

# Version Control for Web Designers

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# 5 Signs You Need Version Control

- ✓ You don't know what it is or how it can be helpful
- ✓ You code locally and have no backup system
- ✓ You backup your projects by duplicating the root directory
- ✓ You've accidentally deleted a file permanently and had to recreate
- ✓ When something breaks, you hold down undo & reverse all changes



# 5 Immediate Benefits

- ✓ Accidentally delete something? Run a single command and revert to a previous state
- ✓ Ever have a hard drive crash and you lose all of your work? With a free service called GitHub or BitBucket, you can get your code back fast!
- ✓ Work with others? Wonder who wrote this code that you now have to rewrite? No need to blame anyone, Git will tell you!



# 5 Immediate Benefits

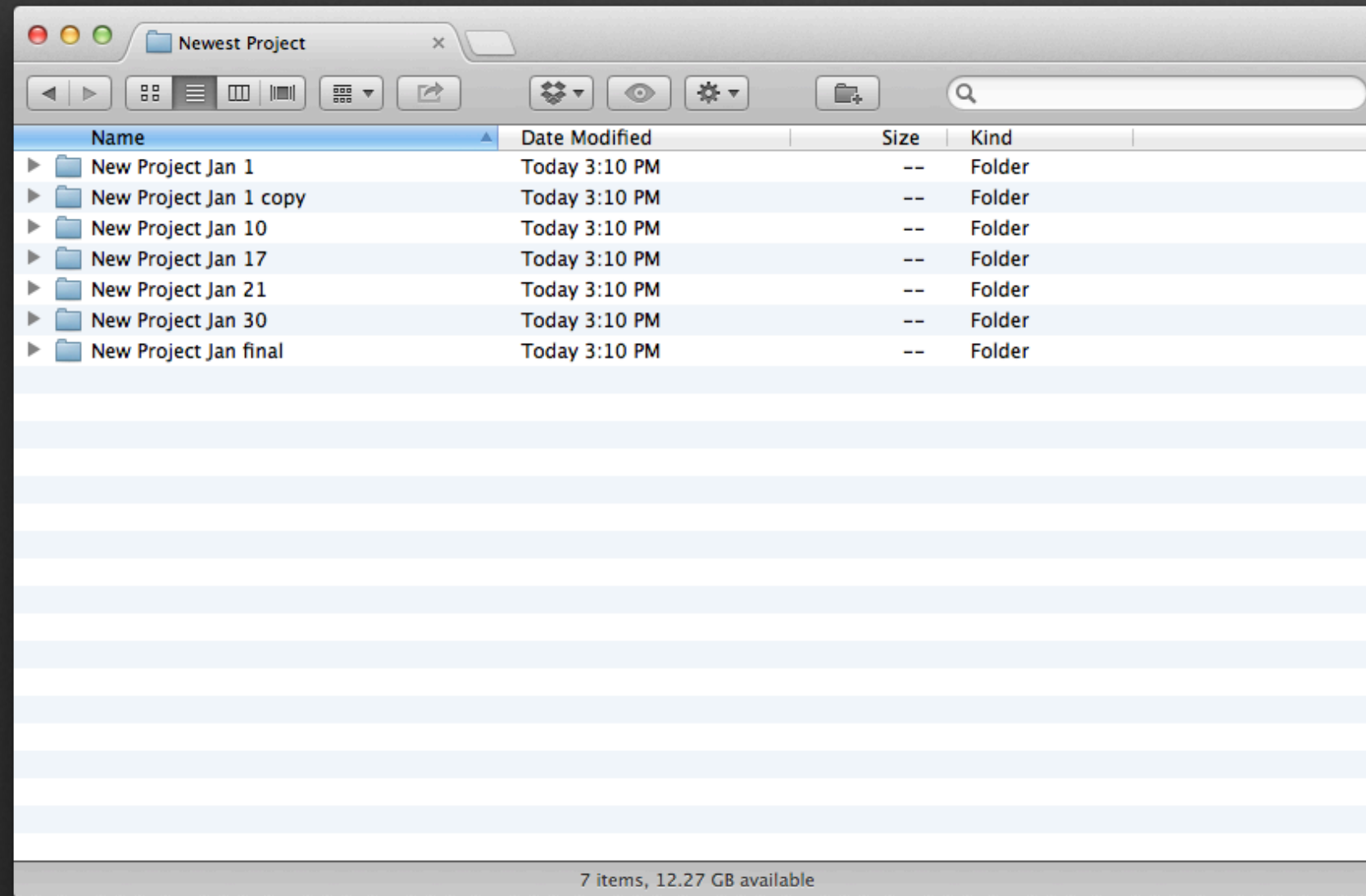
- ✓ Ever leave code in a project “just in case” you need it later? With each commit a snapshot of your project is saved, so you can roll back to a previous state.
- ✓ If for no other reason, accept that developers who are more seasoned than you have deemed it is a best practice. Remember it’s helpful to mimic those we admire / inspire to be.

# What is Version Control?

- ✓ A system that tracks changes to your files over time



# Type of Version Control



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# Become a Better Developer

- ✓ Incremental backups
- ✓ Short and long term undo
- ✓ Easier to collaborate with others
- ✓ Track changes and ownership





# Version Control Systems

- ✓ Git
- ✓ Subversion (SVN)
- ✓ Mercurial
- ✓ Bazaar



# Why Git?



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# Why Git?

- ✓ It's Lightning Fast
- ✓ It's a distributed version control system
- ✓ It has a staging area
- ✓ It has objects
- ✓ Easy Branching



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# Distributed Version Control

- ✓ When you clone a repository, you get the full history, not just the latest version
- ✓ You can see where the project was yesterday or three weeks ago
- ✓ You don't need network access to make changes
- ✓ Since files are stored locally, everyone has a backup of the data

# Staging Area

- ✓ Unique to Git
- ✓ Three Places where Git stores data
  - ✓ Working Directory
  - ✓ Staging Area (index)
  - ✓ Git Repository



# Staging Area

Working Directory

Staging Area (index)

Git Repository



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# Staging Area

Working Directory

Staging Area (index)

Git Repository



Like a Factory

A single checkout of one version of the project.  
This is found locally on your computer



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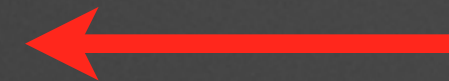


# Staging Area

Working Directory

Staging Area (index)

Git Repository



Like a Loading Dock

A file that contains information about what will go in the next commit



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# Staging Area

Working Directory

Staging Area (index)

Git Repository



The .git folder

This is where Git stores the metadata  
and object database for the project



# Git Repositories



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**git**

version control system

!=

**github**  
SOCIAL CODING

collaborative coding web app



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# GitHub.org

<b>Micro</b> <span>\$7/mo</span> <b>5 Private Repositories</b> Unlimited collaborators Unlimited public repositories	<b>Small</b> <span>\$12/mo</span> <b>10 Private Repositories</b> Unlimited collaborators Unlimited public repositories	<b>Medium</b> <span>\$22/mo</span> <b>20 Private Repositories</b> Unlimited collaborators Unlimited public repositories	
<b>Bronze</b> <span>\$25/mo</span> <b>10 Private Repositories</b> Unlimited teams Unlimited public repositories <a href="#">Create an organization</a>	<b>Silver</b> <span>\$50/mo</span> <b>20 Private Repositories</b> Unlimited teams Unlimited public repositories <a href="#">Create an organization</a>	<b>Gold</b> <span>\$100/mo</span> <b>50 Private Repositories</b> Unlimited teams Unlimited public repositories <a href="#">Create an organization</a>	<b>Platinum</b> <span>\$200/mo</span> <b>125 Private Repositories</b> Unlimited teams Unlimited public repositories <a href="#">Create an organization</a>

# BitBucket.org

<b>5</b> USERS	<b>10</b> USERS	<b>25</b> USERS	<b>50</b> USERS	<b>100</b> USERS	<b>UNLIMITED</b>
<b>Free</b>	<b>\$10</b> /mo	<b>\$25</b> /mo	<b>\$50</b> /mo	<b>\$100</b> /mo	<b>\$200</b> /mo
<a href="#">Sign up</a>	<a href="#">Sign up</a>	<a href="#">Sign up</a>	<a href="#">Sign up</a>	<a href="#">Sign up</a>	<a href="#">Sign up</a>



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# Git Objects



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# Blob

- ✓ Blob - how Git stores file content
- ✓ Blob is a Git Object with a SHA-1 hash (40 character string)
  - ✓ a2aa0ef0e07f7e653723bcbe843db485bd83b27d
- ✓ A blob stores the header and content



# Tree

- ✓ Tree - how Git stores directories (aka files)
- ✓ Header Information
- ✓ For each file and directory in the directory:
  - ✓ File Permissions
  - ✓ Object Type (blob or tree)
  - ✓ SHA-1
  - ✓ File / Directory name



# Commit

- ✓ How Git Stores “Snapshots”
  - ✓ Author Information
  - ✓ Committer Information
  - ✓ Commit Message
  - ✓ SHA-1 of any parent commits
  - ✓ SHA-1 of a tree that the commit points to



# How Git Tracks Changes



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# Terms

- ✓ REPO: The database storing the files (or repository)
- ✓ COMMIT: A snapshot of your files in time



# Three File States

- ✓ Committed Safely stored in the Git database
- ✓ Modified File has been modified, but hasn't been committed
- ✓ Staged File is marked to go into your next commit

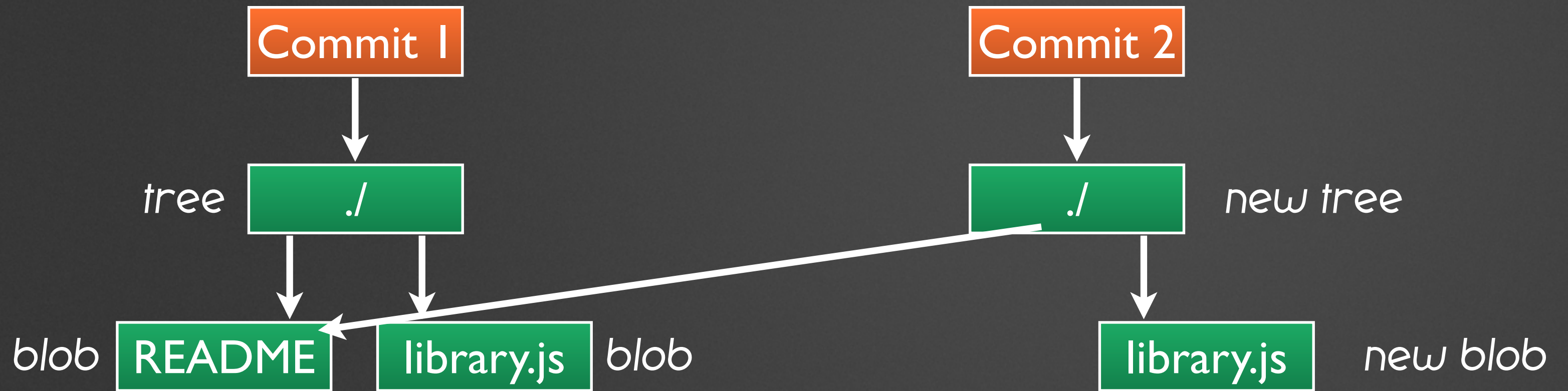
# Good Commit Messages

- ✓ 9a3046c Space => tab indent correction
- ✓ 3e2a77c Remove the tabindex
- ✓ 66f60ba Update Sizzle: regex cleanup
- ✓ bd84aad Grunt: Add testswarm task



# Bad Commit Messages

- ✓ 9a3046c Er, almost there
- ✓ 3e2a77c Actually, now the rollover bug is fixed
- ✓ 66f60ba Fixed rollover bug
- ✓ bd84aad Changed a bunch of things





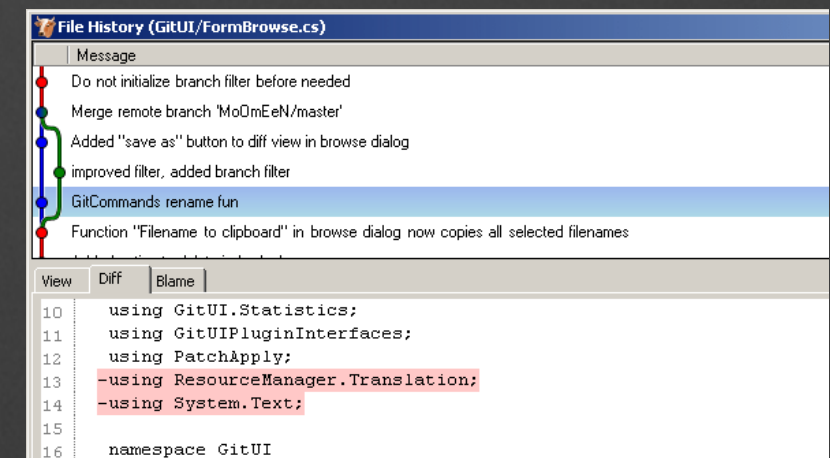
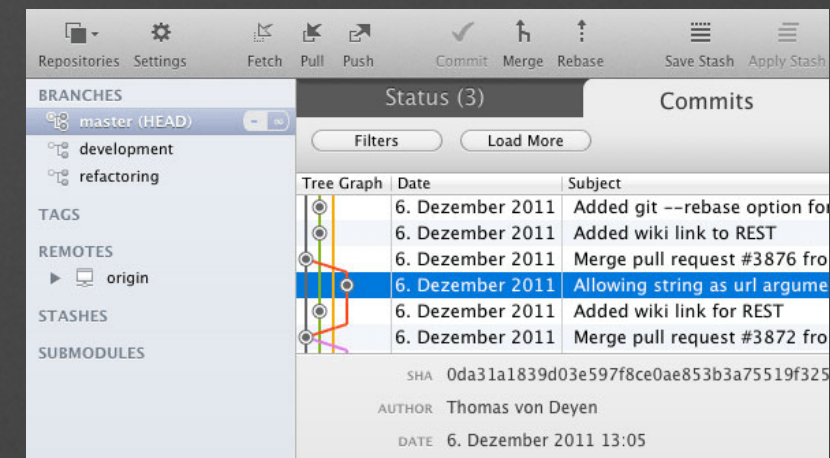
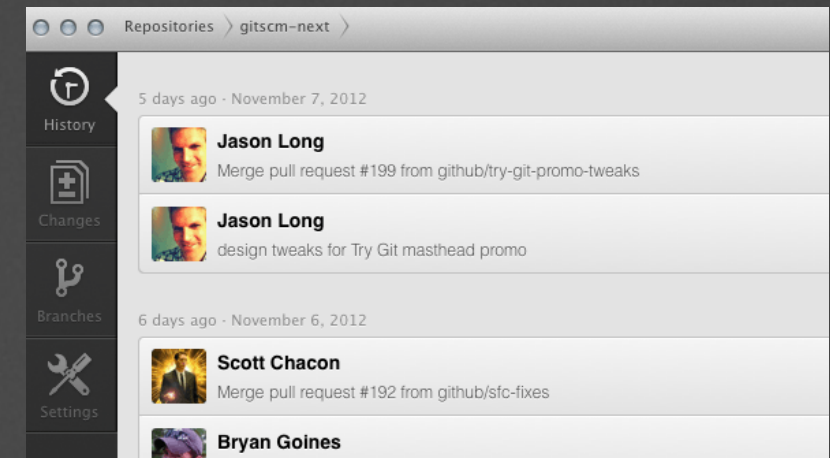
# Git Workflow

- ✓ Modify files
- ✓ Stage files
- ✓ Commit



# Time to Install Git

✓ <http://git-scm.com/downloads/guis>





# Source Tree

- ✓ First we need to configure our Full Name & Email Address
- ✓ This will be our default author



# Source Tree

- ✓ Connect to your favorite online service
- ✓ I use Bitbucket

Welcome

Connect to online services:

**Atlassian Bitbucket** Username:   
Password:

Sign up for unlimited Git & Mercurial repository hosting for free!  
[Sign up now!](#)

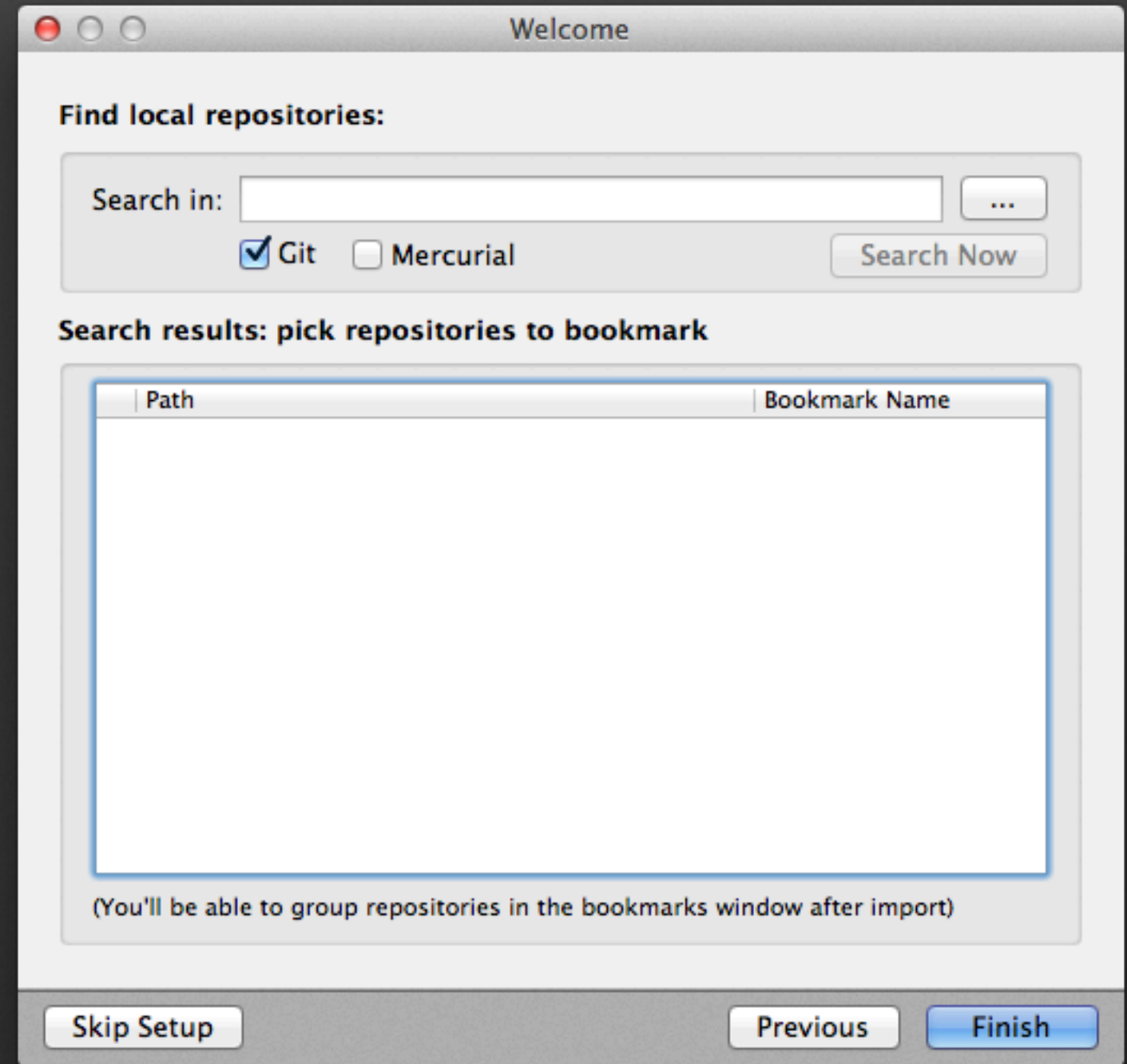
**Atlassian Stash** URL:   
Username:   
Password:   
Projects:  ...

**github** SOCIAL CODING Username:   
Password:

[Skip Setup](#) [Previous](#) [Next](#)



# Source Tree



# Live Demo



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