Version Control for Web Designers

@DustinHartzler



5 Signs You Need Version Control

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

5 Immediate Benefits

WEBSITE

- \checkmark Accidentally delete something? Run a single command and revert to a previous state
- \checkmark 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!
- \checkmark 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

- \checkmark 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.
- \checkmark 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?

\checkmark A system that tracks changes to your files over time





Type of Version Control

● ○ ○ □ Newest Project ×	7		
			Q
Name 🔺	Date Modified	Size	Kind
New Project Jan 1	Today 3:10 PM		Folder
New Project Jan 1 copy	Today 3:10 PM		Folder
New Project Jan 10	Today 3:10 PM		Folder
New Project Jan 17	Today 3:10 PM		Folder
New Project Jan 21	Today 3:10 PM		Folder
New Project Jan 30	Today 3:10 PM		Folder
🕨 🚞 New Project Jan final	Today 3:10 PM		Folder

7 items, 12.27 GB available





Become a Better Developer

✓ Incremental backups

- \checkmark Short and long term undo
- \checkmark Easier to collaborate with others
- ✓ Track changes and ownership





Version Control Systems

√ Git

✓ Subversion (SVN)

✓ Mercurial

✓ Bazaar











Why Git?

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





Distributed Version Control

WEBSITE Engineer

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

Staging Area

- \checkmark 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







Working Directory

Staging Area (index)

Li

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

Git Repository



Like a Factory



Working Directory

Staging Area (index)



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

Git Repository



Like a Loading Dock

Staging Area

Working Directory

Staging Area (index)

Git Repository



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



The .git folder

Git Repositories





SOCIAL CODING

version control system

collaborative coding web app



GitHub.org

Micro	\$ 7 /mo	Small		\$ 12 /mo	Me	dium
5 Private Repositories		10 Private Repos	itories		20 P	Private Repositor
Unlimited collaborators		Unlimited collaborate	ors		Unlim	ited collaborators
Unlimited public repositories		Unlimited public repo	sitories		Unlim	ited public reposito
Bronze \$25/mo	Silver	\$ 50 /mo	Go	ld	\$ 100 /mo	Platinu
10 Private Repositories	20 Private	e Repositories	50 P	Private Rep	ositories	125 Privat
Unlimited teams	Unlimited te	ams	Unlim	ited teams		Unlimited te
Unlimited public repositories	Unlimited p	ublic repositories	Unlim	ited public re	epositories	Unlimited pu
Create an organization	Create a	an organization	C	reate an org	anization	Create a





um \$200/mo

ate Repositories

teams

public repositories

e an organization

BitBucket.org





Git Objects





Blob

✓ Blob - how Git stores file content

- \checkmark Blob is a Git Object with a SHA-1 hash (40 character string)
 - a2aa0ef0e07f7e653723bcbe843db485bd83b27d \checkmark
- \checkmark 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

TE

Engineer

- ✓ Object Type (blob or tree)
- ✓ SHA-I

Your

✓ File / Directory name

VEBSI



Commit

✓ How Git Stores "Snapshots"

- \checkmark Author Information
- \checkmark Committer Information
- ✓ Commit Message
- \checkmark SHA-I of any parent commits
- \checkmark SHA-I of a tree that the commit points to





How Git Tracks Changes





Terms

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





Three File States

Committed

✓ Modified

✓ Staged

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



Good Commit Messages

WEBSITE Engineer

✓ 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

 \checkmark 3e2a77c Actually, now the rollover bug is fixed

✓ 66f60ba Fixed rollover bug

✓ bd84aad Changed a bunch of things











new tree

library.js

new blob

Git Workflow

✓ Modify files

 \checkmark Stage files

✓ Commit





Time to Install Git

✓ <u>http://git-scm.com/downloads/guis</u>





-	\$	M	K (R	1	ĥ	1	≡	Ē
epositories	Settings	Fetch	Pull P	ush	Commit	Merge	Rebase	Save Stash	Apply Stash
RANCHES				\$	Status (3)			Commit	s
📽 maste	r (HEAD)	- <u>-</u>							
T _o develo	pment			Filter	s CL	oad Mo	re		
ਾਊ refacto	oring		Tree G	raph	Date		Subject		
AGS			۲		6. Dezembe	r 2011	Added	gitrebase	option fo
			۲		6. Dezembe	r 2011	Added	wiki link to F	REST
EMOTES			0		6. Dezembe	r 2011	Merge	pull request	#3876 fro
Image: Second	gin		0)	6. Dezembe	r 2011	Allowin	ng string as u	Irl argume
TASHES			۲		6. Dezembe	r 2011	Added	wiki link for	REST
UBMODUL	ES				6. Dezembe	r 2011	Merge	pull request	#3872 fro
OBMODUL	2.5				SHA Oda31	a18390	d03e597f8	3ce0ae853b3a	75519f325
			AUTHOR Thomas von Deyen						
			DATE 6. Dezember 2011 13:05						

File History (GitUI/FormBrowse.cs) Message Do not initialize branch filter before needed Merge remote branch 'MoOmEeN/master' Added "save as" button to diff view in browse dialog improved filter, added branch filter GitCommands rename fun Function "Filename to clipboard" in browse dialog now copies all selected filenames Diff Blame View using GitUI.Statistics; using GitUIPluginInterfaces; using PatchApply; -using ResourceManager.Translation; -using System.Text; namespace GitUI

Source Tree

✓ First we need to configure our Full Name & Email Address

 \checkmark This will be our default author



Atlassian

000

Welcome to SourceTree! Let's get started...

When you commit, use these details by default:

Full Name: Dustin Hartzler

You can set alternate details per repository using the Settings button in the repository toolbar.

Allow SourceTree to update my Mercurial and Git configuration

Skip Setup

Welcome

SourceTree

Email Address: Dustin@YourWebsiteEngineer.com



Source Tree

✓ Connect to your favorite online service

✓ I use Bitbucket





Welcome	
Username:	
Password:	
Git & Mercurial repository hosting for free!	
Sign up now!	
.:	
2:	
i:	
s:	
2:	
i:	
Previous Next	

Source Tree

earch in:		
	Cit	Marcu

0 0 We	elcome
ind local repositories:	
Search in: Search in:	 Search Now
earch results: pick repositories to	o bookmark
(You'll be able to group repositories in t	the bookmarks window after import)
Skip Setup	Previous Finish



Live Demo



