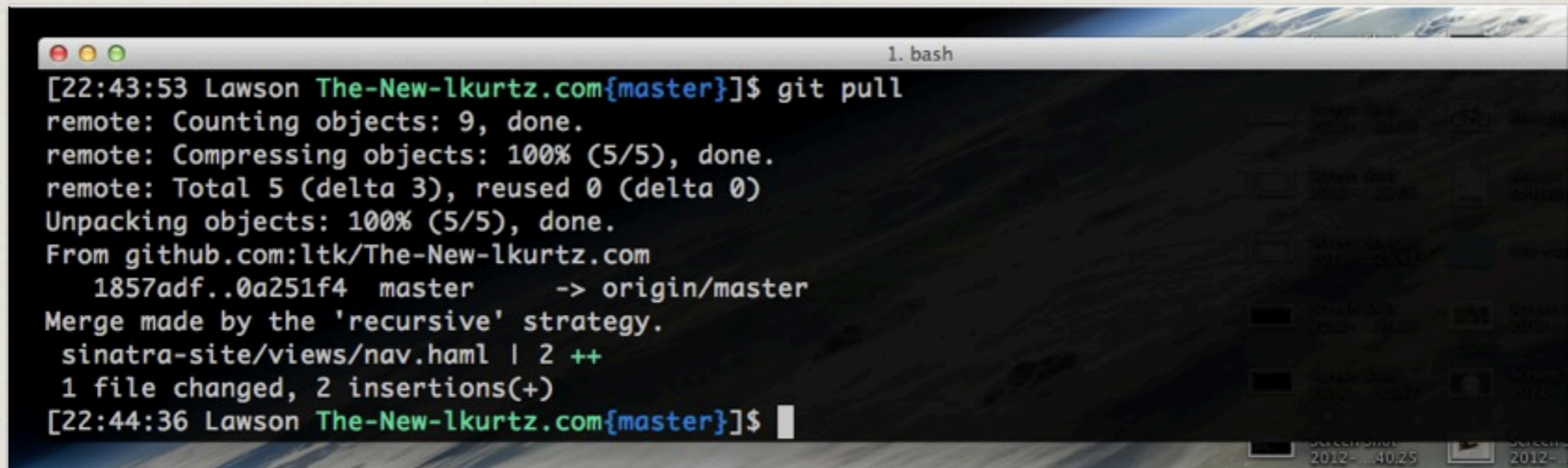
**Branches** Recently Active  Stale

Showing 10 branches not merged into master

Branch Name	Last Updated	By	Status	Commits Ahead/Behind	Action
<b>master</b>	Last updated 2 days ago	markstory	Base branch		
refs/heads/3.0	Last updated a day ago	markstory	1 behind	605 ahead	Compare
refs/heads/2.3	Last updated 2 days ago	markstory	1 behind	285 ahead	Compare
refs/heads/3.0-database	Last updated 4 days ago	lorenzo	25 behind	617 ahead	Compare
refs/heads/1.3	Last updated 3 months ago	markstory		75 ahead	Compare

- ✦ *Work on long-term projects at the same time as short-term maintenance tasks... in the same directory*

# Why version control?

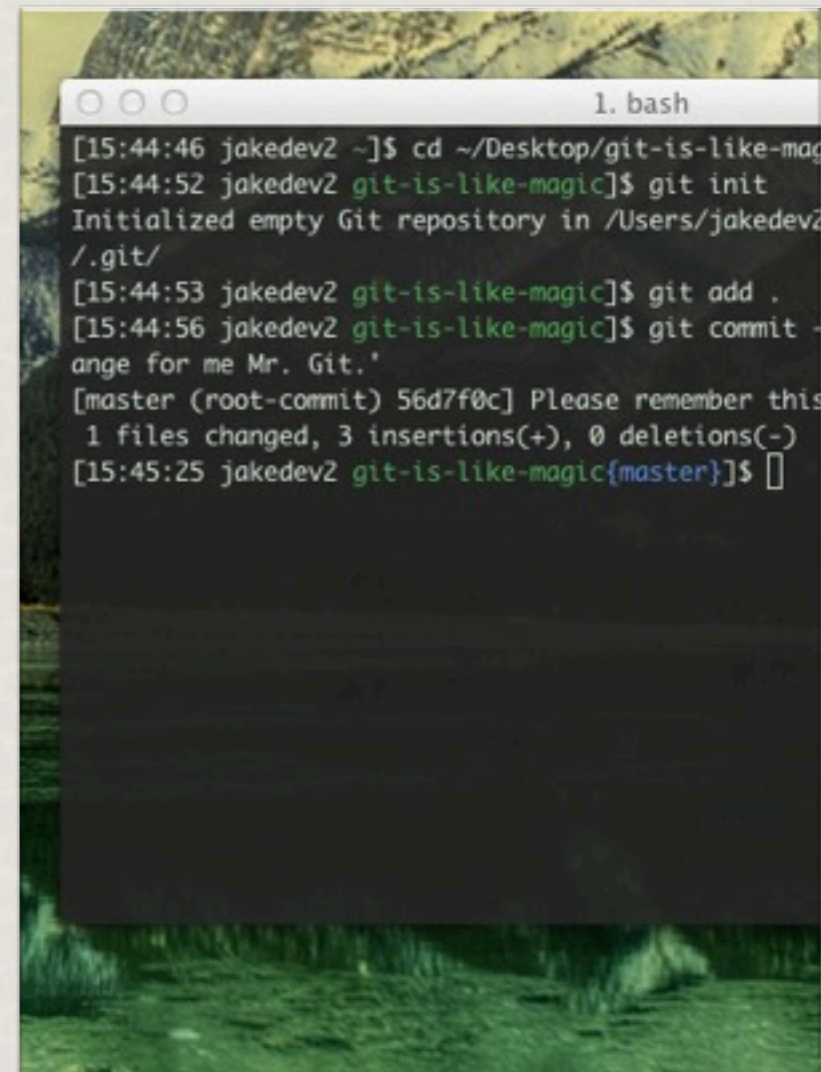


```
1. bash
[22:43:53 Lawson The-New-lkurtz.com{master}]$ git pull
remote: Counting objects: 9, done.
remote: Compressing objects: 100% (5/5), done.
remote: Total 5 (delta 3), reused 0 (delta 0)
Unpacking objects: 100% (5/5), done.
From github.com:ltk/The-New-lkurtz.com
   1857adf..0a251f4  master    -> origin/master
Merge made by the 'recursive' strategy.
   Sinatra-site/views/nav.haml | 2 ++
1 file changed, 2 insertions(+)
[22:44:36 Lawson The-New-lkurtz.com{master}]$
```

- ✦ *Keep the team (and your servers) in sync*

# So what is git?

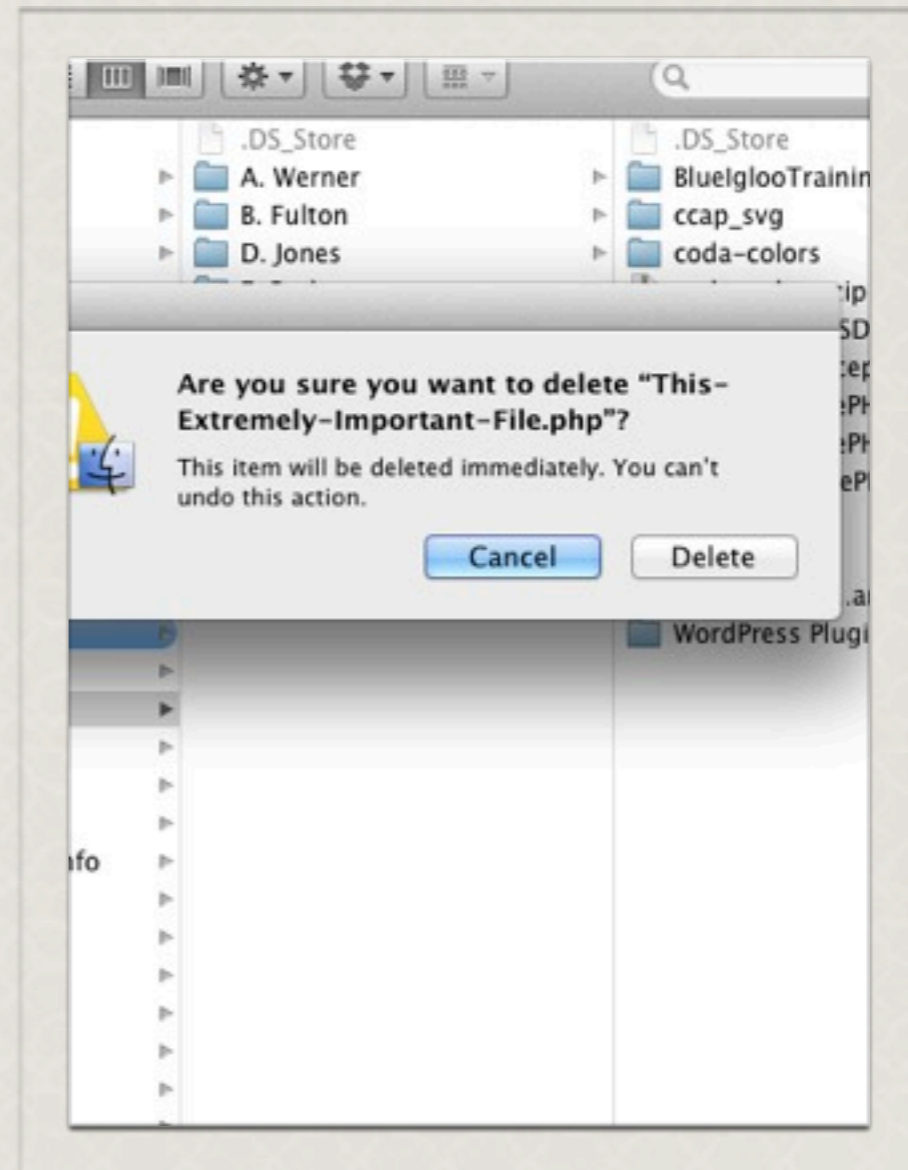
- ✦ *Git is a version control program that sets up shop in a project folder and proceeds to remember every change ever made to every file, forever*
- ✦ *Note: changes, not files*

A terminal window titled "1. bash" showing a sequence of git commands and their output. The user navigates to a directory on the desktop, initializes a git repository, adds the current directory, and commits the changes with a message. The output shows the repository is initialized, files are added, and a commit is created with a specific hash and a summary of changes.

```
1. bash
[15:44:46 jakedev2 ~]$ cd ~/Desktop/git-is-like-mag
[15:44:52 jakedev2 git-is-like-magic]$ git init
Initialized empty Git repository in /Users/jakedev2
/.git/
[15:44:53 jakedev2 git-is-like-magic]$ git add .
[15:44:56 jakedev2 git-is-like-magic]$ git commit -
ange for me Mr. Git.'
[master (root-commit) 56d7f0c] Please remember this
1 files changed, 3 insertions(+), 0 deletions(-)
[15:45:25 jakedev2 git-is-like-magic{master}]$
```

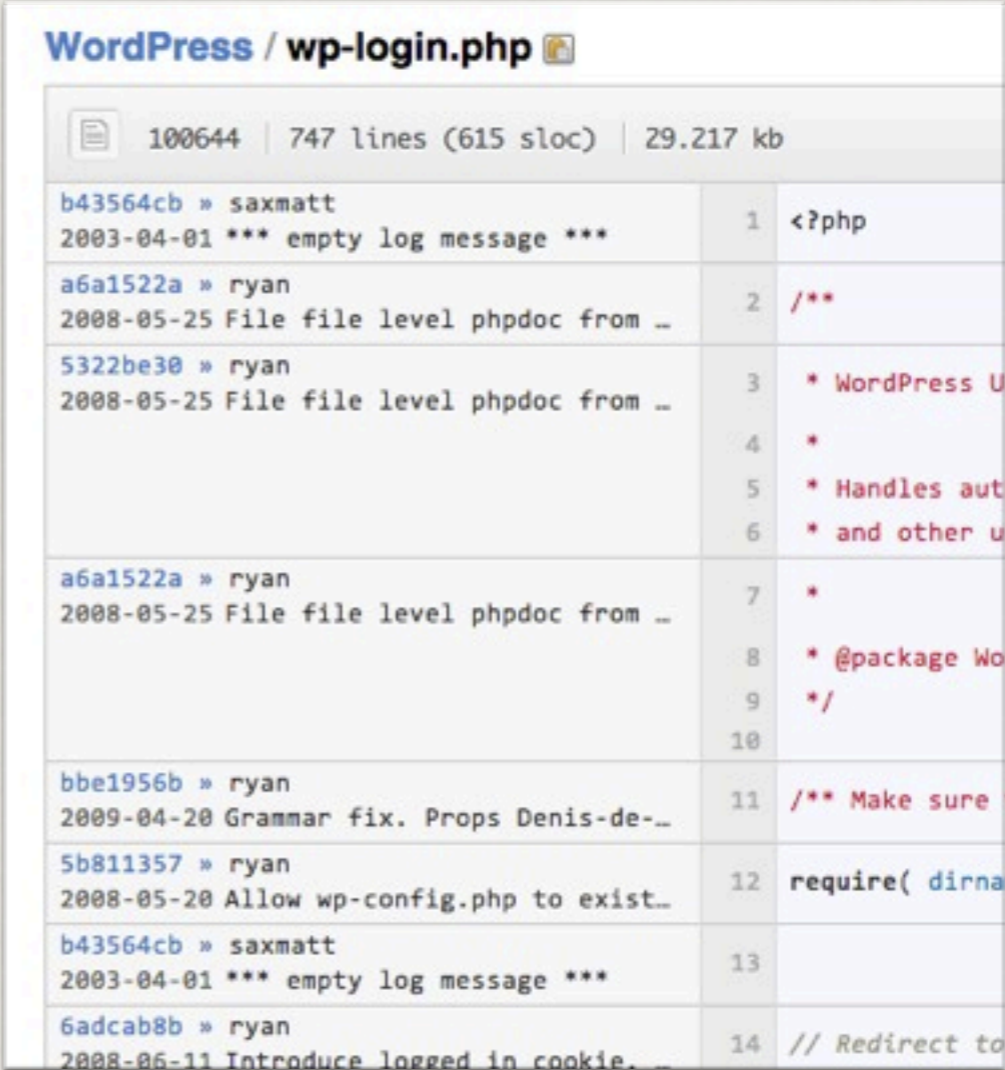
# Git's got your back.

- ✿ *Abhhhh! I just deleted the whole site!*
- ✿ *Tell git to remember how things were back before you screwed up big time.*
- ✿ *Instantly revert your files back to any point in history*



# Git's social.

- ✿ *Each git-ified folder is very good at chatting with other git-ified folders*
- ✿ *They have a number of very cool commands that can be extremely useful*



The screenshot shows a GitHub file view for `WordPress / wp-login.php`. The file has 100644 bytes, 747 lines (615 sloc), and is 29.217 kb. The commit history is shown as a table with columns for commit hash, author, date, and file level. The code content is displayed in a table with line numbers and code snippets.

Commit Hash	Author	Date	File Level
b43564cb	saxmatt	2003-04-01	*** empty log message ***
a6a1522a	ryan	2008-05-25	File file level phpdoc from ...
5322be30	ryan	2008-05-25	File file level phpdoc from ...
a6a1522a	ryan	2008-05-25	File file level phpdoc from ...
bbe1956b	ryan	2009-04-20	Grammar fix. Props Denis-de-...
5b811357	ryan	2008-05-20	Allow wp-config.php to exist...
b43564cb	saxmatt	2003-04-01	*** empty log message ***
6adcab8b	ryan	2008-06-11	Introduce logged in cookie...

```
1 <?php
2 /**
3  * WordPress U
4  *
5  * Handles aut
6  * and other u
7  *
8  * @package Wo
9  */
10
11 /** Make sure
12 require( dirna
13
14 // Redirect to
```

# Pushing and Pulling

- ✦ *Teams need one authoritative location for code*
- ✦ *A single, central repository (repo) manages the inclusion/exclusion/combination of all the team's work*

# Pushing and Pulling

- ✿ *“Push” to add a change to the central repository*
- ✿ *“Pull” to collect your teammate’s changes*

# Woah now.

- ✿ *What if you changed the same exact file as somebody else on your team? Who's version wins?*
- ✿ *Changes, not files!*
- ✿ *Git merges all non-conflicting changes together automatically*
- ✿ *Time for an example*



*Central Repo*

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*

*Central Repo*

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*

*Central Repo*

PUSH

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*



*Central Repo*

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*

*Central Repo*

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*

*Central Repo*

PUSH  
(FAILS)

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*

*Central Repo*

PULL

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*

*Central Repo*

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*



*Central Repo*

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*

PUSH



*Central Repo*

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*

*Central Repo*

PULL

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*

*Central Repo*

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*

Everyone's happy.

*But what about our poor server?*

*Central Repo*

*Server Repo*

*Server*

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*

*Central Repo*

PULL

*Server Repo*

*Server*

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*

*Central Repo*

*Server Repo*

*Server*

*Tyler's Repo*

*Tyler's Computer*

*Lawson's Repo*

*Lawson's Computer*



# Summary

- ✿ *Local dev + git = awesome*
- ✿ *The ease, power, and flexibility of working in isolation*
- ✿ *The advantages of social coding*
- ✿ *The security of a time machine and an authoritative source*

# Questions? Need help?

- ✦ *If you would like to learn more, or are in need of an implementation consult, we'd love to hear from you!*

*The Jake Group*

*[www.thejakegroup.com](http://www.thejakegroup.com)*

*[info@thejakegroup.com](mailto:info@thejakegroup.com)*

*(202) 333-2850*

The logo for The Jake Group, featuring a blue asterisk-like symbol followed by the text "the jake group" in a sans-serif font. "the" and "group" are in green, while "jake" is in blue.