Absolute Beginner's Guide to Web Development Lab Contents

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Absolute Beginner's Guide to Web Development Lab

Overview

During this lab, you will use Github Pages to create a live, working website you can access from any device. By working through the steps in this lab, you will create a website from scratch using the tools and technologies discussed in the introduction to web development workshop.

The page we will be building for this section of the workshop will feature an animated CSS button that when clicked, changes the entire look and feel of the page (we will use jQuery to achieve this outcome).

An of the final product is available at the following link: http://tiny.cc/project-live

This project will include static and interactive content. All of the required content to achieve the final product is included in this document. You can view the code for this project at: http://tiny.cc/project-files

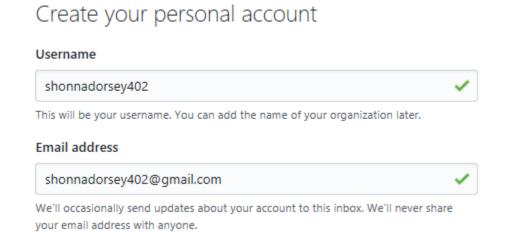
Equipment and Implementation Requirements

- Internet access
- Testing devices (laptop, smartphone)
- Recommended browser Google Chrome

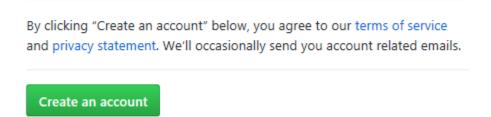
Let's get started!

Github Setup

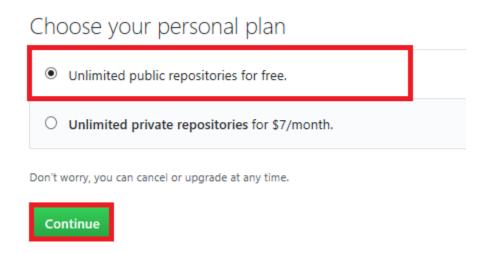
- 1. Go to github.com
- 2. Click the **sign up** button in the upper right corner of the screen:
- 3. Add your information into the signup form. You will receive error messages if your name and/or email address are already in the system and can perform a password reset if needed using the **Sign In** link located at the top right corner of the site:



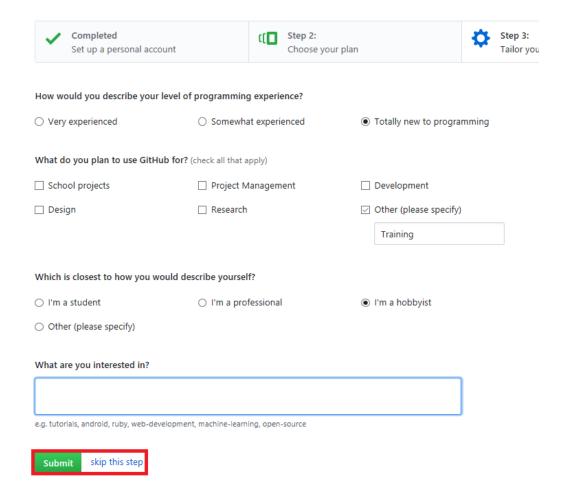
4. Read the privacy statement and terms of service. If you agree, click **the Create Account** button below the **sign up** form (please contact the workshop facilitator for other options):



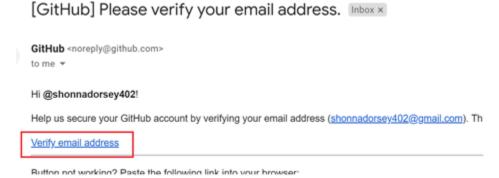
5. Under Plans, select **'Unlimited Free Repositories'**. Feel free to check the boxes below the plans section if you would like to receive the information offered to you via Github. Click **Continue**:



6. Complete/skip the Tailor Your Experience section of the sign up form and click Submit:

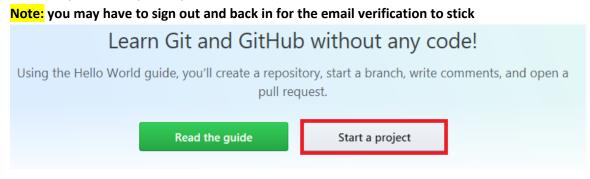


7. Login to the email account you used to setup your Github account and click the link to verify your email address. You will not be able to create a new repository until you complete this step.

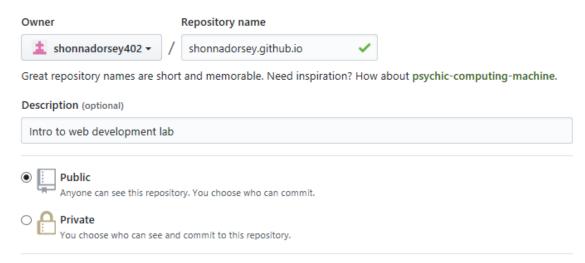


Create your first repository

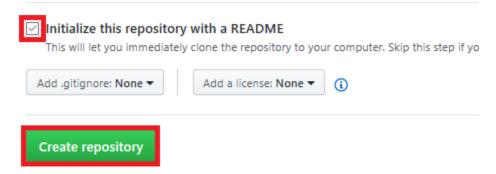
1. Return to Github after you verify your email address and click the **Start a Project** button to create your first repository!



2. In the **Repository Name** field, type your **username.github.io**. Example: shonnadorsey402.github.io

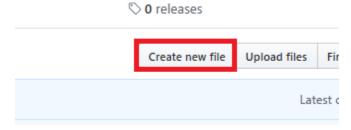


3. Check the box to initialize the repository with a **README** to setup a repository that is ready for you to add content. Click **Create Repository**

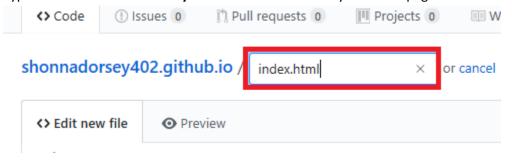


Commit your first file

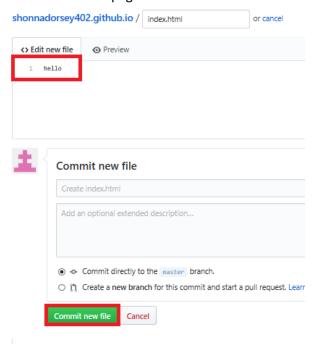
1. Click Create new file:



2. Type index.html in the Name your file field. This will be your home page:

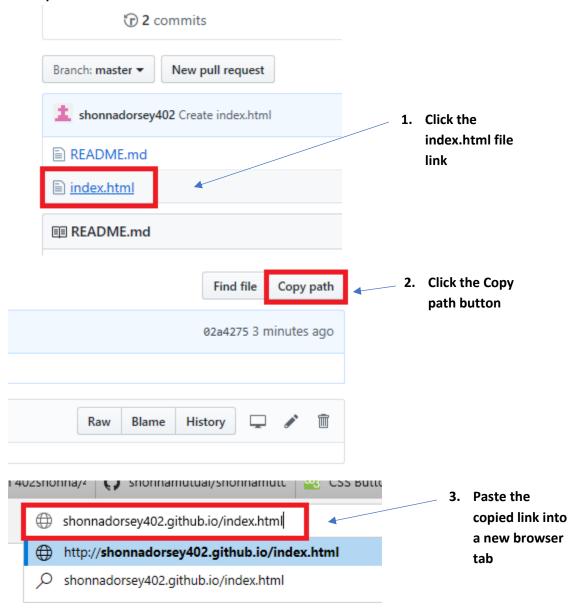


3. Type 'Hello' on the first line of the editor for index.html then click Commit New File at the bottom of the page:



Create a tiny URL for easy site reference

1. On your project dashboard, click the index.html file link, then click **Copy Path** and **paste** the copied link into a new browser tab and click enter:



2. Once your page loads, you should see the following – this is a live website:



- 3. In a new tab, type **tiny.cc** and press the enter key.
- 4. Paste the link you copied from Github into the Paste a long URL field. Be sure to add https:// before your URL if it does not already appear there. You will receive an error message if this prefix is missing.



5. In the custom section of the tiny.cc URL, type a short and easy to remember short name for your new file:



6. After you'd updated the custom URL field, click the **Shorten** button next to the long url field:



- In a new/existing browser window, type in your new short URL. In this case, it would be tiny.cc/shonnaweb.Press enter. You will notice that your page loads with the original URL.
- 8. Return to Github let's build out the content for the site!

Build Your Home Page

Throughout the rest of this document, the purpose and options to edit content in each of the files you will create is described in detail.

- 1. Go to the following link: **tiny.cc/project-files** to view the content for this project. You can use this link as a reference throughout this lab.
- 2. In a separate tab/window, open your personal index.html file. Click the **edit** button (looks like a pencil) to begin making changes to the file:



Setup the <head> section

3. On the index.html file located at tiny.cc/project-files, copy lines 1 – 10 and paste the content into your index.html file. A description of the content on each line follows this image:

Line 1: <!DOCTYPE html>

This declaration must be the very first thing in your HTML document, before the https://www.ntml tag. It is not an HTML tag; it is an instruction to the web browser about what version of HTML the page is written in.

Line 2: <html>

This tag tells the browser that this is an HTML document, represents the root of an HTML document, and is the container for all other HTML elements (except for the <!DOCTYPE> tag).

Line 3 and Line 10: <head> </head>

This element is a container for all the head elements and can include a title for the document, scripts, styles, meta information, and more.

Line 4: <meta name="viewport" content="width=device-width, initial-scale=1.0"> A <meta> viewport element gives the browser instructions on how to control the page's dimensions and scaling.

The width=device-width part sets the width of the page to follow the screen-width of the device (which will vary depending on the device).

The initial-scale=1.0 part sets the initial zoom level when the page is first loaded by the browser.

Examples from w3schools of a site with and without meta viewport data:





Without the viewport meta tag With the viewport meta tag

Line 5: <title>Page Title</title>

Defines a title in the browser toolbar, provides a title for the page when it is added to favorites, and displays a title for the page in search-engine results.

Line 6: <link

href="https://fonts.googleapis.com/css?family=Raleway|Calligraffitti|Homemade +Apple" rel="stylesheet">

Reference to Google Fonts an open source library of customizable fonts for your web projects. You can view other font options at fonts.google.com.

Line 7: k rel='stylesheet' href='css/style.css'>

Reference to the custom stylesheet we will use to modify the look and feel of content in our HTML document.

Line 8: <script

```
src='https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js'></script>
```

This is a reference to a jQuery library. A reference to the library is required before a custom JS file reference. Remember, you cannot checkout a book without first going into the library.

```
Line 9: <script src='js/script.js'></script>
```

Reference to the custom JavaScript file we will create to make our site interactive. Notice that it is in a directory called js. It is important to organize your files in a way that is easy to manage.

Setup the <body> and <container>

As mentioned during the walkthrough, the <body> section of your page is where all content that will appear on the page belongs. In this section, you will add text, hyperlinks, images, buttons, tables, lists, etc.

Line 11: <body>

This is the beginning of the section where visible content will appear on your site.

```
Line 12: <div class="container">
```

The container will include all visible content within the layout we develop for this site.

Line 13 - 15: Header section

Content in this part of the site will appear at the top of the layout

Line 16: <hr />

HR = horizontal row and is a self closing element. It is a single line separating the header from the content below it.

Setup <section> within <container>

Line 18: <section>

Semantic tag to describe the content included in the main section of the page.

Lines 19-26: <nav>...</nav>

Semantic tag used to describe the navigation section of the page.

Line 20: <h3>

Special header tag to bring attention to this section of the page.

Lines 21 - 25: ...

Unordered list with hyperlinks to external content.

Lines 22 - 24: and <a>

Each describes a single line in this list.

Each <a> references an external link. Instructions on how to add a hyperlink follow:

Format: Word/words you want user to click on

Example: Best Search Engine!

Include target="_blank" after your URL if you want the user to go to the link in a new tab. Very useful feature for external content.

New Window/Tab Example:

Best Search Engine!

Setup <article> within <section>

Lines 28 - 33: <article>...</article>

Content within this section will appear to the right of the <nav> section on lines 19 – 26.

Line 29: <h1>

Largest default heading in HTML.

Lines 30-31: ...

Two lines of paragraph content. Please add as much content as you'd like to here. Only use a closing tag when you have finished adding content.

Line 32: <button>

This button will be customized using CSS. Please update the button text to your own text.

Current (the highlighted section can be customized):

<button id="animated">Fall is near!!

Line 34: </section>

End of the main content on the page

Setup <footer> within <container>, close the document, commit changes, view initial results

Lines: 36 - 42: <footer>...</footer>

Content that will appear at the bottom of the page.

Line 37:

Custom ID that will be used in CSS to customize this section of the page

Line 38:

Self closing line break element. Used instead of to create a single line break vs. double line break.

```
Line 39: <a href="mailto:shonna.dorsey@gmail.com">shonna.dorsey@gmail.com</a>
```

Using an href attribute with mailto:email address results in the default email client opening with the email address that appears after mailto in the 'to' field.

```
Line 41: <a href="tel:14023511536">402.351.1536</a>
```

Using an href attribute with tel:phone number results in the default phone app opening with the phone number in the phone number field. Try this on your smartphone after you save the content.

Line 42: </footer>

Closing footer tag.

Line 43: </div>

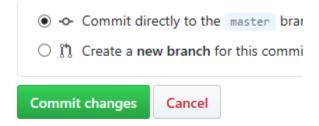
Closing div for the container class on line 12

Line 44: </body>

Closing body tag for all content on the page

Line 45: </html>

Closing html tag signifies the end of the document Click the commit changes button at the bottom of the page once you are ready to submit your index.html file.



Go to your page (tiny.cc/**NameYouChose**) to view the current results. It may take a minute, but once the page content is loaded, you should see something like this:

I love fall!

Fall Activities and Images

- Fall Activities in Omaha
- Beautiful Fall Photos
- Fall Recipes

Fall is the best

Not only is the weather better, but the fashion is the best! Layers anyone?

Click the button below for a beautful fall background!

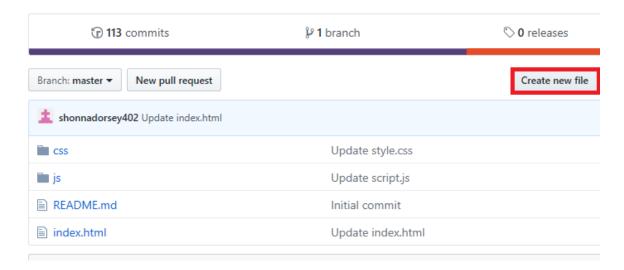
Fall is near!!

Shonna Dorsey shonna.dorsey@gmail.com 402.351.1536

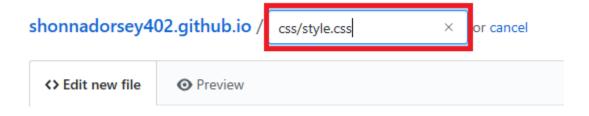
Not very exciting yet! We are going to change that with some CSS.

Create your CSS file

1. Go back to the root of your github repository for this project. (You should see your index.html file and your README.MD file). Click the **Create New File** button:



Once you have clicked the Create New File button, you are going to create a CSS folder
with a file called style.css (all lowercased). To create a folder, simply type the folder
name followed by an "/" then add the name of the file you'd like to add (see example
below).



3. Click into the editor. Let's start styling!

```
1
     /*toggleClass content for jQuery */
2
     .fall {
3
         background-image: url("https://images.pexels.com/photos/33109/fall-autumn-red-season.jpg");
4
5
     .text {
        color: #fff;
6
7
       background: #6B0200;
8
     }
9
    .content {
        background-image: url("https://images.pexels.com/photos/589840/pexels-photo-589840.jpeg");
10
         color: #fff;
11
12
13
     .navigation {
14
        background:#6B0200;
15
       color: white;
16
     }
17
18
   .links {
19
           color: #fff;
20
```

Create toggleClass() references for jQuery

Line 1: /*toggleClass content for jQuery */

This is an example of a comment. Comments in CSS start with /* and end with */. All content within a comment will only be seen by the developer or when a user clicks on your page source. Use these throughout your CSS document whenever you want to leave notes for yourself/anyone else who will be reviewing your content.

Line 2 – 4: Fall Class

This content will be used by jQuery to change the background of the page when the user clicks on the button. The format of the background image property in CSS follows. You can use any image you'd like. Pexel.com is recommended and includes thousands of open source photos for the purpose of this project.

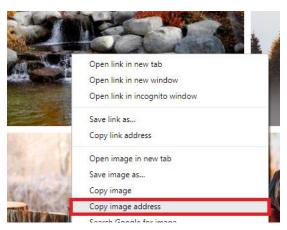
Format:

background-image: url('picture link');

Example:

background-image: url("https://images.pexels.com/photos/33109/fall-autumn-redseason.jpg");

On pexels.com, search for an image then right click on any image you'd like to use then click on **copy image address**:



Go back to your CSS document and paste the address in the field – **important** – be sure to remove all content after the ? (please also delete the question mark) in the URL.

Example:

Original Image Link Text:

https://images.pexels.com/photos/230629/pexels-photo-230629.jpeg?auto=compress&cs=tinysrgb&h=350

Updated Image Link Text:

https://images.pexels.com/photos/230629/pexels-photo-230629.jpeg

Correct format for CSS background-image property:

background-image: url('https://images.pexels.com/photos/230629/pexels-photo-230629.jpeg')

Lines 5 - 8: .text

The .text class includes an updated font color (color:) and background color (background:) for header and footer. Feel free to provide select a different font color and background color.

Lines 9 - 12: .content

The **.content** class includes an updated font color (color:) and background image (background:) for article section of index.html. Feel free to select a different font color and background image.

Lines 13 - 16: .navigation

The .navigation class defines an updated font color (color:) and background color (background:) for <nav> section of index.html. Feel free to select a different font color and background color.

Lines 18 – 20: .links

The .links class defines an updated font color (color:) for hyperlinks in index.html. Feel free to select a different font color for links.

Container Class Modifications and Intro to Flexbox for Responsive Design

```
22
     .container {
23
         /*top right bottom left*/
         padding: 5% 3% 5% 3%;
24
         font-family: 'Raleway';
25
26
    }
27
28
    header {
29
         font-family: 'Homemade Apple', cursive;
30
         text-align: center;
         font-size: 35px;
31
         color: #333;
32
33
         padding: 30px 30px 5px 30px;
34
    }
35
36
    /*flexbox content required for media queries*/
37
     section {
38
         display: -webkit-flex;
         display: flex;
39
40
    }
41
```

Lines 22-26: .container

Padding is added to the container class so that the background image will be visible when a user clicks the button on your page. Font family is set to the Google Font Raleway. You can use any Google Font you list in the <head> section of your HTML document. If you did not add fonts here, you can simply leave it as is.

Lines 28 – 34: header

The header section defines the font, padding, alignment, text size and color for the header section. You may update the **font-family** and **color** properties for the header selector.

Lines 36 – 40: section (the comment on line 36 is optional)

This is an important segment as it will determine how your page appears on different screen sizes by utilizing flexbox. Float and position were used in the past, but are difficult to control. Flexbox (Flexible Box Layout Model) is an updated approach to manage page flow on different screen sizes.

Navigation Section Modifications

```
42
     /* Style the navigation menu */
43
     nav {
44
         -webkit-flex: 20%;
45
         -ms-flex: 20%;
46
         flex: 20%;
47
         background: #ccc;
         padding: 10px;
48
         height: 1000px;
49
50
         overflow-y: hidden;
51
     }
52
     /* Style the list inside the menu */
54
     nav ul {
         list-style-type: none;
56
         padding: 0;
     }
58
59
     a {
         text-decoration: none;
61
62
63
     a:hover {
64
         text-decoration: underline;
65
     }
66
67
     /* Style the content */
     article {
         -webkit-flex: 80%;
70
         -ms-flex: 80%;
         flex: 80%;
71
72
         background-color: #f1f1f1;
         padding: 10px;
    }
```

Lines 43 - 51: nav

Describes the left navigation section of the page. Recommend keeping all content as it is. You may consider increasing/reducing the size of the flexbox (currently set to 20% of the container width – lines 44-46)

Lines 54 - 57: nav ul

This selector targets any tags under the <nav> tag. A outside of <nav> would not be impacted by this selector. **list-style-type: none;** indicates that this list will not have a bullet () or a number ().

Lines 59 - 65: a, a:hover

The first selector (a{) includes text-decoration: none; which means, do not underline. However, with a:hover we reintroduce the underline, but it will only appear when the user hovers over a hyperlink

Lines 68 - 74: article

This section defines the size (80%), the background color and padding around the content.

Media Queries to Customize Content Based on Screen Size

```
85
       @media (max-width: 600px) {
86
          section {
             -webkit-flex-direction: column;
87
             flex-direction: column;
88
89
           }
90
91
           nav{
92
               height: 100%;
           }
94
           #animated {
96
               animate: 0;
97
           }
98
99
           hr {
               display: none;
           }
102
       }
```

Lines 85: @media (max-width: 600px)

This is a media query and will include a different set of properties and values for a variety of selectors for screen sizes that are 600px wide and smaller.

Lines 86 -89: section

Sets the sections to be stacked vs. the original layout.

Lines 91 - 93: nav

Adjusts the nav height from 1000px to 100% which means that it will be tall enough to accommodate its content.

Lines 99 - 101: hr

display: none; is the same as hide

Line 102: }

Important: remember to close the media query!

Animated Button Setup

```
104
      button:hover {
           transition: box-shadow 1s ease-in-out;
           box-shadow: 5px 5px 5px grey;
      }
      #animated {
110
      font-family: 'Raleway';
111
      width:200px;
112
      padding: 5px;
113
      background: #6B0200;
114
      color: #fff;
115
      position: relative;
116
      font-weight:bold;
      font-size:20px;
118
      padding:10px;
119
      animation:animated 5s 1;
120
      border-radius:5px;
      -webkit-border-radius:5px;
122
      }
```

Lines 104 - 107: button:hover

This section adds a shadow behind the button when a user hovers over the button. Feel free to change the color of the hover on line 106 (currently grey)

Lines 109 - 122: #animated

This section includes styling for the #animated button on the page. Feel free to change:

- **Line 110: font-family** (remember: if you are using a different Google Font, it has to be listed in the head section of your index.html document)
- **Line 111: width -** you may need to adjust the width of the button if your button text is much longer or shorter than "Fall is near!!" as provided in the example.
- Line 113: background this is the color of the button. The button can be any color you choose
- **Line 114: color** this is the text color of the button. The button text can be any color you choose
- Line 117: font-size the font can be any size you choose.
- **Line 119:** animation **5s** is the duration of the animation described in the next section. You can increase/decrease the length of the animation. **1** is the number of times the animation will run. Change to **infinite** to see what happens.

Finally – the most fun! Button animation!

```
124
      @keyframes animated
125
126
      0% {transform: rotate(0deg);left:0px;}
127
      25% {transform: rotate(20deg);left:0px;}
128
      50% {transform: rotate(0deg);left:500px;}
129
      55% {transform: rotate(0deg);left:500px;}
130
      70% {transform: rotate(0deg);left:500px;background:#C95101; color:#fff;}
131
      100% {transform: rotate(-720deg);left:0px;}
132
```

Lines 124: @keyframes animated

The @keyframes CSS at-rule controls the intermediate steps in a CSS animation sequence by defining styles for keyframes (or waypoints) along the animation sequence (source: http://tiny.cc/mozilla-keyframes). For this animation, we are targeting the animated button in index.html which is also called animated.

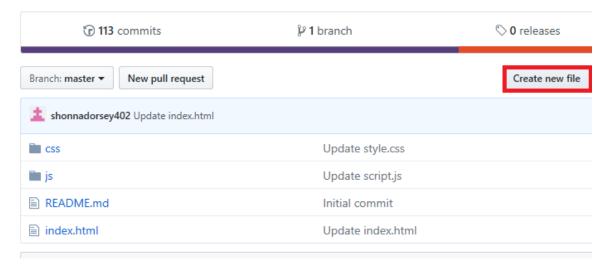
Lines 125 – 132: Animation

- Line 126: starts the animation
- Line 127: at the 25% point of the animation, rotate the button by 20 degrees
- Line 128: at the 50% point of the animation, move the button 500px to the right (add 500px of space to the left) and rotate it back to 0 degrees
- Line 129: at the 55% point of the animation, move the button 500px to the right (add 500px of space to the left)
- Line 130: at the 70% point of the animation, move the button 500px to the right (add 500px of space to the left), change the background color (you can update the color here), and change the text color (you can change the text color here)
- Line 131: at the 100% point of the animation, rotate the button by -720 degrees and move it back to its original position. (you may update the rotation by any multiple of 360 be sure to include a negative sign in front of your rotation.

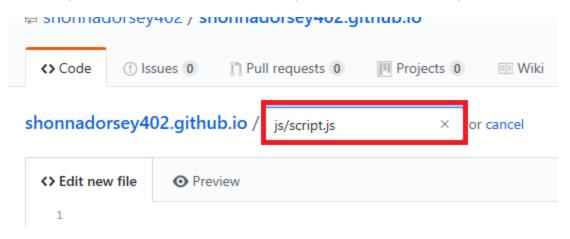
That's it for CSS! Commit your file. Reload your page at tiny.cc/NameYouChose to see the completed version. Refer to tiny.cc/project-files to view the code if you run into issues.

Add jQuery to your site (final step!)

1. Go back to the root of your github repository for this project. (You should see your index.html file, your css folder and your README.MD file). Click the Create New File link:



2. Once you have clicked the create new file button, you are going to create a js folder with a file called script.js (all lowercased). To create a folder, simply type the folder name followed by an "/" then add the name of the file you'd like to add (see example below).



3. Add content to your script.js file

```
$(document).ready(function(){
2
             $("button").click(function(){
3
                  $("body").toggleClass("fall");
                  $("header, footer").toggleClass("text");
                  $("nav").toggleClass("navigation");
6
                  $("a").toggleClass("links");
                  $("article").toggleClass("content");
7
8
                  $("#update").toggleClass("hide");
9
         });
10
     });
```

Line 1: \$(document).ready(function(){

Ensures the document it is attached to has loaded before any of the functions kick off. In this case, we do not have any functions that kick off on page load.

Line 2: \$("button").click(function(){

Once the button is clicked, do everything that is contained within the click function (lines 3-8). Important: do not miss any semicolons, opening/closing parentheses or opening/closing braces. Your code may not work if any of the symbols described are not present.

Lines 3 -8: toggleClass method

The toggleClass method allows us target elements and add/remove CSS classes. In this case we are transforming the look and feel of the body, header, footer, navigation bar, article background, and hyperlinks.

Lines 9 – 10: close your functions });

Each function needs to be closed. In this case, we have two functions, so you should see)}; twice at the end of the script.js document.

That's it for this project! Commit your file. Reload your page at tiny.cc/NameYouChose to see the completed version. Refer to tiny.cc/project-files to view the code if you run into issues.

Additional Resources

Free online coding courses:

https://www.codecademy.com/ - Codecademy - free online web development tutorials
https://learn.freecodecamp.org/ - FreeCodeCamp - learn to code for free. Opportunities to help nonprofits.

Code Snippets

https://codepen.io/ - creative uses of jQuery, JavaScript, CSS

https://css-tricks.com/ - tips and tricks for CSS. Great help forum.

https://www.w3schools.com/ - excellent resource for front end development

Code Editors

https://atom.io/ - Developed by Github.

http://brackets.io/ - lightweight, powerful