

The Zen of Coding

Web Development Boot Camp
Lesson 1.1



The Path of Learning

Your Goals

Basically, 100% of you said **new career**.



Your Goals

And why do you want a new career?



To pursue a **dream**



To escape a **dead-end job**



To be able to **create**



To follow a **fascination**



To attain **financial stability**



To obtain **financial freedom**



To **challenge yourself**



To be a **role model** to kids



Your Goal = Our Goal

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

Support Team Promise

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

This goes for everyone working on this program:

- Instructors
- TAs
- Student Success Team
- Career coaches
- Everyone else!





But Remember:
Nothing good comes easily.

Our Keys to Success

Don't Be This Person:

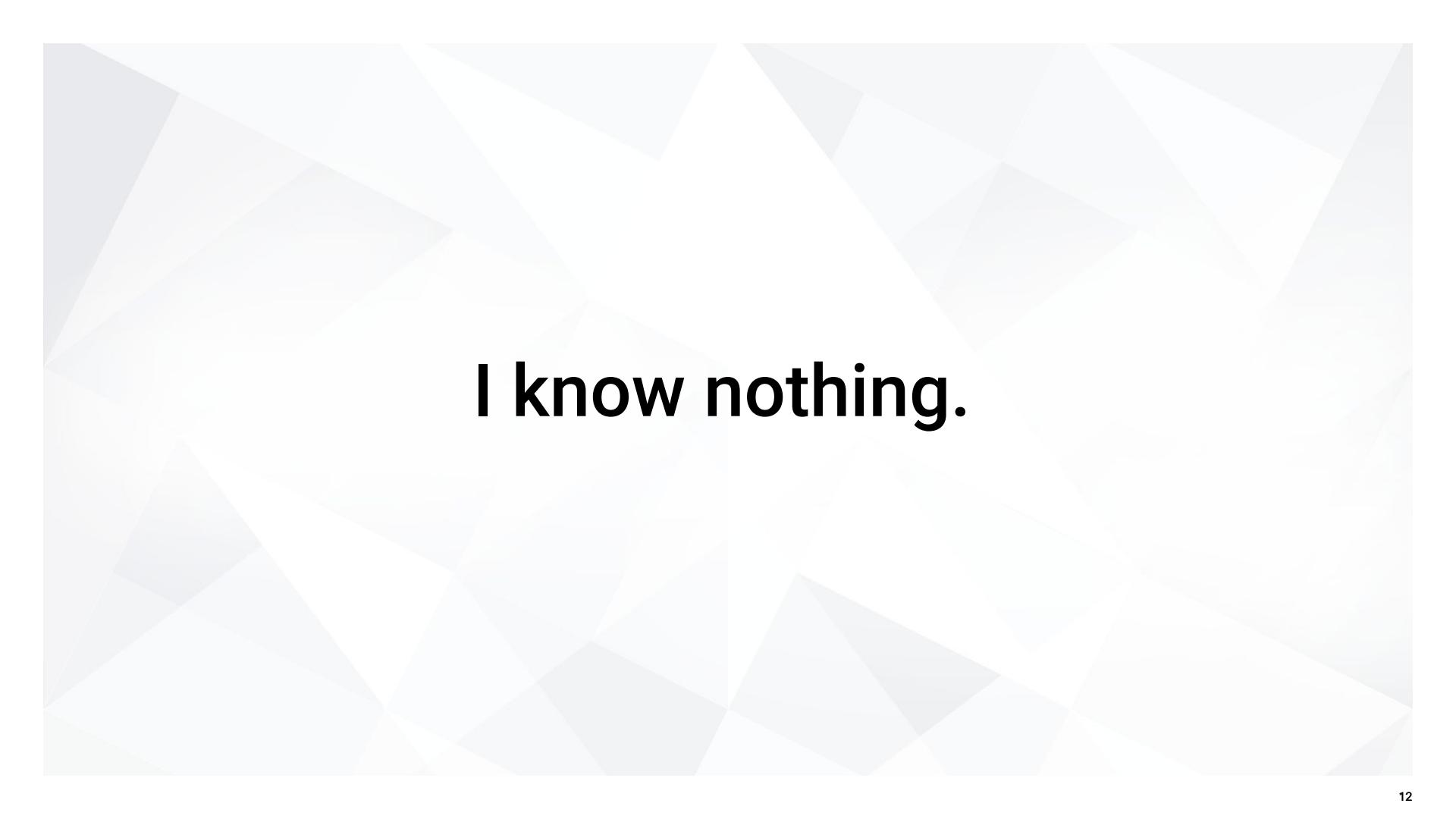


A close-up photograph of a baby with light blue eyes and a wide-open mouth, appearing surprised or excited. The baby is wearing a bright pink, zippered jacket. The background is a dark, textured surface covered in numerous small water droplets, suggesting rain or condensation. The overall composition is a full-frame shot focusing on the baby's face and upper body.

This Should Be You

Our Mantra for Today and Beyond

When it comes to web development...



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.

My code works and I don't know why.



Obstacle #2: The Great Doubt

“Maybe I’m just dumb.”

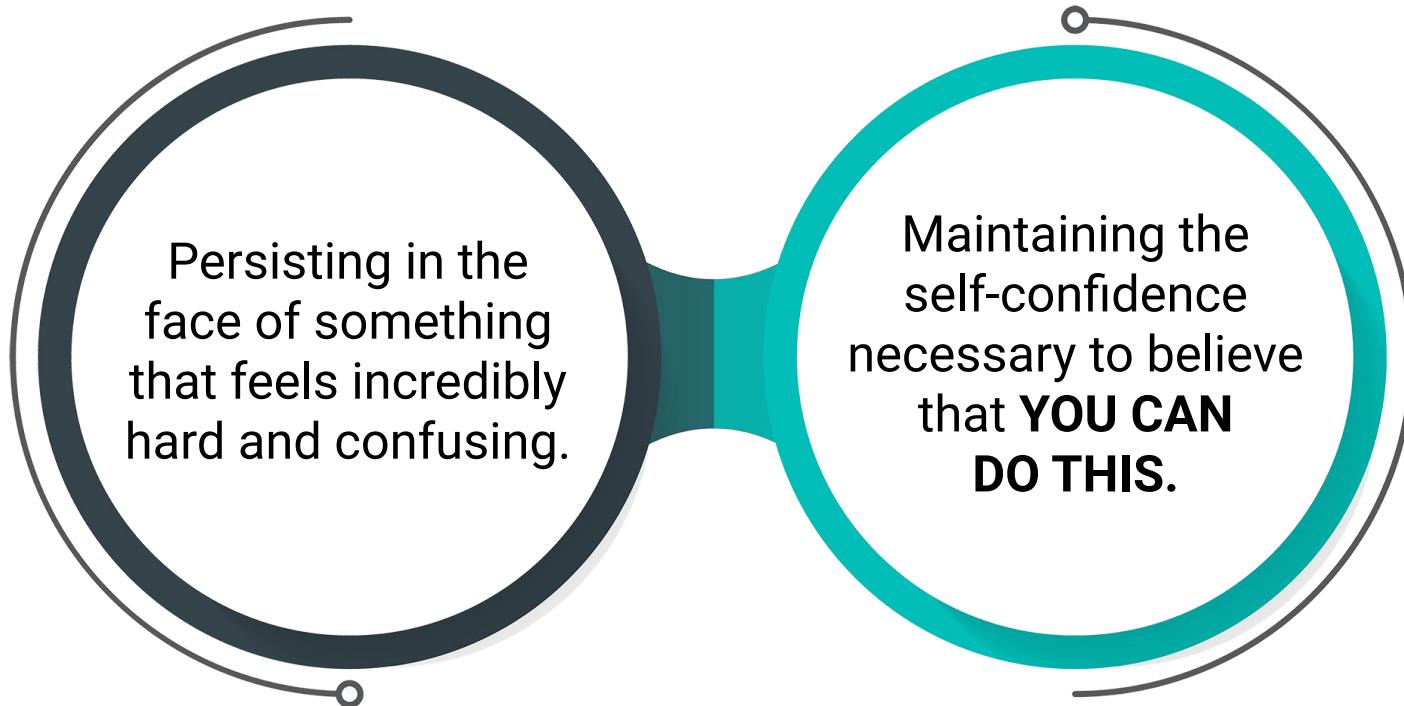


Obstacle #3: The Great Distance



Nothing Comes Easy

Learning to code requires two things:



Learning Can Be 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.

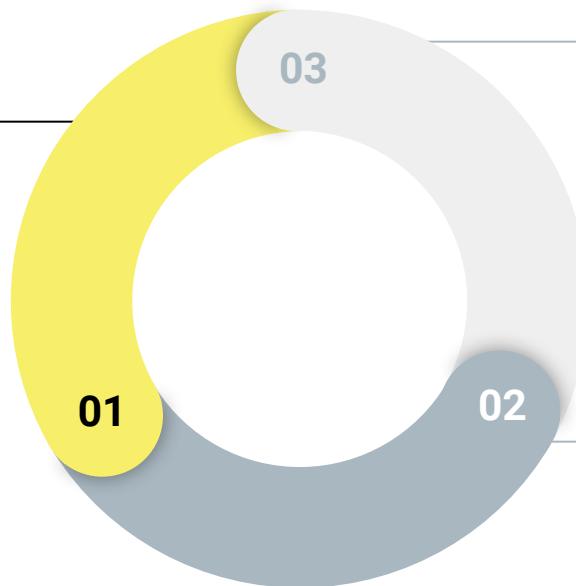


—Jeff Dickey, author of *Write Modern Web Apps with the MEAN Stack: Mongo, Express, AngularJS, and Node.js* (Peachpit Press, 2014)

Advice for the Journey

Throughout this course, always remember to:

Work hard!

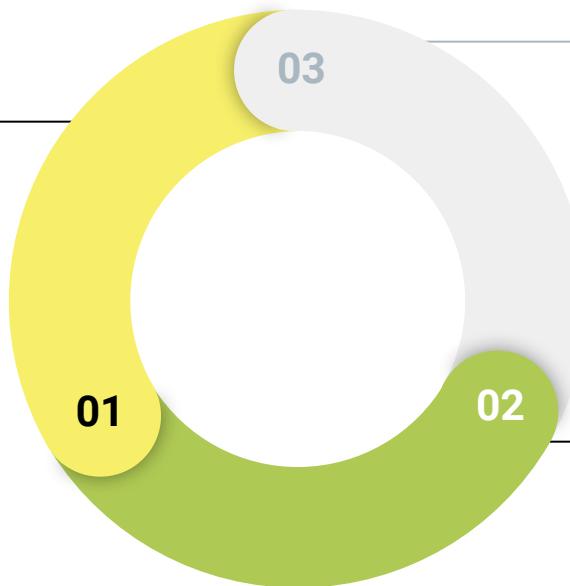


Trust yourself

Celebrate your
successes

Advice for the Journey

Throughout this course, always remember to:



Work hard!

Trust yourself

Celebrate your
successes

Advice for the Journey

Throughout this course, always remember to:



Work hard!

Trust yourself

Celebrate your
successes

And Remember...

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



Google Fu: The Most Important Skill of All



| What Is Google Fu?



Course Structure

Daily Schedule

In each class, we'll cover the following:

01

Set objectives

02

Brief background lecture

03

Watch me / coding demos

04

Code discussions

05

In-class exercises

06

Project work

Daily Schedule

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06

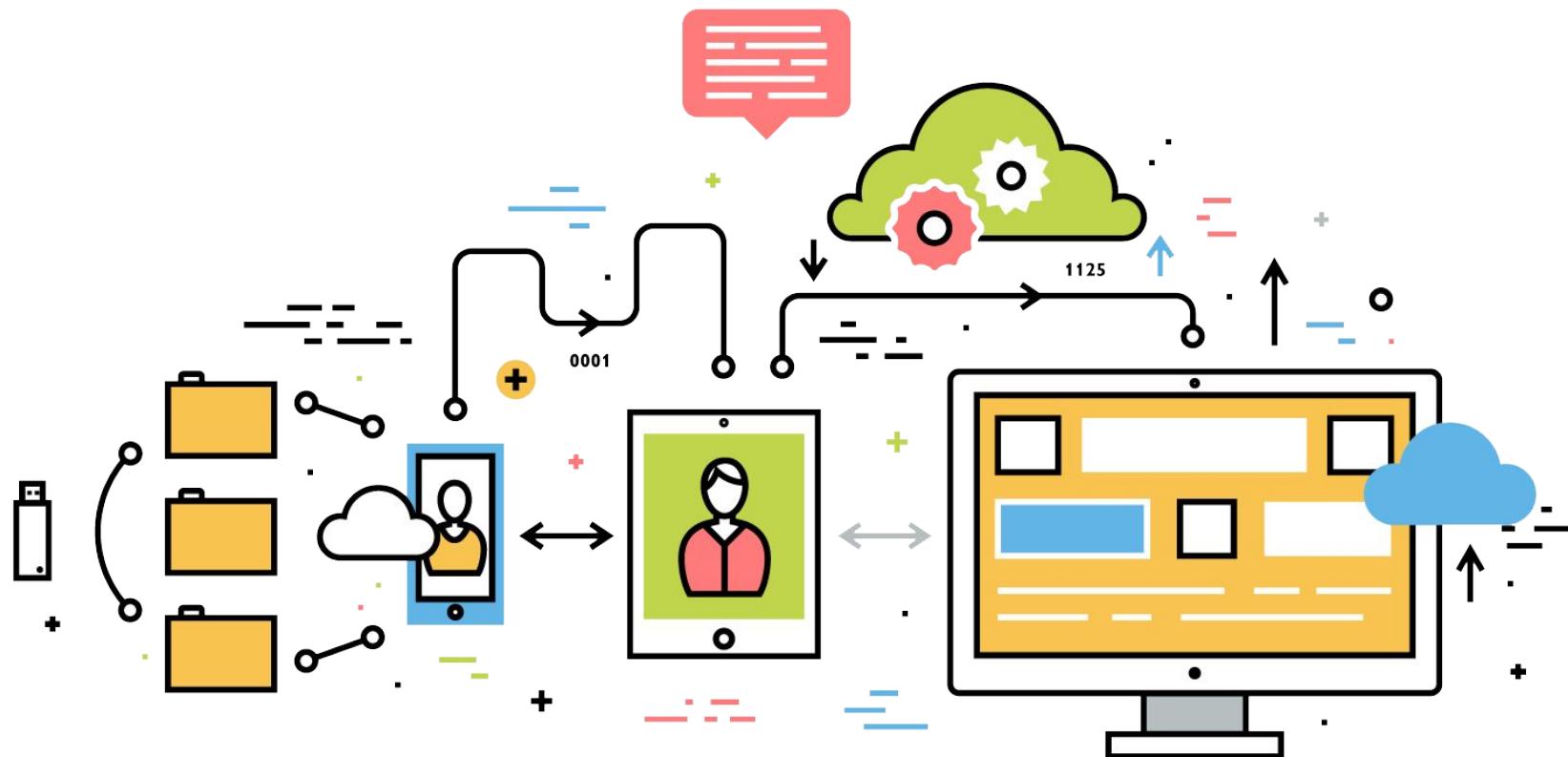
Project work



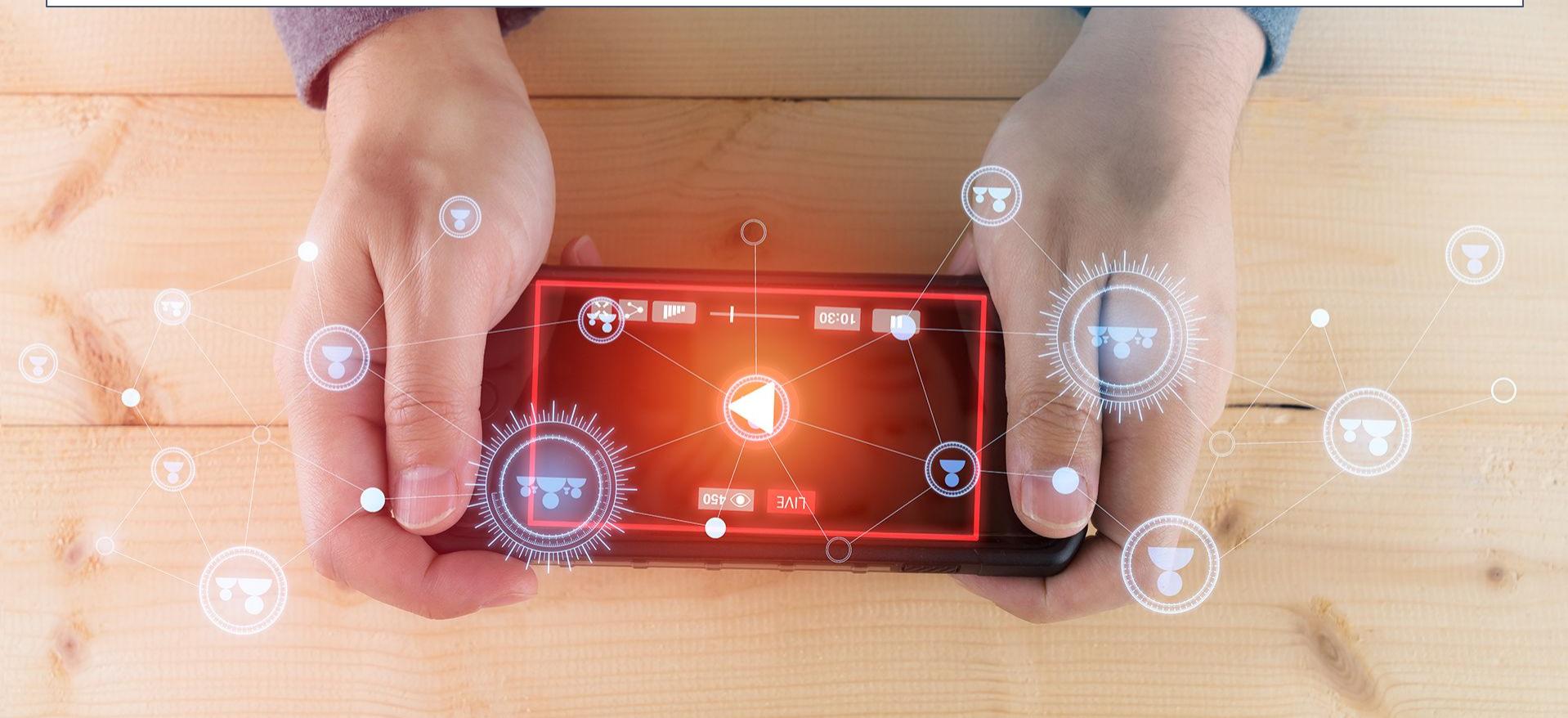
This is the super important
stuff—ALWAYS BE CODING!

The Modern Web

What Exactly Is Full-Stack Development?



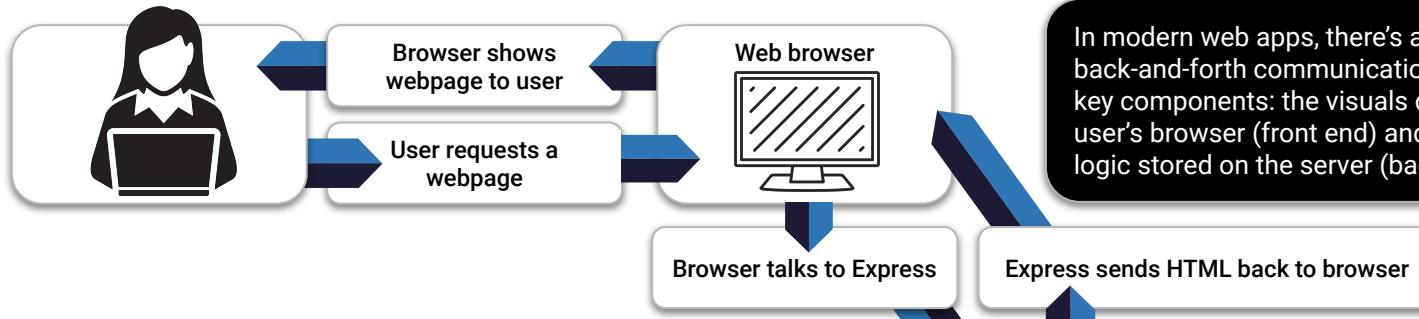
The “Magic” of YouTube



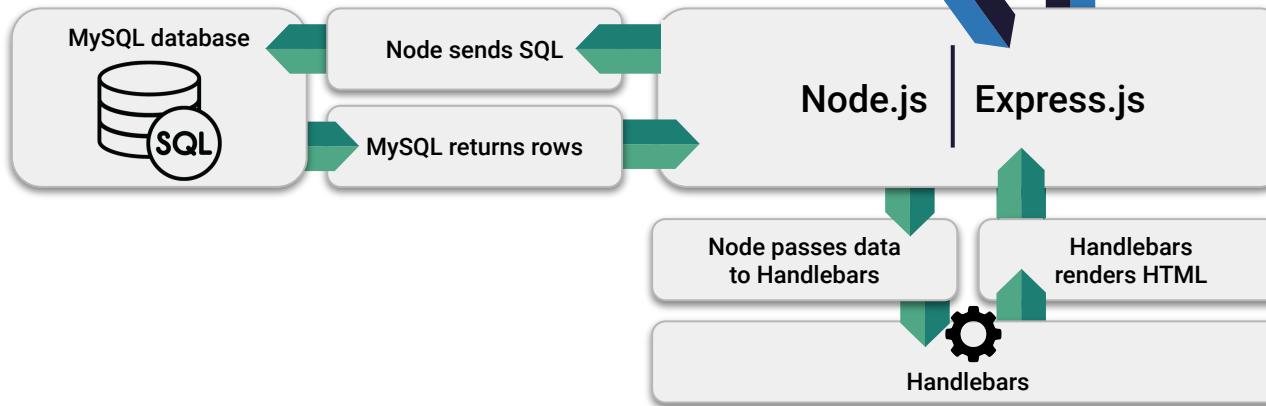
Full-Stack Development

Front end

FSF FLOW



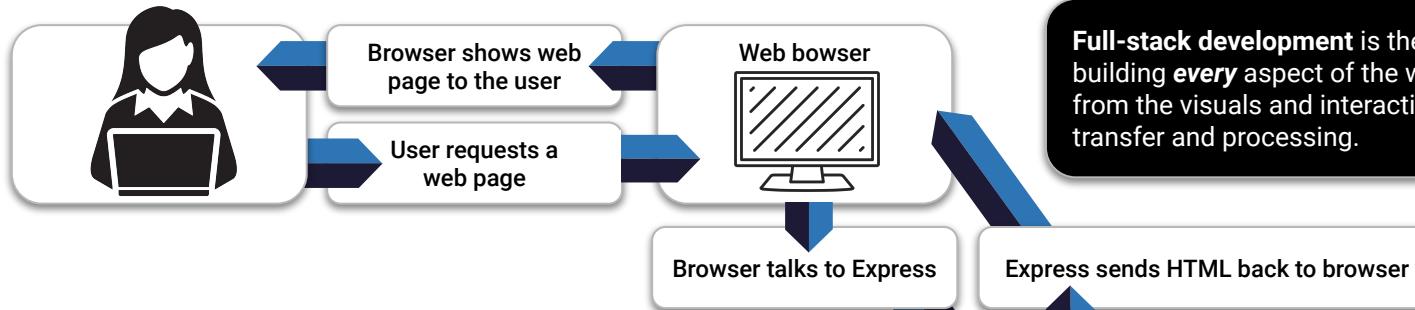
Back end



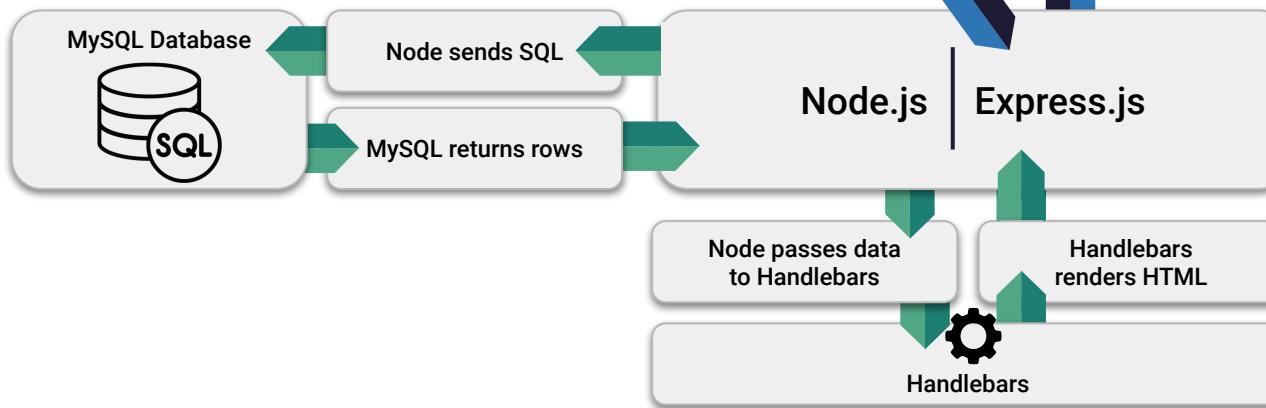
Full-Stack Development

Frontend

FSF FLOW



Backend



Full-Stack Development

The Browser	Dev Tools	Server Side	
HTML	Heroku	Templating engines	
CSS	Git	Sessions	
JavaScript	GitHub	Writing tests	
jQuery	Databases		
Bootstrap	MySQL	Express.js	
SEO	MongoDB	Creating APIs	
API Interaction		MVC	
APIs (Consuming)		User authentication	
JSON		ORM (Sequelize)	
AJAX		CS Fundamentals	
Cutting-Edge Development		Design patterns	
Progressive Web Applications			
React.js			

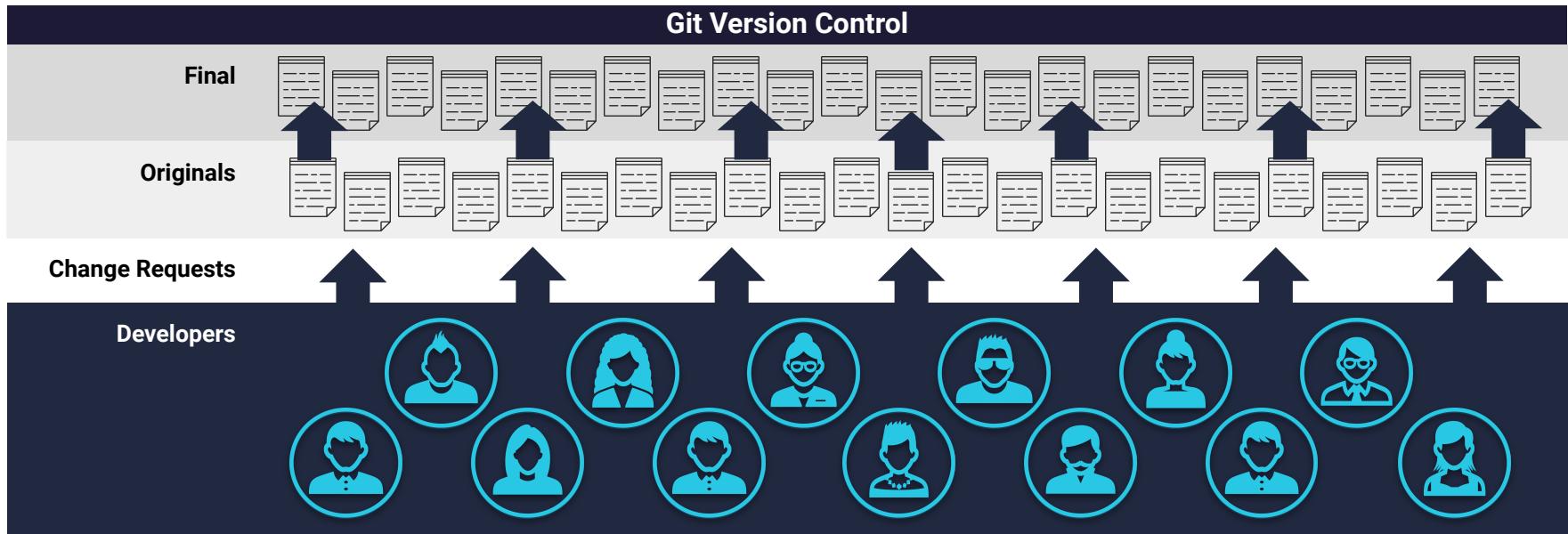
What Is Git?

Collaborative Coding

Modern web development is highly collaborative.

Teams are often extremely large and spread out across the country or world.

Apps are sometimes made up of hundreds or even thousands of files.



The Team's Task

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

Programming Team		
Maya Angelou	Anne Sexton	Gil Scott Heron
 A circular portrait of Maya Angelou. She is wearing dark sunglasses and a black jacket, smiling as someone holds a blue ribbon with a gold medal around her neck.	 A circular black and white portrait of Anne Sexton. She has short, dark hair and is looking directly at the camera with a neutral expression.	 A circular portrait of Gil Scott Heron. He is sitting at a piano, wearing a cap and headphones, and singing into a microphone. The background shows stage lights and equipment.

Maya Angelou & Gil Scott Heron Make Their Edits



Maya Angelou is programming away.



Maya Angelou's version

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



Gil Scott Heron is programming away.



Gil Scott Heron's version

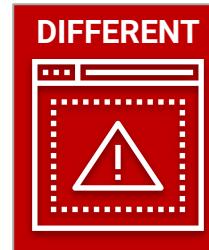
```
<ul>
  <li>Free Will</li>
  <li>Pieces of a Man</li>
  <li>The Revolution Will Not Be
    Televised</li>
</ul>
```

Different Solutions



Maya Angelou's version

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



Gil Scott Heron's version

```
<ul>
  <li>Free Will</li>
  <li>Pieces of a Man</li>
  <li>The Revolution Will Not Be Televised</li>
</ul>
```

Resolution



Maya Angelou's version

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



Gil Scott Heron's version

```
<ul>
  <li>Free Will</li>
  <li>Pieces of a Man</li>
  <li>The Revolution Will Not Be Televised</li>
</ul>
```

Let's settle on this:

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

Anne Sexton Writes Her Own Version



Anne Sexton's version

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

Anne Sexton Overwrites the Work of Her Teammates



Delete. Delete.
Delete. Delete.
Delete. Delete.

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

A large, solid black arrow points from the left side of the slide towards the right, indicating a transformation or comparison between the two states of the list.

```
<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 because it helps you manage multiple developers working on a single codebase.



"Today we fret and pull on wheels, ignore our regular loss of time..." Or maybe we should just use Git.



Git Version Control

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

The Benefits of Git



01

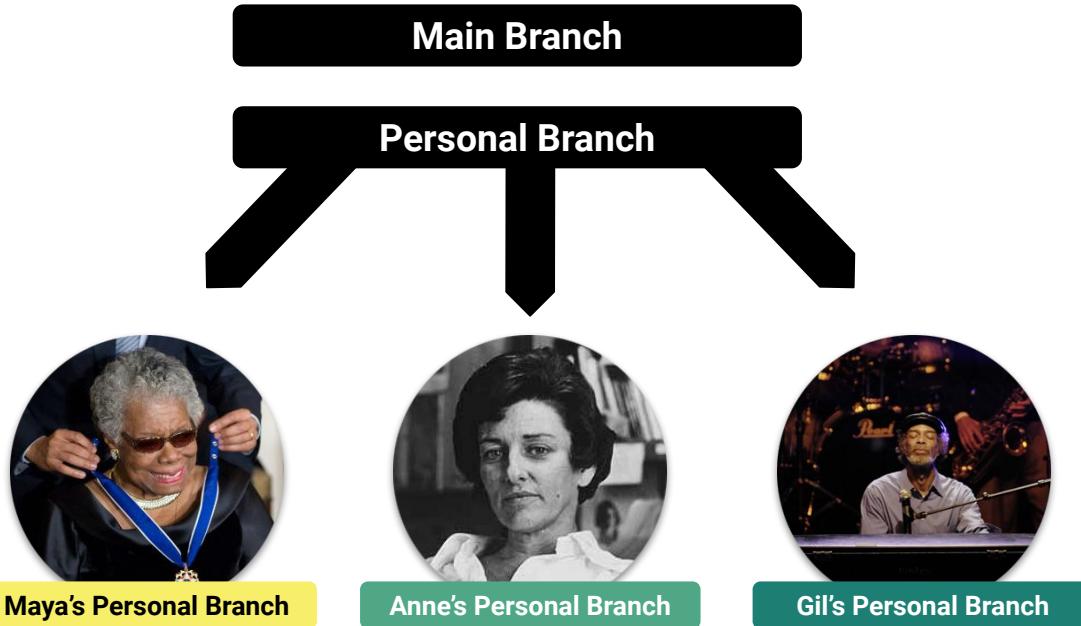
A process for resolving conflicts in code

02

Version history

The Group Project

Branch = personal copy



The Team Goes to Work



Maya Angelou's version

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



Gil Scott Heron's version

```
<ul>
  <li>Free Will</li>
  <li>Pieces of a Man</li>
  <li>The Revolution Will Not Be Televised</li>
</ul>
```

Maya Angelou Pushes First

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

No code conflicts

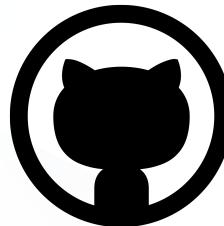


Main Branch



Maya's Personal Branch



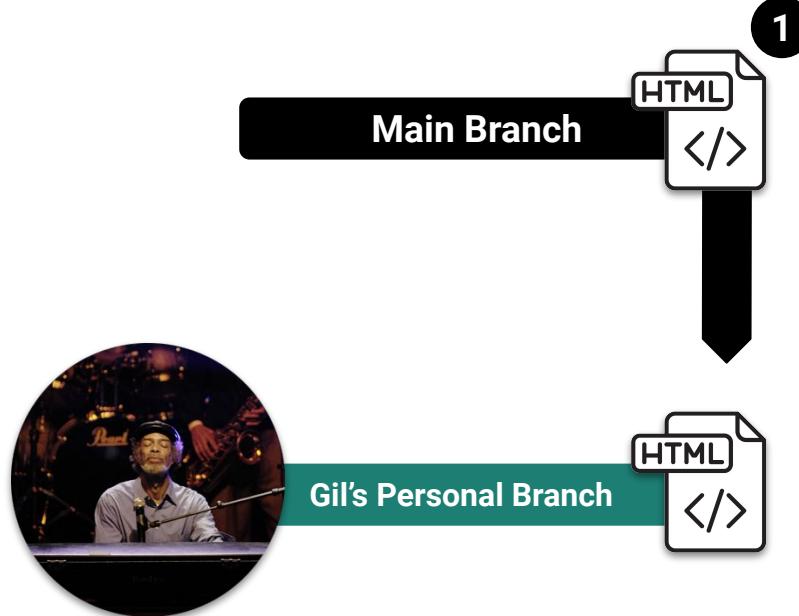


Rule: Pull first, and then push your changes.

Gil Scott Heron's Edits Are Ready



Rule: Pull first, and then push your changes.

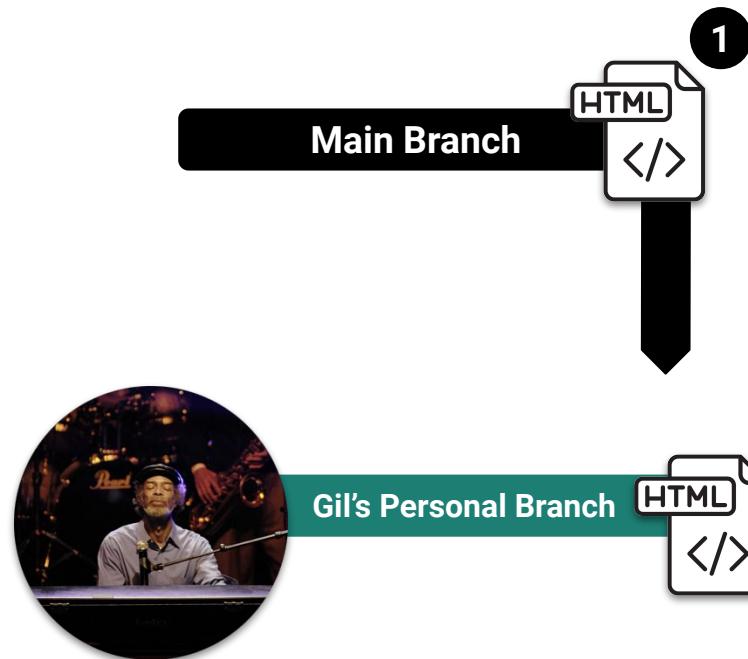


Gil Scott Heron Conflicts with the Main Branch



Git sees a conflict.

```
<ul>
<<<<<<< HEAD
    <li>Free Will</li>
    <li>Pieces of a Man</li>
    <li>The Revolution Will Not Be Televised</li>
=====
    <li>On the Pulse of Morning</li>
    <li>I Know Why the Caged Bird Sings</li>
    <li>And Still I Rise</li>
>>>>>> main
</ul>
```



Gil Resolves

```
<ul>
<<<<<<< HEAD
    <li>Free Will</li>
    <li>Pieces of a Man</li>
    <li>The Revolution Will Not Be Televised</li>
=====
    <li>On the Pulse of Morning</li>
    <li>I Know Why the Caged Bird Sings</li>
    <li>And Still I Rise</li>
>>>>>>> main
</ul>
```

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



Gil's Personal Branch



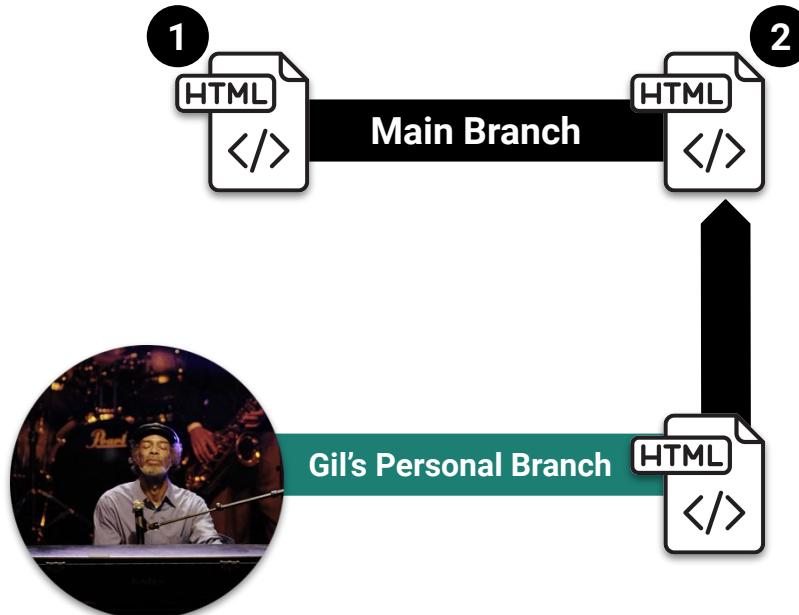
Gil Scott Heron Fixes and Pushes

Gil pushes (uploads) his revision to the main branch.



No code conflicts

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



Anne Sexton Starts Her Work



Rule: Pull first, and then push your changes.

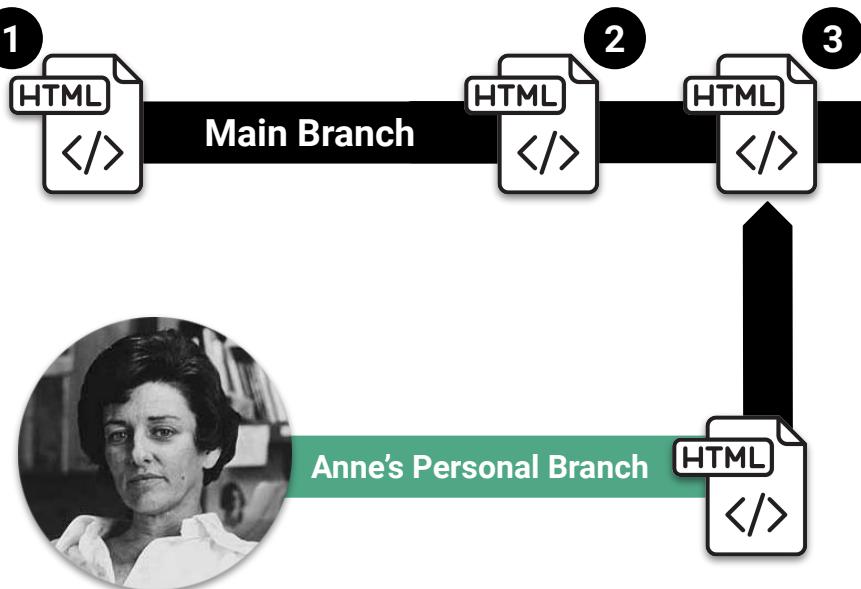


*look into my face
and you will know that crimes dropped upon me
as from a high building...
...by which I mean, I broke the rules.*

Anne Sexton Pushes

Anne Sexton pushes (uploads) her revision to the main branch, but she doesn't pull first. Because she did not pull first, she sees no conflicts in the code (and doesn't get Gil's work!). **This is not what we want.**

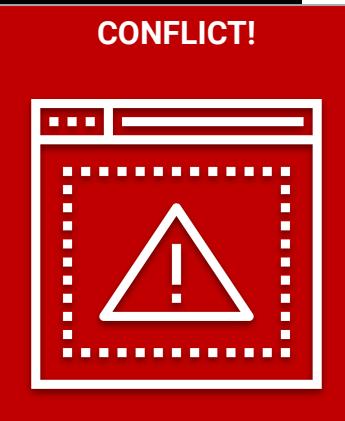
```
<ul>
  <li>The Double Image</li>
  <li>Heart's Needle</li>
  <li>Baby Picture</li>
</ul>
```



If Anne Had Made a Pull First...

Conflict!

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



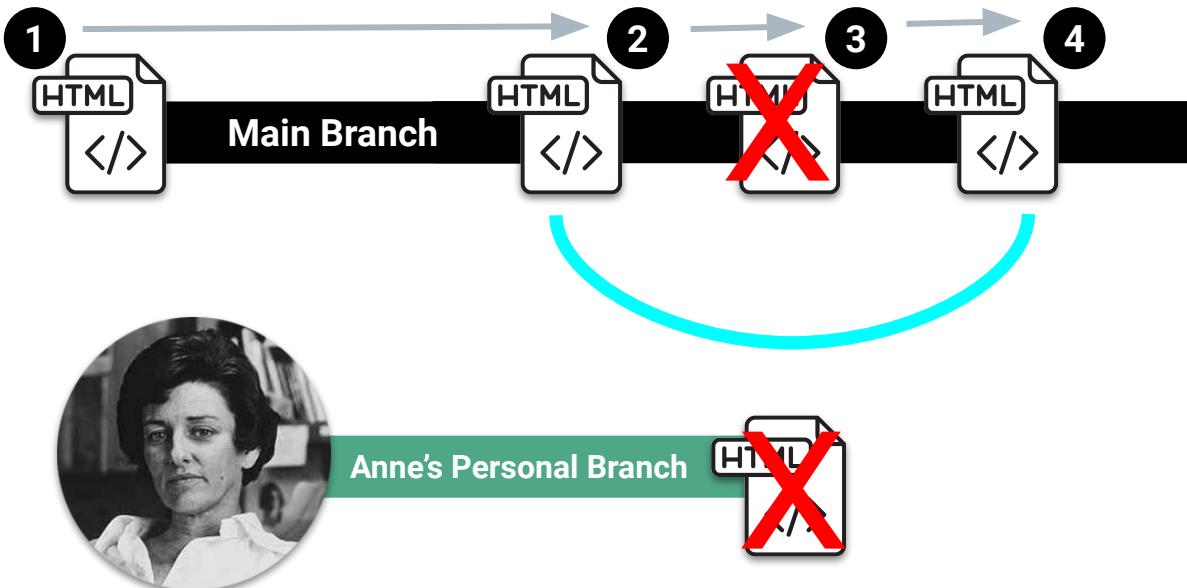
CONFLICT!

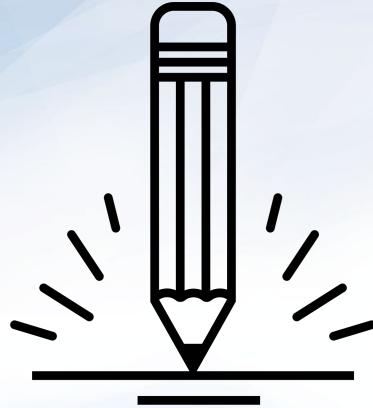


The **overwritten** work
is discovered!

Roll Back

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





Activity:

Explain Git (Version Control)

Suggested Time:
3 Minutes



Activity: Explain Git (Version Control)

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

The concept of version control

Then, the other should explain:

Two key advantages of using a version control system

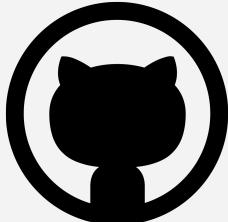
Suggested Time: 3 Minutes



What Is GitHub?

01

GitHub is a web-based hosting service to store code online.



02

It allows developers to pull (download) code or push (upload) code to the same repository (directory).

03

It also allows developers to view histories of code changes and track issues.

Pushing and Pulling to GitHub

