

Introduction to HTML + CSS + JS

Aaron Geller



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What lies beneath?

Don't look behind you... it's... it's... code!!!

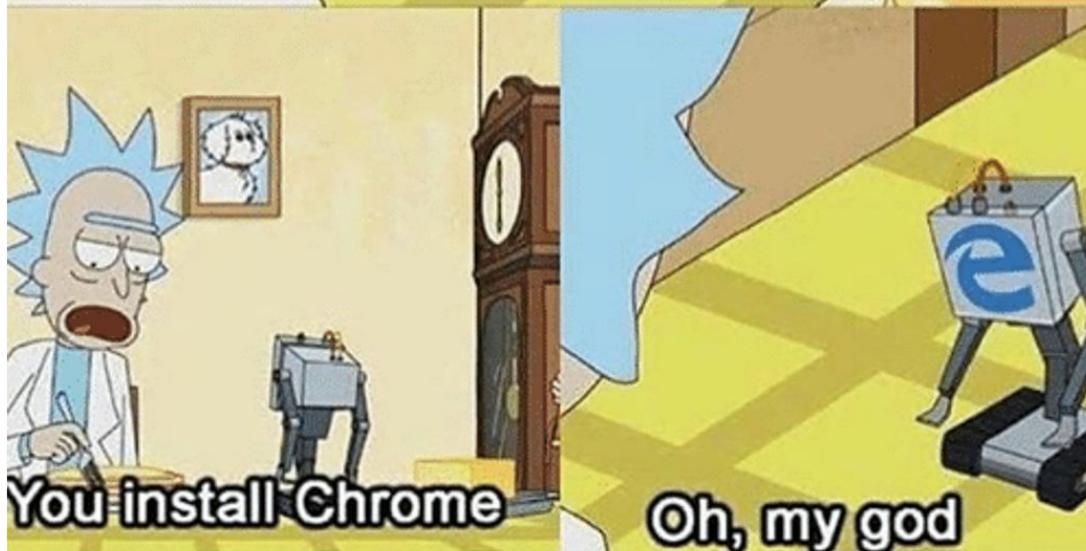
Browsers “simply” interpret code that is written in HTML + CSS + Javascript to display the websites that you love.

There are many choices for browsers out there. Uniformity across browsers, in how the code is interpreted and displayed is sometimes a problem. I recommend sticking with Chrome or Firefox for web development.





What is my purpose?





The Big Three

HTML



CSS



Javascript





What is HTML?

HyperText Markup Language

- Sets the basic structure of a website
- Uses tags (also attributes like “id” and “class”) to identify different types of content

```
<p> This is a paragraph. </p>
```

If we use a house as a metaphor, HTML are the walls, roof, foundation and all structural elements.

Title of an Awesome Website

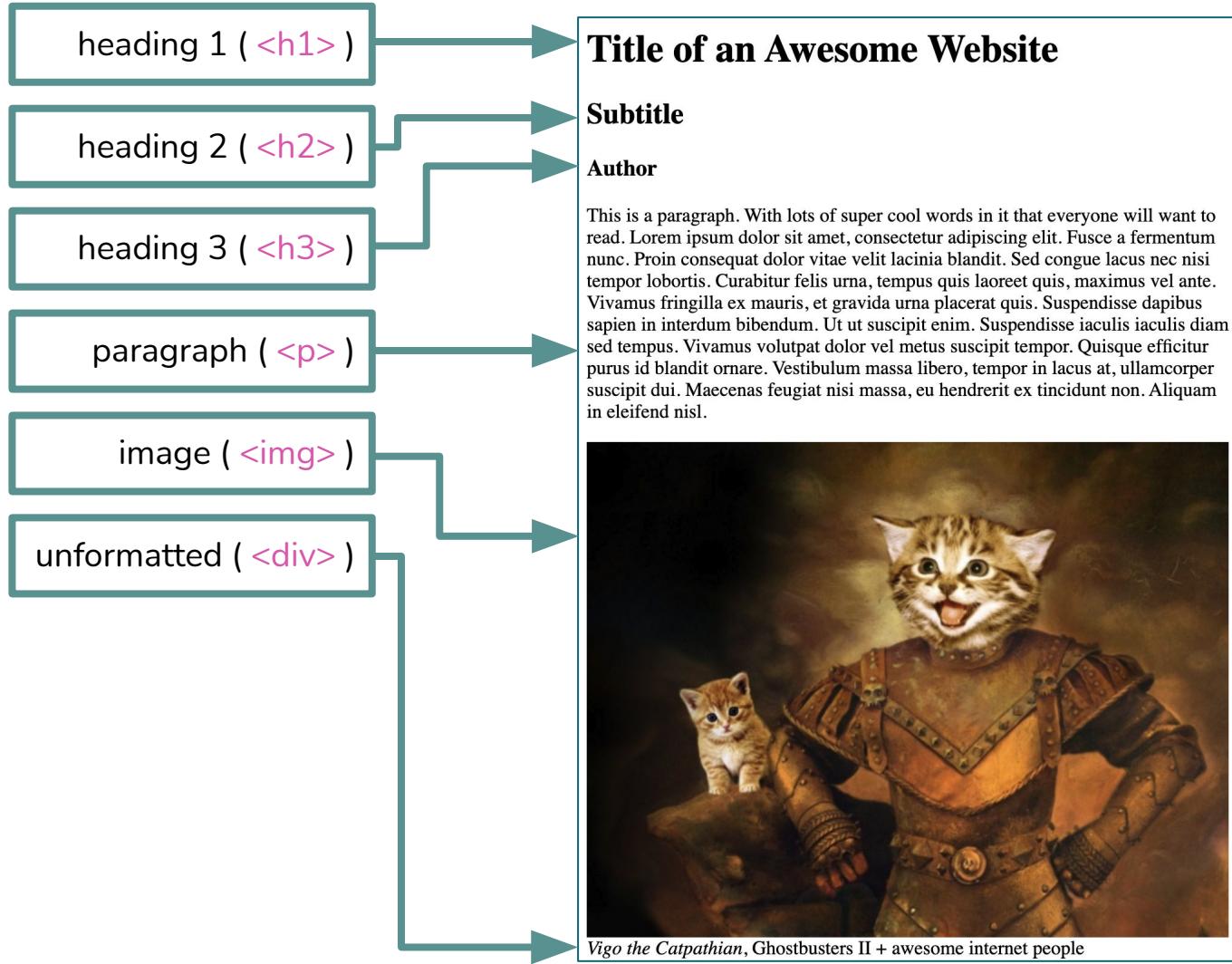
Subtitle

Author

This is a paragraph. With lots of super cool words in it that everyone will want to read. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce a fermentum nunc. Proin consequat dolor vitae velit lacinia blandit. Sed congue lacus nec nisi tempor lobortis. Curabitur felis urna, tempus quis laoreet quis, maximus vel ante. Vivamus fringilla ex mauris, et gravida urna placerat quis. Suspendisse dapibus sapien in interdum bibendum. Ut ut suscipit enim. Suspendisse iaculis iaculis diam sed tempus. Vivamus volutpat dolor vel metus suscipit tempor. Quisque efficitur purus id blandit ornare. Vestibulum massa libero, tempor in lacus at, ullamcorper suscipit dui. Maecenas feugiat nisi massa, eu hendrerit ex tincidunt non. Aliquam in eleifend nisl.



Vigo the Catpathian, Ghostbusters II + awesome internet people





Basic HTML commands

`<html></html>`

Your entire website should live in between these.

`<head></head>`

The header contains special information, like the page title and links to external libraries or style sheets.

`<body></body>`

Everything that should be visible on the website goes in here (usually the largest portion of the code).

`<h1></h1>`

Up to six levels of headers are available with `<h1>` as the largest.

`<p></p>`

Paragraph; most normal text can go inside these tags.

`<a>`

Links to other websites.

`, <i></i>`

Bold (``) and italics (`<i>`).

``

Lists; in between these you insert items with the `` tag. There are also numbered lists with ``.

``

Images.

`<div></div>`

Unformatted element; very useful for defining different layouts and objects you will style/manipulate.

What is CSS?

Cascading Style Sheets

- Sets the colors, sizes, mood and tone of a website
- Accesses different tags from HTML to provide the style

```
p {  
    font-family: Verdana;  
    text-align: justify;  
    font-size: 14px;  
    margin: 20px 10px 10px 10px;  
}
```

If we use a house as a metaphor, CSS is the paint, wallpaper, tiles, siding, etc.

Subtitle

Author

This is a paragraph. With lots of super cool words in it that everyone will want to read. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce a fermentum nunc. Proin consequat dolor vitae velit lacinia blandit. Sed congue lacus nec nisi tempor lobortis. Curabitur felis urna, tempus quis laoreet quis, maximus vel ante. Vivamus fringilla ex mauris, et gravida urna placerat quis. Suspendisse dapibus sapien in interdum bibendum. Ut ut suscipit enim. Suspendisse iaculis iaculis diam sed tempus. Vivamus volutpat dolor vel metus suscipit tempor. Quisque efficitur purus id blandit ornare. Vestibulum massa libero, tempor in lacus at, ullamcorper suscipit dui. Maecenas feugiat nisi massa, eu hendrerit ex tincidunt non. Aliquam in eleifend nisl.

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Title of an Awesome Website

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Basic CSS manipulations

colors

Foreground, background, borders, shadows, etc. Enter either as string, hex code or rgb.

spacing

Margins for exterior spacing; padding for interior spacing.

position

Can be absolute on the page, or relative to other object.

fonts

Font family, style, size, line height, text alignment, etc.

sizes

Width, height.

borders

Styles, thickness, color (or none).

box shadow

Shadows around objects (lots of control on the look).

transform

Move, rotate, and scale objects.

animations

Some simple animations can be done with only css (e.g., blinking text). Transition times can be defined.



Connecting HTML and CSS

link

In order to use your stylesheet, e.g., index.css, in your website, you need to link it within the header of the HTML document with, e.g., `<link rel="stylesheet" type="text/css" href="index.css" />`

id

Given an HTML object with attribute `id="foo"`, you access that in CSS with `#foo{ mystyle : value; }`. Generally an id should be unique and only used once in the HTML.

class

Given an HTML object with attribute `class="fee"`, you access that in CSS with `.fee{ mystyle: value; }`. Classes are meant to be reused. They can also serve as a way to select multiple objects in javascript.

inline

Sometimes it is beneficial to include the style “inline” within the HTML code, with the attribute `style = “mystyle1 : value1; mystyle2 : value2;”`. These supersede the styles that may be in the CSS for that object. These are also the styles that could be modified with javascript.

What is JS?

Javascript

- Modifies website content
- Initiates different behavior based on user actions (e.g., mouse clicks)

```
function toggleDropdown(id){  
    var drop = document.getElementById(id);  
    console.log(id, drop, drop.style.display);  
    if (drop.style.display == "block" ){  
        drop.style.display = "none";  
    } else {  
        drop.style.display = "block";  
    }  
}
```

If we use a house as a metaphor, JS tells the doors and windows how to open when you pull/push the handle.

Subtitle

Author

This is a paragraph. With lots of super cool words in it that everyone will want to read. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce a fermentum nunc. Proin consequat dolor vitae velit lacinia blandit. Sed congue lacus nec nisi tempor lobortis. Curabitur felis urna, tempus quis laoreet quis, maximus vel ante. Vivamus fringilla ex mauris, et gravida urna placerat quis. Suspendisse dapibus sapien in interdum bibendum. Ut ut suscipit enim. Suspendisse iaculis iaculis diam sed tempus. Vivamus volutpat dolor vel metus suscipit tempor. Quisque efficitur purus id blandit ornare. Vestibulum massa libero, tempor in lacus at, ullamcorper suscipit dui. Maecenas feugiat nisi massa, eu hendrerit ex tincidunt non. Aliquam in eleifend nisl.

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Javascript is awesome!

Basically anything that you can dream of doing with your website, can be done in javascript. And someone has probably already done it and posted online with their steps (and/or code).

There are LOTS of javascript libraries that you can download and use. My favorites are [d3.js](#) , [three.js](#), [dat.gui](#) [p5.js](#) and [ml5.js](#) .

If you're used to coding in languages like python, javascript will come very naturally.

Some ideas of what you might use javascript for:

- Select an HTML element and change its style (e.g., color, size, location, etc.).
- Initiate actions when a user clicks/hovers/touches/drags some HTML element.
- Read in a .csv (or other type of) data file and use that to populate a webpage.
- Generate 2D or 3D plots of data and allow the user to manipulate it in real time
- Populate a database from user inputs to a form (e.g., connect to a Google Sheet)
- Initiate a download of a data file or an image of a plot that you've generated on the page.



Web development utils

There are apps like *Dreamweaver*, platforms like *WordPress*, online templates you can download, etc. They all have HTML+CSS+JS under the hood. Personally, I prefer to write my own code and know exactly what is in there.

text editor

e.g., [Sublime](#) or any other app without markup (not *Word*)

browser

e.g., [Chrome](#) or [Firefox](#)

Python

to start a local server (or any other app that can do this)

Steps:

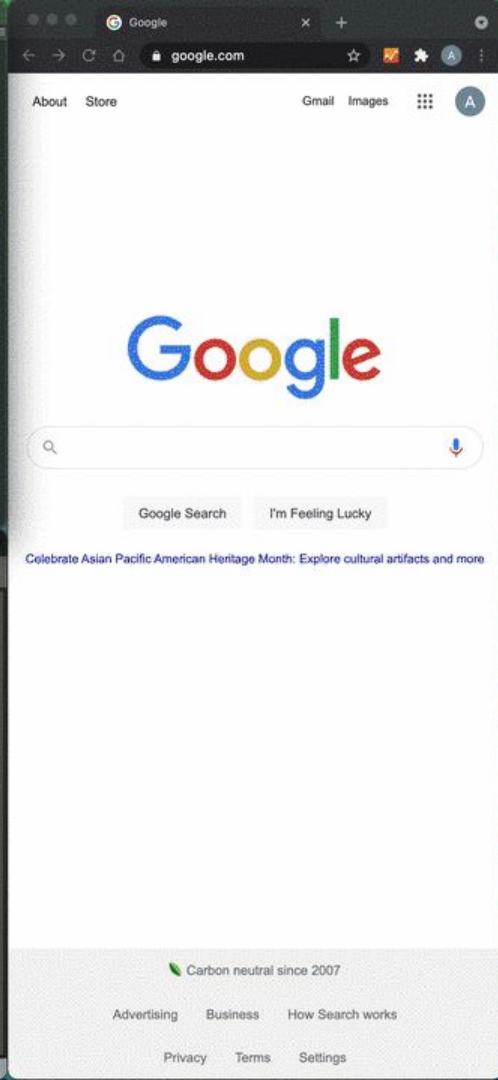
1. In terminal : ***python -m http.server***
2. In browser : ***http://localhost:8000/***

Expert tip: GitHub can host your websites for free on their [github.io pages](#).

(base) [ageller@williamson:introToHTMLCSSJS] \$

```
dropdown.js
1 //this is a simple javascript function to toggle the display on/off for the dropdown menu
2 function toggleDropdown(id){
3     //grab the correct dropdown content element based on it's ID
4     var drop = document.getElementById(id);
5
6     //console.log is your best friend for debugging!
7     console.log(id, drop, drop.style.display);
8
9     //toggle the display style
10    if (drop.style.display == "block"){
11        drop.style.display = "none";
12    } else {
13        drop.style.display = "block";
14    }
15}
16 }
```

Line 16, Column 2 3 misspelled words Tab Size: 4 JavaScript



View Source

For many websites you can view the source code very easily. If you're curious about how a website achieved a certain look, this can show you.

my title localhost:8000

Title of an Awesome Website

Subtitle

Author

This is a paragraph. With lots of super cool words in it that everyone will want to read. *Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce a fermentum nunc. Proin consequat dolor vitae velit lacinia blandit. Sed congue lacus nec nisi tempor lobortis. Curabitur felis urna, tempus quis laoreet quis, maximus vel ante. Vivamus fringilla ex mauris, et gravida urna placerat quis. Suspendisse dapibus sapien in interdum bibendum. Ut ut suscipit enim. Suspendisse iaculis iaculis diam sed tempus. Vivamus volutpat dolor vel metus suscipit tempor. Quisque efficitur purus id blandit ornare. Vestibulum massa libero, tempor in lacus at, ullamcorper suscipit dui. Maecenas feugiat nisi massa, eu hendrerit ex tincidunt non. Aliquam in eleifend nisl.*



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**Let's look at all the
code that produces the
awesome *Catpathian*
website...**

index.html

```
1 <html>
2   <head>
3     <!-- title and other meta data go in the "head" portion -->
4     <title>my title</title>
5
6     <!-- my style sheet -->
7     <link rel="stylesheet" type="text/css" href="index.css" />
8
9   </head>
10
11 <body>
12   <!-- all website content that will be visible to the user go in the body -->
13
14     <!-- here is the text that I will display -->
15     <h1>Title of an Awesome Website </h1>
16     <h2>Subtitle </h2>
17     <h3>Author </h3>
18
19     <p>This is a paragraph. With lots of super cool words in it that everyone will want to read.  
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce a fermentum nunc. Proin consequat  
dolor vitae velit lacinia blandit. Sed congue lacus nec nisi tempor lobortis. Curabitur felis  
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suscipit dui. Maecenas feugiat nisi massa, eu hendrerit ex tincidunt non. Aliquam in eleifend nisl.  
</p>
20
21
22     <!-- here is an image I will display -->
23     <div id="image">
24       </img>
25       <div class="imageCredit"><i>Vigo the Catpathian</i>, Ghostbusters II + awesome internet people</div>
26     </div>
27
28     <!-- here is a menu. This will only be visible when the css and js files are linked in -->
29     <div id="hamburger" onclick="toggleDropdown('dropdown')">
30       <div></div>
31       <div></div>
32       <div></div>
33     </div>
34     <div id="dropdown" style="display:none">
35       <div><a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank">item 1</a></div>
36       <div><a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank">item 2</a></div>
37       <div></div><a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank">item 3</a>
38     </div>
39
40     <!-- load my javascript -->
41     <script src="dropdown.js"></script>
42
43   </body>
44 </html>
```

Title of an Awesome Website

Subtitle

Author



item 1

item 2

item 3

This is a paragraph. With lots of super cool words in it that everyone will want to read. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce a fermentum nunc. Proin consequat dolor vitae velit lacinia blandit. Sed congue lacus nec nisi tempor lobortis. Curabitur felis urna, tempus quis laoreet quis, maximus vel ante. Vivamus fringilla ex mauris, et gravida urna placerat quis. Suspendisse dapibus sapien in interdum bibendum. Ut ut suscipit enim. Suspendisse iaculis iaculis diam sed tempus. Vivamus volutpat dolor vel metus suscipit tempor. Quisque efficitur purus id blandit ornare. Vestibulum massa libero, tempor in lacus at, ullamcorper suscipit dui. Maecenas feugiat nisi massa, eu hendrerit ex tincidunt non. Aliquam in eleifend nisl.



thian, Ghostbusters II + awesome internet people

index.html

```
1 <html>
2   <head>
3     <!-- title and other meta data go in the "head" portion --&gt;
4     &lt;title&gt;my title&lt;/title&gt;
5
6     <!-- my style sheet --&gt;
7     &lt;link rel="stylesheet" type="text/css" href="index.css" /&gt;
8
9   &lt;/head&gt;
10
11 &lt;body&gt;
12   <!-- all website content that will be visible to the user go in the body --&gt;
13
14     &lt;!-- here is the text that I will display --&gt;
15     &lt;h1&gt;Title of an Awesome Website &lt;/h1&gt;
16     &lt;h2&gt;Subtitle &lt;/h2&gt;
17     &lt;h3&gt;Author &lt;/h3&gt;
18
19     &lt;p&gt;This is a paragraph. With lots of super cool words in it that everyone will want to read. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce a fermentum nunc. Proin consequat dolor vitae velit lacinia blandit. Sed congue lacus nec nisi tempor lobortis. Curabitur felis urna, tempus quis laoreet quis, maximus vel ante. Vivamus fringilla ex mauris, et gravida urna placerat quis. Suspendisse dapibus sapien in interdum bibendum. Ut ut suscipit enim. Suspendisse iaculis iaculis diam sed tempus. Vivamus volutpat dolor vel metus suscipit tempor. Quisque efficitur purus id blandit ornare. Vestibulum massa libero, tempor in lacus at, ullamcorper suscipit dui. Maecenas feugiat nisi massa, eu hendrerit ex tincidunt non. Aliquam in eleifend nisl.&lt;/p&gt;
20
21
22     &lt;!-- here is an image I will display --&gt;
23     &lt;div id="image"&gt;
24       &lt;img src="vigo-the-cat.jpg" /&gt;
25       &lt;div class="imageCredit"&gt;&lt;i&gt;Vigo the Catpathian&lt;/i&gt;, Ghostbusters II + awesome internet people&lt;/div&gt;
26     &lt;/div&gt;
27
28     &lt;!-- here is a menu. This will only be visible when the css and js files are linked in --&gt;
29     &lt;div id="hamburger" onclick="toggleDropdown('dropdown')"&gt;
30       &lt;div&gt;&lt;/div&gt;
31       &lt;div&gt;&lt;/div&gt;
32       &lt;div&gt;&lt;/div&gt;
33     &lt;/div&gt;
34     &lt;div id="dropdown" style="display:none"&gt;
35       &lt;div&gt;&lt;a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank"&gt;item 1&lt;/a&gt;&lt;/div&gt;
36       &lt;div&gt;&lt;a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank"&gt;item 2&lt;/a&gt;&lt;/div&gt;
37       &lt;div&gt;&lt;a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank"&gt;item 3&lt;/a&gt;&lt;/div&gt;
38     &lt;/div&gt;
39
40     &lt;!-- load my javascript --&gt;
41     &lt;script src="dropdown.js"&gt;&lt;/script&gt;
42
43   &lt;/body&gt;
44 &lt;/html&gt;</pre>
```

The screenshot shows the rendered HTML from the code editor. The title 'Title of an Awesome Website' is displayed in a large font at the top. Below it is a subtitle 'Subtitle' and an author section. The main content area contains a paragraph of placeholder text. To the right, there is a sidebar with three items: 'item 1', 'item 2', and 'item 3'. At the bottom of the page is a footer with the text 'thian, Ghostbusters II + awesome internet people'. The main content area features a large image of a cat dressed in medieval-style armor, with a smaller cat sitting next to it.

index.html + index.css

```
1 <html>
2
3   <head>
4     <!-- title and other meta data go in the "head" portion -->
5     <title>my title</title>
6
7     <!-- my style sheet -->
8     <link rel="stylesheet" type="text/css" href="index.css" />
9
10    </head>
11
12  <body>
13    <!-- all website content that will be visible to the user go in the body -->
14
15    <!-- here is the text that I will display -->
16    <h1>Title of an Awesome Website </h1>
17    <h2>Subtitle </h2>
18    <h3>Author </h3>
19    <p>This is a paragraph. With lots of super cool words in it that everyone will want to read. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce a fermentum nunc. Proin consequat dolor vitae velit lacinia blandit. Sed congue lacus nec nisi tempor lobortis. Curabitur felis urna, tempus quis laoreet quis, maximus vel ante. Vivamus fringilla ex mauris, et gravida urna placerat quis. Suspendisse dapibus sapien in interdum bibendum. Ut ut suscipit enim. Suspendisse iaculis iaculis diam sed tempus. Vivamus volutpat dolor vel metus suscipit tempor. Quisque efficitur purus id blandit ornare. Vestibulum massa libero, tempor in lacus at, ullamcorper suscipit dui. Maecenas feugiat nisi massa, eu hendrerit ex tincidunt non. Aliquam in eleifend nisl.</p>
20
21    <!-- here is an image I will display -->
22    <div id="image">
23      </img>
24      <div class="imageCredit"><i>Vigo the Catpathian</i>, Ghostbusters II + awesome internet people</div>
25    </div>
26
27    <!-- here is a menu. This will only be visible when the css and js files are linked in -->
28    <div id="hamburger" onclick="toggleDropdown('dropdown')">
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35      <a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank">item 2</a></div>
36      <div></div><a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank">item 3</a>
37    </div>
38
39    <!-- load my javascript -->
40    <script src="dropdown.js"></script>
41
42  </body>
43
44 </html>
```

```
1   body {
2     margin:0;
3     font-family: Verdana;
4     text-align: left;
5   }
6   p {
7     text-align: justify;
8     font-size: 14px;
9     margin:20px 10px 10px 10px;
10  }
11  h1 {
12    font-family: Georgia;
13    background-color: #285667;
14    padding:10px;
15    margin:0;
16    font-size: 32px;
17    color: #4CAF50;
18    line-height: 60px;
19    border-bottom: 6px solid #5c8485;
20  }
21  h2 {
22    font-family: Georgia;
23    font-size: 28px;
24    margin:0 0 10px;
25    padding:0;
26    color: #285667;
27    font-style: italic;
28  }
29  h3 {
30    font-family: Georgia;
31    font-size: 20px;
32    margin:10px;
33    color: #285667;
34    padding:0;
35  }
36  img{
37    margin-left:20px;
38    width:95%;
39  }
40  #image{
41    margin:10px;
42  }
43  .imageCredit{
44    font-size: 11px;
45    color: #b579e;
46    transform: rotate(-90deg);
47    transform-origin: left top;
48  }
49  #hamburger{
50    position: absolute;
51    top: 10px;
52    right: 10px;
53    cursor: pointer;
54  }
55  #hamburger div{
56    width: 22px;
57    height: 2px;
58    background-color: #d5e1f9;
59    margin: 5px 0;
60  }
61  #dropdown{
62    position: absolute;
63    top: 80px;
64    right: 10px;
65    display: none;
66    background-color: #5c8485;
67    color:#d5e1f9;
68    padding:6px;
69  }
70  #dropdown div{
71    padding:4px;
72  }
73  #dropdown a{
74    color:#d5e1f9;
75    text-decoration: none;
76  }
```

Title of an Awesome Website

Subtitle

Author

This is a paragraph. With lots of super cool words in it that everyone will want to read. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce a fermentum nunc. Proin consequat dolor vitae velit lacinia blandit. Sed congue lacus nec nisi tempor lobortis. Curabitur felis urna, tempus quis laoreet quis, maximus vel ante. Vivamus fringilla ex mauris, et gravida urna placerat quis. Suspendisse dapibus sapien in interdum bibendum. Ut ut suscipit enim. Suspendisse iaculis iaculis diam sed tempus. Vivamus volutpat dolor vel metus suscipit tempor. Quisque efficitur purus id blandit ornare. Vestibulum massa libero, tempor in lacus at, ullamcorper suscipit dui. Maecenas feugiat nisi massa, eu hendrerit ex tincidunt non. Aliquam in eleifend nisl.



thian, Ghostbusters II + awesome internet people

item 1
item 2
item 3

index.html + index.css

```
<h1> Title of an Awesome Website </h1>
```

```
h1 {  
    font-family: Georgia;  
    background-color: #285667;  
    padding: 10px;  
    margin: 0;  
    font-size: 32px;  
    color: #94cfcc;  
    line-height: 60px;  
    border-bottom: 6px solid #5c8485;  
}
```

Title of an Awesome Website

index.html + index.css

```
<div class="imageCredit"><i>Vigo the Catpathian</i>, Ghostbusters II + awesome internet people</div>
```

```
.imageCredit{  
    font-size: 11px;  
    color: #bd579e;  
    transform: rotate(-90deg);  
    transform-origin: left top;  
}
```

Vigo the Catpathian, Ghostbusters II + awesome internet people

index.html + index.css + dropdown.js

```
1 <html>
2
3   <head>
4     <!-- title and other meta data go in the "head" portion -->
5     <title>my title</title>
6
7     <!-- my style sheet -->
8     <link rel="stylesheet" type="text/css" href="index.css" />
9
10    </head>
11
12  <body>
13    <!-- all website content that will be visible to the user go in the body -->
14
15    <!-- here is the text that I will display -->
16    <h1>Title of an Awesome Website </h1>
17    <h2>Subtle </h2>
18    <h3>Author </h3>
19
20    <p>This is a paragraph. With lots of super cool words in it that everyone will want to read. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce a fermentum nunc. Proin consequat dolor vitae velit lacinia blandit. Sed congue lacus nec nisi tempor lobortis. Curabitur felis urna, tempus quis laoreet quis, maximus vel ante. Vivamus fringilla ex mauris, et gravida urna placerat quis. Suspendisse dapibus sapien in interdum bibendum. Ut ut suscipit enim. Suspendisse iaculis iaculis diam sed tempus. Vivamus volutpat dolor vel metus suscipit tempor. Quisque efficitur purus id blandit ornare. Vestibulum massa libero, tempor in lacus at, ullamcorper suscipit dui. Maecenas feugiat nisi massa, eu hendrerit ex tincidunt non. Aliquam in eleifend nisl.</p>
21
22
23    <!-- here is an image I will display -->
24    <div id="image">
25      </img>
26      <div class="imageCredit"><i>Vigo the Catpathian</i>, Ghostbusters II + awesome internet people</div>
27    </div>
28
29    <!-- here is a menu. This will only be visible when the css and js files are linked in -->
30    <div id="hamburger" onclick="toggleDropdown('dropdown')">
31      <div></div>
32      <div></div>
33      <div></div>
34    </div>
35    <div id="dropdown" style="display:none">
36      <a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank">item 1</a></div>
37      <a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank">item 2</a></div>
38      <div></div><a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank">item 3</a>
39    </div>
40
41    <!-- load my javascript -->
42    <script src="dropdown.js"></script>
43
44  </body>
45
46 </html>
```

```
1   body {
2     margin:0;
3     font-family: Verdana;
4     text-align: left;
5   }
6   p {
7     text-align: justify;
8     font-size: 14px;
9     margin:20px 10px 10px 10px;
10  }
11  h1 {
12   font-family: Georgia;
13   background-color: #285667;
14   padding:10px;
15   margin:0;
16   font-size: 32px;
17   color: #e4f4ff;
18   line-height: 60px;
19   border-bottom: 6px solid #5c8485;
20  }
21  h2 {
22   font-family: Georgia;
23   font-size: 28px;
24   margin:0 0 10px;
25   padding:0;
26   color: #285667;
27   font-style: italic;
28  }
29  h3 {
30   font-family: Georgia;
31   font-size: 20px;
32   margin:10px;
33   color: #285667;
34   padding:0;
35   }
36  img{
37   margin-left:20px;
38   width:95%;
39  }
40  #image{
41   margin:10px;
42   }
43  .imageCredit{
44   font-size: 11px;
45   color: #b059e6;
46   transform: rotate(-90deg);
47   transform-origin: left top;
48  }
49  #hamburger{
50   position: absolute;
51   top: 10px;
52   right: 10px;
53   cursor: pointer;
54  }
55  #hamburger div{
56   width: 22px;
57   height: 2px;
58   background-color: #d5e1f9;
59   margin: 5px 0;
60  }
61  #dropdown{
62   position: absolute;
63   top:80px;
64   right:0px;
65   display: none;
66   background-color: #5c8485;
67   color:#d5e1f9;
68   padding:6px;
69  }
70  #dropdown div{
71   padding:4px;
72  }
73  #dropdown a{
74   color:#d5e1f9;
75   text-decoration: none;
76  }
```

Title of an Awesome Website

Subtitle

Author

This is a paragraph. With lots of super cool words in it that everyone will want to read. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce a fermentum nunc. Proin consequat dolor vitae velit lacinia blandit. Sed congue lacus nec nisi tempor lobortis. Curabitur felis urna, tempus quis laoreet quis, maximus vel ante. Vivamus fringilla ex mauris, et gravida urna placerat quis. Suspendisse dapibus sapien in interdum bibendum. Ut ut suscipit enim. Suspendisse iaculis iaculis diam sed tempus. Vivamus volutpat dolor vel metus suscipit tempor. Quisque efficitur purus id blandit ornare. Vestibulum massa libero, tempor in lacus at, ullamcorper suscipit dui. Maecenas feugiat nisi massa, eu hendrerit ex tincidunt non. Aliquam in eleifend nisl.

```
1 //this is a simple javascript function to toggle the display
2 //on/off for the dropdown menu
3 function toggleDropdown(id){
4   //grab the correct dropdown content element based on
5   //it's ID
6   var drop = document.getElementById(id);
7
8   //console.log is your best friend for debugging!
9   console.log(id, drop, drop.style.display);
10
11  //toggle the display style
12  if (drop.style.display == "block") {
13    drop.style.display = "none";
14  } else {
15    drop.style.display = "block";
16  }
17}
```



item 1

item 2

item 3

index.html + index.css + dropdown.js

```
<div id="hamburger" onclick="toggleDropdown('dropdown')">
  <div></div>
  <div></div>
  <div></div>
</div>
<div id="dropdown">
  <div><a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank">item 1</a></div>
  <div><a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank">item 2</a></div>
  <div></div><a href="https://www.w3schools.com/css/css_dropdowns.asp" target="_blank">item 3</a>
</div>
</div>

<!-- load my javascript --&gt;
&lt;script src="dropdown.js"&gt;&lt;/script&gt;</pre>
```

```
#hamburger{
  position: absolute;
  top: 10px;
  right: 10px;
  cursor: pointer;
}
#hamburger div{
  width: 22px;
  height: 2px;
  background-color: #d5e19f;
  margin: 5px 0;
}
#dropdown{
  position: absolute;
  top: 80px;
  right: 0px;
  display: none;
  background-color: #5c8485;
  color: #d5e19f;
  padding: 6px;
}
#dropdown div{
  padding: 4px;
}
#dropdown a{
  color: #d5e19f;
  text-decoration: none;
}
```

```
function toggleDropdown(id){
  //grab the correct dropdown content element based on
  //it's ID
  var drop = document.getElementById(id);

  //console.log is your best friend for debugging!
  console.log(id, drop, drop.style.display);

  //toggle the display style
  if (drop.style.display == "block"){
    drop.style.display = "none";
  } else {
    drop.style.display = "block";
  }
}
```





In Summary

HTML + CSS + JS are your tools for web development.
All you need is a browser, a text editor and Python.

HTML sets the structure (e.g., walls of the house).

CSS sets the style (e.g., color of the paint).

Javascript allows changes and actions (e.g., how to open the doors of the house).

The browser interprets this code to show the website.

The sky's the limit...

The screenshot shows the Firefly WebGL tool interface. At the top, it says "Firefly:" and "A WebGL tool to explore particle-based data" by "Aaron Geller / Alex Gurvich / Northwestern". Below that is a "Instructions:" section with a bulleted list:

- Right click and drag with the mouse to rotate your view.
- Use the scroll wheel to zoom in and out.
- Click the Controls bar on the top left to show/hide a user interface.
- Detailed instructions can be found on the [Firefly GitHub page](#).
- No, I promise this help screen is on and off.

A purple textured button labeled "Click to begin." is visible. The main area shows a dark space background with several celestial bodies represented by colored circles (yellow, green, blue) and their corresponding orbital paths. A toolbar at the top has icons for target selection and controls. A status bar at the bottom indicates "Target" and "Loading ...". A title "Explore the Aquarius Asteroid's Orbit and Impact!" is displayed, along with a detailed description of the simulation's purpose and controls.