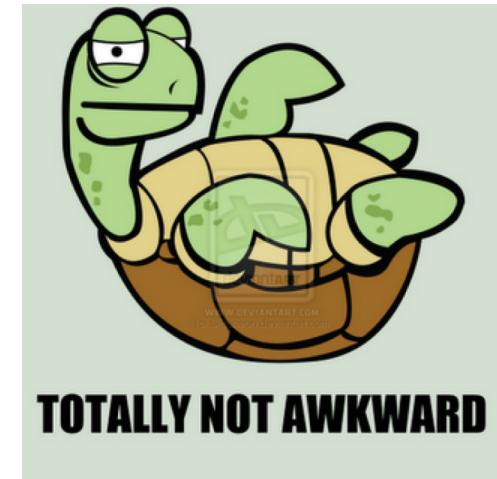


The Zen of Coding

The Coding Bootcamp

Quick Introductions! (30 seconds)

- Name
- Location
- Background (Career, Education, Interests)
- Why learn web development?
- Excited about class?



The Path of Learning

Your Goals...

Basically 100% of you said...

New Career



Your Goals...

And why do you want a new career?

To escape a “dead-end job”

To pursue a “dream”

To be able to “create”

To follow a “fascination”

To attain “financial stability”

To attain “financial freedom”

To “challenge” yourself

To be a “role model” for kids



Your Goal = Our Goal

As instructors,
we take your goals very, very seriously.

Support Team

Our Promise:

If you're willing to put in the time – and you take our advice, we're here to help you 100% of the way.

This goes for everyone working behind the program:

- Instructors
- TAs
- Student Success Team
- Career Coaches
- Everyone Else!

But Remember...

Nothing good comes easy.

On Keys To Success...

Don't Be This Guy...



This Should Be You.



Our Mantra for Today and Beyond...

When it comes to web development...

Our Mantra for Today and Beyond...

I know nothing.



You.

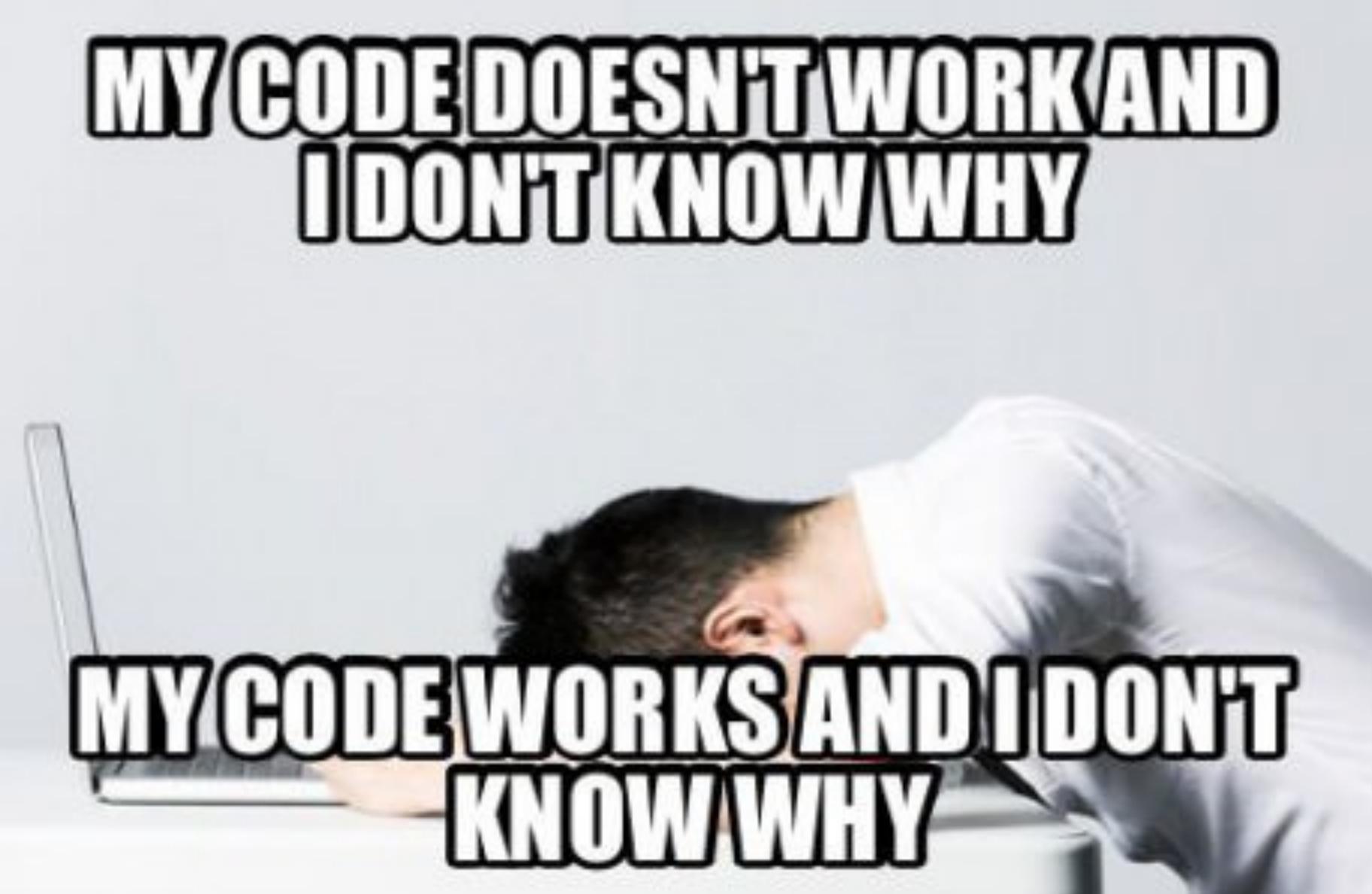
The Path of Learning

Nothing Comes Easy...

As students, you face three
HUGE obstacles!

Obstacle #1 – The Great Confusion

**MY CODE DOESN'T WORK AND
I DON'T KNOW WHY**

A black and white photograph of a man with dark hair, wearing a light-colored shirt. He is sitting at a desk, leaning forward with his head resting on his hand, looking intently at a laptop screen which is partially visible on the left. His expression is one of deep concentration or confusion.

**MY CODE WORKS AND I DON'T
KNOW WHY**

Obstacle #2 – The Great Doubt



Obstacle #3 – The Great Distance



Nothing Comes Easy...

Learning to Code Requires Two Things:

1. Persisting in the face of something that feels incredibly hard and confusing.
2. Maintaining the self-confidence necessary to believe that you CAN DO THIS.

Learning is “Frustrating”

“You can’t tell whether you’re learning something when you’re learning it—in fact, learning feels a lot more like frustration.”

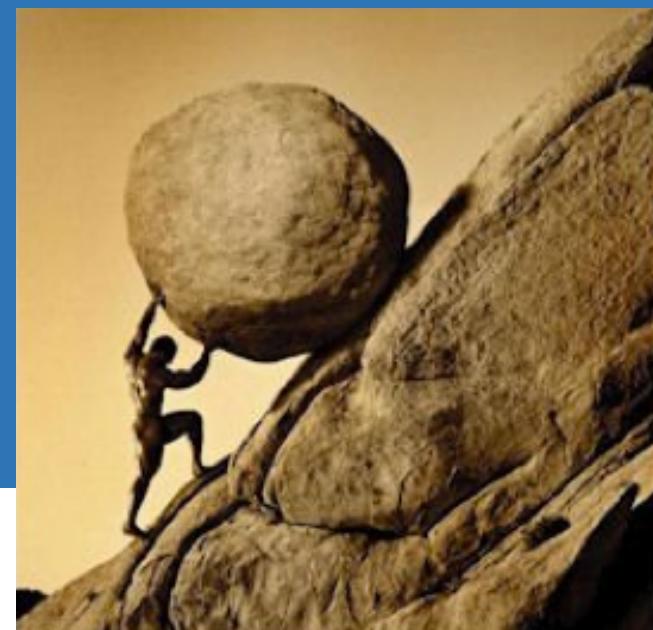
“What I’ve learned is that during this period of frustration is actually when people improve the most, and their improvements are usually obvious to an outsider. If you feel frustrated while trying to understand new concepts, try to remember that it might not feel like it, but you’re probably rapidly expanding your knowledge.”

Jeff Dickey, Author of Write Modern Web Apps with the MEAN Stack: Mongo, Express, AngularJS, and Node.JS

Advice for the Journey

Throughout this course, always remember to:

1. *Work Hard!!*



Advice for the Journey

Throughout this course, always remember to:

1. *Work Hard!!*
2. *Appreciate your successes*



Advice for the Journey

Throughout this course, always remember to:

1. *Work Hard!!*
2. *Appreciate your successes*
3. *Trust yourself*



But remember...



*If you want to go fast, go alone.
If you want to go far, go in a team.*

Google Fu – The Most Important Skill of All



[What is Google Fu?](#)

Course Structure

Daily Schedule

For each class we'll run through the following:

- Set Objectives
- Brief Background Lecture
- Watch Me / Coding Demos
- Code Discussions
- In-Class Exercises
- Project Work

Daily Schedule

For each class we'll run through the following:

- Set Objectives
- Brief Background Lecture
- Watch Me / Coding Demos

- Code Discussions
- In-Class Exercises
- Project Work

The Super Important Stuff!!!

i.e. Always be coding!

Pre-Work

Software Checklist

At this point, you should have each of these installed:

- Slack
- Visual Studio Code
- Git for Version Control
- Git Bash (Windows) or Terminal (Mac)
- Node.js
- Heroku-CLI
- Google Chrome

Accounts Checklist

You should also now have accounts for:

- GitHub (with SSH Integration)
- Heroku
- LinkedIn
- Stack Overflow

Self-Check

Let's do some quick checks of the following

- ✓ Visual Studio Code Check
- ✓ Git Bash / Terminal Check
- ✓ Node Check
- ✓ Git Check
- ✓ Heroku Check

On the Modern Web

Full-Stack Development?



The “Magic” of YouTube

https://www.youtube.com

YouTube

how to be awesome

how to be awesome at everything

how to be awesome in school

how to be awesome at skateboarding

how to be awesome at agario

how to be awesome at basketball

how to be awesome at soccer

how to be awesome in middle school

how to be awesome kid president

how to be awesome in minecraft

Subscribe 131K

TODAY Recommendations

Angelina Jolie, Brad Pitt Discuss Marriage, New Film, Cancer Fig...
TODAY
2,091,579 views • 2 months ago

'Pretty Woman' Cast Reunites 25 Years Later | TODAY
TODAY
1,491,399 views • 9 months ago

Amy Schumer On Body Image, Kardashians, Style (Full...
TODAY
556,855 views • 3 months ago

Popular Videos - Movies & Walt Disney by #Movies

LIST SHOW
24
HISTORICAL INACCURACIES IN DISNEY MOVIES
mental_floss
7:23

24 Historical Inaccuracies in Disney Movies - mental_floss Li...
Mental Floss
142,518 views • 3 days ago

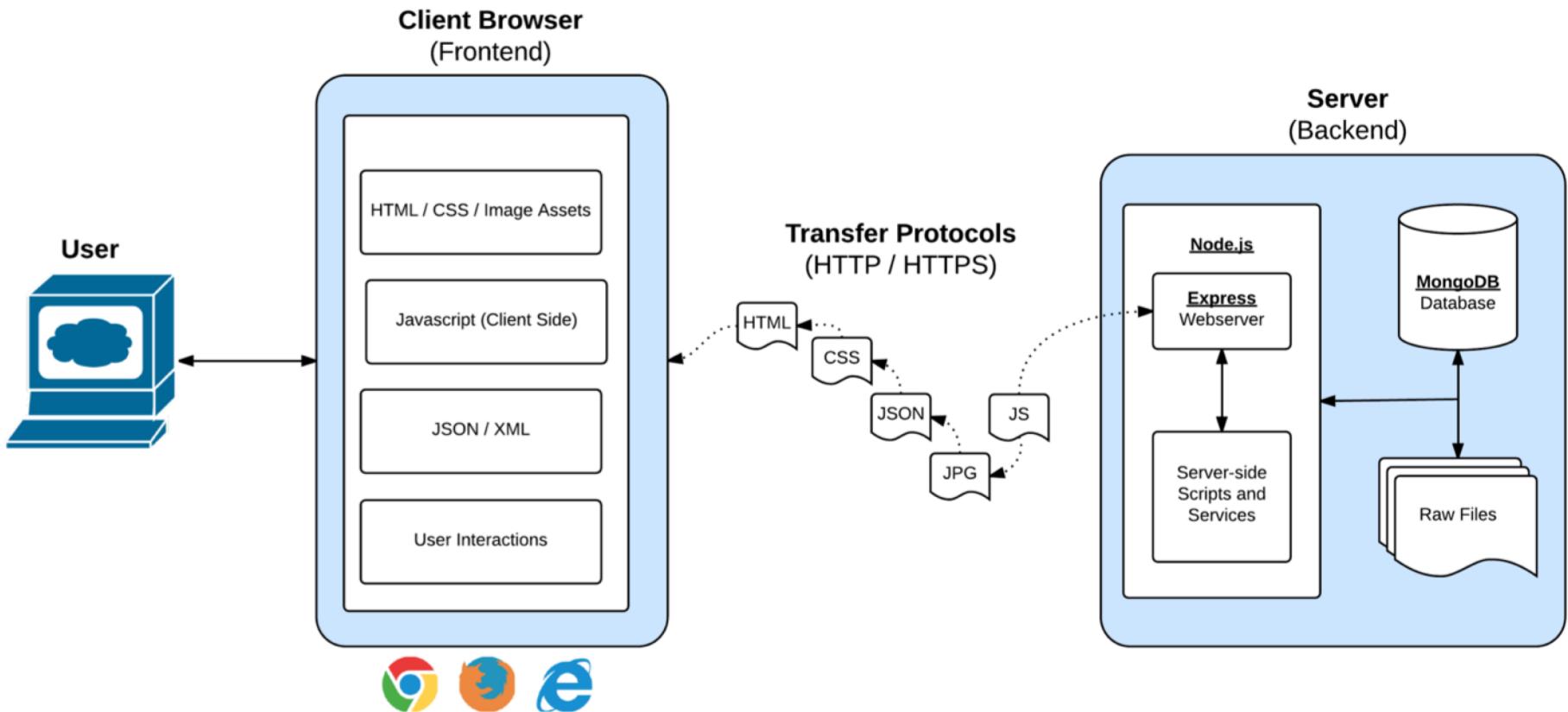
SR
10 Hidden Details In Disney Movies
Screen Rant
5:58

10 Hidden Details In Disney Movies
Screen Rant
11,553,738 views • 5 months ago

Walt Disney Movies 2015 - Animation Movies 2015 English...
Geroy Donothe
1:15:26

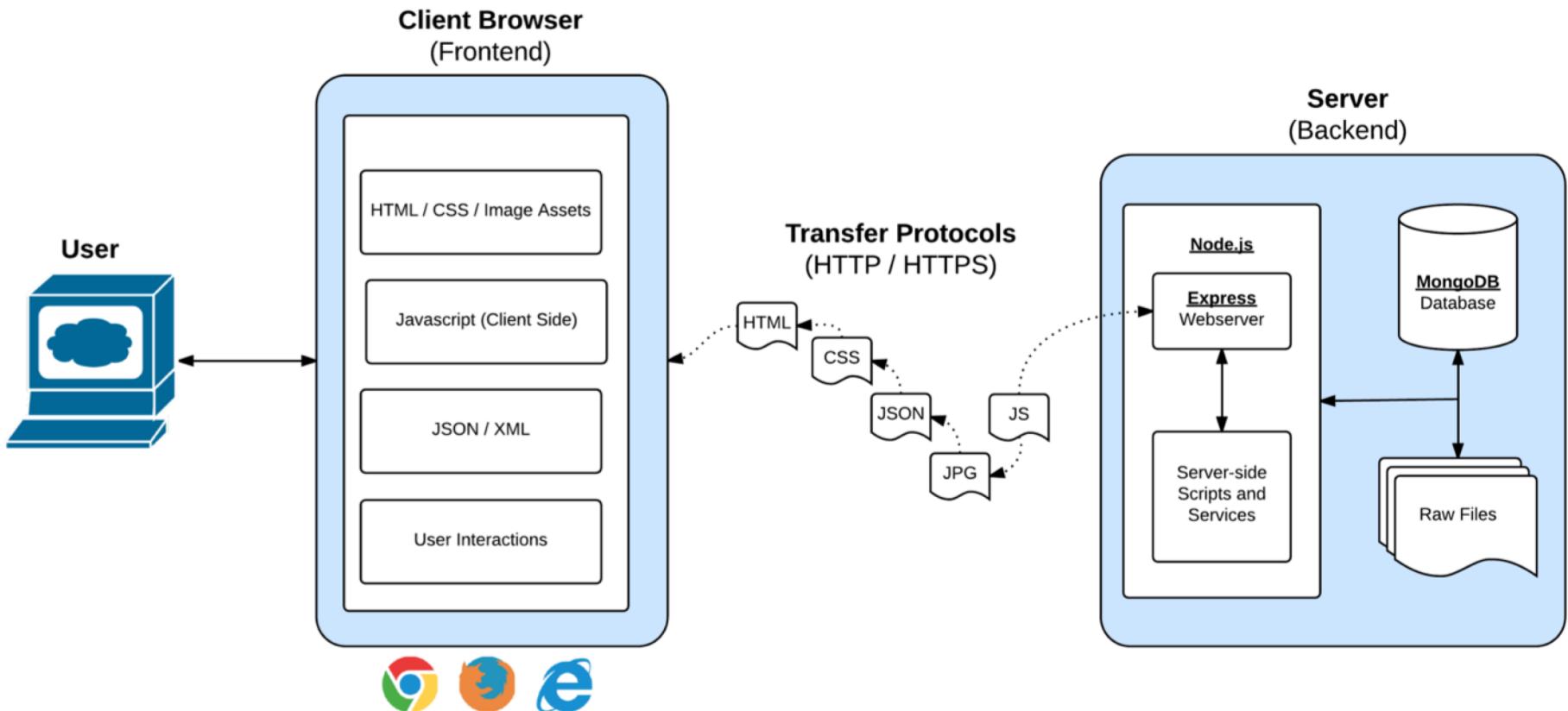
Walt Disney Movies 2015 - Animation Movies 2015 English...
Geroy Donothe
186,964 views • 4 months ago

Full-Stack Development



- In modern **web apps**, there's a constant back-and-forth communication between two key components: the visuals displayed on the user's browser (**frontend**) and the data and logic stored on the server (**backend**).

Full-Stack Development



- **Full-Stack Development** is the concept of building **every** aspect of the web application – from the visuals and interactions, to the data transfer and processing.

Full-Stack Development

The Browser

- HTML
- CSS
- JavaScript
- jQuery
- Bootstrap
- SEO

API Interaction

- APIs (Consuming)
- JSON
- AJAX
- Real Time Cloud Database via Firebase

Cutting Edge Development

- React.js

Dev Tools

- Heroku
- Git
- GitHub

Databases

- MySQL
- MongoDB

Server Side

- Templating Engines
- Sessions
- Writing tests
- Node.js
- Express.js
- Creating APIs
- MVC
- User Authentication
- ORM (Sequelize)

CS Fundamentals

- Algorithms
- Design Patterns

Let's Get Crackin!

Intro to Console / Terminal

The screenshot shows a Mac OS X terminal window titled "Macintosh HD — bash — 80x26". The window contains the output of the command "ls -l" run by a user named OSXDaily. The output lists numerous system directories and files, many of which are color-coded in purple and green. The color coding is likely a result of the "ls" command's "-G" option, which highlights executable files. The terminal window has three tabs at the top: "Terminal", "nano", and two "bash" tabs.

```
OSXDaily@hyrule:/$ ls -l
total 16053
drwxrwxr-x+ 112 root admin 3.7K Jan 29 16:49 Applications/
drwxrwxr-x  15 root admin 510B Jul 21 2011 Developer/
drwxrwxr-x   7 root admin 238B Aug  9 15:28 Incompatible Software/
drwxr-xr-x+  62 root wheel 2.1K Jan 29 13:47 Library/
drwxr-xr-x@  2 root wheel 68B Jun 20 2012 Network/
drwxr-xr-x+  4 root wheel 136B Jul 26 2012 System/
lrwxr-xr-x   1 root admin 60B Mar 10 2011 User Guides And Information@ ->
/Library/Documentation/User Guides and Information.localized
drwxr-xr-x   9 root admin 306B Jan 25 14:00 Users/
drwxrwxrwt@  4 root admin 136B Jan 29 13:56 Volumes/
drwxr-xr-x@  39 root wheel 1.3K Jan 29 13:47 bin/
drwxrwxr-t@  2 root admin 68B Jun 20 2012 cores/
dr-xr-xr-x   3 root wheel 4.3K Jan 29 13:56 dev/
lrwxr-xr-x@  1 root wheel 11B Jul 26 2012 etc@ -> private/etc
dr-xr-xr-x   2 root wheel 1B Jan 29 14:08 home/
-rw-r--r--@  1 root wheel 7.8M Aug 25 00:49 mach_kernel
dr-xr-xr-x   2 root wheel 1B Jan 29 14:08 net/
drwxr-xr-x@  4 root admin 136B Dec  2 14:44 opt/
drwxr-xr-x@  6 root wheel 204B Jul 26 2012 private/
drwxr-xr-x@  62 root wheel 2.1K Jan 29 13:47 sbin/
lrwxr-xr-x@  1 root wheel 11B Jul 26 2012 tmp@ -> private/tmp
drwxr-xr-x@  11 root wheel 374B Dec  2 14:45 usr/
lrwxr-xr-x@  1 root wheel 11B Jul 26 2012 var@ -> private/var
OSXDaily@hyrule:/$
```

INSTRUCTOR DEMO

Instructor: Demo
(01-ConsoleCommands)

Assignment:

- Make a folder on your desktop named code.
- Put all of your code that you do inside of that folder.

Best Practices:

- Always use lowercase for folder and file names.
- Never put in spaces in your folder and file names.
- Use dashes to separate.

Assignment:

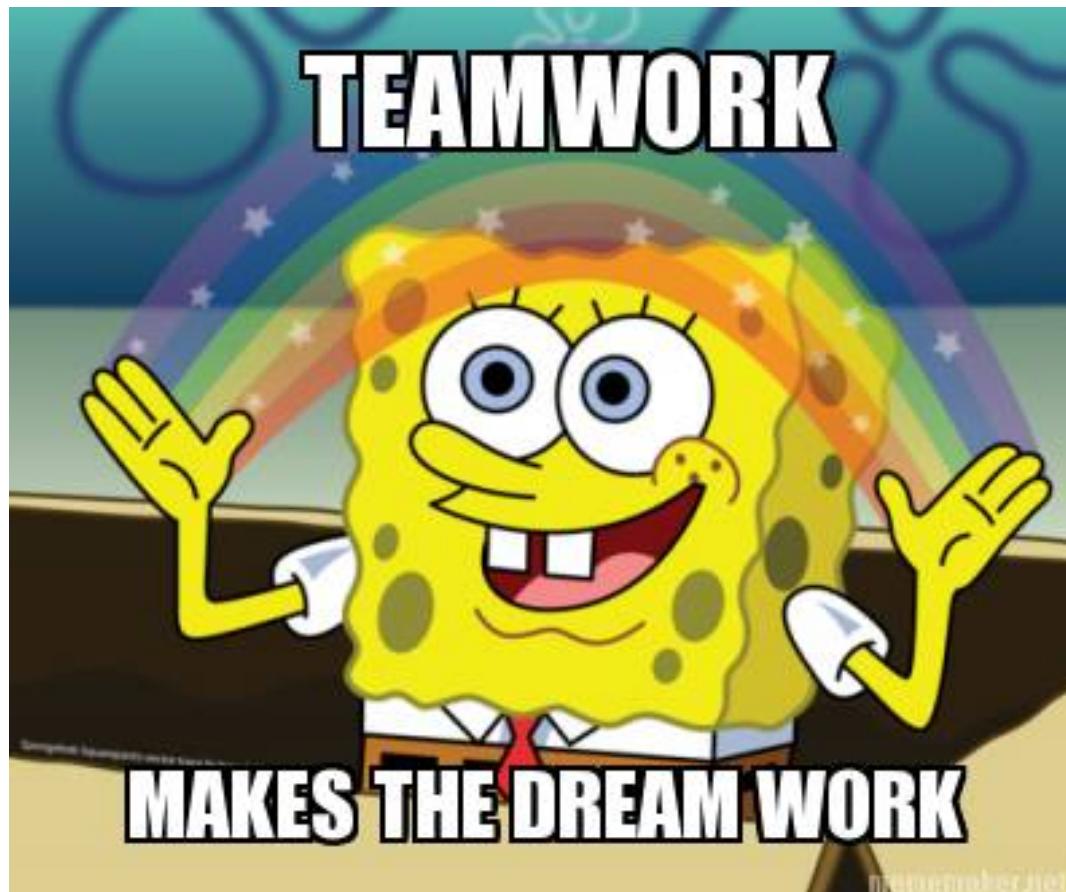
From the Terminal / Console and using only the command line, create:

- A new folder with the name of first_day_stuff.
- A new HTML file with the name of first_day.html.
- Open the current folder containing the new HTML file.

Bonus:

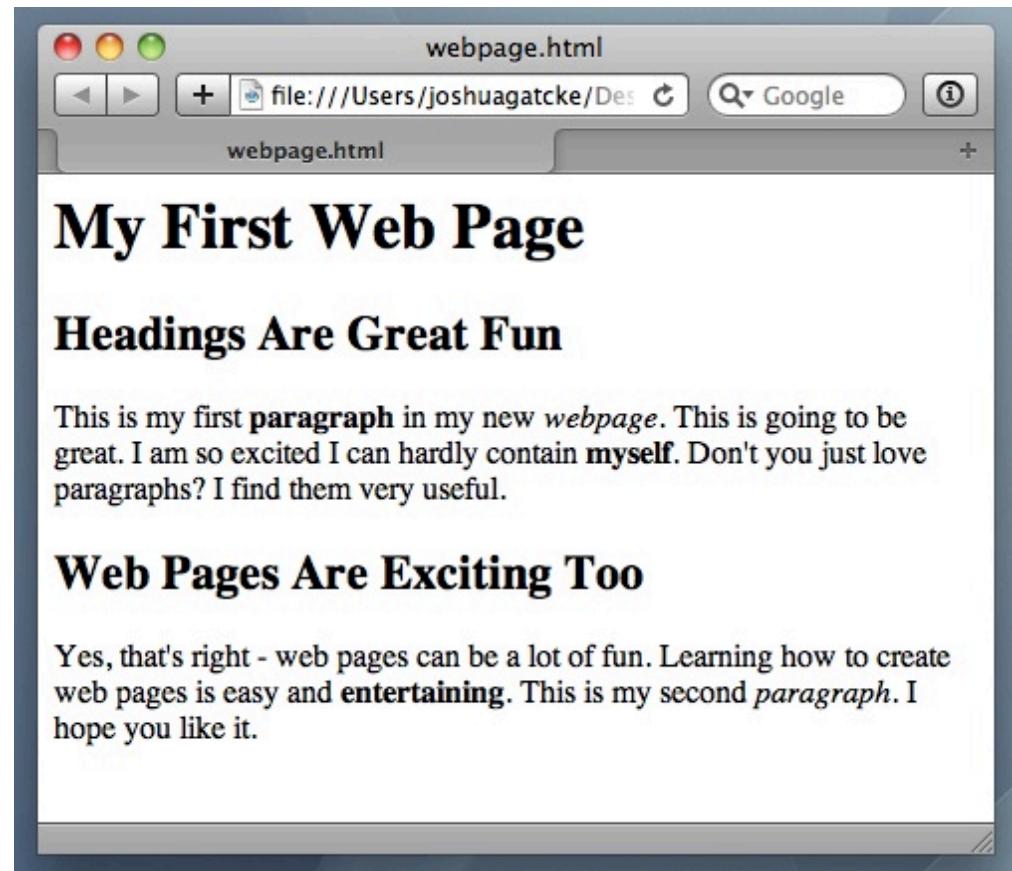
- Create multiple directories/folders with the names one_folder and second_folder in one command.
- Create multiple files with the names one.html and two.html in one command in the first_day_stuff directory.

Discuss with Neighbors



Hello, HTML

<title> Intro to HTML </title>



- **HTML** is one of the three base languages behind every single website.
- It defines all of the basic content and a *bit* of formatting.

> YOUR TURN

Assignment:

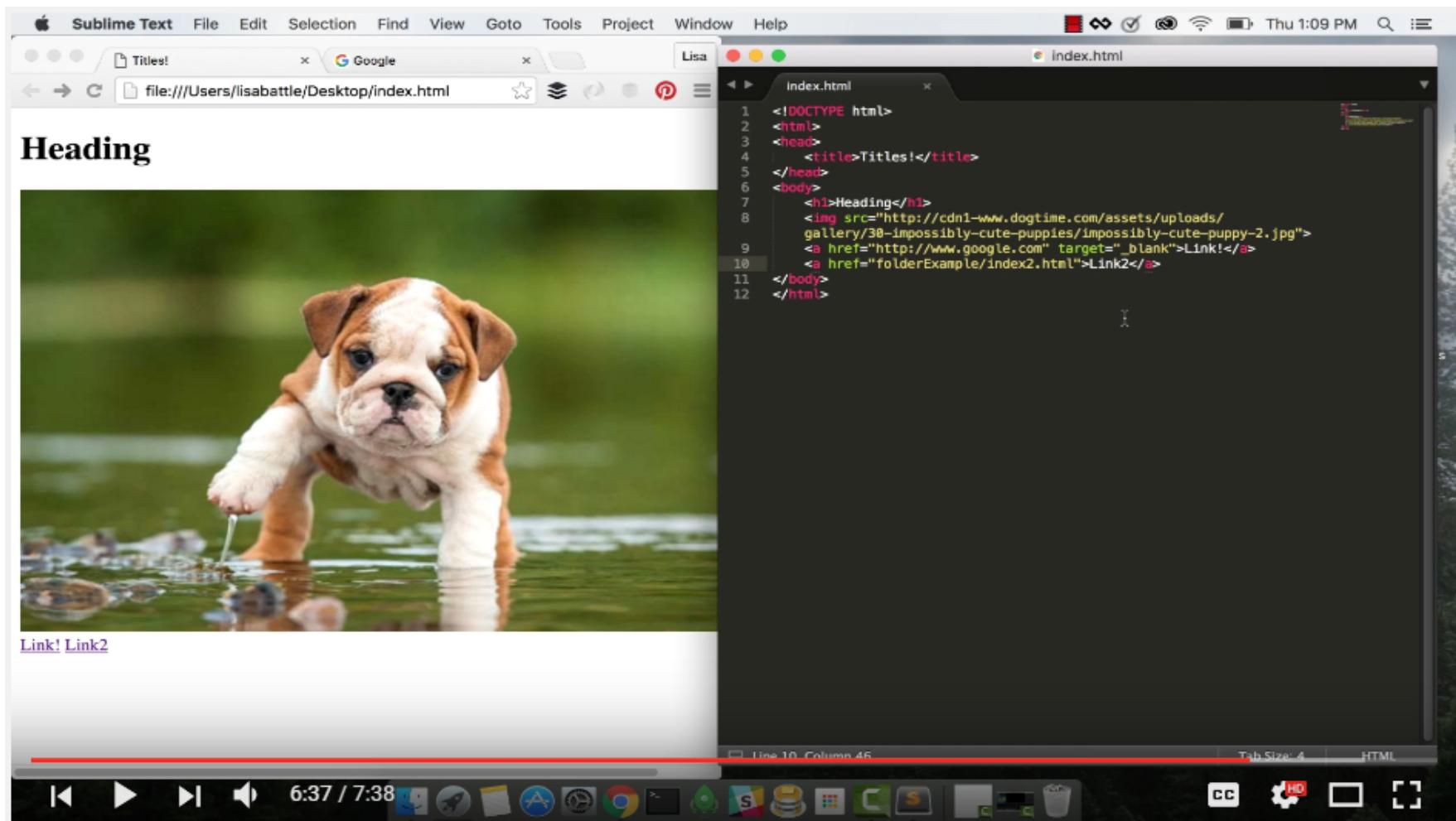
In a new HTML file, create the basic structure of an HTML document and include the following in it:

- DOCTYPE declaration.
- Head tag with a title tag.
- H1 tag with a title of your choice.
- Embed an image.
- Create the following three links on your page:
 - One link that is target="_blank" so that it opens a new tab when clicked on.
 - Make the second link bold.
 - Make the third link a placeholder so it goes nowhere.

Bonus:

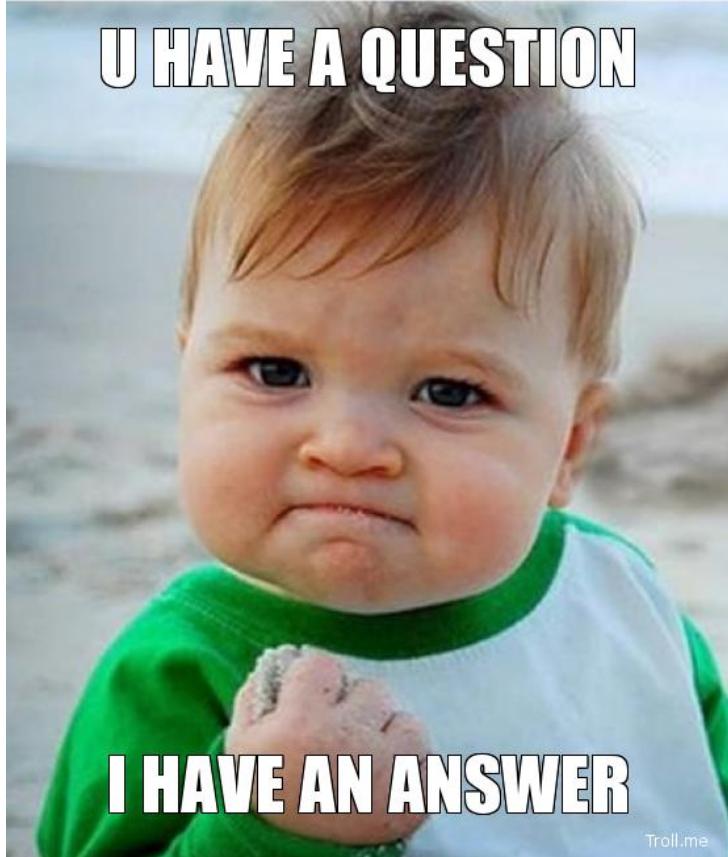
- Create an ordered list of steps to make a sandwich.
- Create an unordered list of 5 bands/musicians you like.
- Create a table with 2 columns (animal class and animal name) and 4 rows of animals.
- Use an alternate way of separating links without line breaks.
- Embed a YouTube video of your favorite band/musician.

YouTube Video Walkthrough!



<https://www.youtube.com/watch?v=ieb6Svbc10E&index=1&list=PLgJ8UgkiorCnMLsUevoQRxH8t9bt7ne14>

<title> Intro to HTML </title>



How'd it go?

LUNCH (30 Mins)

What / Why Git?

Collaborative Coding

Git Version Control to the Rescue

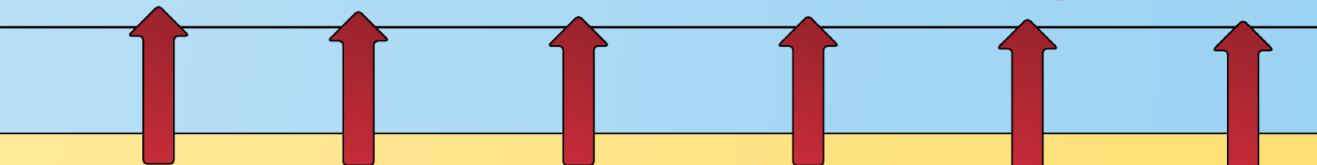
Final



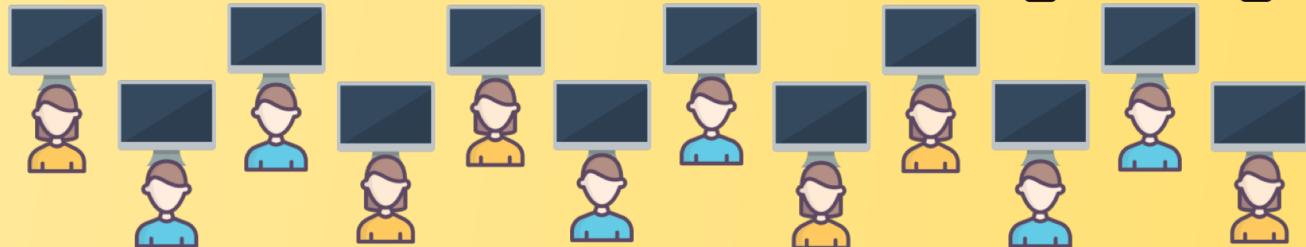
Originals



Change Requests



Developers



- Modern web development is highly collaborative.
- Teams are often extremely large and separated across the country — or planet.
- Apps sometimes comprise hundreds or even thousands of files.

The Team's Task

Task: Make a list of creative works you've written in the past

Programming Team:



Maya Angelou



Anne Sexton



Gil Scott Heron

Maya & Gil make their edits



Programming Away...

Maya's Version



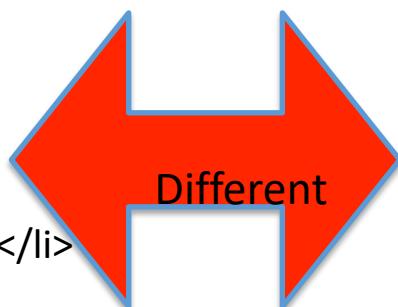
Programming Away...

Gil's Version



Different Solutions

```
<ul>
  <li>On the Pulse of Morning</li>
  <li>I Know Why the Caged Bird Sings</li>
  <li>And Still I Rise</li>
</ul>
```



```
<ul>
  <li>Free Will</li>
  <li>Pieces of a Man</li>
  <li>The Revolution will not be Televised</li>
</ul>
```



Resolution



```
<ul>
  <li>On the Pulse of Morning</li>
  <li>I Know Why the Caged Bird Sings</li>
  <li>And Still I Rise</li>
</ul>
```

“Let’s settle on this...”

```
<ul>
  <li>Poems</li>
  <li>Albums</li>
  <li>Songs</li>
</ul>
```



```
<ul>
  <li>Free Will</li>
  <li>Pieces of a Man</li>
  <li>The Revolution will not be Televised</li>
</ul>
```

Anne writes her own stuff...



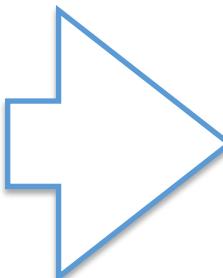
```
<ul>
  <li>The Double Image</li>
  <li>Heart's Needle</li>
  <li>Baby Picture</li>
</ul>
```

Anne overwrites work of her teammates...



**Delete. Delete.
Delete. Delete.
Delete. Delete**

```
<ul>  
  <li>Poems</li>  
  <li>Albums</li>  
  <li>Songs</li>  
</ul>
```



```
<ul>  
  <li>The Double Image</li>  
  <li>45 Mercy Street</li>  
  <li>The Road Back</li>  
</ul>
```

The Group Project



Lesson: You should use Version Control.

....and watch your teammates' work



Today we fret and pull
on wheels, ignore our regular loss
of time...

...or maybe we should just use git



Version Control

Git Version Control:

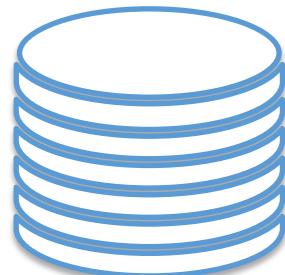
Provides an organized system for managing code for when multiple developers work on a project at the same time.

The Benefits of Git:

1. A process for resolving conflicts in code.
2. Version History.

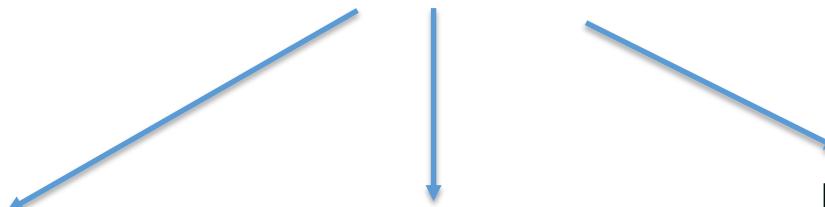
The Group Project

Master Branch



'Branch' = personal copy

Personal branch



Maya's branch



Anne's branch



Gil's branch

The team goes to work



```
<ul>
  <li>On the Pulse of Morning</li>
  <li>I Know Why the Caged Bird Sings</li>
  <li>And Still I Rise</li>
</ul>
```



```
<ul>
  <li>Free Will</li>
  <li>Pieces of a Man</li>
  <li>The Revolution will not be Televised</li>
</ul>
```

Maya pushes first

Master Copy



1



Maya **pushes (uploads)** her code changes into the main branch.

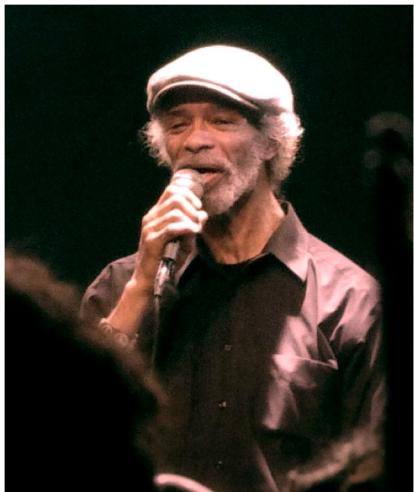
No code conflicts.



Maya's Branch

Gil's edits are ready

Rule: pull first, then push your changes



Ok

Gil pulls latest changes

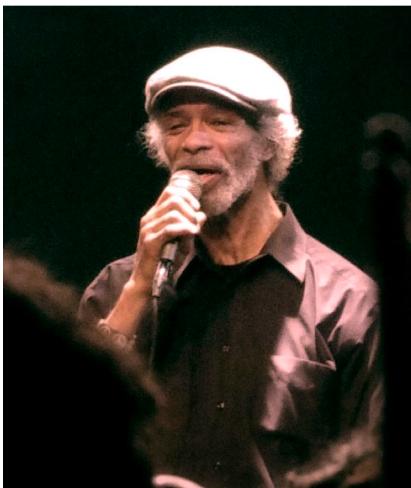
Master Copy



1



Gil's Branch

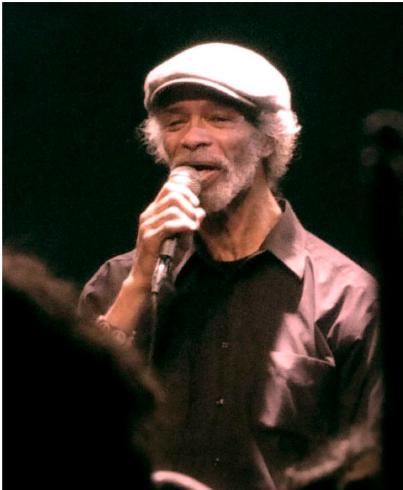


Gil conflicts with master branch

Master Branch



1

A black and white photograph of Gil Scott-Heron, an African American poet and activist, singing into a microphone. He is wearing a light-colored cap and a dark shirt. The background is dark, suggesting a stage performance.

On the Pulse of Morning
I Know Why the Caged Bird Sings
And Still I Rise
On the Pulse of Morning
I Know Why the Caged Bird Sings
And Still I Rise

Git sees a conflict.

Kobe resolves

```
<li>On the Pulse of Morning</li>
<li>I Know Why the Caged Bird Sings</li>
<li>And Still I Rise</li>
<li>On the Pulse of Morning</li>
<li>I Know Why the Caged Bird Sings</li>
<li>And Still I Rise</li>
```

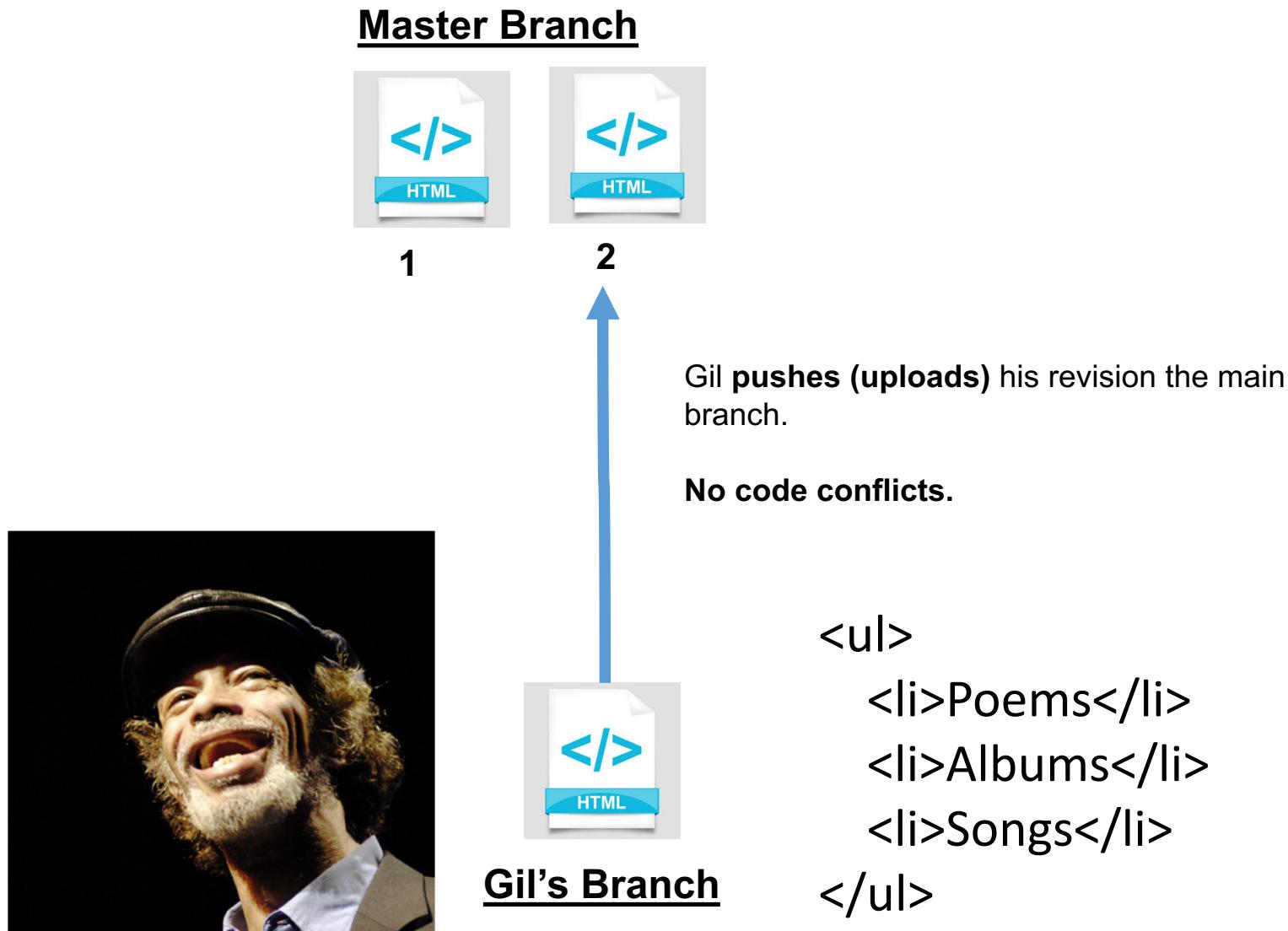


```
<ul>
  <li>Poems</li>
  <li>Albums</li>
  <li>Songs</li>
</ul>
```



Gil's Branch

Gil fixes and pushes



Anne starts her work

Rule: pull first, then push your changes



*look into my face
and you will know that crimes dropped
upon me
as from a high building...*

...by which I mean, I broke the rules.

Anne pushes

Master Branch



1



2



3

Anne dude **pushes (uploads)** her revision the main branch. No code conflicts.

Not what we want.



Anne's Branch

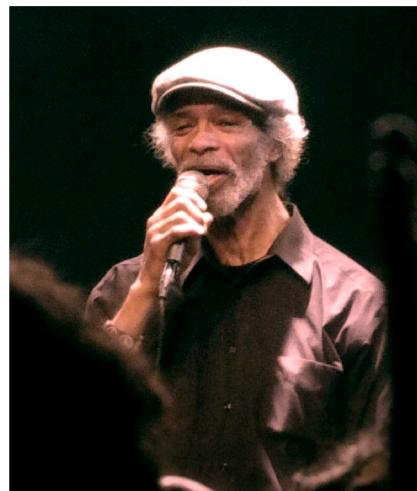
- The Double Image
- Heart's Needle
- Baby Picture

If Anne had made a pull first...

Conflict!

```
<ul>
    <li>The Double Image</li>
    <li>Heart's Needle</li>
    <li>Baby Picture</li>
</ul>
<ul>
    <li>Poems</li>
    <li>Albums</li>
    <li>Songs</li>
</ul>
```

The overwritten work is discovered



The screenshot shows a GitHub desktop application interface. The left sidebar lists repository sections: WORKSPACE, BRANCHES, TAGS, REMOTES, STASHES, SUBMODULES, and SUBTREES. The BRANCHES section shows branches like 'avgrund_replace_jquery-ui', 'file_reorg', and 'master'. The master branch is selected. The central area displays a commit history under 'All Branches' with three commits listed:

Commit	Author	Date
origin/master	Greg Sandell <gre...	Today, 2:56 PM
master 1 ahead 1 behind	Greg Sandell <gre...	Today, 2:55 PM
Conflict experiment: undo rogue changes	Greg Sandell <gre...	Today, 2:53 PM

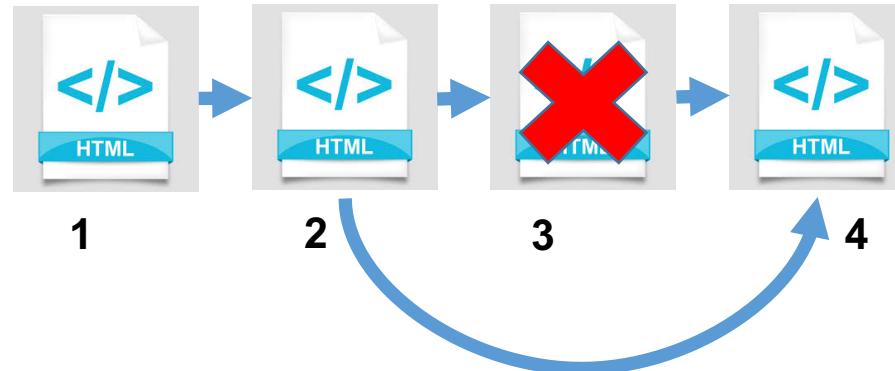
A conflict summary indicates 'Conflict experiment: restore rogue...' and 'Conflict experiment: undo rogue changes'. Below the commit history, a preview window shows a black and white photo of a woman's face. The right panel displays the content of 'test.html' with a diff view. A specific hunk is highlighted, showing code changes:

```
<!doctype html>
<html>
<body>
<ul>
- <li>Legislative</li>
- <li>Judicial</li>
- <li>Executive</li>
</ul>
+ <list>
+   <li>Washington
+   <li>Dudes in Robes</li>
+   <li>Mr. Hot Shot</li>
</list>
</body>
</html>
```

Roll Back



Main Branch



Maya **rolls back** the code to an earlier version.



Anne's Branch

The Group Project

Lesson:

You should use Version Control!

Quick Activity!

Suggested Time: 3 min

Turn to your neighbor, and have one of you explain to the other:

- The concept of version control.

Then the other should explain:

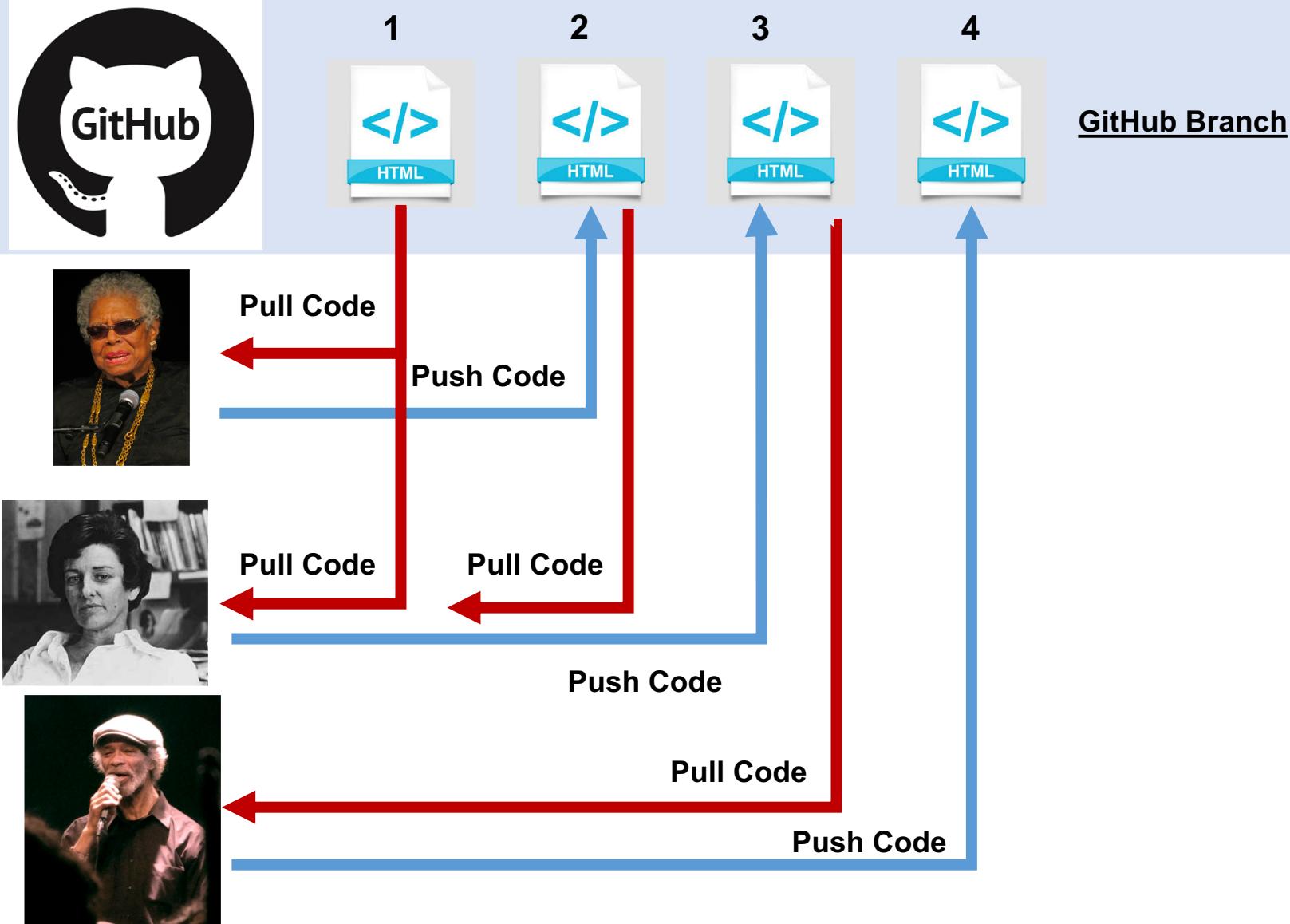
- Two of the key advantages to using a version control system.

So... What's this GitHub?

- GitHub is a Web-Based hosting service to store code online.
- It allows developers to **pull** (download) code or **push** (upload) code to the same **repository** (directory).
- It also allows developers to **view histories** of code changes and to **track issues**.



Pushing and Pulling to GitHub



Get Started with Git

Instructor Git Demo!

This repository Search

Pull requests Issues Gist

afhaque / **DemoRepository**

Watch 0 Star 0 Fork 0

Code Issues 0 Pull requests 0 Wiki Pulse Graphs Settings

This is Ahmed's Demo repository for his class! — Edit

1 commit 1 branch 0 releases 1 contributor

Branch: master New pull request New file Find file HTTPS https://github.com/afhaque Download ZIP

afhaque Initial commit Latest commit 2df88aa 4 minutes ago

README.md Initial commit 4 minutes ago

README.md

DemoRepository

This is Ahmed's Demo repository for his class!

Basic Git Commands

At its most basic, these are the five git commands to get started:

- 1. git clone**
- 2. git add**
- 3. git commit**
- 4. git push**
- 5. git pull**

Basic Git Commands

At its most basic, these are the five git commands to get started:

1. **git clone** – copies an entire repo (to begin).
2. **git add** – adds a file for inclusion in Git.
3. **git commit** – notes a change to the local repo.
4. **git push** – sends changes to hosting service.
5. **git pull** – downloads freshest version of repo.

> YOUR TURN! Activity: Git Add, Commit, Push | Suggested Time: 20 min

Assignment:

Using GitHub and the Command Line:

- Create a new **public GitHub repository** and name it whatever you like. Be sure to check the box for “initialize this repository with a README.”
- Next, **clone** the repo to your local directory.
- Then create an HTML file inside the local directory.
- **Add, Commit, and Push** the code to GitHub.

Bonus:

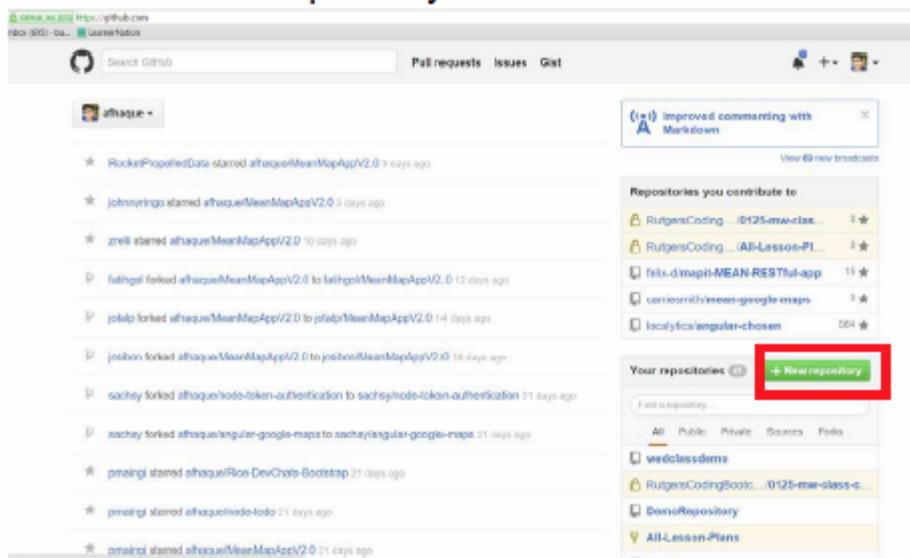
- Find a partner in class, and **fork** *their* repository to your own GitHub account. Clone this forked repository to your local directory.
- Add, Commit, and Push the code back to your forked copy.
- Finally, submit a **pull request** to send your changes to your partner’s repo.

Still a Bit Lost? Never Worry!

Steps to Uploading Your Code to GitHub

Step 1

Create a New Repository in GitHub.com



- Follow this handy Guide!
- Practice a few times on your own before our next class.

If You're Still Lost... Here's a (Free) Course

The screenshot shows the Code School website with a blue background featuring a repeating GitHub logo pattern. In the top left corner is the Code School logo, which includes a circular icon with a cat-like face and the text "Code School" and "a Pluralsight company". The top navigation bar has links for "Courses", "Screencasts", and "Pricing". On the right side of the header are "Create Free Account" and "Sign in" buttons.

The main content area features a large circular icon with a GitHub cat face and the text "tryGit". To its right is the word "GIT" in a small blue box and the text "Try Git". Below this is a blue button labeled "Play Course for Free".

Below the main banner, the breadcrumb navigation shows "Paths > Git > Try Git". To the right are two buttons: "Watch Videos" and "Discuss Course".

The "COURSE DESCRIPTION" section contains the text: "Learn how to use Git by reviewing the basic concepts of Git version control. Try out this introductory course that was created with GitHub." Below this is the "COURSE OVERVIEW" section, which includes a "tryGit" icon, the text "LEVEL 1 | FREE LEVEL", and "Discover Git 25 Challenges". It also describes the basics of Git, including initializing a repo, adding, committing, and pushing code to GitHub.

The "ABOUT THE PROFESSORS" section features two profiles: Olivier Lacan and Gregg Pollack. Each profile includes a photo, the professor's name, and a brief bio.

<https://www.codeschool.com/courses/try-git>

Homework!

Homework “Due”: This Week

By Next Class You Should:

- Figure out where the GitHub Repo is for our class.
- Re-do the Terminal example from class today.
- Re-do the HTML example from class today.
 - Watch the Walkthrough Video if you felt a bit lost.
- Review the Git commands we learned and how to use them