

# Git

Ya Gotta Know It If You Wanna Be a Developer

R. Scott Granneman & Jans Carton

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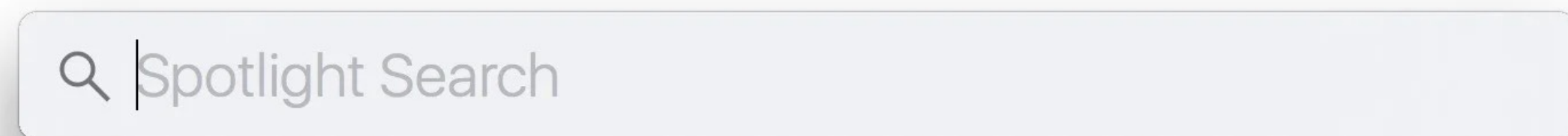
“Some form of distributed version control is standard these days, and git is easily the most popular. I interviewed somewhere a few months ago and they told me they use SVN. I remember thinking that was pretty much a deal breaker.” —Ryan Cook, Software Engineer

Before  
We Begin

Searching



macOS



On a Mac, press ⌘⏏ to invoke  
Spotlight, the built-in searching tool

keynote



#### TOP HITS



Keynote



Keyboard Maestro

#### APPLICATIONS



Keychain Access



Keynote Actions



Key Codes

#### SYSTEM PREFERENCES



Keyboard



Spotlight



Siri



Missing



Disk Utility

#### DOCUMENTS



Key icon set - annexs2 - 2015-04-...

#### PDF DOCUMENTS



# Keynote

30 Recent Documents



Dorothy Gibson & the Titanic.key

2016-09-29, 11:30 PM



Web Dev Intro - Oasis.key

2017-06-11, 12:08 PM



CSS - Layout.key

2017-07-01, 2:31 AM




Scott - Oasis.key

2017-06-26, 11:02 PM


Type the name of an app in Spotlight & press  
Enter or click on the app when you see it

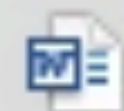





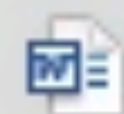
 index.xml

#### Documents

 Mastering PostCSS for Web Design -...


 libby waterman llc resolution (000531...


 libby waterman llc resolution (000531...


 libby waterman llc resolution\_DL.doc


 Libby-Waterman Resolution.doc

#### Images

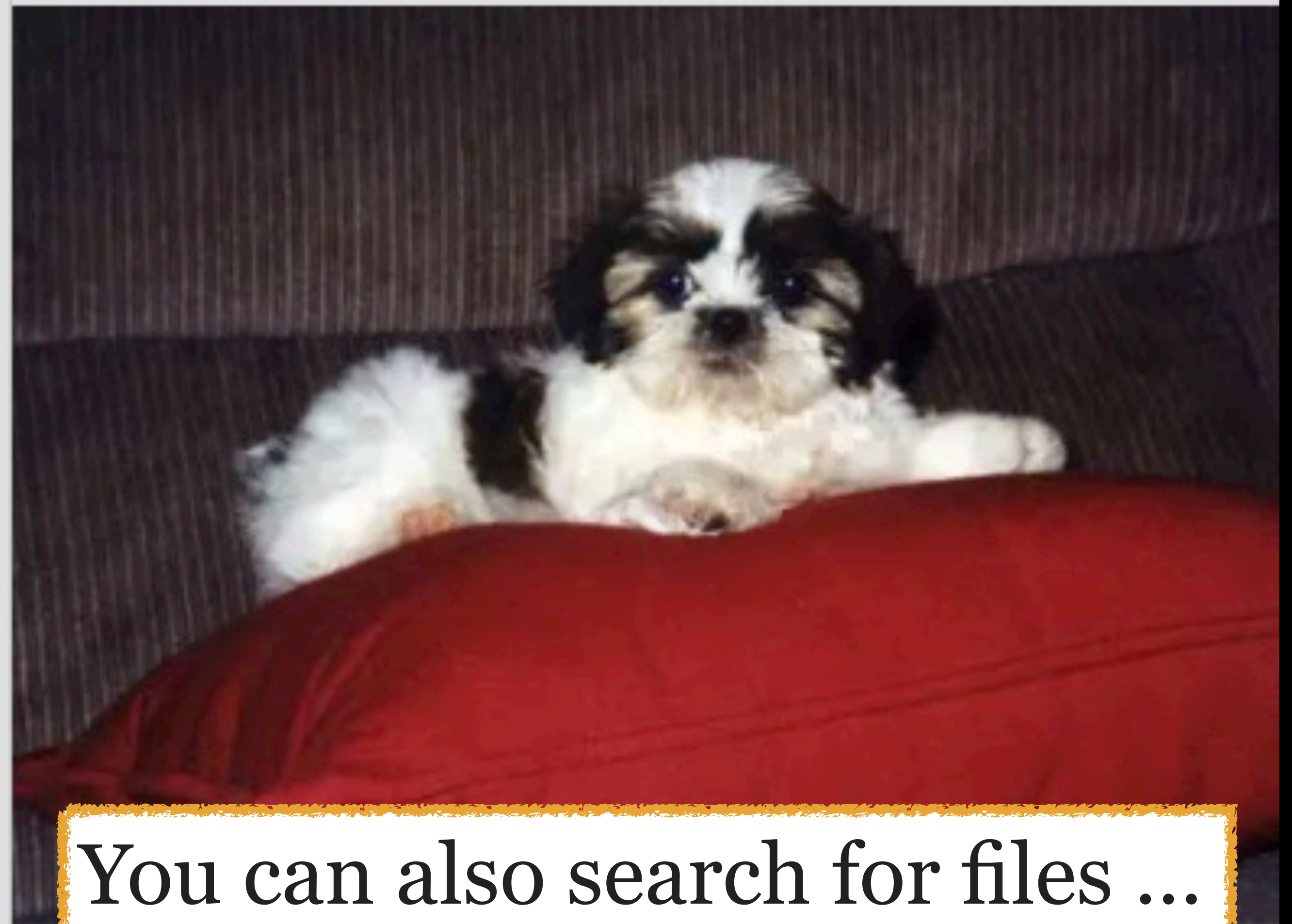
 2005-0822-Lake-George-Libby.webp

 2005-0822-Lake-George-Libby.jpg

 2003-0525-Libby-at-jim-the-Wonder...

 2003-0525-Libby-at-jim-the-Wonder...

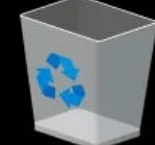
 **1998-11-Libby-Puppy.webp**



You can also search for files ...  
& many other things as well

Windows





Recycle Bin



Mac Files



Games

Windows 10 Search box



Type here to search





Recycle Bin



Mac F



Game

AllAppsDocumentsWebMore

Top apps

File Explorer

Chocolatey GUI

Discord

Brave

Steam

Recent

Command Prompt

System Information

Control Panel

Check for updates

Quick searches

Weather

Top news

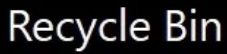
Today in history

Coronavirus trends



Type here to search





Mac Fi



Game

A screenshot of the Windows Search interface. The top navigation bar includes 'All', 'Apps', 'Documents', 'Web', and 'More'. The 'All' tab is selected. The search results are categorized into 'Best match', 'Apps', 'Search the web', 'Folders', and 'Documents'. Under 'Best match', 'The Elder Scrolls V Skyrim Special Edition' is listed as an App. Under 'Apps', 'Skyrim Script Extender (SKSE)' is listed. Under 'Search the web', several search results for 'skyrim' are shown. Under 'Folders', 'Skyrim', 'The Elder Scrolls V Skyrim (Plugins)', and 'The Elder Scrolls V Skyrim Special Edition' are listed. Under 'Documents', 'The Elder Scrolls V Skyrim' is listed. On the right side, a detailed view of 'The Elder Scrolls V Skyrim Special Edition' is shown, including its icon, name, and type ('App'). Below this, three actions are available: 'Open', 'Open file location', and 'Pin to Start'.

# Type your search term

Use     to  
move around in the  
Start menu

Press **Enter** to open  
the app or file





Windows 11 does something weird & kinda dumb

Start

Search







Type here to search

Pinned

All apps >

Settings

Microsoft...

Chocolatey...

Terminal

File Explorer

1Password

Sublime Tex...

Solitaire

Spotify

Calculator

Clock

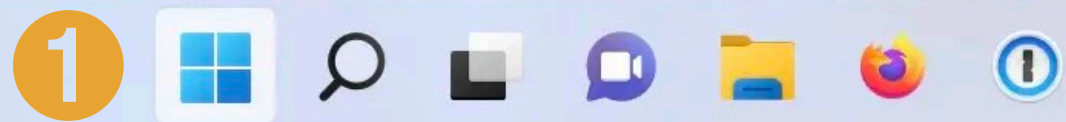
Tips

Window Resizer.csv  
Oct 17

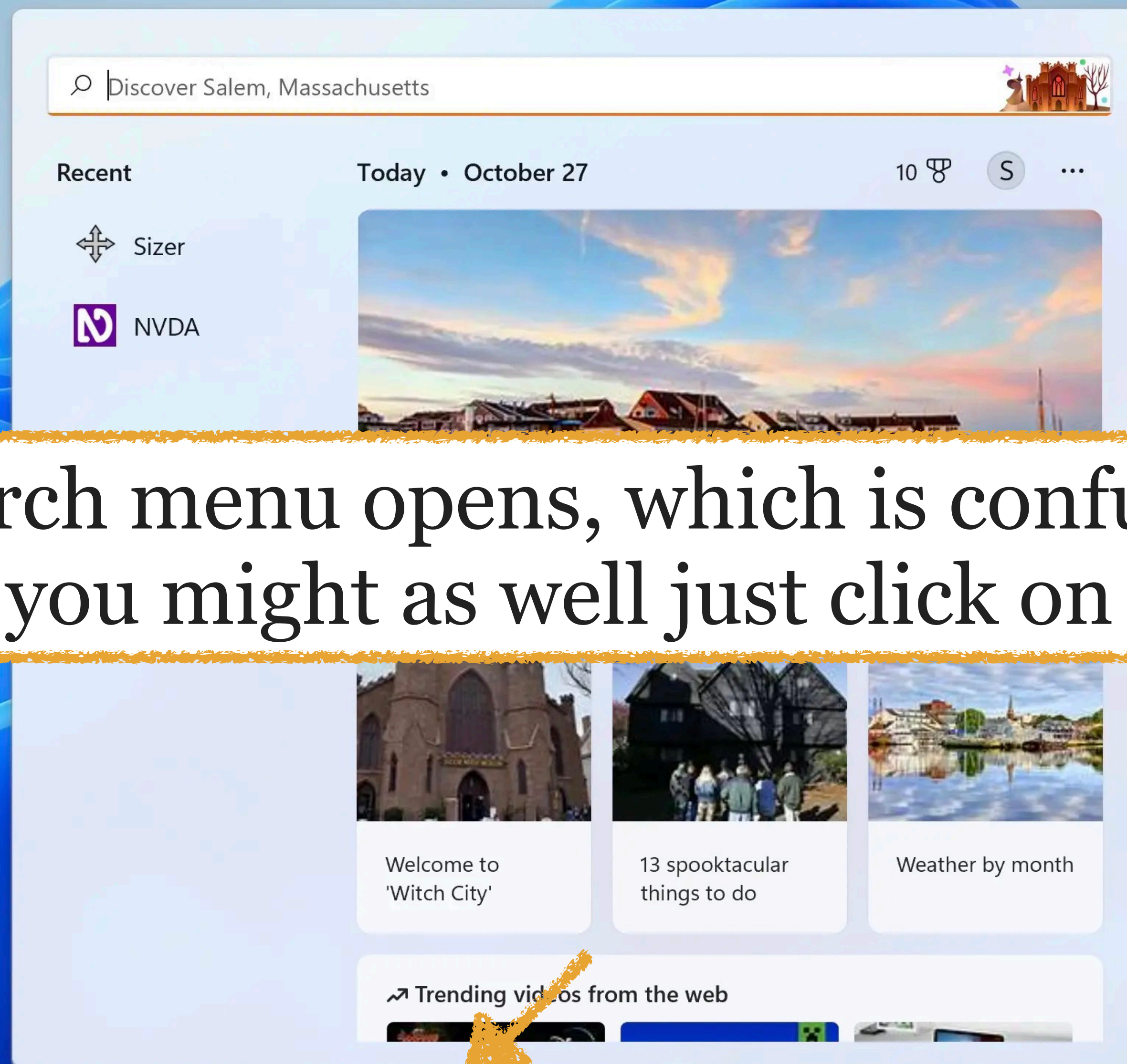
image.webp  
Oct 17

Scott Granneman

If you ❶ click on Start & then ❷ click in the Search box at the top...

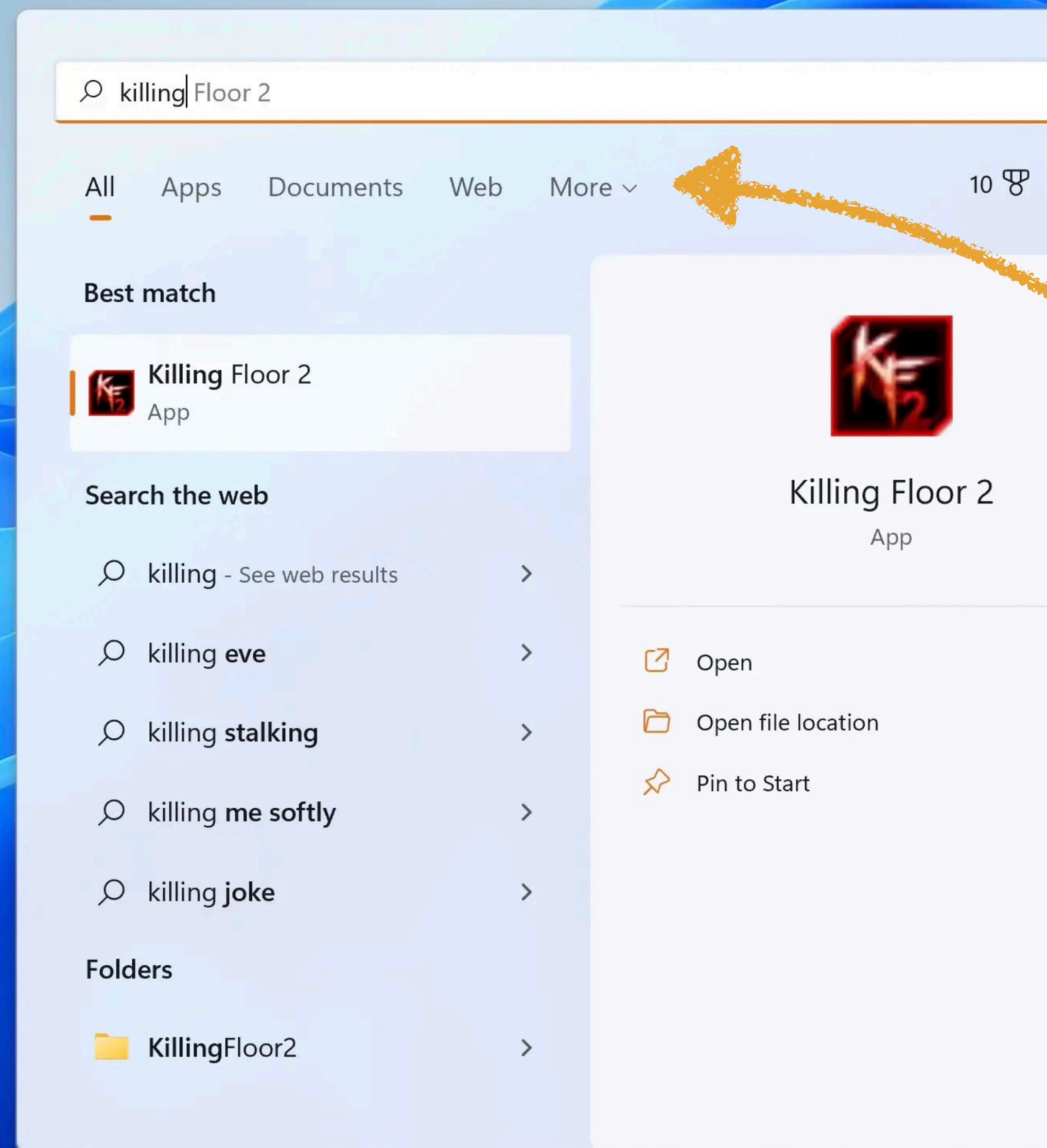






...the Search menu opens, which is confusing & weird, so you might as well just click on Search





Type your search term

Use filters

Use     to move around in the Search menu

Press **Enter** to open the app or file



# Terminal



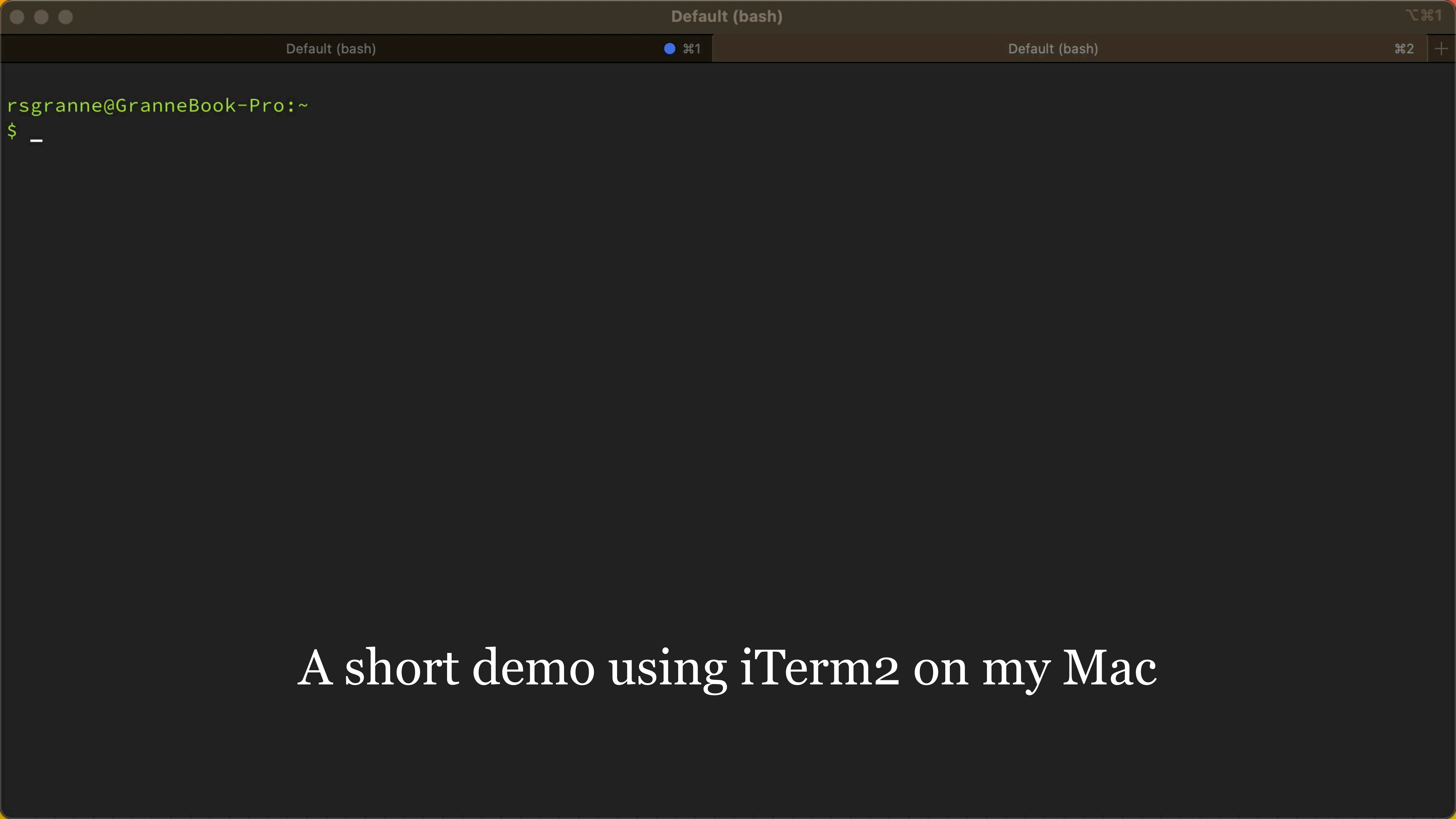


*A shell* is a computer program that exposes an operating system's commands to users



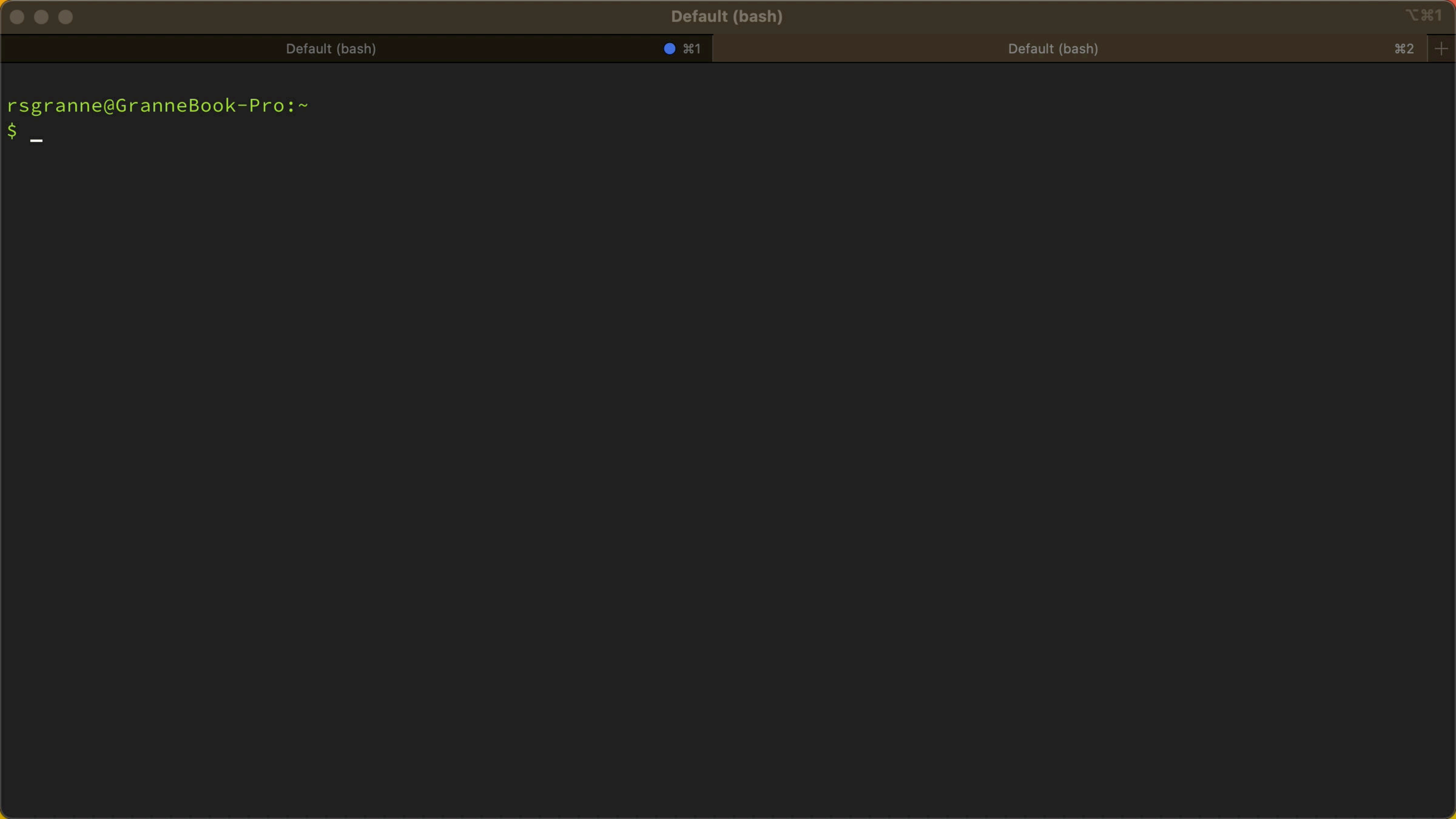
```
rsgranne@GranneBook-Pro:~  
$ ls  
Applications/      Documents/          Movies/             Public/  
Applications (Parallels)/ Downloads/          Music/             RightFont/  
Databases/         Dropbox/           Parallels/         bin/  
Desktop/           Library/           Pictures/          projects/  
  
rsgranne@GranneBook-Pro:~  
$ cd Desktop/  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ echo "Hi there! I'm text in a file!" > ~/Desktop/hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ cat hello.txt  
Hi there! I'm text in a file!  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ echo "I'm appending a new line to this file." >> hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ cat hello.txt  
Hi there! I'm text in a file!  
I'm appending a new line to this file.  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ rm hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ _
```

A *terminal* is an app that allows you to access the shell via the *command line* to run commands (programs) locally or on a remote computer



A short demo using iTerm2 on my Mac





Default (bash)

⌘1

Default (bash)

⌘1

Default (bash)

⌘2

+

rsgranne@GranneBook-Pro:~

\$ \_

```
rsgranne@GranneBook-Pro:~  
$ ls  
Applications/      Documents/          Movies/             Public/  
Applications (Parallels)/ Downloads/          Music/             RightFont/  
Databases/         Dropbox/           Parallels/         bin/  
Desktop/           Library/          Pictures/          projects/  
  
rsgranne@GranneBook-Pro:~  
$ cd Desktop/  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ echo "Hi there! I'm text in a file!" > ~/Desktop/hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
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rsgranne@GranneBook-Pro:~/Desktop  
$ cat hello.txt  
Hi there! I'm text in a file!  
I'm appending a new line to this file.  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ rm hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ _
```

The part in green is the *command prompt*, which is where you type commands

Usually ends with \$, %, #, or > & includes other info



```
rsgranne@GranneBook-Pro:~  
$ ls  
Applications/      Documents/          Movies/             Public/  
Applications (Parallels)/ Downloads/          Music/             RightFont/  
Databases/         Dropbox/           Parallels/         bin/  
Desktop/           Library/           Pictures/          projects/  
  
rsgranne@GranneBook-Pro:~  
$ cd Desktop/  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ echo "Hi there! I'm text in a file!" > ~/Desktop/hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ cat hello.txt  
Hi there! I'm text in a file!  
  
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$ echo "I'm appending a new line to this file." >> hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ cat hello.txt  
Hi there! I'm text in a file!  
I'm appending a new line to this file.  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ rm hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$
```

I split my command prompt on 2 lines

The 1st line contains my `username@computer:current/location`

I type my commands after the `$` on the 2nd line



```
rsgranne@GranneBook-Pro:~  
$ ls  
Applications/      Documents/          Movies/             Public/  
Applications (Parallels)/ Downloads/          Music/             RightFont/  
Databases/         Dropbox/           Parallels/         bin/  
Desktop/           Library/          Pictures/          projects/  
  
rsgranne@GranneBook-Pro:~  
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rsgranne@GranneBook-Pro:~/Desktop  
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rsgranne@GranneBook-Pro:~/Desktop  
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$ cat hello.txt  
Hi there! I'm text in a file!  
I'm appending a new line to this file.  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ rm hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ _
```

When you want to run a command, you type it & press **Enter/Return**



```
rsgranne@GranneBook-Pro:~  
$ ls  
Applications/      Documents/          Movies/             Public/  
Applications (Parallels)/ Downloads/          Music/             RightFont/  
Databases/         Dropbox/           Parallels/         bin/  
Desktop/           Library/           Pictures/          projects/  
  
rsgranne@GranneBook-Pro:~  
$ cd Desktop/  
  
rsgranne@GranneBook-Pro:~/Desktop  
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rsgranne@GranneBook-Pro:~/Desktop  
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Hi there! I'm text in a file!  
I'm appending a new line to this file.  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ rm hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$
```

Very often, if a command succeeds, you get no feedback except a return to the prompt — that's how you know it worked!



```
rsgranne@GranneBook-Pro:~  
$ ls  
Applications/      Documents/          Movies/             Public/  
Applications (Parallels)/ Downloads/          Music/             RightFont/  
Databases/         Dropbox/           Parallels/         bin/  
Desktop/           Library/           Pictures/          projects/  
  
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rsgranne@GranneBook-Pro:~/Desktop  
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Hi there! I'm text in a file!  
I'm appending a new line to this file.  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ rm hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ _
```

Depending on the command, you may get feedback — sometimes spewing by screen after screen!

Press **^c** to stop a command if that happens



```
rsgranne@GranneBook-Pro:~  
$ ls  
Applications/      Documents/      Movies/      Public/  
Applications (Parallels)/ Downloads/      Music/      RightFont/  
Databases/         Dropbox/        Parallels/   bin/  
Desktop/           Library/        Pictures/     projects/  
  
rsgranne@GranneBook-Pro:~  
$ cd Desktop/  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ echo "Hi there! I'm text in a file!" > ~/Desktop/hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ cat hello.txt  
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Hi there! I'm text in a file!  
I'm appending a new line to this file.  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ rm hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$
```

Command

Depending on the command, you may get feedback — sometimes spewing by screen after screen!

Press **^c** to stop a command if that happens



```
rsgranne@GranneBook-Pro:~  
$ ls  
Applications/      Documents/      Movies/          Public/  
Applications (Parallels)/ Downloads/      Music/           RightFont/  
Databases/         Dropbox/        Parallels/       bin/  
Desktop/            Library/        Pictures/         projects/  
  
rsgranne@GranneBook-Pro:~  
$ cd Desktop/  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ echo "Hi there! I'm text in a file!" > ~/Desktop/hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
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$ cat hello.txt  
Hi there! I'm text in a file!  
I'm appending a new line to this file.  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ rm hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$
```

Command

Results

Depending on the command, you may get feedback — sometimes spewing by screen after screen!

Press **^c** to stop a command if that happens



```
rsgranne@GranneBook-Pro:~  
$ ls  
Applications/      Documents/          Movies/             Public/  
Applications (Parallels)/ Downloads/          Music/             RightFont/  
Databases/         Dropbox/           Parallels/         bin/  
Desktop/           Library/           Pictures/          projects/  
  
rsgranne@GranneBook-Pro:~  
$ cd Desktop/  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ echo "Hi there! I'm text in a file!" > ~/Desktop/hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ cat hello.txt  
Hi there! I'm text in a file!  
  
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$ cat hello.txt  
Hi there! I'm text in a file!  
I'm appending a new line to this file.  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ rm hello.txt  
  
rsgranne@GranneBook-Pro:~/Desktop  
$ _
```

You cannot use a mouse in a terminal

Instead, you use arrow keys (e.g., ← to move left 1 character) & key commands (e.g., ⌘← to move left 1 word or ^e to move to the end of a line)

# Version Control

## Version control, AKA *revision control* & *source control*

“...management of changes to documents, computer programs, large web sites, and other collections of information. Changes are usually identified by a number or letter code, termed the ‘revision number’ ... or simply ‘revision’. ... Each revision is associated with a timestamp and the person making the change. Revisions can be compared, restored, and ... merged.”

Built-in



View

Zoom

1

Git  
Type to enter text  
R. Scott Stevenson @r-scott

2

"Some forms of distributed systems control is standard. Some data, and all its state, the most popular, is centralized and controlled by a few master nodes. They maintain the state of the system, and all other nodes are merely clients. This is a good thing, but it is not a good thing if the system is not a good thing." — Ryan Cook, Software Engineer

3

Version Control

4

Version control, AKA revision control & source control  
"...management of changes to documents, computer programs, large web sites, and other collections of information. Changes are usually identified by a number or letter code, termed the 'revision number' ... or simply 'revision'. ... Each revision is associated with a timestamp and the person making the change. Revisions can be compared, restored, and ... merged."

5

Text

6

git  
History

7

Text

8

Installation

9

GitHub

10

When Github became a thing, you were expected to use it. It was not easy to copy it.

11

GitHub, a web-based Git repository, launched in 2008. It provided a central place to store your code, and it was a good thing. It was a good thing, but it was not easy to copy it.

12

Let's take a look at GitHub & explore  
github.com/repositories/branches/default/master/branches  
github.com/repositories/branches/default/master/branches

13

Let's take a look at GitHub & explore  
github.com/repositories/branches/default/master/branches  
github.com/repositories/branches/default/master/branches

14

Let's take a look at GitHub & explore  
github.com/repositories/branches/default/master/branches  
github.com/repositories/branches/default/master/branches

File

Edit

Insert

Slide

Format

Arrange

View

Play

Share

Window

Help

New ⌘N

Open... ⌘O

Open Recent ▶

Close Window ⇧⌘W

Close Tab ⌘W

Save ⌘S

Duplicate ⇧⌘S

Rename...

Move To...

Revert To ▶

Export To ▶

Advanced ▶

Set Password...

Change Theme...

Save Theme...

Print... ⌘P

Git.key

Table

Chart

Text

Shape

Media

Comment

Collaborate

Format

Animate

Document

CSS - Typography.key

HowOSsWork\_20081210.key

Git.key

Slide Layout

Text

Change Master

Appearance

☐ Title

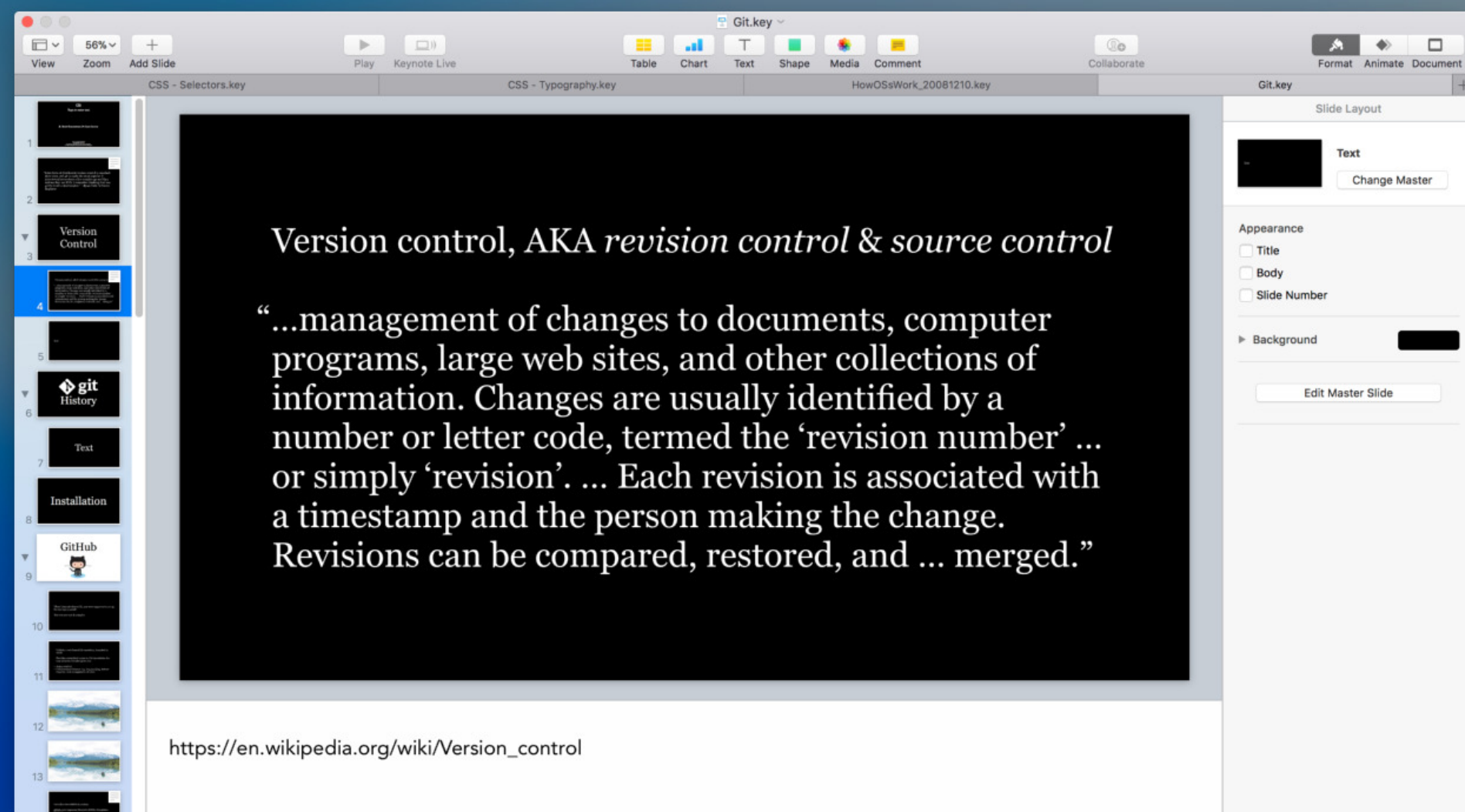
☐ Body

☐ Slide Number

Background

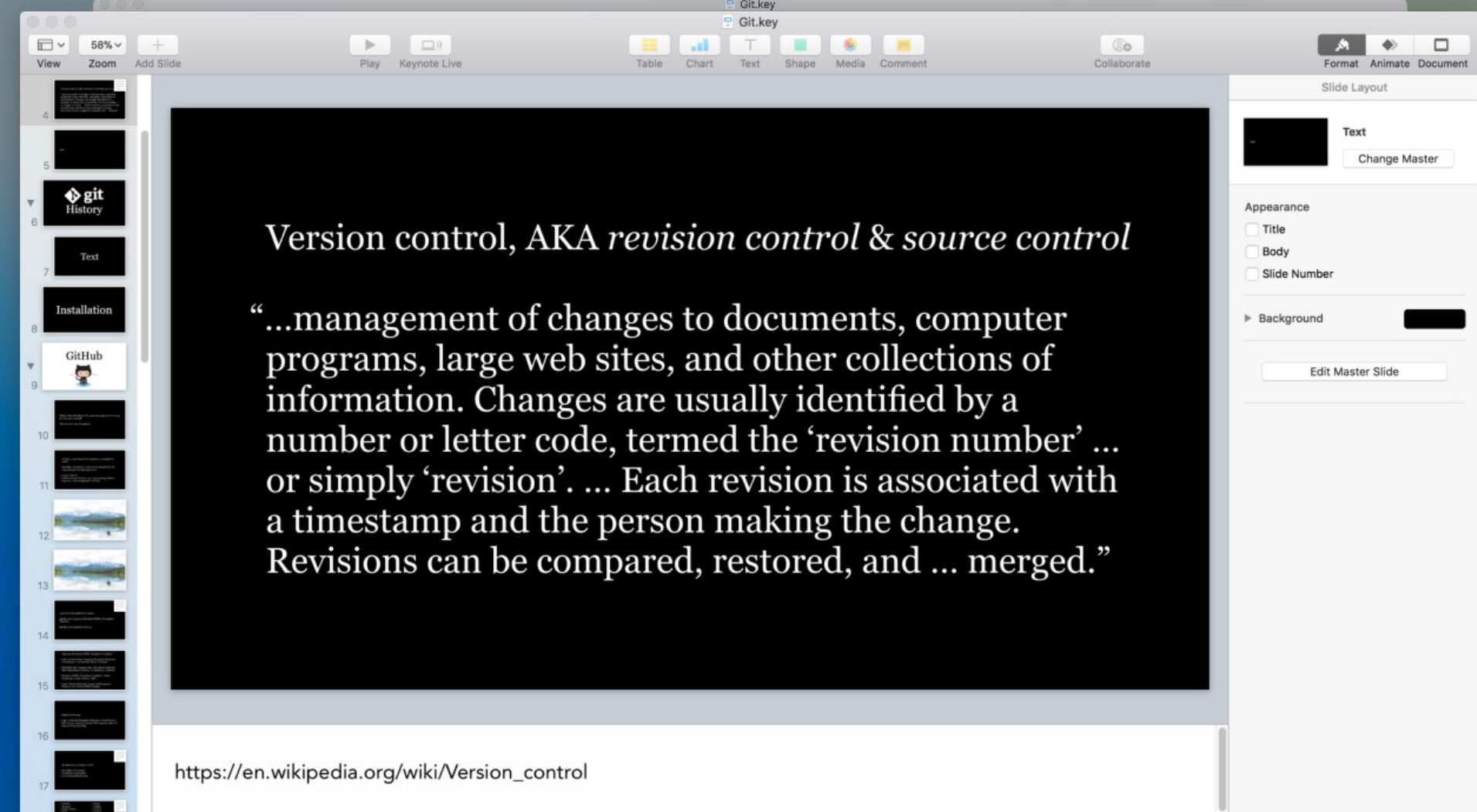
Edit Master Slide





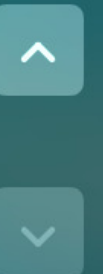
Current Document

Done



Restore

Today at 10:00 AM

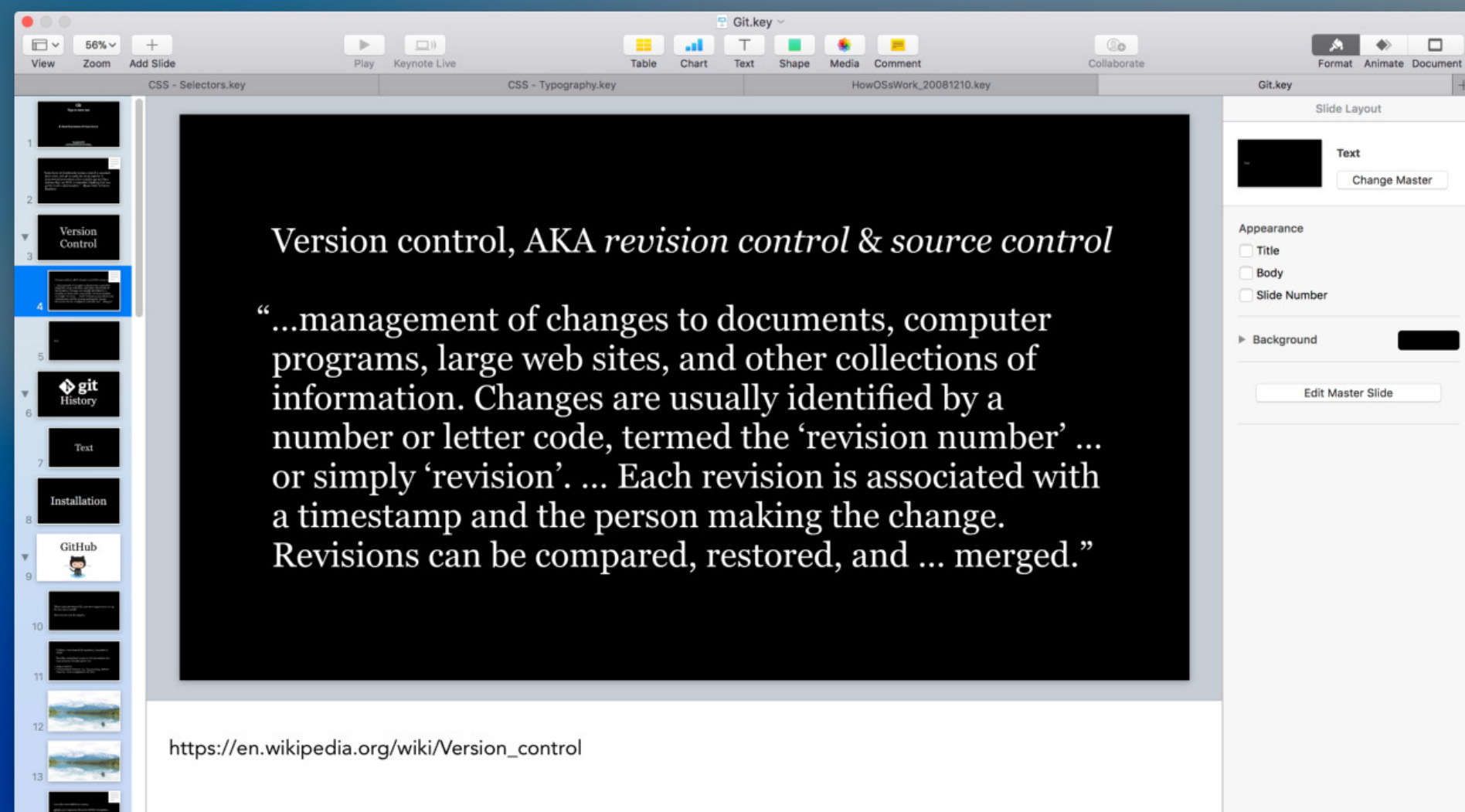


May 2016

Yesterday

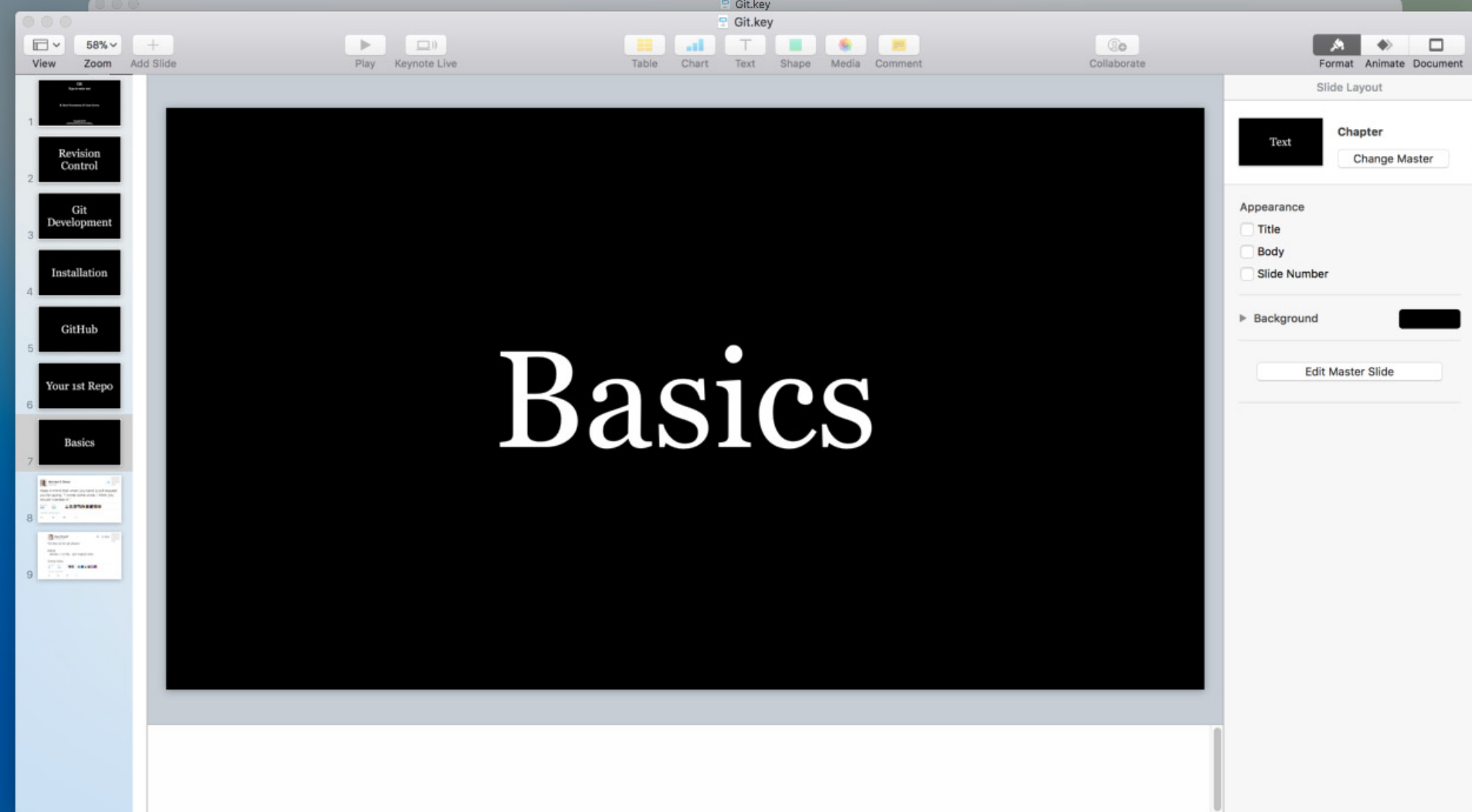
Today





Current Document

Done



Restore

Yesterday at 2:41 PM



May 2016

Yesterday

Today

Copying





## Favorites

- Desktop
- Dropbox
- Documents
- Downloads
- Applications
- Photos
- AirDrop
- Recents
- Inbox
- DEVONthink PDF
- Git
- Web Dev Projects
- WebSanity
- iCloud
  - iCloud Drive
  - Shared

## Locations

GranneBook Pro

< > H.P. Lovecraft Paper



Name	Date Modified	Size	Kind
H.P. Lovecraft - Influences 1 ORIGINAL.md	2021-06-29	7 KB	Markdown
H.P. Lovecraft - Influences 1.md	2021-06-29	7 KB	Markdown
H.P. Lovecraft - Influences 2.md	2021-06-30	7 KB	Markdown
H.P. Lovecraft - Influences 3 - old.md	2021-07-02	7 KB	Markdown
H.P. Lovecraft - Influences 3.5 - new.md	2021-07-02	7 KB	Markdown
H.P. Lovecraft - Influences 3.5.md	2021-07-02	7 KB	Markdown
H.P. Lovecraft - Influences 3.md	2021-07-02	7 KB	Markdown

Copy work & give it a new name for each version

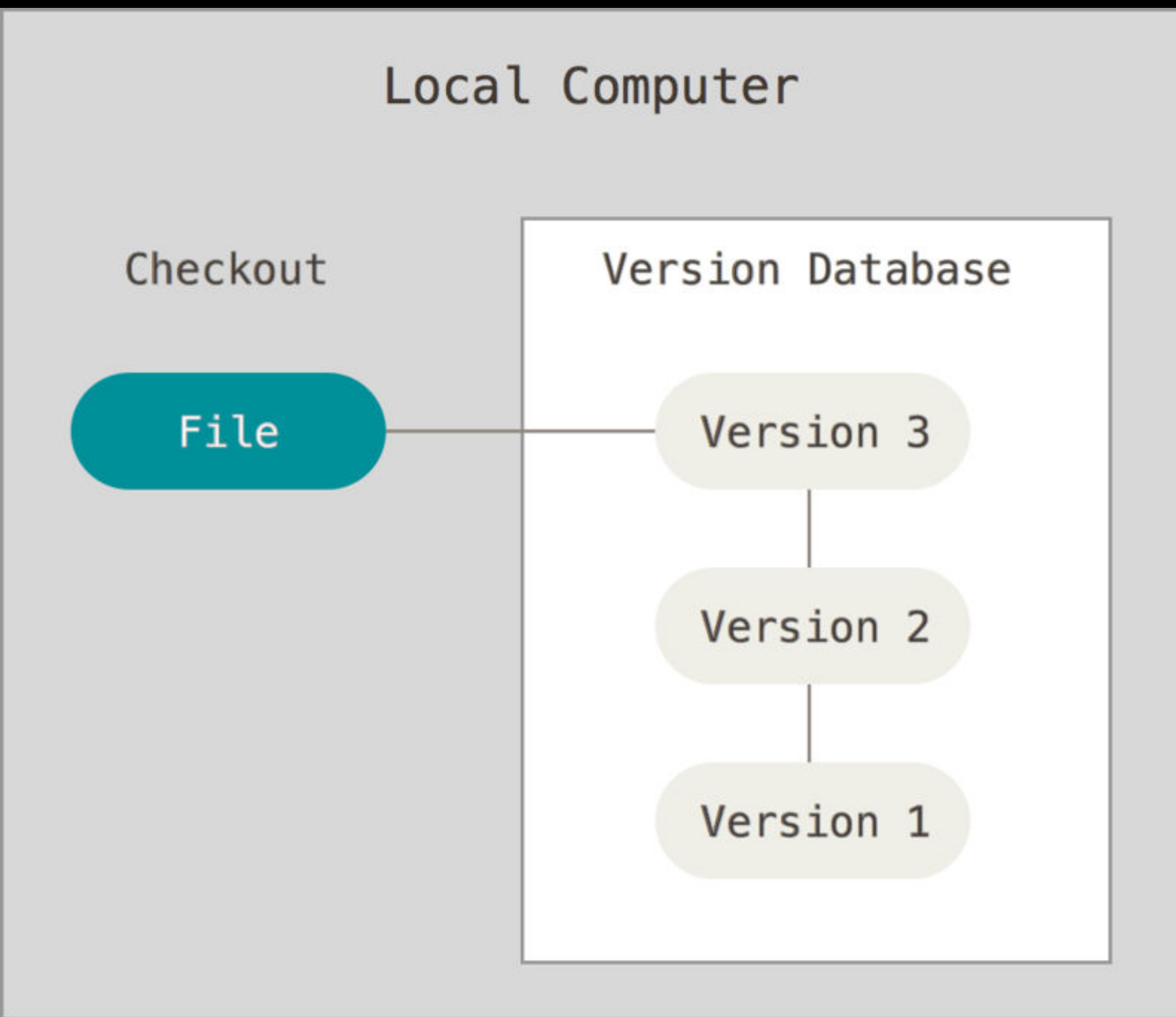
Problems:

- » Easy to mis-label
- » Easy to overwrite files
- » What's changed? When? By whom?

Macintosh HD > Users > Downloads > H.P. Lovecraft Paper

7 items, 241.29 GB available

# Local Version Control Systems



Store all files in a database  
on each developer's  
computer

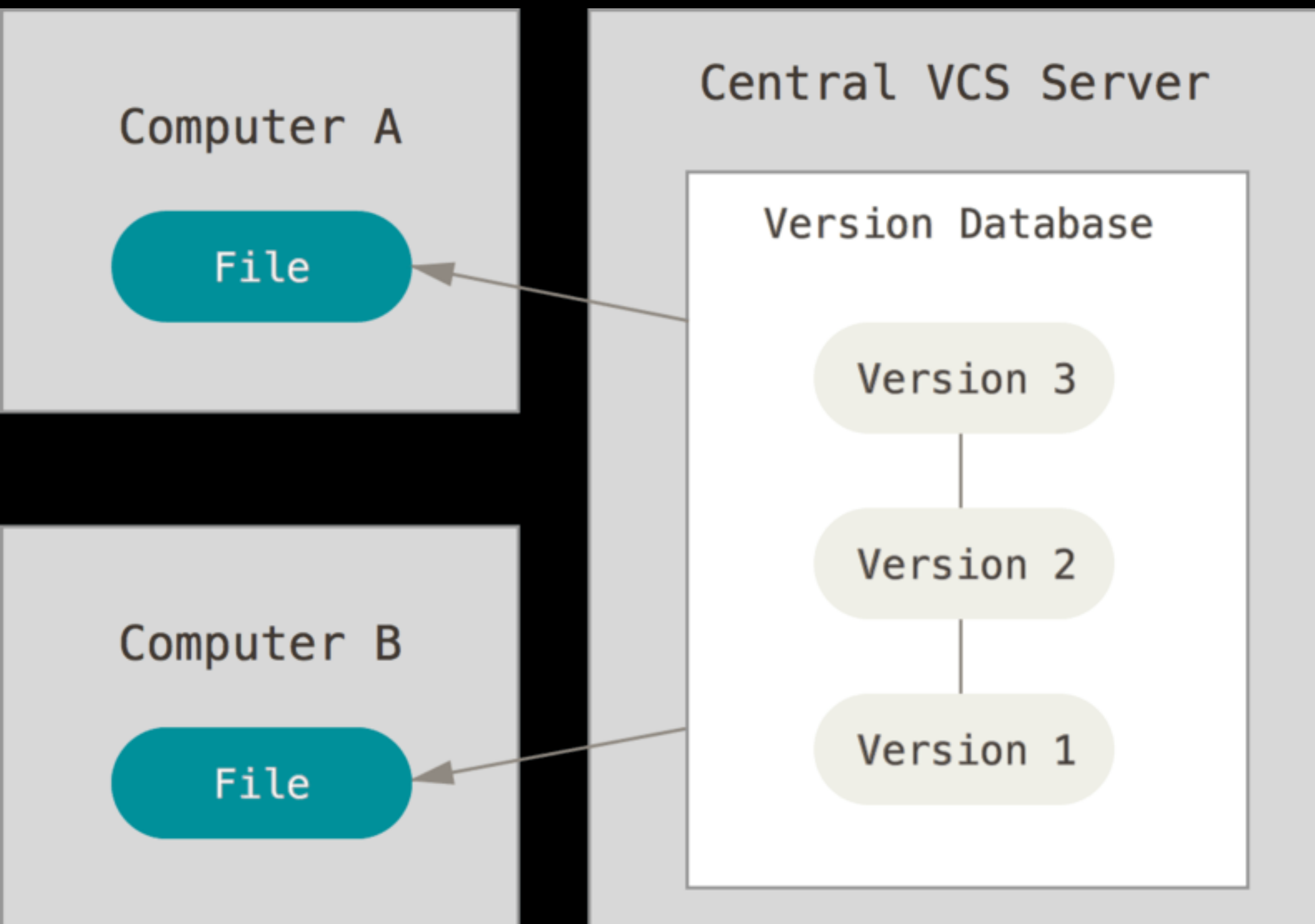
Each developer checks out a  
file she wants to work on, but  
it's all on her computer

No way to share code &  
collaborate

Ex.: RCS (Revision Control  
System)

# Centralized Version Control Systems





Store all files in a database  
on a single server

Developers check out files  
& save them back in to the  
project

Ex's: CVS & Subversion

# Advantages

Several developers can collaborate on a project

Developers know what each other is working on

Admins get fine-grained control over who has access to what files

1 server is a lot easier to manage

# Problems

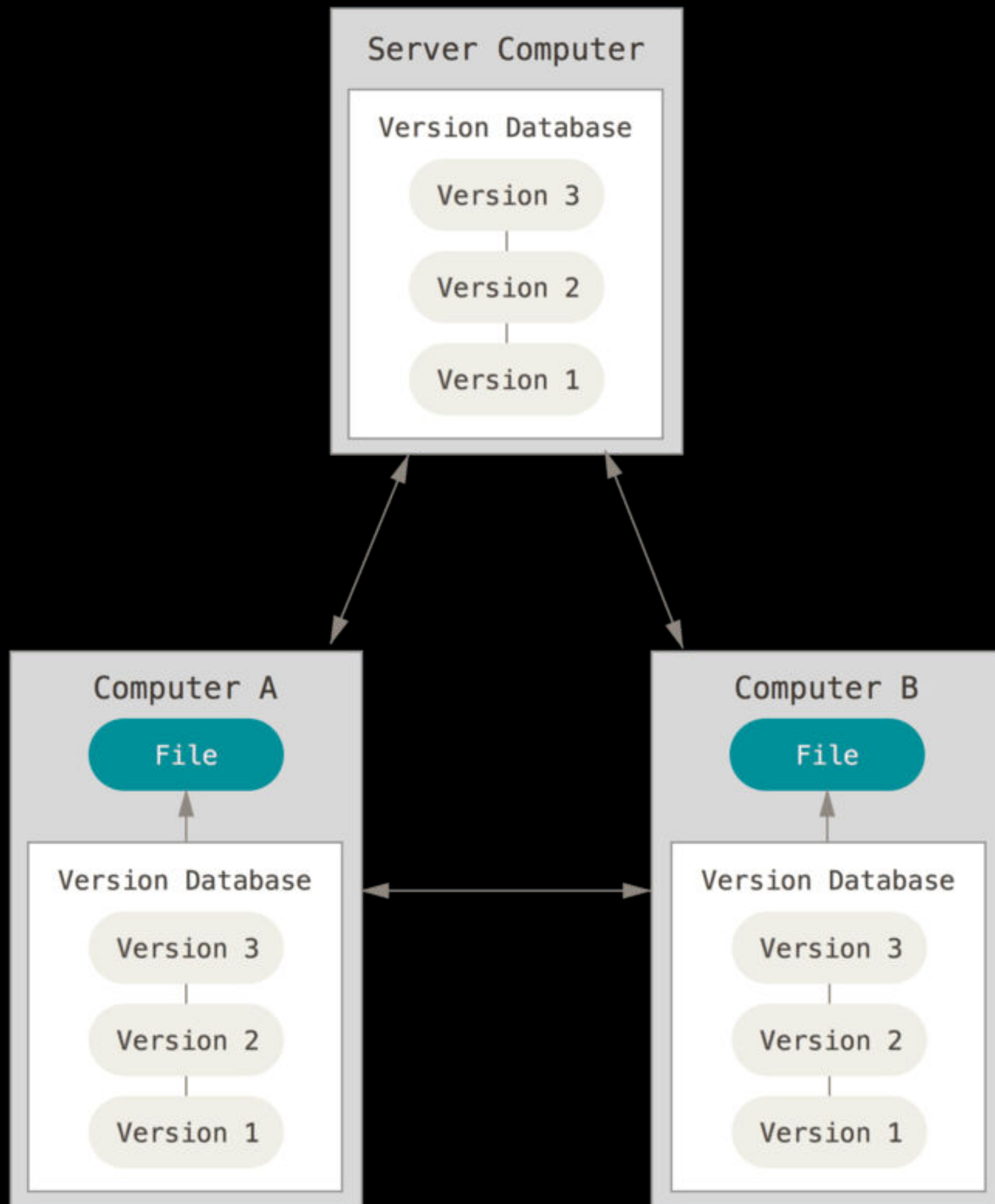
If server goes down, no one can work

How do multiple users work on same files at same time? Who's changes get accepted?

If changes conflict, someone manually merges the differences



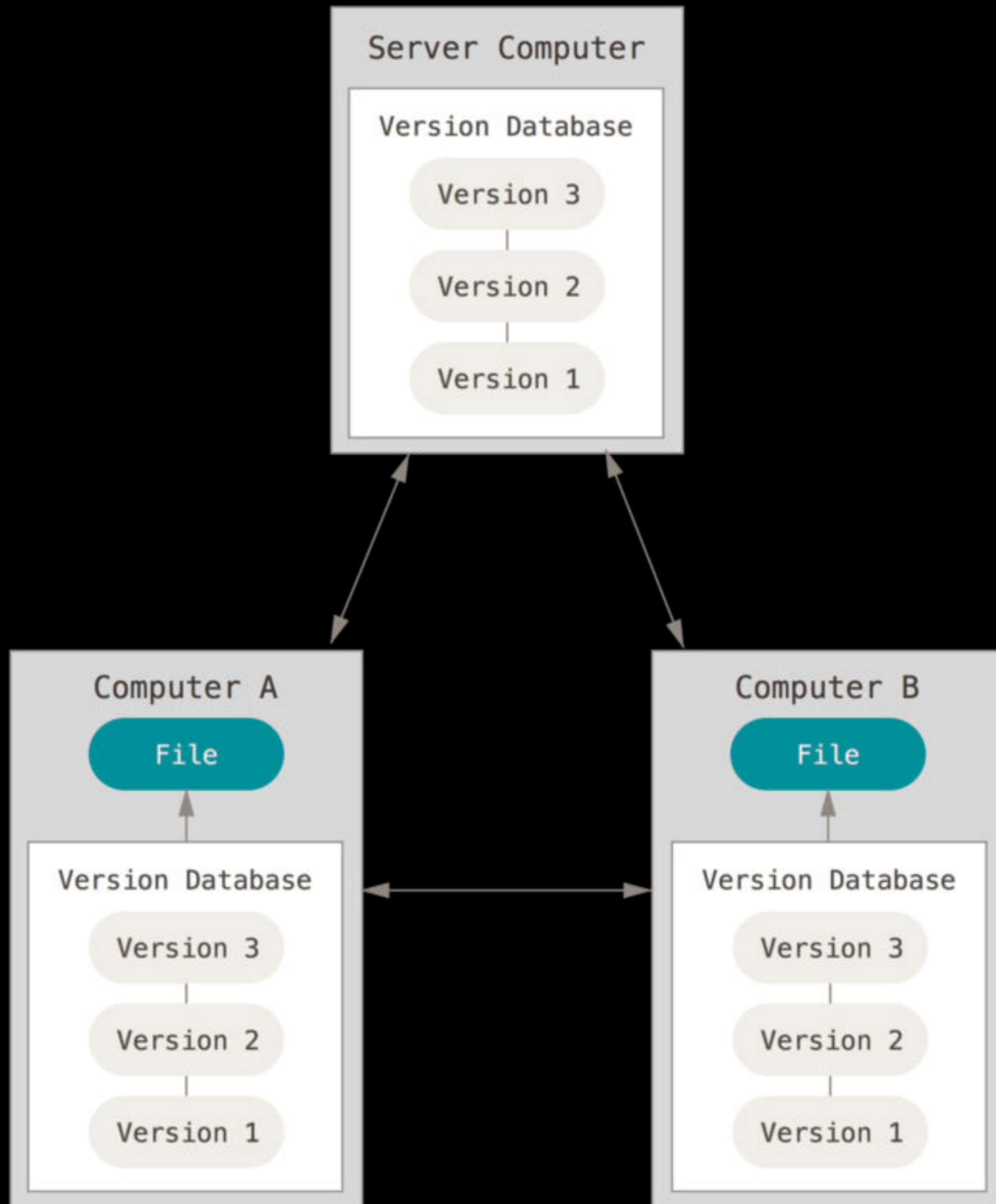
# Distributed Version Control System



There is a central *repository* of the project's code

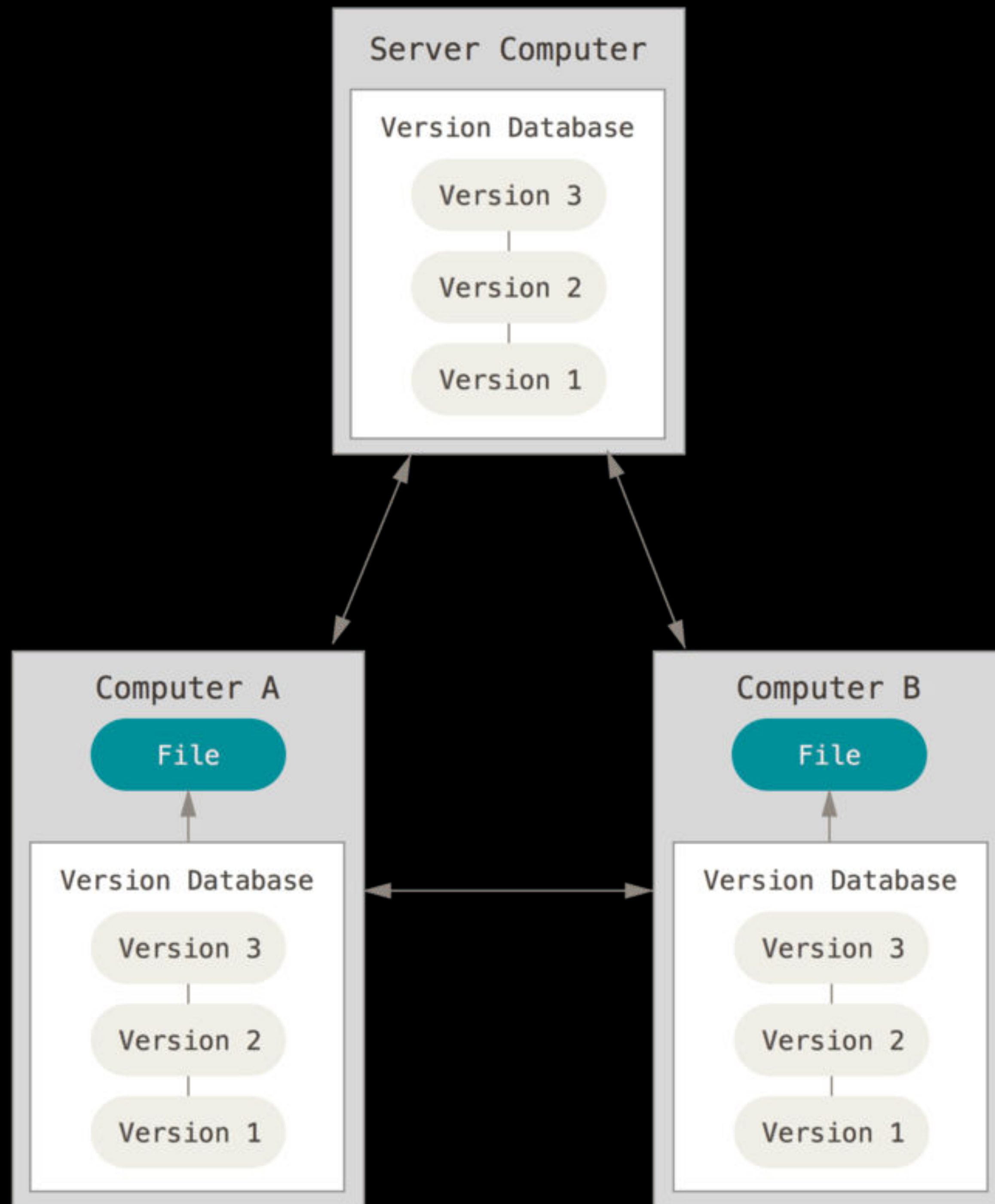
Every developer gets her own copy (*clone*) of the project, including all changes anyone has made





Each developer works on whatever she wants & merges (*pushes*) back to the repository when she thinks it's time

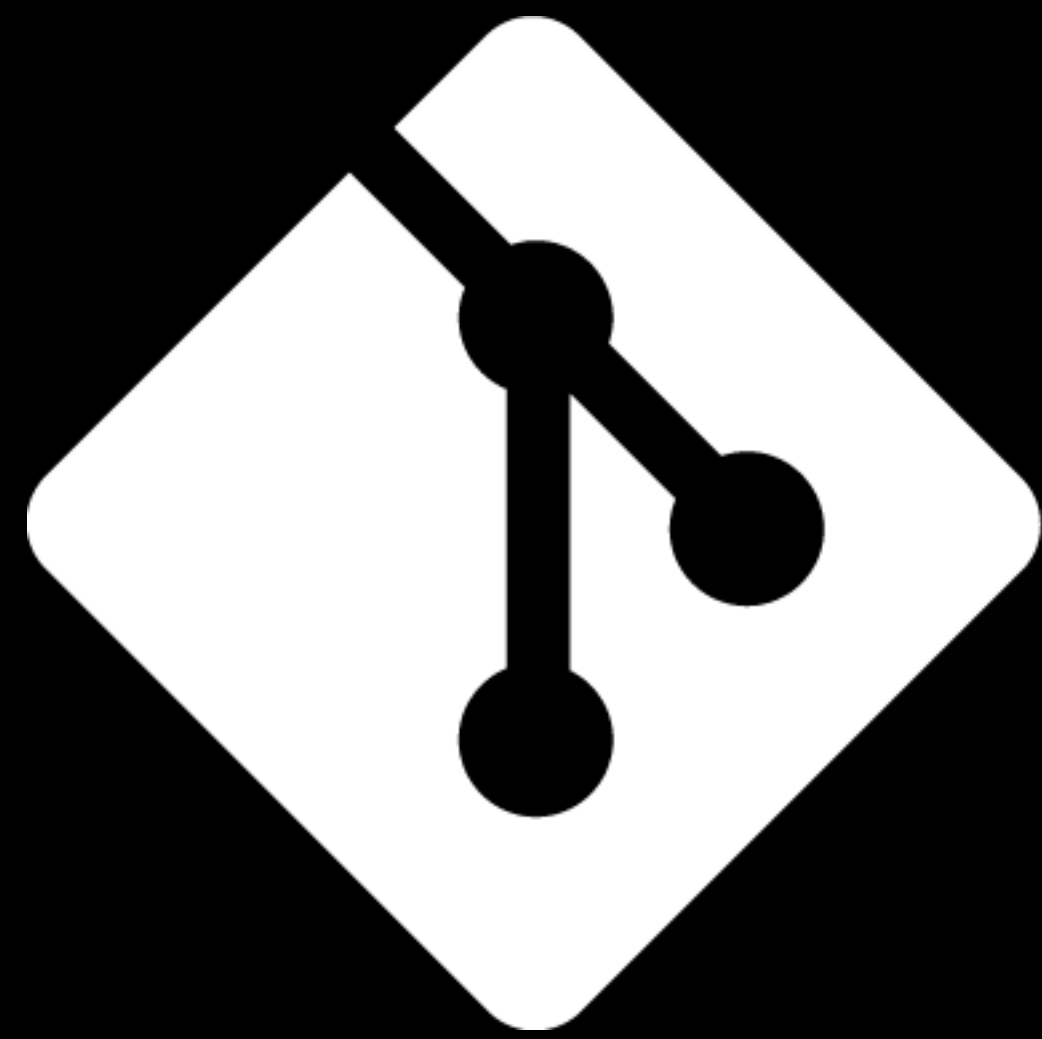
Each developer *pulls* the latest changes every other developer has made



Easier to share code,  
merge conflicts, &  
experiment with code

Git is a DVCS (so is  
Mercurial)





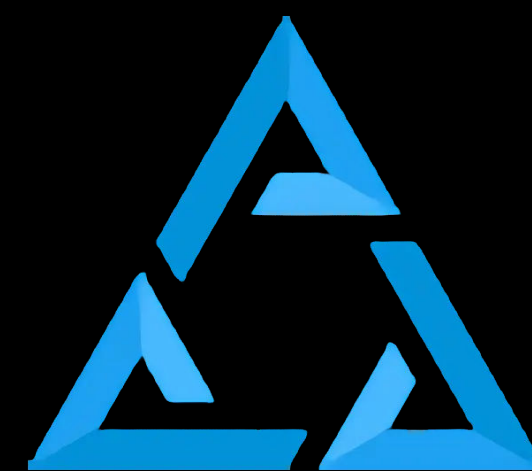
git

History





2000: Larry McVoy  
released BitKeeper, a  
closed-source DVCS



**BITKEEPER**  
Scalable Version Control





1991–2002: Linux developers use patches & archives to manage software changes (this proves unsustainable)

2002: Linus Torvalds, creator of Linux & leader of Linux kernel developers, starts making developers use BitKeeper (owned by his buddy Larry)

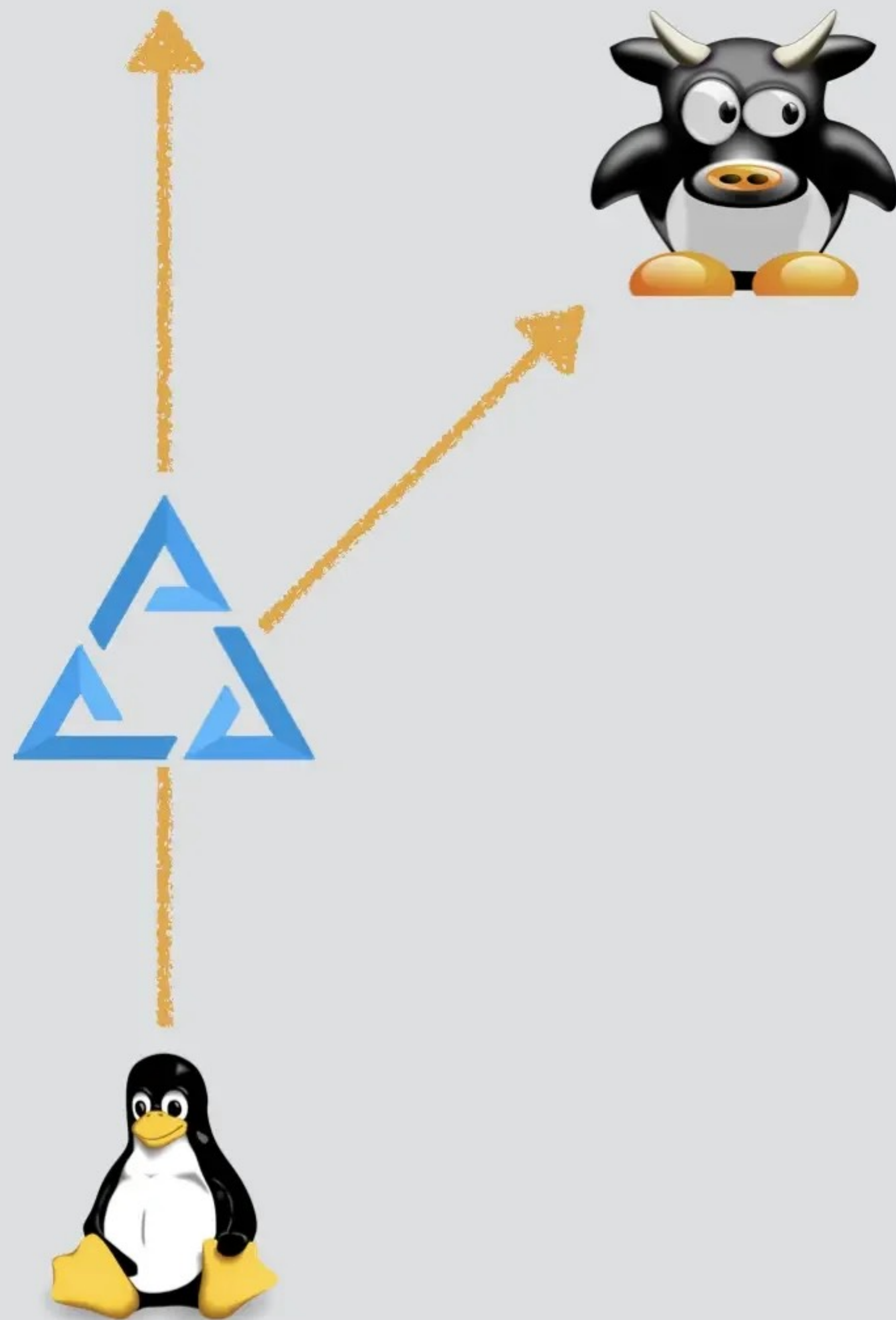




2002–2005: Developers complain that closed-source software is used to manage the world's biggest open-source project, but Linus refuses to change

McVoy allows developers working on open source projects to use BitKeeper for free, which reduces grumbling somewhat





In 2005, McVoy changes BitKeeper licensing terms so open source developers no longer get free licenses

Developers revolt against Linus, threatening to fork the Linux kernel

April 3, 2005: Linus begins developing Git with a goal of 2 weeks before “having something usable”

April 7, 2005: Initial release of Git

April 16, 2005: 1st commit of Linux kernel using Git

June 16, 2005: Git manages the Linux kernel

July 26, 2005: Linus turns over management to Junio Hamano



Companies & organizations using Git: Adobe •  
American Airlines • Amazon • Android • Apple •  
BuzzFeed • Canva • Cloudflare • Coinbase • Dell •  
Disney • DuckDuckGo • Eclipse • Epic Games • Etsy •  
Facebook • Ford • GNOME • Home Depot • Hubspot •  
IBM • KDE • LinkedIn • Linux • Lyft • Medium • MGM  
Resorts • Microsoft • Mozilla • NASA • Netflix • New  
York Times • NVIDIA • Perl • Pinterest • Pixar •  
PostgreSQL • Procter & Gamble • Reddit • Robinhood  
• Ruby On Rails • Samsung • Shopify • Spotify • Stripe •  
Twitter • Unsplash • Walmart • Wix • Zappos • Zillow

## Why *git*?

Linus Torvalds: “I’m an egotistical bastard, and I name all my projects after myself. First ‘Linux’, now ‘git’.”

- » Random 3-letter combination that is pronounceable & not used by any UNIX command
- » Mispronunciation of “get”
- » The Urban Dictionary: “A completely ignorant, childish person with no manners.”





BitKeeper was released as  
open source in 2016

Last update was in 2018

No longer being developed

BitKeeper was released as  
open source in 2016

Last update was in 2018

No longer being developed



# Installation

`git` is really a command line tool



macOS

In VS Code, open the built-in Terminal & enter:

```
git --version
```

You will be prompted to install Command Line Tools for Xcode:

```
xcode-select --install
```



Verify `git` is installed by entering the following in Terminal:

```
$ git --version  
git version 2.32.0 (Apple Git-132)
```

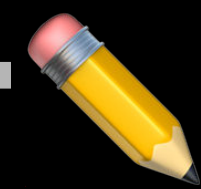
```
$ xcode-select -p  
/Library/Developer/CommandLineTools
```

Windows



Go to [git-scm.com/download/win](https://git-scm.com/download/win), download, & install

Accept all default options, but at very end don't launch it



## SIDE NOTE

Not sure if you should get the 32- or 64-bit version?

Start > Settings > System

Scroll down on left sidebar & click on *About*

In the right pane, look at System Type

- » 32-bit will say *32-bit operating system, or X86-based PC*
- » 64-bit will say *64-bit operating system, or X64-based PC*



Verify git is installed

Open Terminal (search for **Terminal**) or Command Prompt (search for **cmd**) & enter the following:

```
C:\Users\YourUserName>git --version  
git version 2.35.1_windows.2
```





Version 1.24 is now available! Read about the new features and fixes from May.

# Code editing. Redefined.

Free. Open source. Runs everywhere.

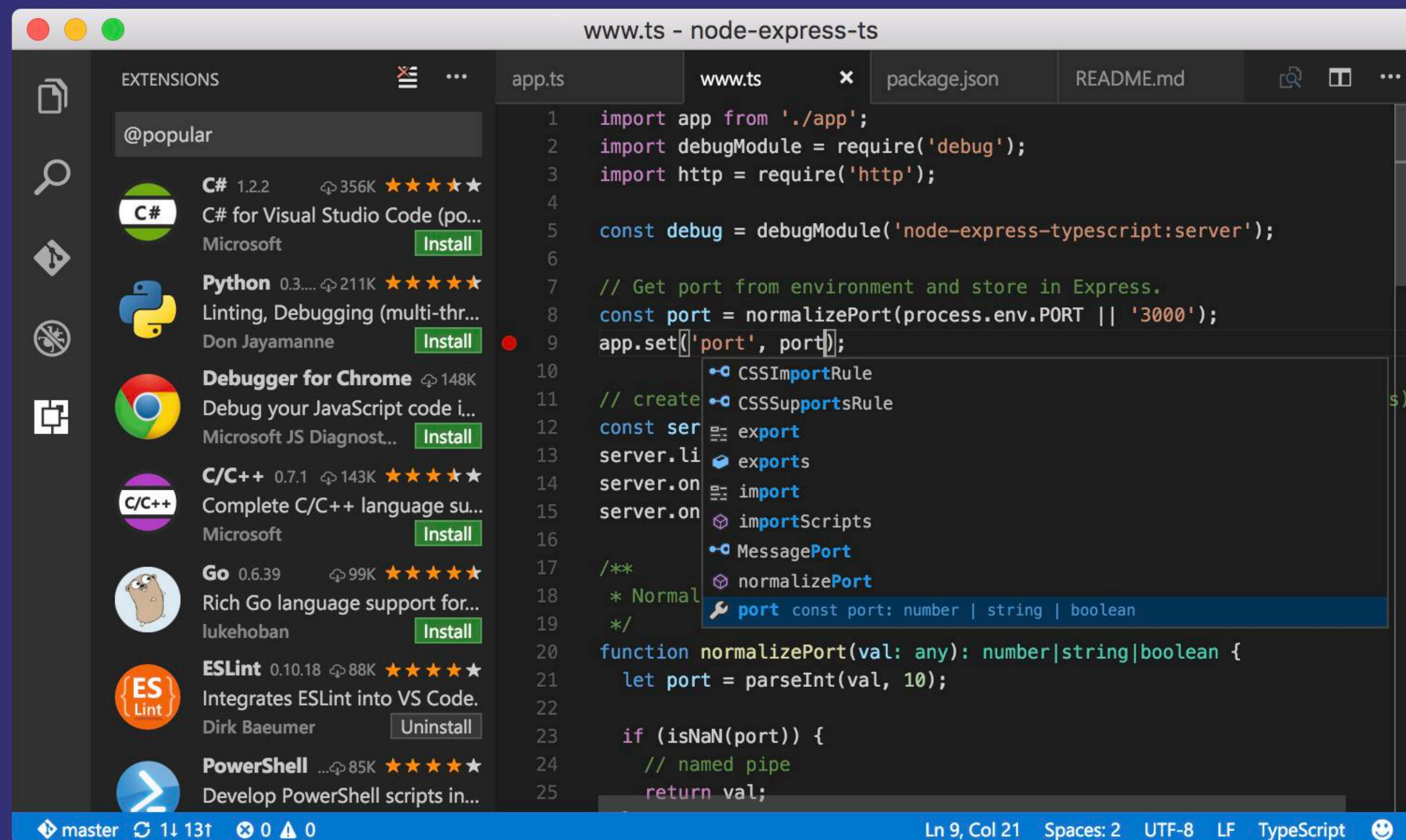
Download for Mac

Stable Build



Other platforms and Insiders Edition

By using VS Code, you agree to its  
license and privacy statement.







## EXPLORER

## OPEN EDITORS

index.html

## OASIS-STAR-WARS-BOOTSTRAP

## css

bootstrap-theme.css

bootstrap.css

main.css

## fonts

glyphicons-halflings-regul...

glyphicons-halflings-regul...

glyphicons-halflings-regul...

glyphicons-halflings-regul...

glyphicons-halflings-regul...

## images

## js

bootstrap.js

jquery.js

main.js

npm.js

config.codekit

config.codekit3

index.html

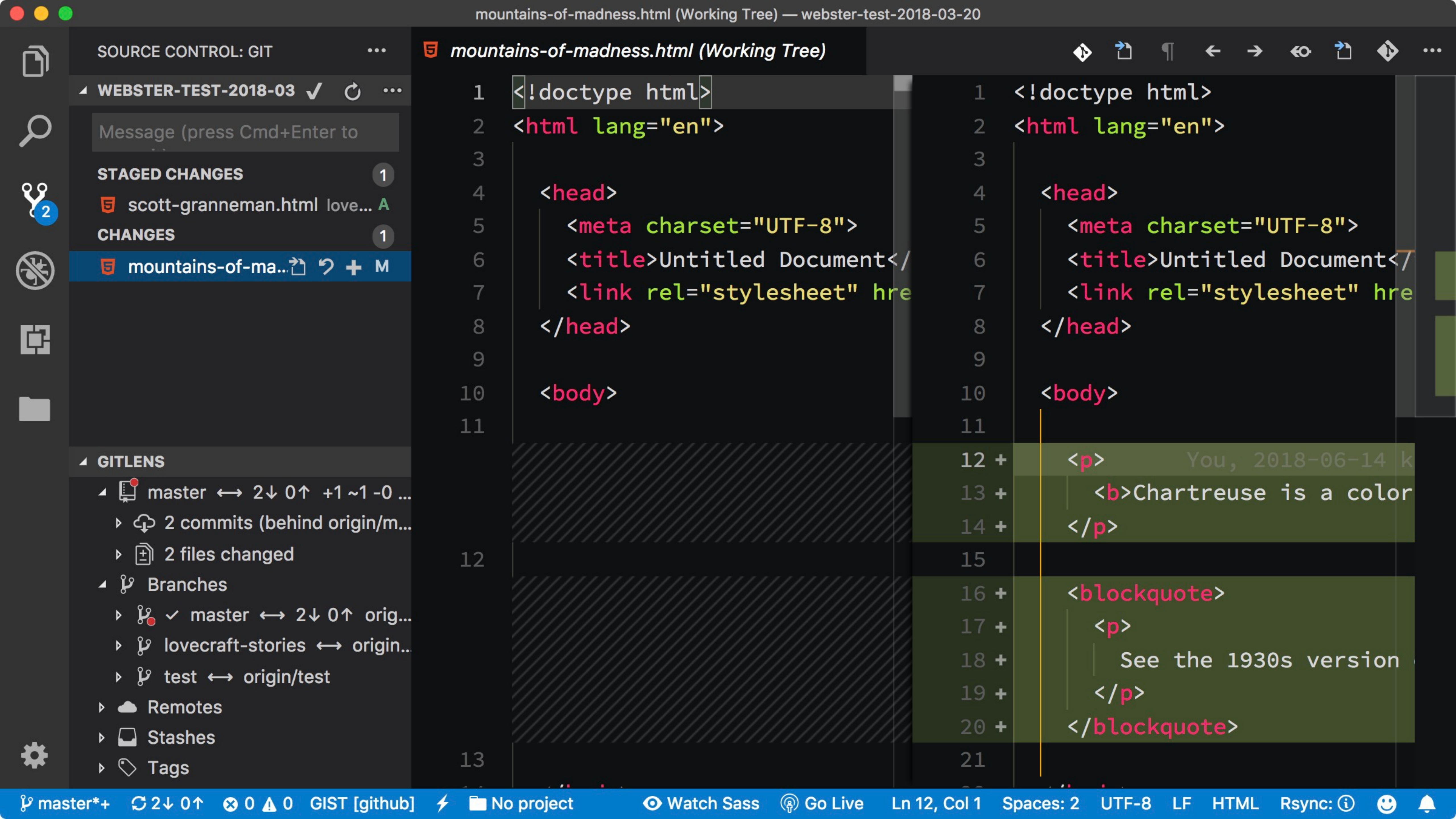
## MARK JUMP

index.html

```
1 <!doctype html>
2 <html>
3   <head>
4     <meta charset="UTF-8">
5     <title>SWAPP</title>
6     <meta name="viewport" content="width=device-width, initial-s
7     <link rel="stylesheet" href="css/bootstrap.css" media="scre
8     <link rel="stylesheet" href="css/main.css">
9   </head>
10  <body>
11    <main class="container">
12      <div class="row">
13        <div class="col-xs-12">
14          <h1>Star Wars Character Creator</h1>
15          <fieldset>
16            <legend>Name Your Character</legend>
17            <div class="form-group">
18              <!--<h2 class="h3">Name Your Character</h2>-->
19              <form>
20                <input type="text" maxlength="75" class="form-co
                  placeholder="New Name">
```

```
1 <!--<h2 class="h3">Name Your Character</h2>-->
2 <form>
3   <input type="text" maxlength="75" class="form-co
4     placeholder="New Name">
5 </form>
6 </div>
7 </fieldset>
8 </div>
9 </main>
10 </body>
11 </html>
```





SOURCE CONTROL: GIT

WEBSTER-TEST-2018-03 ✓ ↻ ...

Message (press Cmd+Enter to

STAGED CHANGES

1

scott-granneman.html love... A

CHANGES

1

mountains-of-ma... ↻ + M

GITLENS

master ↔ 2↓ 0↑ +1 ~1 -0 ...

2 commits (behind origin/m...

2 files changed

Branches

master ↔ 2↓ 0↑ orig...

lovecraft-stories ↔ origin...

test ↔ origin/test

Remotes

Stashes

Tags

mountains-of-madness.html (Working Tree)

```
1 <!doctype html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8">
6   <title>Untitled Document</
7   <link rel="stylesheet" hre
8 </head>
9
10 <body>
11
```

12

13

```
1 <!doctype html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8">
6   <title>Untitled Document</
7   <link rel="stylesheet" hre
8 </head>
9
10 <body>
11
```

12 + <p> You, 2018-06-14 k

13 + <b>Chartreuse is a color

14 + </p>

15

16 + <blockquote>

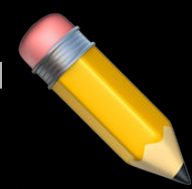
17 + <p>  
18 + See the 1930s version

19 + </p>

20 + </blockquote>

21





## SIDE NOTE

Might need to change "`git.path`": `null` in VS Code Settings



I have prepared an extension pack for VS Code that contains some useful Git-based extensions: GrannePack

Git 🎉🥰🎊🍾



EXTENSIONS: M... ...

granne

2

**GrannePack Git**Git-related extensions for Scot...  
granneman

Install |

**GrannePack CSS**CSS-related extensions for Sc...  
granneman**GrannePack HTML**HTML-related extensions for S...  
granneman**GrannePack Mark...** 116Markdown-related extensions f...  
granneman

Install |

**GrannePack Web D...** 21HTML-, CSS-, & SCSS-related...  
granneman

Install |

1

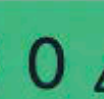
1

Click on the Extensions button to  
open Extensions View

2

Search for **granne** & my 5 extension  
packs should appear

master



0 0

GIST [github]






bin


Rsync:





EXTENSIONS: M...    ...



granne

 **GrannePack Git**  
Git-related extensions for Scot...  
granneman [Install](#) |  **GrannePack CSS**  
CSS-related extensions for Sc...  
granneman  **GrannePack HTML**  
HTML-related extensions for S...  
granneman  **GrannePack Mark...**  116  
Markdown-related extensions f...  
granneman [Install](#) |  **GrannePack Web D...**  21  
HTML-, CSS-, & SCSS-related...  
granneman [Install](#) |  Extension: GrannePack Git

# GrannePack Git v0.3.0

granneman |  603 | ★★★★★

Git-related extensions for Scott Grannema...

[Install](#) |  

This extension is enabled globally.

  
**Click on Install**

RUNTIME STATUS

## Extension Pack (4)



### GitLens — Git supercharged

Supercharge Git within VS Code — Visualize co...

 **GitKraken**

### GitHub Pull Requests and Issues

Pull Request and Issue Provider for GitHub

 **GitHub**

## Categories

[Extension Packs](#)

## Extension Resources

[Marketplace](#)[Repository](#)

You might have to reload VS Code if it tells you to



granne

GrannePack Git

Git-related extensions for Scott Granneman

granneman

{g}

GrannePack CSS

CSS-related extensions for Scott Granneman

granneman

<g>

GrannePack HTML

HTML-related extensions for Scott Granneman

granneman

g↓

GrannePack Markdown

Markdown-related extensions for Scott Granneman

granneman

116

Install

g&x

GrannePack Web Development

HTML-, CSS-, & SCSS-related extensions for Scott Granneman

granneman


21

Install

Extension: GrannePack Git

Extension: GrannePack Markdown

g




Done!

DETAILS

CHANGELOG

RUNTIME STATUS


Extension Pack (4)



GitLens — Git supercharged

Supercharge Git within VS Code — Visualize commit history, branches, and diffs

GitKraken



GitHub Pull Requests and Issues

Pull Request and Issue Provider for GitHub

GitHub

Categories

Extension Packs

Extension Resources

Marketplace

Repository

master

0 0

GIST [github]

bin

Rsync: ⓘ

# GitHub





When Linus developed Git, you were supposed to set up the Git repo yourself

This was complex & not easy

GitHub, a web-based Git repository, launched in 2008

Provides centralized access to Git repositories for your projects, but also gives you:

- » Access control
- » Collaboration features; e.g., bug tracking, feature requests, task management, & wikis
- » Many other features!



[Sign up](#)

# Where the world builds software

Millions of developers and companies build, ship, and maintain their software on GitHub—the largest and most advanced development platform in the world.

[Sign up for GitHub](#)

73+ million

Developers

4+ million

Organizations

200+ million

Repositories

84%

Fortune 100

Feb. 2022



Sign up



# Let's build from here

Mar. 2023



	2022	2023
Developers	73+ m	100+ m
Organizations	4+ m	4+ m
Repositories	200 m	330+ m
Fortune 100	84%	90%

Amazing GitHub statistics!

GitHub is now the largest host of source code in the world

It's also something of a developer's social network





This repository

Search

Pull requests

Issues

Marketplace

Explore



git / git

Watch

1,865

Star

21,517

Fork

12,523

Code

Pull requests 123

Insights

Git Source Code Mirror - This is a publish-only repository and all pull requests are ignored. Please follow Documentation/SubmittingPatches procedure for any of your improvements.

c

shell

50,638 commits

5 branches

682 releases

1,180 contributors

Branch: master

New pull request

Create new file

Upload files

Find file

Clone or download



gitster Sync with Git 2.16.3

Latest commit 90bbd50 8 days ago

.github

Configure Git contribution guidelines for github.com

10 months ago

Documentation

Sync with Git 2.16.3

8 days ago

block-sha1

sha1: provide another level of indirection for the SHA-1 functions

2 years ago

builtin

Merge branch 'rj/warning-uninitialized-fix'

9 days ago

ci

Merge branch 'sg/test-x'

16 days ago





Search or jump to...



Pulls

Issues

Codespaces

Marketplace








Explore



## Top Repositories

New

Find a repository...

-  websanity/ws-tech
-  rsgranne/granne-bin
-  rsgranne/granneman-www
-  websanity/ws-server-scripts
-  websanity/ws-server-files
-  rsgranne/grannepack-web-dev-snippets
-  rsgranne/ws-appendices

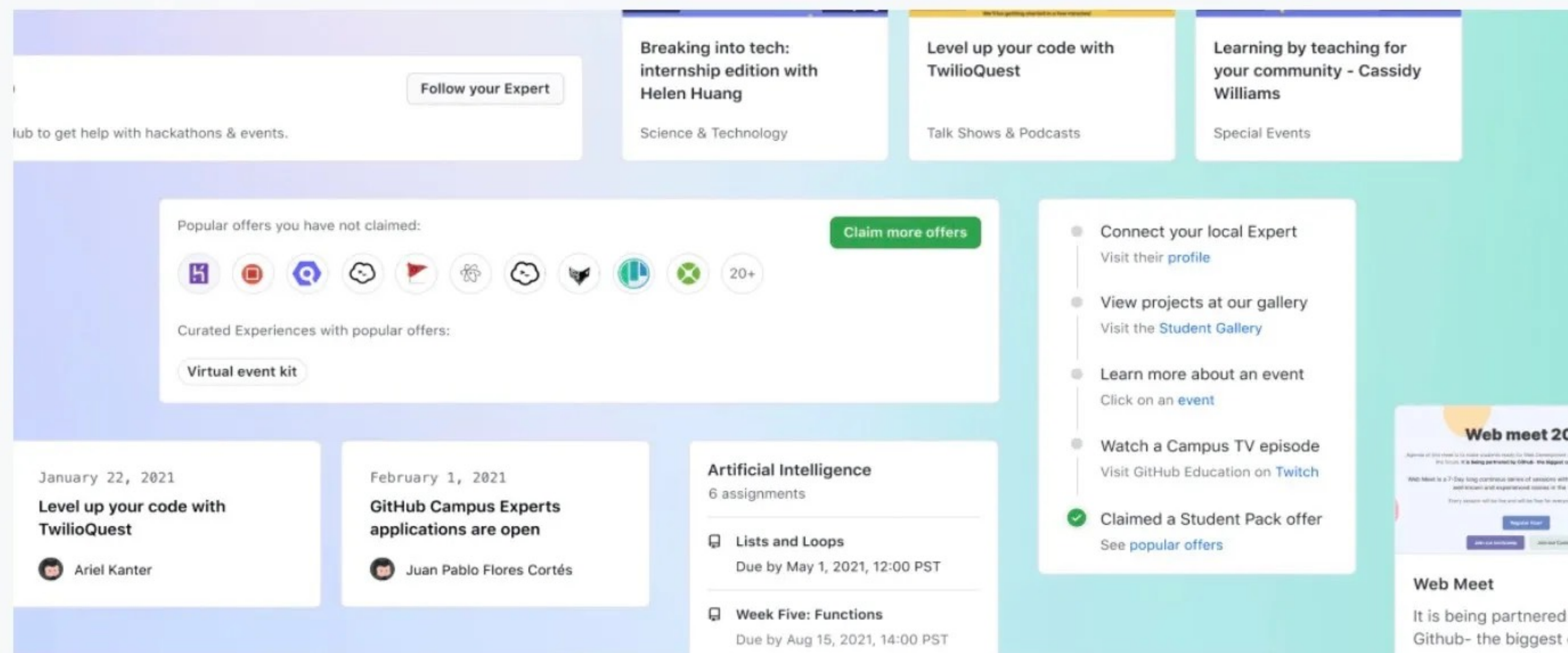
Show more

## Recent activity

-  microsoft/vscode  
Path completion isn't working with

## Join GitHub Global Campus!

Prepare for a career in tech by joining GitHub Global Campus. Global Campus will help you get the practical industry knowledge you need by giving you access to industry tools, events, learning resources and a growing student community.



Follow your Expert

Breaking into tech: internship edition with Helen Huang  
Science & Technology

Level up your code with TwilioQuest  
Talk Shows & Podcasts

Learning by teaching for your community - Cassidy Williams  
Special Events

Popular offers you have not claimed:  
Claim more offers

Curated Experiences with popular offers:  
Virtual event kit

January 22, 2021  
Level up your code with TwilioQuest  
Ariel Kanter

February 1, 2021  
GitHub Campus Experts applications are open  
Juan Pablo Flores Cortés

Artificial Intelligence  
6 assignments

Lists and Loops  
Due by May 1, 2021, 12:00 PST

Week Five: Functions  
Due by Aug 15, 2021, 14:00 PST

Connect your local Expert  
Visit their profile

View projects at our gallery  
Visit the Student Gallery

Learn more about an event  
Click on an event

Watch a Campus TV episode  
Visit GitHub Education on Twitch

Claimed a Student Pack offer  
See popular offers

Web meet 202  
It is being partnered by Github- the biggest of

Join Global Campus





Search or jump to...



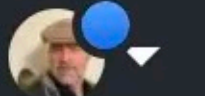
Pull requests

Issues

Codespaces

Marketplace








Explore



## Top Repositories

New

Find a repository...

-  websanity/ws-tech
-  rsgranne/granne-bin
-  rsgranne/granneman-www
-  websanity/ws-server-scripts
-  websanity/ws-server-files
-  rsgranne/grannepack-web-dev-snippets
-  rsgranne/ws-appendices

Show more

## Recent activity

-  microsoft/vscode  
Path completion isn't working with the `srcset` attribute

Following

For you

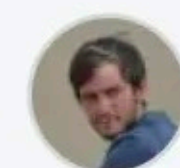
Beta

Your repositories, as well as those in which you are a collaborator

regular logging in Node.

Updated Mar 4

Star



fabiospampinato starred emilkowalski/sonner · yesterday

emilkowalski/sonner

An opinionated toast component for React.

TypeScript 1.9k Updated Mar 4

Star

Start coding instantly with GitHub Codespaces

Spin up fully configured dev environments on powerful VMs that start in seconds. Get up to 60 hours a month of free time.

Get started

## Latest changes

- 2 days ago  
Secret scanning changes coming to how you opt-in ...
- 2 days ago  
GitHub Desktop 3.2 – Preview your Pull Request





Search or jump to...



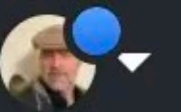
Pull requests

Issues








Codespaces

Marketplace

Explore




# Latest changes to repositories

-  websanity/ws-tech
-  rsgranne/granne-bin
-  rsgranne/granneman-www
-  websanity/ws-server-scripts
-  websanity/ws-server-files
-  rsgranne/grannepack-web-dev-snippets
-  rsgranne/ws-appendices

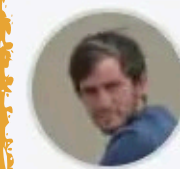
Show more

## Recent activity

-  microsoft/vscode  
Path completion isn't working with the `srcset` attribute

Following

For you Beta



fabiospampinato created a repository fabiospampinato/pioppo · yesterday



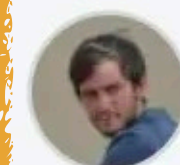
**fabiospampinato/pioppo**

☆ Star



A tiny isomorphic batched logger. ~3x faster than regular logging in Node.

Updated Mar 4



fabiospampinato starred emilkowalski/sonner · yesterday

**emilkowalski/sonner**

☆ Star



An opinionated toast component for React.



TypeScript



1.9k

Updated Mar 4

Start coding instantly with GitHub Codespaces

Spin up fully configured dev environments on powerful VMs that start in seconds. Get up to 60 hours a month of free time.

Get started

## Latest changes


- 2 days ago  
Secret scanning changes coming to how you opt-in ...
- 2 days ago  
GitHub Desktop 3.2 – Preview your Pull Request




Top Repositories


New

# Latest changes to repositories

 rsgranne/granneman-www

 websanity/ws-server-scripts


 websanity/ws-server-files

 rsgranne/grannepack-web-dev-snippets

 rsgranne/ws-appendices

Show more

## Recent activity

 microsoft/vscode  
Path completion isn't working with the `srcset` attribute



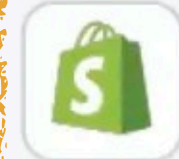
janscarton pushed to websanity/cam-store · last week

3 commits to `main`

 9c6a053 tighten paragraphs in blocquotes

 9aaf600 blockquote styles

1 more commit »



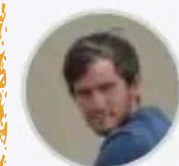
shopify pushed to websanity/cam-store · last week

5 commits to `main`

 ae0e415 Update from Shopify for theme CAM

 2241c9c Update from Shopify for theme CAM

3 more commits »



fabiospampinato starred WebReflection/custom-function ·

2 weeks ago

## WebReflection/custom-function

☆ Star



Literally the only sane way, if not the fastest one, to extend the Function class without evaluation.



## Free

The basics for individuals  
and organizations

\$ 0

per year  
forever

[Create a free organization](#)

- > **Unlimited public/private repositories**
- > **Automatic security and version updates**
- > **2,000 CI/CD minutes/month**  
Free for public repositories
- > **500MB of Packages storage**  
Free for public repositories
- > **120 core-hours Codespaces compute/month**  
For your personal account

## MOST POPULAR

## Team

Advanced collaboration for  
individuals and organizations

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\$ 44

per user/year  
for the first 12 months\*

[Continue with Team](#)

- ← Everything included in Free, plus...
- > **Access to GitHub Codespaces**
- > **Protected branches**
- > **Multiple reviewers in pull requests**
- > **Draft pull requests**
- > **Code owners**

## Enterprise

Security, compliance,  
and flexible deployment

~~\$ 252~~

\$ 231

per user/year  
for the first 12 months\*

[Contact Sales](#)

[Start a free trial](#)

- ← Everything included in Team, plus...
- > **Enterprise Managed Users**
- > **User provisioning through SCIM**
- > **Enterprise Account to centrally manage multiple organizations**



# GitHub Student Developer Pack

**Learn to ship software like a pro.** There's no substitute for hands-on experience. But for most students, real world tools can be cost-prohibitive. That's why we created the GitHub Student Developer Pack with some of our partners and friends.

[Sign up for Student Developer Pack](#)

Love the pack? Spread the word

Gives students free access to  
useful developer tools for learning

100+ services & software available, including:

Algolia hosted search • Browser Stack • Canva Pro • Digital Ocean \$100 credit • GitHub Pro • GitKraken Git GUI • JetBrains IDEs • LambdaTest cross-browser testing • Mailgun 20,000 free emails/month • Microsoft Azure cloud services • New Relic • POEditor localization • Simple Analytics • Stripe payment processor 0 transaction fees on first \$1000 • Termius SSH client • Tower Git client • Typeform interactive forms • Working Copy Git client for iOS



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# Built for developers

GitHub is a development platform inspired by the way you work. From open source to business, you can host and review code, manage projects, and build software alongside millions of other developers.

Username

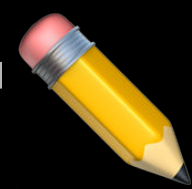
Email

Password

Use at least one letter, one numeral, and seven characters.

[Sign up for GitHub](#)

By clicking "Sign up for GitHub", you agree to our [terms of service](#) and [privacy policy](#). We'll occasionally send you account related emails.



## SIDE NOTE

There are competitors to GitHub & they are also good

GitLab

Gitea

Bitbucket

Assembla

It's just that GitHub is the biggest & most widely used —  
learn it, & you can use any of the others



# Using Git & GitHub

Save, pull, stage, message, commit, push





Search or jump to...



Pull requests

Issues

Marketplace

Explore



rsgranne / grannepack-html

Unpin

Unwatch

Fork

Star 0

Code

Issues

Pull requests

Actions

Projects

Wiki 0

Settings

60 KB



master

1 branch

0 tags



rsgranne Explained update to 0.5.1

d0994f8 8 days ago 12 commits



images

Added initial files

3 years ago



.gitignore

Ignore the ignored

10 B 3 years ago



.vscodeignore

Ignore the ignored

66 B 3 years ago



CHANGELOG.md

Explained update to 0.5.1

1.77 KB 8 days ago



LICENSE

Initial commit

1.05 KB 3 years ago



README.md

Removed Live Server; added Live Previe...

3.61 KB 7 months ago



package.json

Added correct ID for ms-vscode.live-ser...

1.27 KB 8 days ago

HTML-related Visual Studio Code extensions for Scott Granneman's Web Dev courses

MIT License

0 stars

1 watching

0 forks



README.md







Search or jump to...



[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)



[rsgranne](#) / [grannepack-html](#)

Unpin

Unwatch

Fork

Star 0

Code

Issues

Pull requests

Actions

Projects

Wiki 0

Settings

60 KB



master

1 branch

0 tags



HTML-related Visual Studio Code extensions for Scott Granneman's Web Dev courses



[rsgranne](#) Explained update to 0.5.1

d0994f8 8 days ago

2 commits



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MIT License

0 forks

Last commit

Previous commit





Search or jump to...



Pull requests

Issues

Marketplace

Explore



rsgranne / grannepack-html

Unpin

Unwatch

Fork

Star 0

Code

Issues

Pull requests

Actions

Projects

Wiki 0

Settings

60 KB



master

1 branch

0 tags



HTML-related Visual Studio Code extensions for Scott Granneman's Web Dev courses

MIT License

0 forks



rsgranne Explained update to 0.5.1

d0994f8 8 days ago 12 commits



images

Added initial files

3 years ago



.git

Commit ID that uniquely identifies the latest commit



.vscodeignore

Ignore the ignored

66 B 3 years ago



CHANGELOG.md

Explained update to 0.5.1

1.77 KB 8 days ago



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Initial commit

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1.27 KB 8 days ago



README.md







Search or jump to...



Pull requests

Issues

Marketplace

Explore



rsgranne / grannepack-html

Unpin

Unwatch

Fork

Star 0

Code

Issues

Pull requests

Actions

Projects

Wiki 0

Settings

60 KB



master

1 branch

0 tags



HTML-related Visual Studio Code extensions for Scott Granneman's Web Dev courses

MIT License

0 stars

1 watching

0 forks

rsgranne Explained update to 0.5.1 d0994f8 8 days ago 12 commits

images Added initial files ... 3 years ago

.gitignore Ignore the ignored 10 B 3 years ago

.vscodeignore Ignore the ignored 66 B 3 years ago

CHANGELOG.md Explained update to 0.5.1 1.77 KB 8 days ago

LICENSE Initial commit 1.05 KB 3 years ago

README.md

package.json

Click any of those to go to the commit

README md





Search or jump to...



Pull requests

Issues

Marketplace

Explore



rsgranne / grannepack-html

Unpin

Unwatch

Fork

Star 0

Code

Issues

We are now looking at commit **d0994f8**

Explained update to 0.5.1

Browse files

master



rsgranne committed 8 days ago

1 parent 1c3ce3d

commit d0994f8dd6f4452878e31cd8e3b1b4b623d96b46

patch diff

Showing 1 changed file with 6 additions and 0 deletions.

Split

Unified

6 CHANGELOG.md

Code File



@@ -4,6 +4,12 @@ All notable changes to the "grannepack-html" extension pack will be documented i

4

4

5

5

The format is based on [Keep a Changelog](https://keepachangelog.com/en/1.0.0/).

6

6

7

## [0.5.1] - 2022-01-29

8

9

I forgot to add [Live Preview](https://marketplace.visualstudio.com/items?)



```
itemName=ms-vscode.live-server) to `package.json`, so that silly mistake is now fixed.
```

10

11 Total count: 13 extensions & 2 themes.

12

7 13 **## [0.5] -- 2021-07-14**

8 14

9 15 Removed the  
Live Preview

Confirmation this is commit **d0994f8** valent with

Also note others can leave comments

0 comments on commit d0994f8

🔒 Lock conversation

Write

Preview

≡ <> 🔗 ≡ ½≡ ☑ ☐ 🖼️ ⚙️ ↩️

1

Comment on this commit

🔔 Unsubscribe

You're receiving notifications because you're watching this repository.





Search or jump to...



[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)



[rsgranne](#) / [grannepack-html](#)

Unpin

Unwatch ▾

Fork

Star 0 ▾

Code

Issues

Pull requests

Actions

Projects

Wiki 0

Settings

60 KB



Scroll back to the top & you can click  
on the previous commit ID to view that

Explained update to 0.

master

[Browse files](#)

rsgranne committed 8 days ago

1 parent 1c3ce3d

commit d0994f8dd6f4452878e31cd8e3b1b4b623d96b46

[patch](#) [diff](#)

Showing 1 changed file with 6 additions and 0 deletions.

Split

Unified

6 CHANGELOG.md

...

↑

@@ -4,6 +4,12 @@ All notable changes to the "grannepack-html" extension pack will be documented i

4

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5

The format is based on [\[Keep a Changelog\]\(https://keepachangelog.com/en/1.0.0/\)](#).

6

6

7

## [0.5.1] - 2022-01-29

8

9

I forgot to add [\[Live Preview\]\(https://marketplace.visualstudio.com/items?\)](#)




# When you click on the previous commit ID, you see a diff showing changes between the later commit & this older one

Added correct ID for ms-vscode.live-server & upped version number to ...

[Browse files](#)

...0.5.1

 master

 rsgianne committed 8 days ago

1 parent [ad4af40](#)

commit [1c3ce3d2c47230d189ee53466b2c1c7fe53b6582](#)

[patch](#) [diff](#)

 Showing **1 changed file** with **3 additions** and **3 deletions**.

[Split](#)

[Unified](#)

6  package.json 

  ...

@@ -2,7 +2,7 @@

```
2  .. "name": "grannepack-html",
3  .. "displayName": "GrannePack·HTML",
4  .. "description": "HTML-related extensions
   for·Scott·Granneman's·Web·Dev·courses",
5  .. "version": "0.5.0",
6  .. "publisher": "granneman",
7  .. "author": {
8  .... "name": "Scott·Granneman",
```

```
2  .. "name": "grannepack-html",
3  .. "displayName": "GrannePack·HTML",
4  .. "description": "HTML-related extensions
   for·Scott·Granneman's·Web·Dev·courses",
5  .. "version": "0.5.1",
6  .. "publisher": "granneman",
7  .. "author": {
8  .... "name": "Scott·Granneman",
```



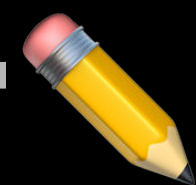
# Git Tools

CLI

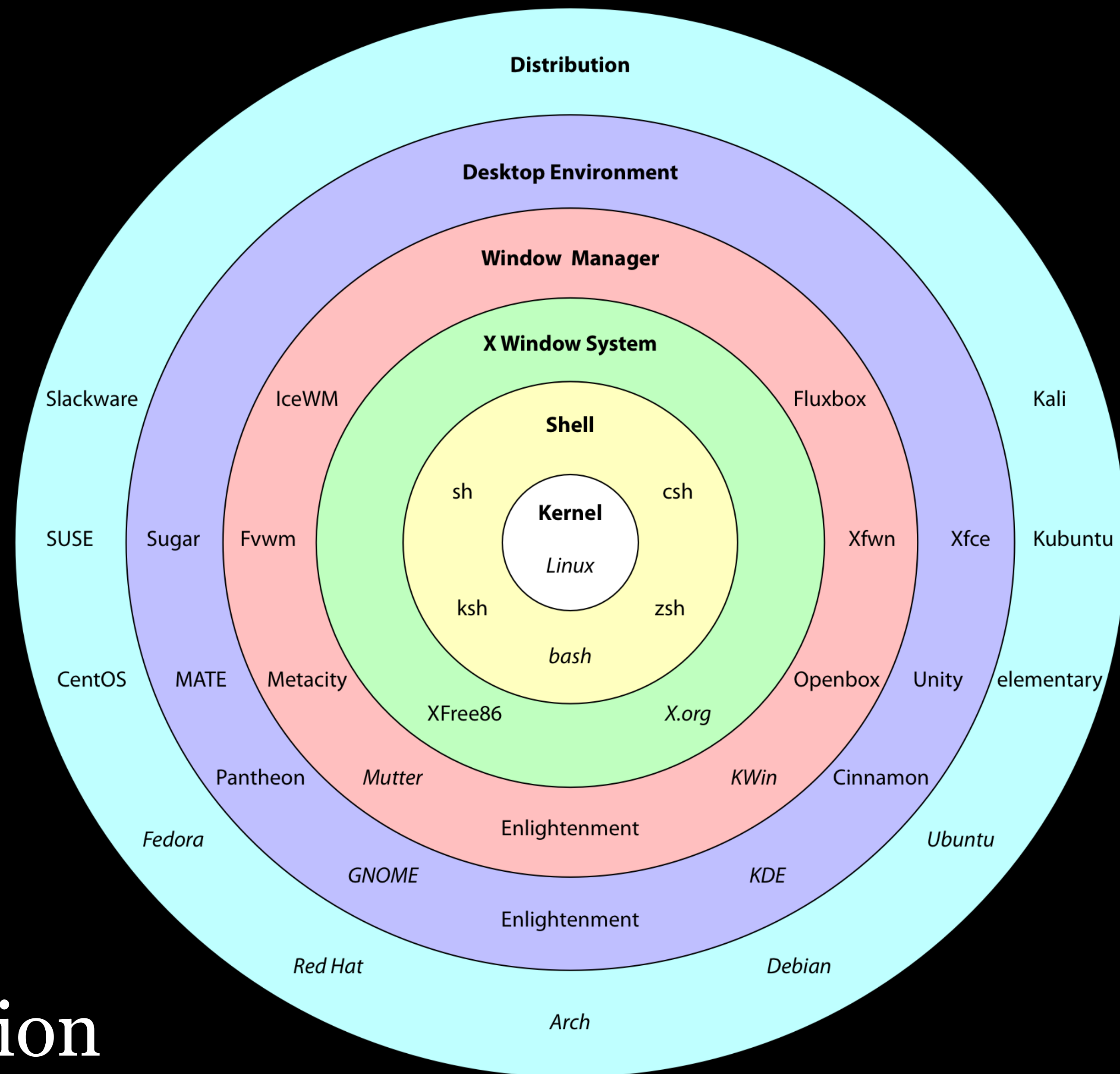


Git is created first for the command line

If you're a serious developer that works on different servers, it could be a good idea to learn the commands



# SIDE NOTE



## The Linux onion



## CONFIGURE TOOLING

Configure user information for all local repositories

```
$ git config --global user.name "[name]"
```

Sets the name you want attached to your commit transactions

```
$ git config --global user.email "[email address]"
```

Sets the email you want attached to your commit transactions

```
$ git config --global color.ui auto
```

Enables helpful colorization of command line output

## CREATE REPOSITORIES

Start a new repository or obtain one from an existing URL

```
$ git init [project-name]
```

Creates a new local repository with the specified name

```
$ git clone [url]
```

Downloads a project and its entire version history

```
$ git reset [file]
```

Unstages the file, but preserve its contents

```
$ git commit -m "[descriptive message]"
```

Records file snapshots permanently in version history

## GROUP CHANGES

Name a series of commits and combine completed efforts

```
$ git branch
```

Lists all local branches in the current repository

```
$ git branch [branch-name]
```

Creates a new branch

```
$ git checkout [branch-name]
```

Switches to the specified branch and updates the working directory

```
$ git merge [branch]
```

Combines the specified branch's history into the current branch

```
$ git branch -d [branch-name]
```

Deletes the specified branch



## CREATE

Clone an existing repository

```
$ git clone ssh://user@domain.com/repo.git
```

Create a new local repository

```
$ git init
```

## LOCAL CHANGES

Changed files in your working directory

```
$ git status
```

Changes to tracked files

```
$ git diff
```

Add all current changes to the next commit

```
$ git add .
```

Add some changes in <file> to the next commit

```
$ git add -p <file>
```

Commit all local changes in tracked files

```
$ git commit -a
```

Commit previously staged changes

```
$ git commit
```

Change the last commit

*Don't amend published commits!*

```
$ git commit --amend
```

## COMMIT HISTORY

Show all commits, starting with newest

```
$ git log
```

## BRANCHES & TAGS

List all existing branches

```
$ git branch -av
```

Switch HEAD branch

```
$ git checkout <branch>
```

Create a new branch based on your current HEAD

```
$ git branch <new-branch>
```

Create a new tracking branch based on a remote branch

```
$ git checkout --track <remote/branch>
```

Delete a local branch

```
$ git branch -d <branch>
```

Mark the current commit with a tag

```
$ git tag <tag-name>
```

## UPDATE & PUBLISH

List all currently configured remotes

```
$ git remote -v
```

Show information about a remote

```
$ git remote show <remote>
```

Add new remote repository, named <remote>

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

Download all changes from <remote>, but don't integrate into HEAD

```
$ git fetch <remote>
```

## MERGE & REBASE

Merge <branch> into your current HEAD

```
$ git merge <branch>
```

Rebase your current HEAD onto <branch>

*Don't rebase published commits!*

```
$ git rebase <branch>
```

Abort a rebase

```
$ git rebase --abort
```

Continue a rebase after resolving conflicts

```
$ git rebase --continue
```

Use your configured merge tool to solve conflicts

```
$ git mergetool
```

Use your editor to manually solve conflicts and (after resolving) mark file as resolved

```
$ git add <resolved-file>
```

```
$ git rm <resolved-file>
```

## UNDO

Discard all local changes in your working directory

```
$ git reset --hard HEAD
```

Discard local changes in a specific file

```
$ git checkout HEAD <file>
```

Revert a commit (by producing a new commit with contrary changes)

```
$ git revert <commit>
```



GUI

Many GUIs for Git have been created

Most developers use one



## About

## Documentation

## Downloads

GUI Clients

Logos

## Community

The entire [Pro Git book](#) written by Scott Chacon and Ben Straub is available to [read online for free](#). Dead tree versions are available on [Amazon.com](#).

# GUI Clients

Git comes with built-in GUI tools for committing ([git-gui](#)) and browsing ([gitk](#)), but there are several third-party tools for users looking for platform-specific experience.

If you want to add another GUI tool to this list, just [follow the instructions](#).

All

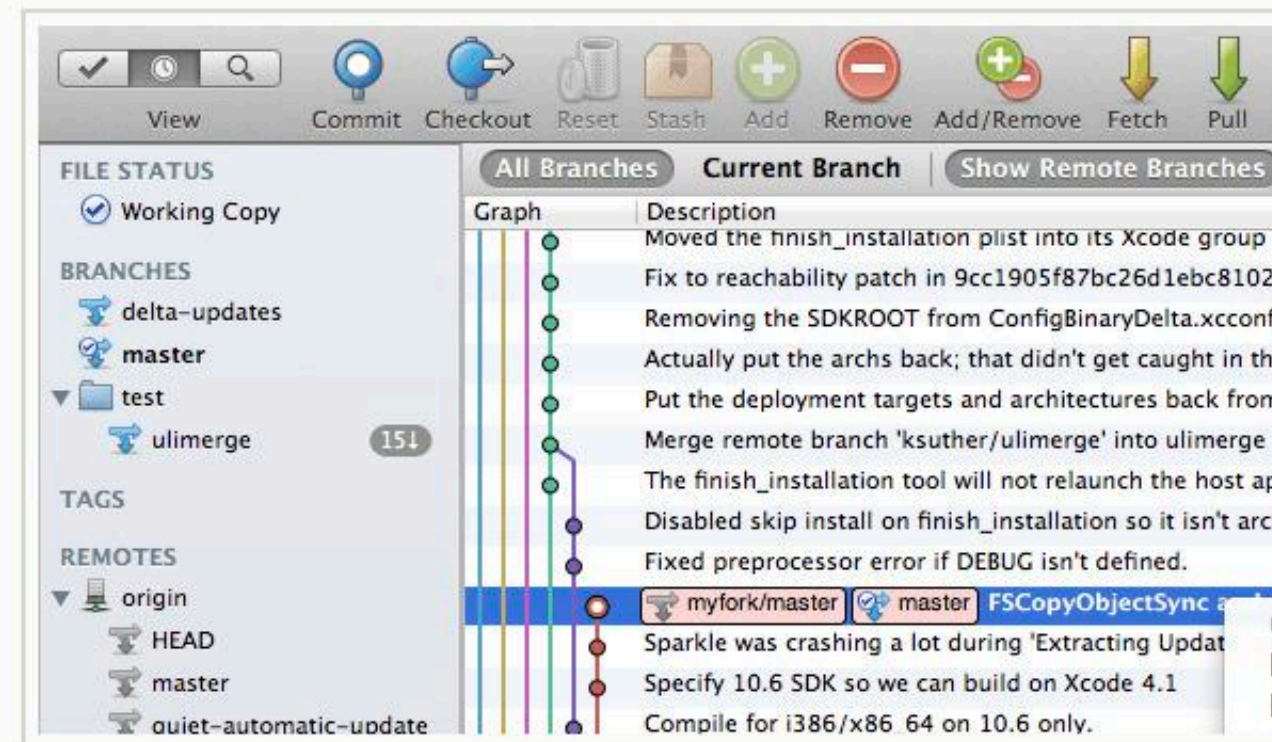
Windows

Mac

Linux

Android

iOS

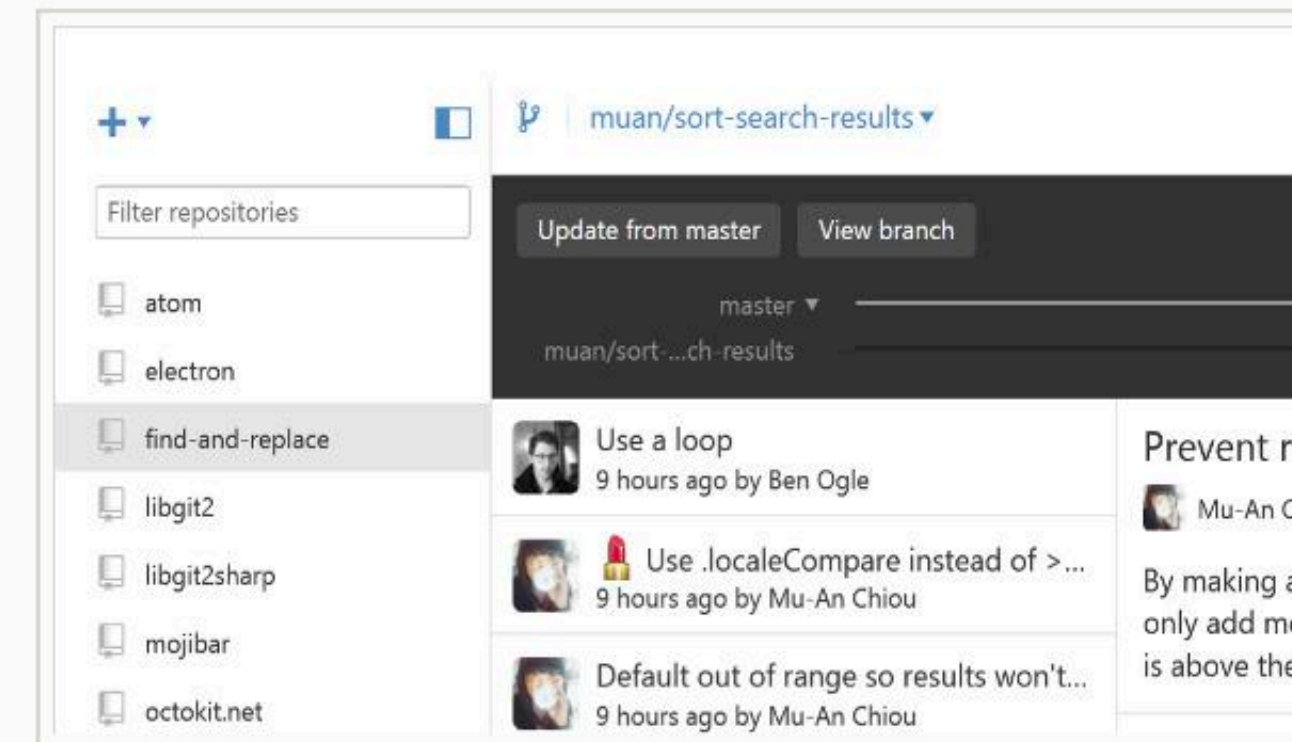


## SourceTree

**Platforms:** Mac, Windows

**Price:** Free

**License:** Proprietary

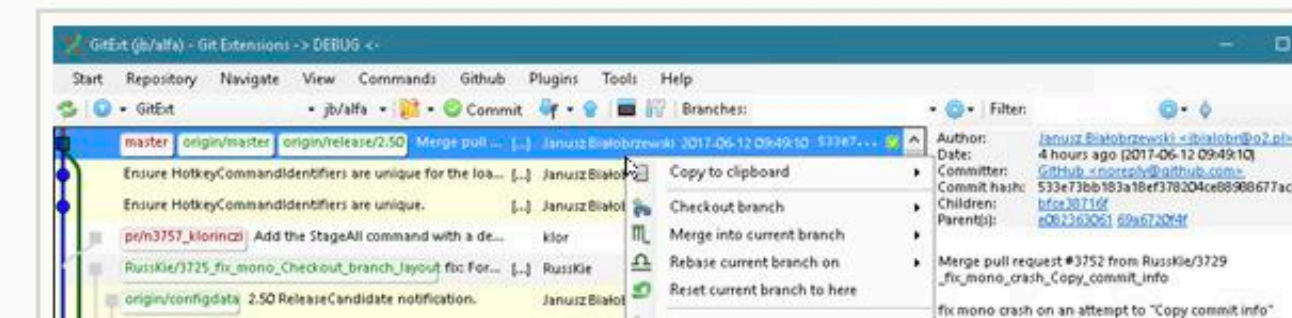
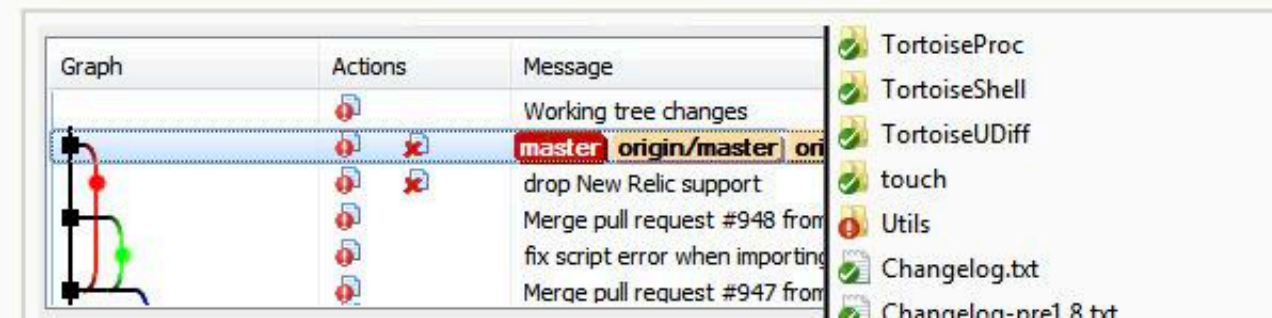


## GitHub Desktop

**Platforms:** Mac, Windows

**Price:** Free

**License:** MIT







Version 1.76 is now available! Read about the new features and fixes from February.



## Overview

## SETUP

## GET STARTED

## USER GUIDE

## SOURCE CONTROL

## Overview

## Introduction to Git

## Collaborate on GitHub

## FAQ

## TERMINAL

## LANGUAGES

NODE.JS /  
JAVASCRIPT

## TYPESCRIPT

## PYTHON

## JAVA

# Using Git source control in VS Code



Edit

Visual Studio Code has integrated source control management (SCM) and includes [Git](#) support out-of-the-box. Many other source control providers are available through [extensions](#) on the VS Code Marketplace.

## IN THIS ARTICLE

{ Working in a Git repository

{ Commit

{ Cloning a repository

{ Branches and Tags

{ Remotes

{ Git Status Bar actions

{ Gutter indicators

{ Merge conflicts

{ Viewing diffs

{ Timeline view

{ Git output window

{ Initialize a repository

{ VS Code as Git editor

{ Working with GitHub Pull  
Requests and Issues

{ SCM Providers

{ Next steps

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Watch on YouTube

[https://code.visualstudio.com/docs/sourcecontrol/overview#\\_viewing-diffs](https://code.visualstudio.com/docs/sourcecontrol/overview#_viewing-diffs)





# TOWER

[Features](#) ▾[Use Cases](#) ▾[Pricing](#)[Support](#) ▾[Get Started - It's Free](#)

## Build Better Software

Over 100,000 developers and designers are more productive with Tower - the most powerful Git client for Mac and Windows.

[Get Started - It's Free](#)

Also available for Windows





All plans include versions for Mac and Windows

## Basic

For individuals

**\$69**

per user  
billed annually

- ✓ 1 user ⓘ
- ✓ macOS & Windows version
- ✓ Unlimited app updates
- ✓ Pull Requests & Services Manager for cloud code hosting ⓘ

### MOST POPULAR

## Pro

For professionals & small teams

**\$99**

per user  
billed annually

- ✓ Everything in Basic
- ✓ Pull Requests & Services Manager for both cloud & on-premises code hosting ⓘ
- ✓ Basic team management

## Enterprise

For large teams & enterprises

Contact us

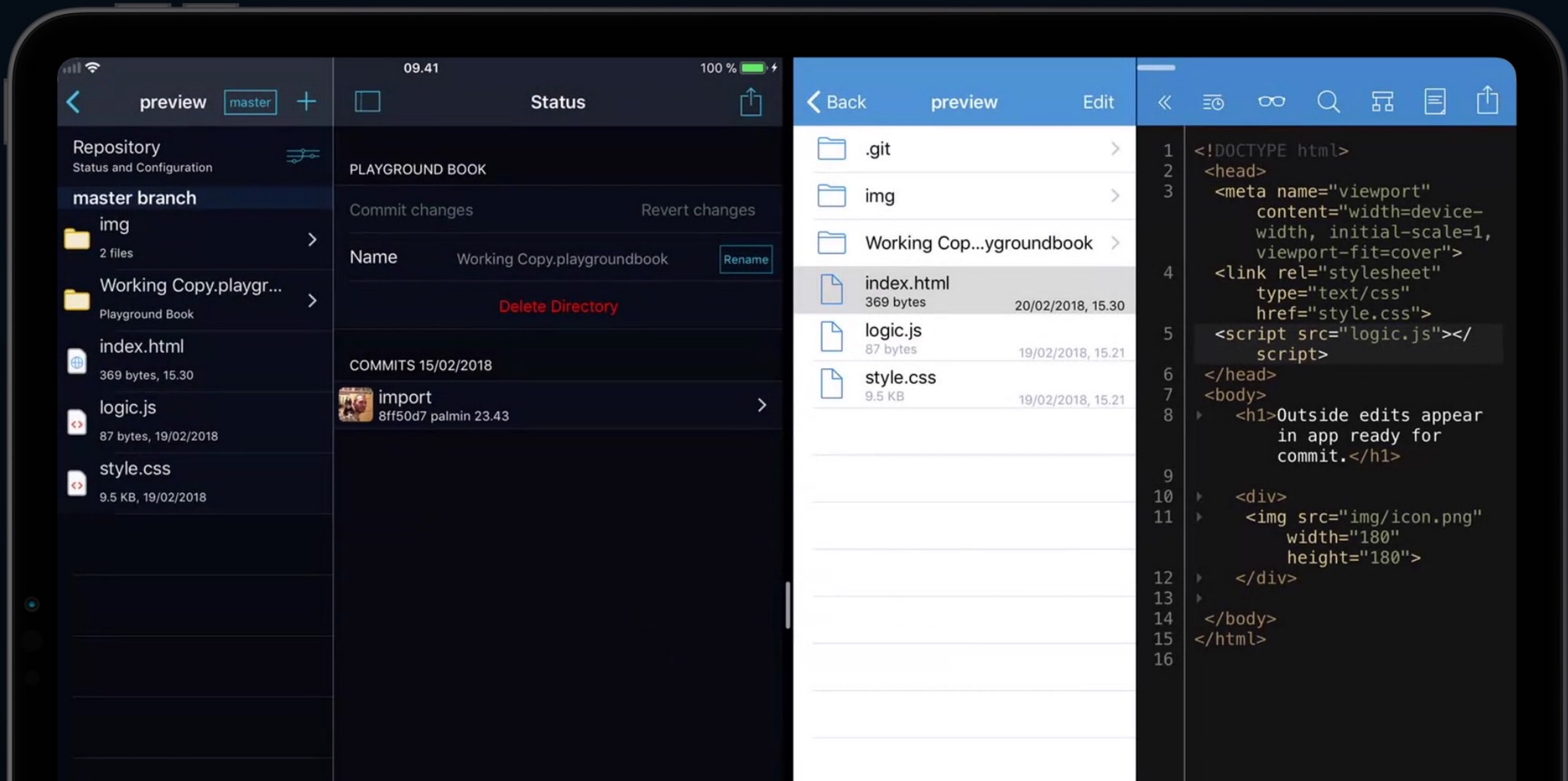
to get a custom quote

- ✓ Everything in Pro
- ✓ Advanced team management
- ✓ Invoicing & wire transfer
- ✓ Priority support
- ✓ Advanced deployment &



# Working Copy

the powerful Git client for iOS that clones, edits, commits, pushes & more.



Working Copy

Easily the best iOS client for Git & GitHub

\$0 or \$16 to unlock all features

iOS

[workingcopyapp.com](https://workingcopyapp.com)



< ws-server-scripts master +

☰ filename, symbol or text ↓☰

## Repository

Status and Configuration



### master branch

📁 dotfiles >  
6 files and 1 directory

📁 ec2-snapshots >  
3 files

📄 .gitignore  
15 bytes, 9:14 AM

📄 aws\_snapshot.sh  
1492 bytes, 9:14 AM

📄 backup\_1\_site.sh  
1358 bytes, 9:14 AM



ws-server-scripts



## CURRENT

Commit changes

Revert changes

Name ws-server-scripts

Rename

Branch master >



Configuration

scott@websanity.com >

Delete from iPad

1100 Kbytes

Visit GitHub Page

## REMOTES



origin

git@github.com:websanity/ws-server-scripts.git >

Add Remote

COMMIT 0/05/10

Repository  
Status and Configuration

master branch

dotfiles  
6 files and 1 directory

ec2-snapshots  
3 files

.gitignore  
15 bytes, 9:14 AM

aws\_snapshot.sh  
1492 bytes, 9:14 AM

backup\_1\_site.sh  
1358 bytes, 9:14 AM

Checkout Cherrypick Reset Tag

768674563593a2914904572869bac9397e2ef81e  
3/19/19, 12:57 PM

Scott Granneman  
scott@websanity.com

Updated xargs used with find

Visit GitHub Page

Changes Files

backup\_daily.sh +3 lines

```
1 #!/bin/bash
2
3
13 #      CREATED:   2007-08-17 14:25:32 CDT
14 #      REVISION:  2018-09-16 23:47:02 CDT Added
    specific backups for ACLU-NJ
15 #=====
16
67 if [ -e /usr/sbin/apache2 ] ; then
68     # delete all Apache log directories (YYYY-MM-DD)
    older than 1 day
```

```
1 #!/bin/bash
2
3
13 #      CREATED:   2007-08-17 14:25:32 CDT
14 #      REVISION:  2018-09-16 23:47:02 CDT Added
    specific backups for ACLU-NJ
15 #      REVISION:  2019-03-18 17:21:48 CDT Updated
    xargs used with find
16 #=====
17
68 if [ -e /usr/sbin/apache2 ] ; then
69     # delete all Apache log directories (YYYY-MM-DD)
    older than 1 day
```



# Branching

# Branch Basics



There's always a **master** branch

If it's in **master**, it's always deployable

If you're working on a new feature, fix, or experiment, a new branch should be created off of **master**

You (& anyone else with permission) can fork a branch

Specifically, you will be creating a *topic branch*: a separate branch for working on a single “topic” (e.g., a bug fix, a new feature, or an experimental idea)

Create as many topics as you need so **master** doesn't get cluttered



Branch names should be descriptive: `convert-to-scss`  
or `add-donation-form`

Process



Make a new branch (we'll cover that in a moment)

Experiment & commit changes on your branch



Changes you make on your branch don't affect `master`

Easy to update separately from work on `master`, so at any time, update `master` while you continue working on your topic branch

Open a *pull request* (or push it)

- » A pull request is you saying “let’s discuss these commits”
- » People discuss the pull request on GitHub\*
- » You can keep pushing to the branch while discussion goes on

\* Comments on GitHub use Markdown



Keeping changes in a topic branch...

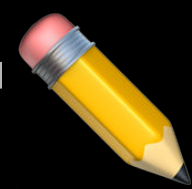
- » Makes it easier for others to review because they can focus on only one small set of changes
- » Allows comments from others to focus only on that one topic

Someone overseeing the project says:

- » Yes, accept it!
- » Nope
- » Maybe, if you make these changes, & then we'll review it again



Once accepted, merge your branch into `master`



## SIDE NOTE

GitHub allows users & developers to report issues

If you branch to fix that issue, when you merge your Pull Request, if you enter **closes #32** then issue number 32 in the repo is automatically closed



Learn More



## About

## Documentation

[Reference](#)[Book](#)[Videos](#)[External Links](#)

## Downloads

## Community

This book is available in [English](#).

Full translation available in

[Español,](#)[Français,](#)[日本語,](#)[한국어,](#)[Nederlands,](#)[Русский,](#)[Українська](#)[简体中文,](#)

Partial translations available in

# Book

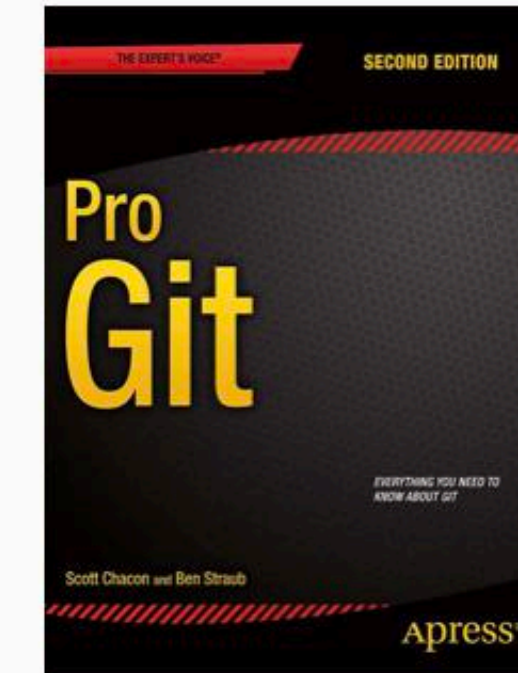
The entire Pro Git book, written by Scott Chacon and Ben Straub and published by Apress, is available here. All content is licensed under the [Creative Commons Attribution Non Commercial Share Alike 3.0 license](#). Print versions of the book are available on [Amazon.com](#).

## 1. Getting Started

- [1.1 About Version Control](#)
- [1.2 A Short History of Git](#)
- [1.3 Git Basics](#)
- [1.4 The Command Line](#)
- [1.5 Installing Git](#)
- [1.6 First-Time Git Setup](#)
- [1.7 Getting Help](#)
- [1.8 Summary](#)

## 2. Git Basics

- [2.1 Getting a Git Repository](#)
- [2.2 Recording Changes to the Repository](#)
- [2.3 Viewing the Commit History](#)
- [2.4 Undoing Things](#)



2nd Edition (2014)

[Switch to 1st Edition](#)

## Download Ebook





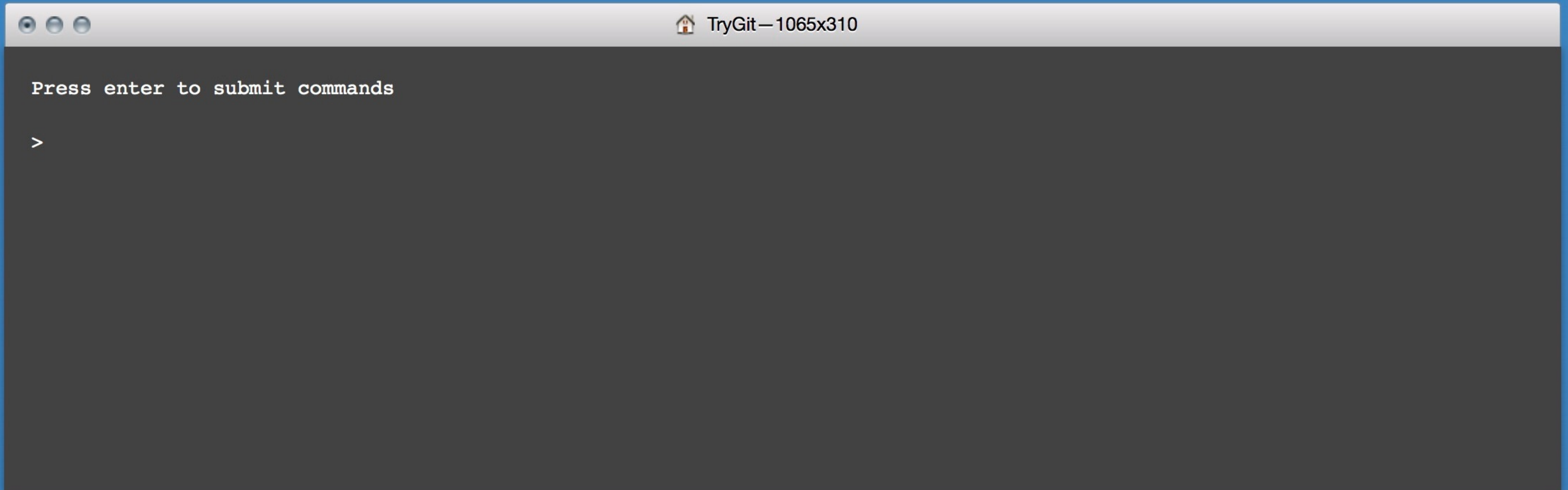


## 1.1 . Got 15 minutes and want to learn Git?

Git allows groups of people to work on the same documents (often code) at the same time, and without stepping on each other's toes. It's a distributed version control system.

Our terminal prompt below is currently in a directory we decided to name "octobox". To initialize a Git repository here, type the following command:

➔ **git init**





**Nicholas C. Zakas**

@slicknet

 **Follow**

Keep in mind that when you send a pull request you're saying, "I wrote some code. I think you should maintain it."

RETWEETS

**389**

LIKES

**262**



7:04 PM - 28 May 2014







**Hugo Giraudel**

@HugoGiraudel



**Follow**

Git alias to list git aliases:

[alias]

aliases = config --get-regexp alias

Going meta.

RETWEETS

48

LIKES

106



7:33 AM - 26 Apr 2016



Thank you!

scott@granneman.com

www.granneman.com

ChainsawOnATireSwing.com

@scottgranneman

jans@websanity.com

websanity.com



# Git

Ya Gotta Know It If You Wanna Be a Developer

R. Scott Granneman & Jans Carton

© 2017 R. Scott Granneman

Last updated 2023-03-12

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# Changelog

2023-03-12 1.2: Added more info to Windows installation; added GrannePack Git; updated screenshots for GitHub; added table of GitHub stats; added VS Code screenshot & info re: Tower to *GUI*; added cite to Ryan Cook quotation; standardized on “VS Code”; hid stuff so I can publish this as is

2022-09-16 1.1: Added citations to Git History & more info to historical version control systems

2022-07-05 1.0: Released initial version



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