

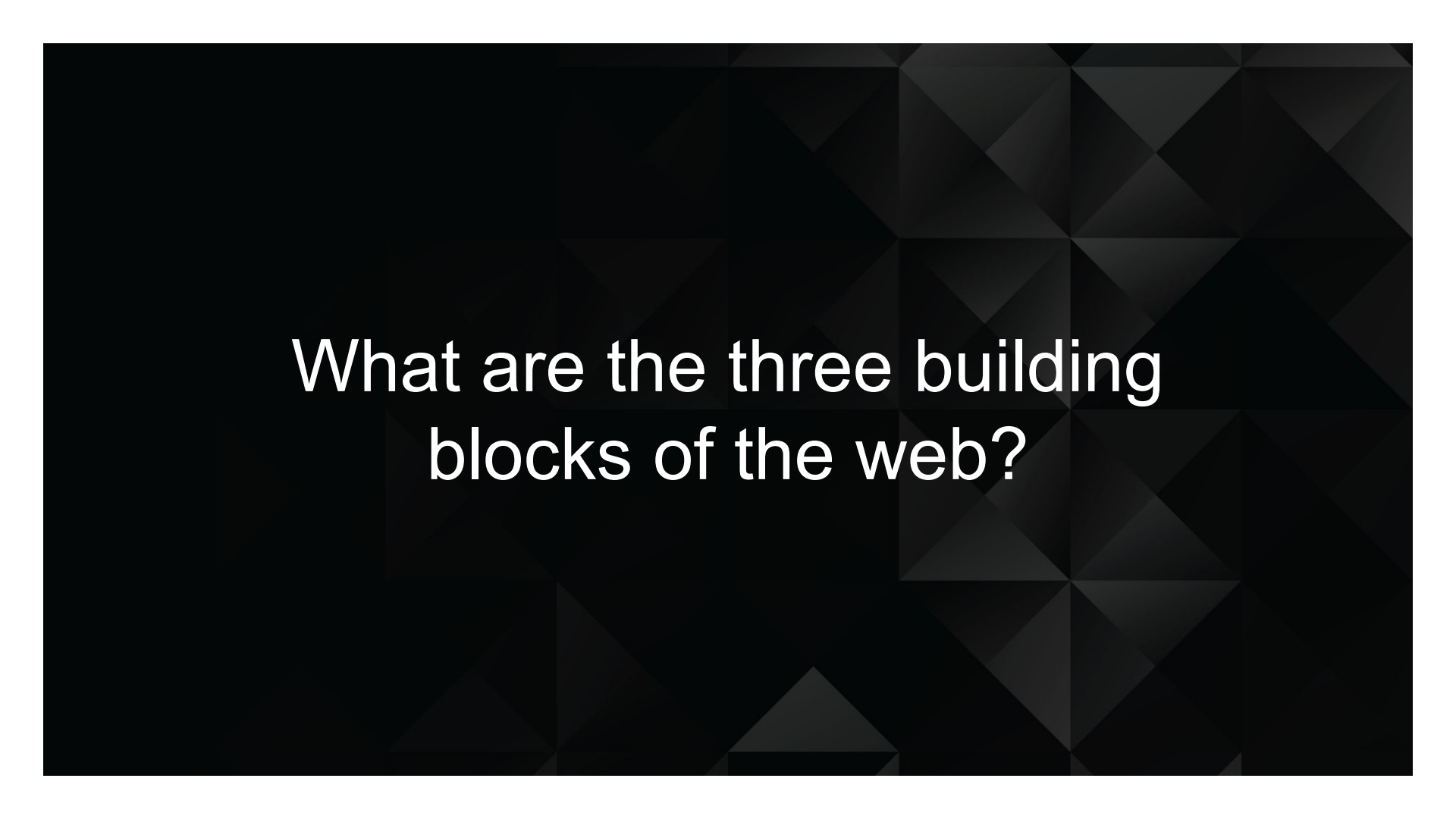


Web APIs

Introduction to the DOM

Web Development
Lesson 4.1






What are the three building
blocks of the web?

Building Blocks of the Web

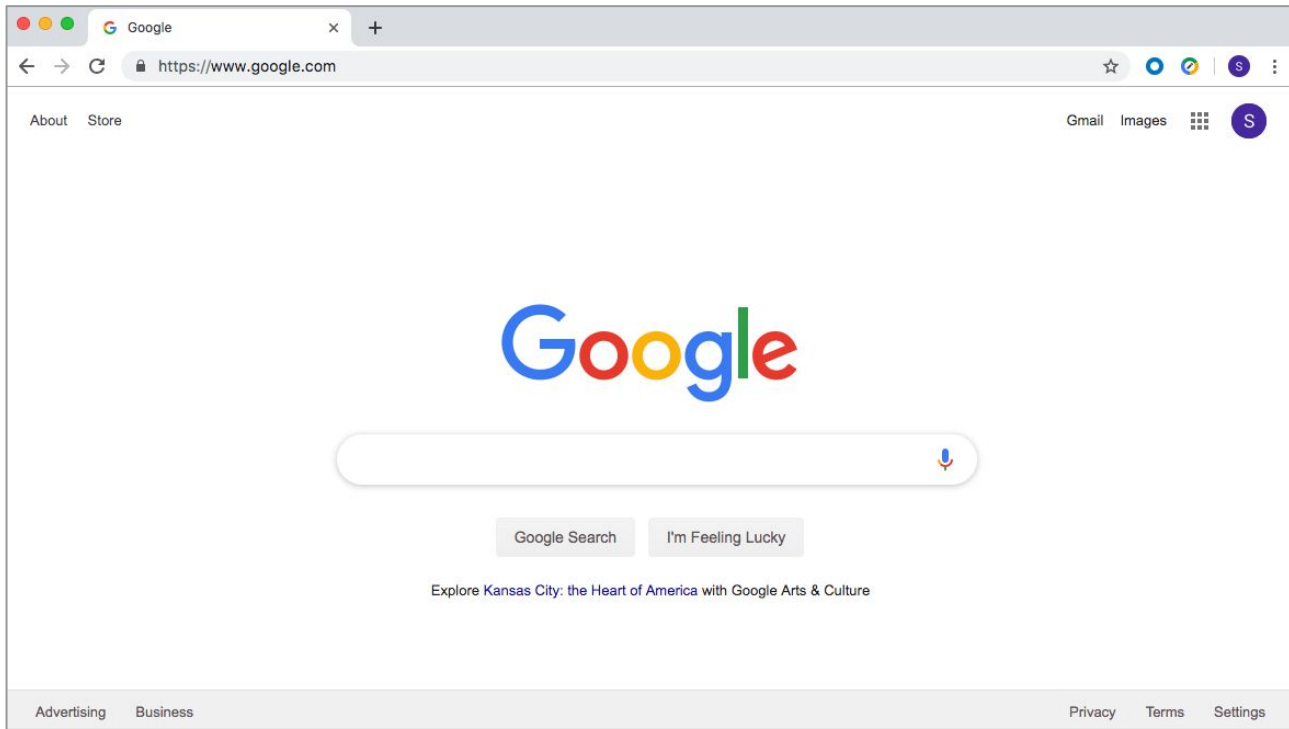
HTML	CSS	JavaScript
<p data-bbox="131 353 471 386">Used to write content.</p> <div data-bbox="249 579 469 892"><p data-bbox="280 583 438 623">HTML</p></div>	<p data-bbox="710 353 1076 386">Used to format content.</p> <div data-bbox="853 579 1072 886"><p data-bbox="904 583 1023 623">CSS</p></div>	<p data-bbox="1290 353 1789 554">Used to create dynamic web applications that take in user inputs, change what's displayed to users, animate elements, and much more.</p> <div data-bbox="1425 579 1644 892"><p data-bbox="1497 583 1574 623">JS</p></div>



How (or where) do we
connect all three?

They Are Connected in the Web Browser

The browser brings together HTML, CSS, and JavaScript to create interactive webpages and applications.

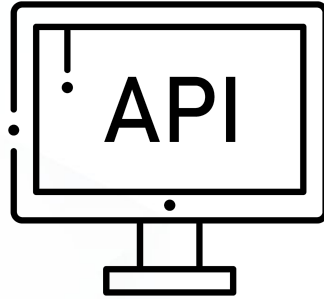




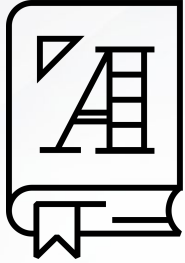
What is a web browser?



A **web browser**, or **browser**, is a program used to access information on the World Wide Web. Every webpage, image, and video on the web can be accessed via a specific Unified Resource Link (URL). This lets browsers retrieve these resources from a web server and display them on a user's device.



**What is an application
programming interface (API)?**

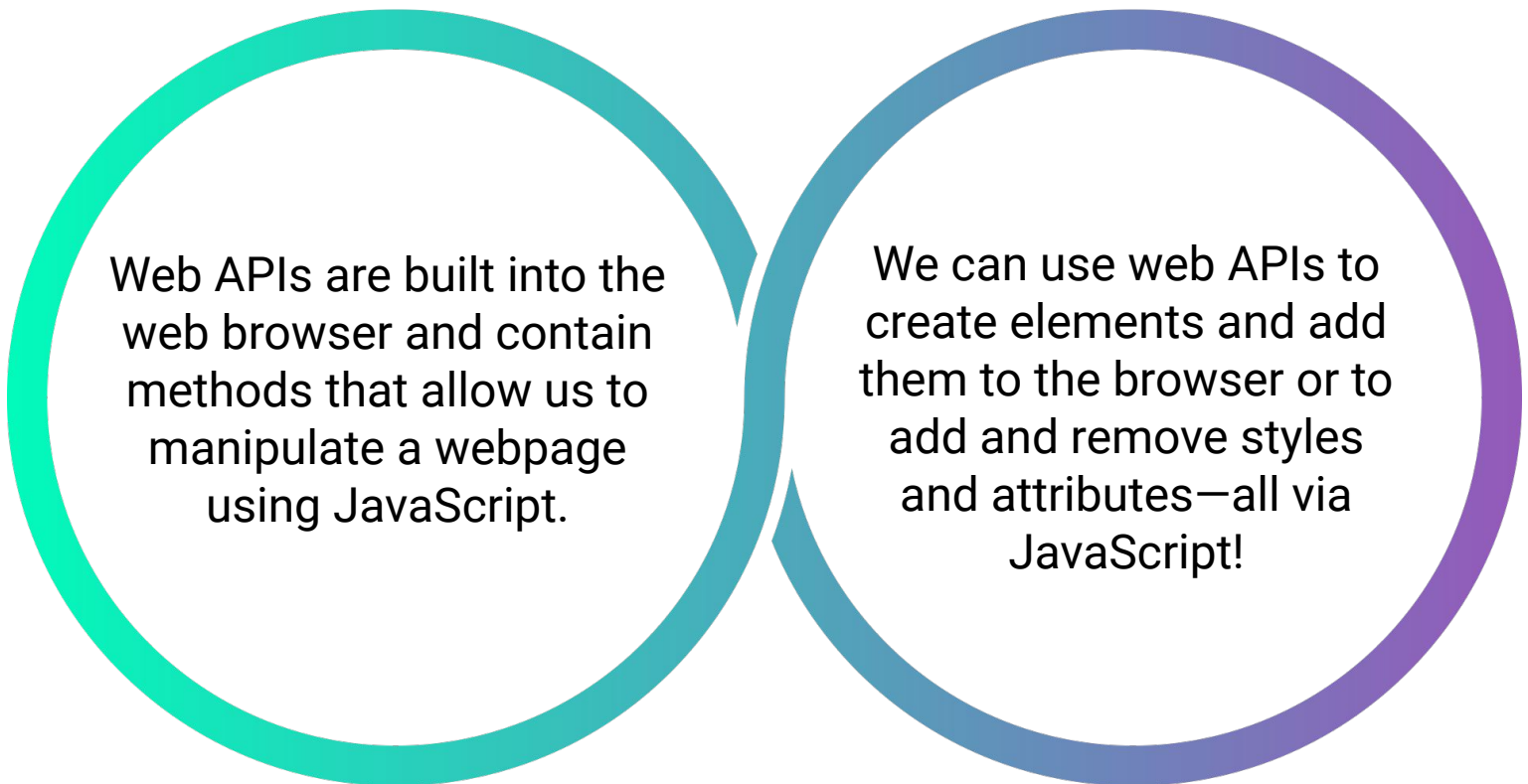


In web development, an **API** is a set of code features (methods, properties, events, and URLs) that developers can use in their apps to interact with components of a user's web browser, data sets, hardware/software on a user's computer, or third-party software and services.



What are web APIs?

Web APIs



Web APIs are built into the web browser and contain methods that allow us to manipulate a webpage using JavaScript.

We can use web APIs to create elements and add them to the browser or to add and remove styles and attributes—all via JavaScript!



Activity: This Window

See instructions in `01-Stu_This-Window` in the class repo.

In this activity, you will use `console.log(this)` and dig around inside the returned object, answering some questions along the way.

Suggested Time:
10 minutes



Activity: This Window

Instructions

- First open the provided `index.html` file in the browser and navigate to the console.

- What is logged?

The `window` object. In this use case, `this` refers to the window. The `window` is an object representation of an open window in a browser.

- Click in the `window` object and begin looking at the numerous properties and methods it contains.
- Make your way down to `document` and click in it.
- Spend some time looking through the properties and methods in `window.document`.



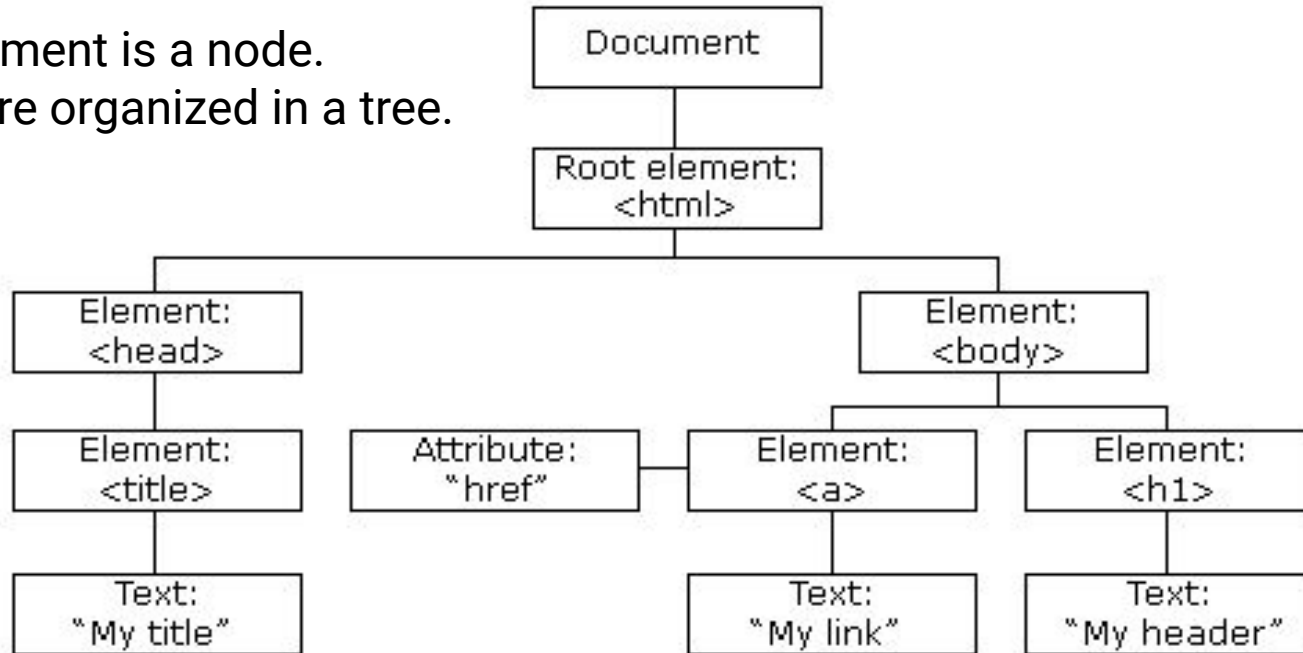


What is `window.document`?

The Document Object Model (DOM)

The DOM is an object-oriented representation of HTML (i.e., the HTML document modeled as JavaScript objects).

Each element is a node.
Nodes are organized in a tree.

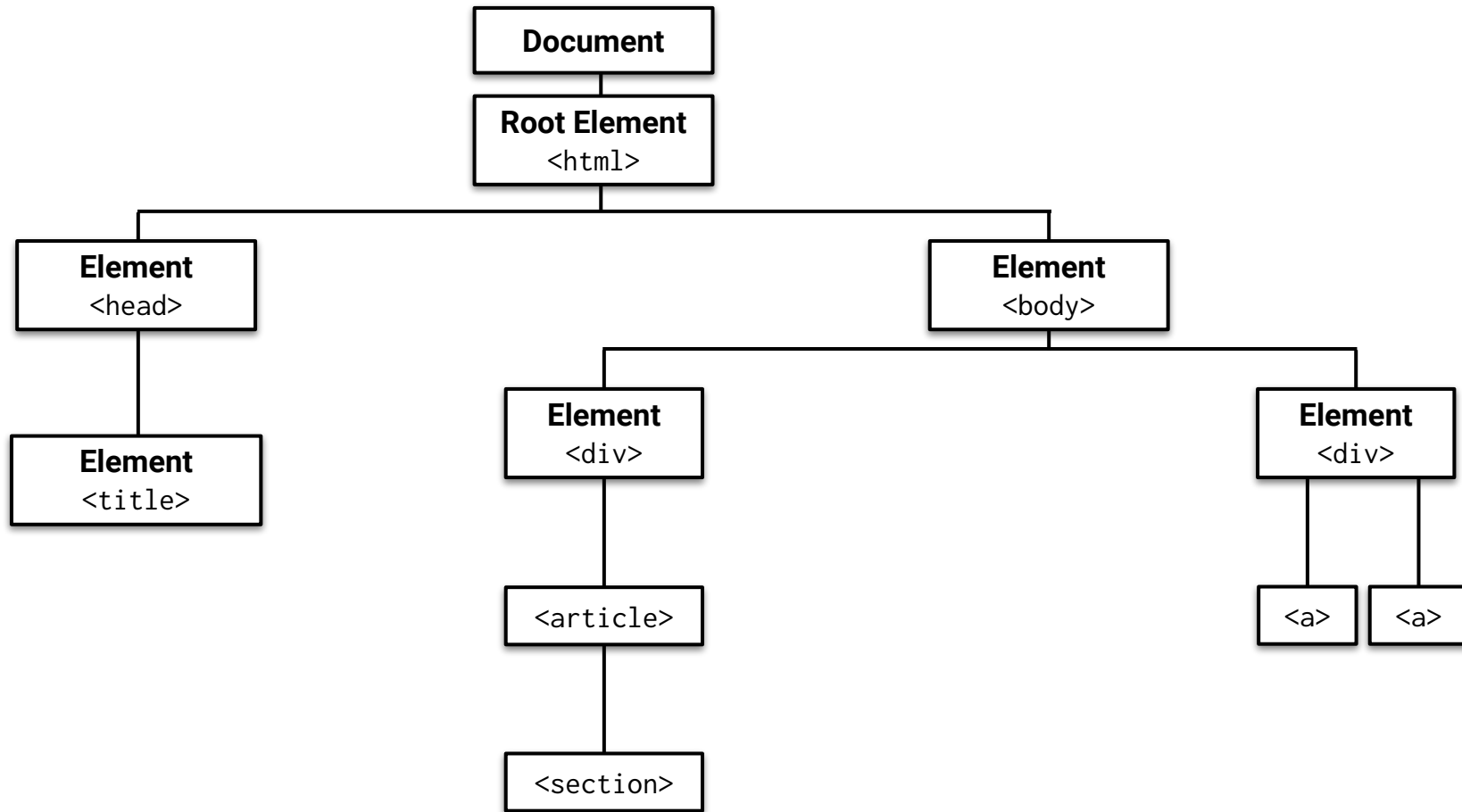


What Is the Node Tree of This HTML?

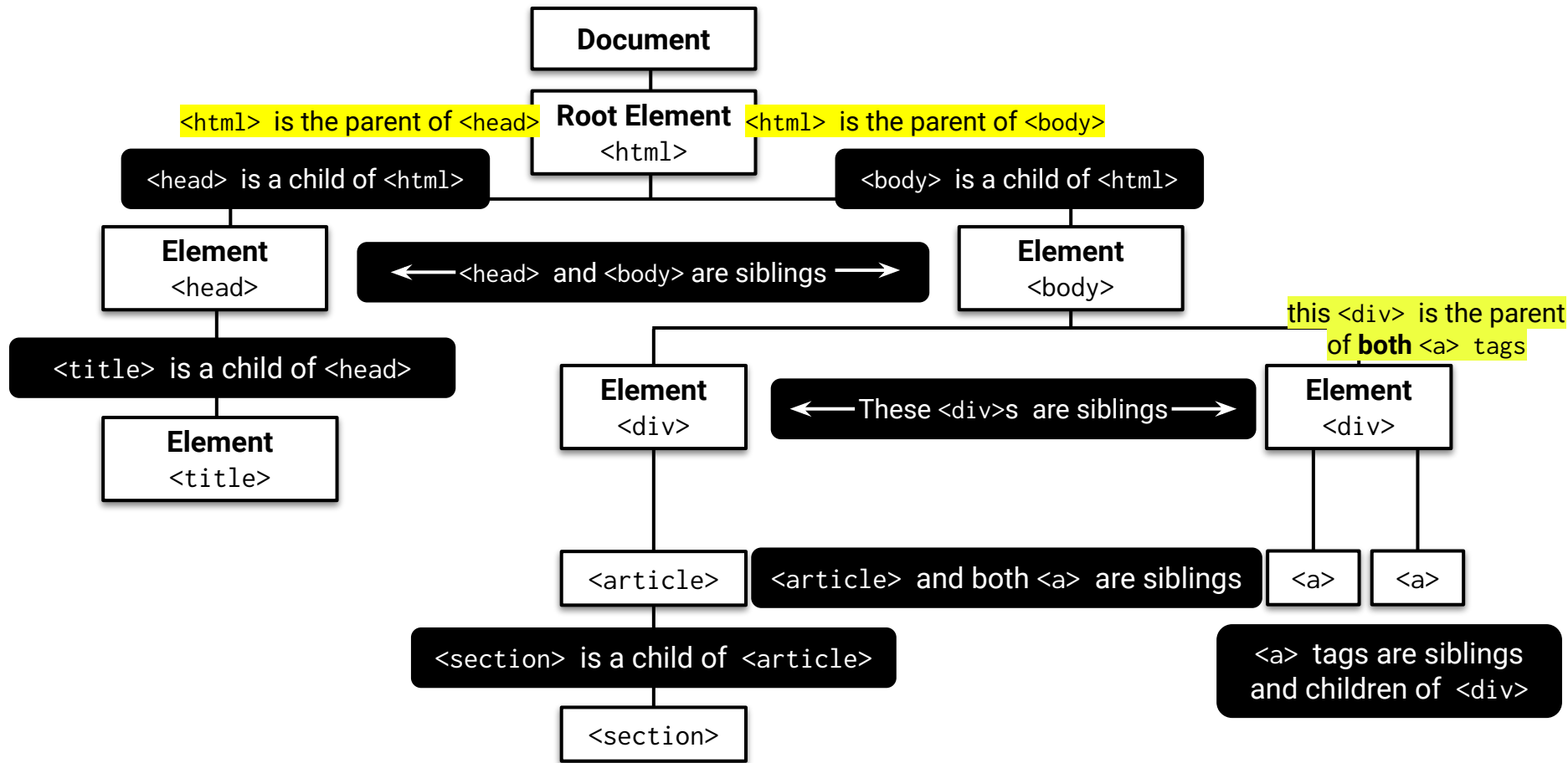
```
<!DOCTYPE html>
<html lang="en">
  <head>
    <title>Document</title>
  </head>
  <body>
    <div>Main div
      <article>
        <section>

          </section>
        </article>
      </div>
      <div>
        <a href="myImg"></a>
        <a href="secondImg"></a>
      </div>
    </body>
  </html>
```


What Are the Parent, Child, and Sibling Nodes?



Node Relationships: Parents, Children, and Siblings





What is traversing the DOM?

DOM Traversal

Navigate to the [MDN DOM Docs](#). Open the Chrome Dev Tools and enter the following commands one by one.

```
console.log(document.body);  
console.log(document.body.children);  
console.log(document.body.children[3]);  
console.log(document.body.children[3].childNodes[7]);  
console.log(document.body.children[3].childNodes[7].style.fontSize = "20px");
```



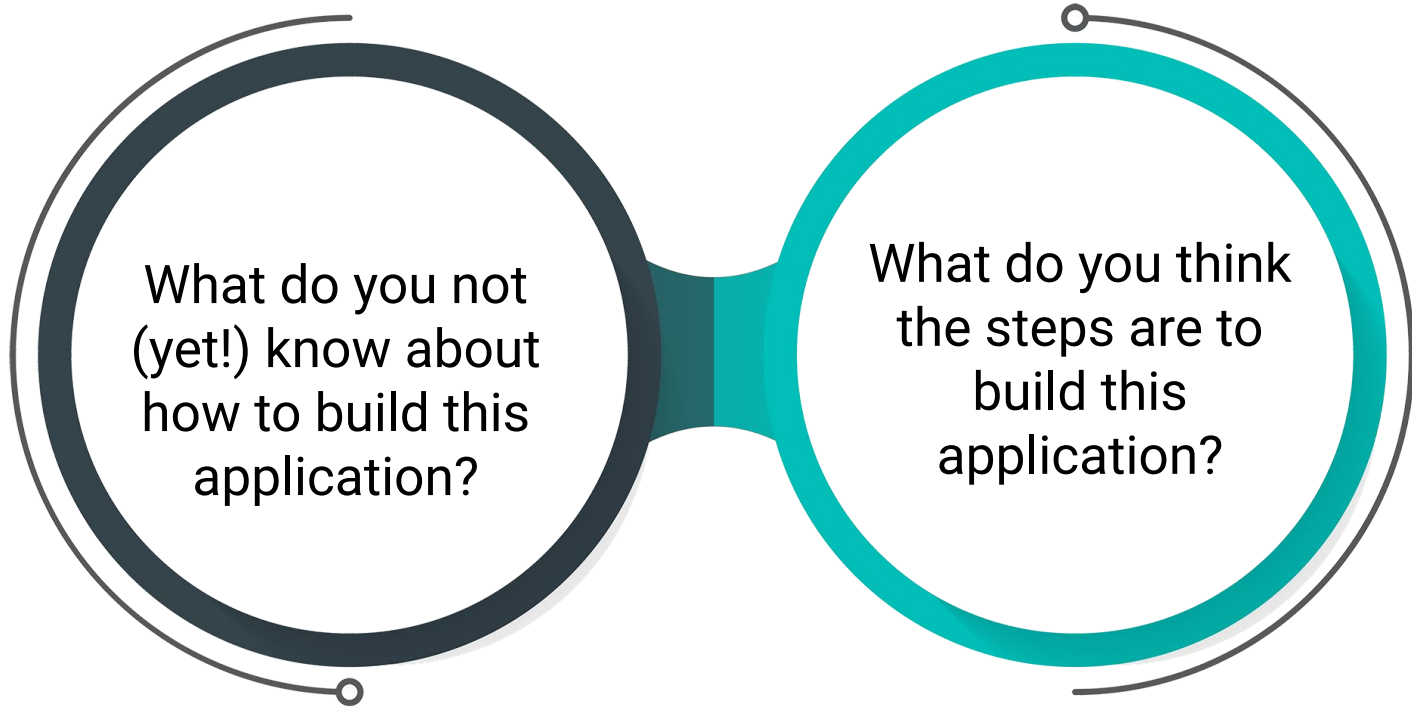
When using the `style` method, properties with two words (such as `font-size`) become a single word and camelCased. `font-size` becomes `fontSize`.

Here is one more example of `.style`:

```
console.log(document.body.children[3].childNodes[7].parentElement.style.color = "red");
```

Our Goal Today

Navigate to the deployed [Speed Reader app](#).



<Time to Code>

