

AN INTRODUCTION TO THE DOM

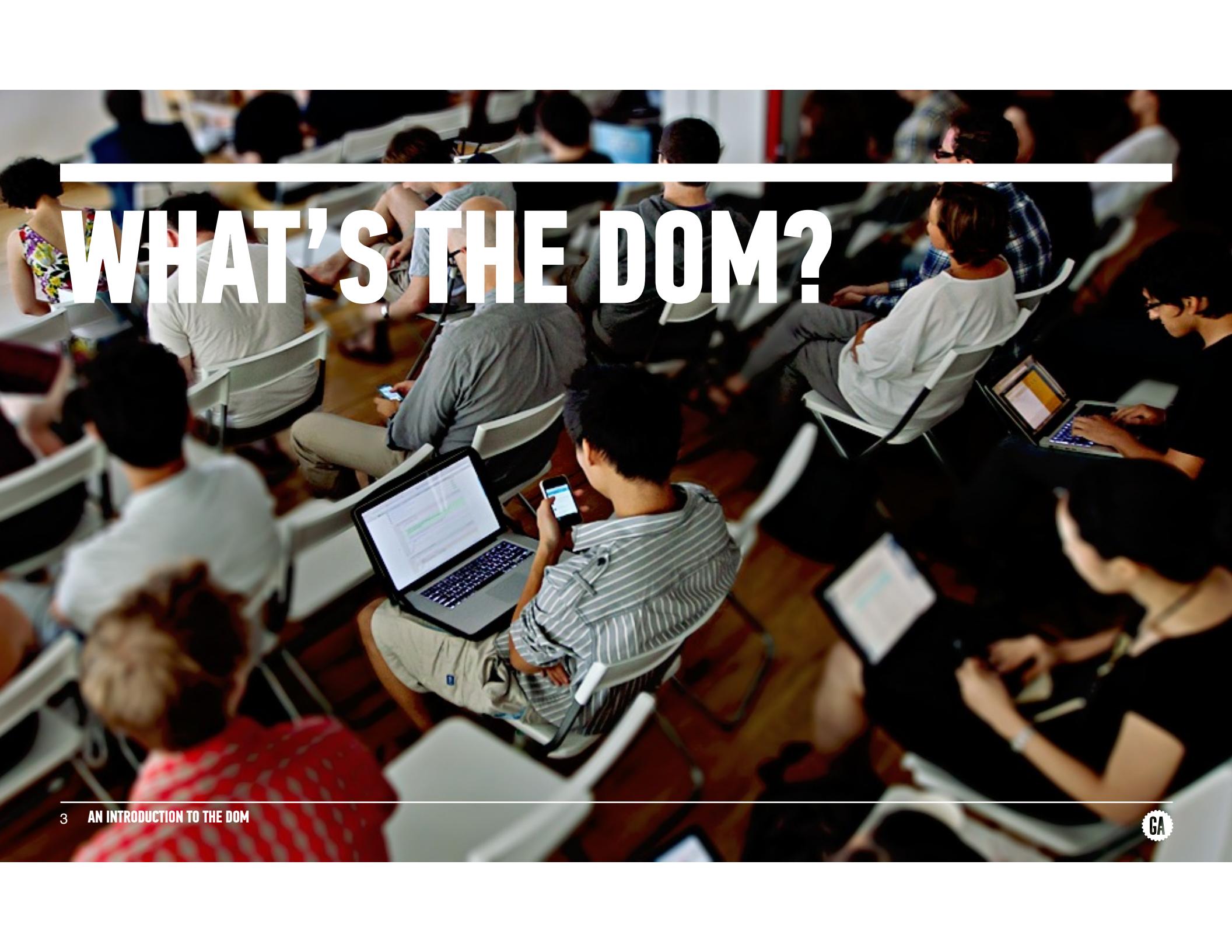
CHO S. KIM, INSTRUCTOR
GENERAL ASSEMBLY



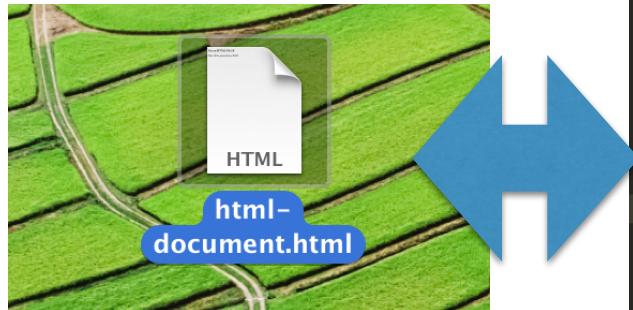
Objectives

- Students will be able to...
 - describe the purpose of the DOM
 - perform CRUD operations on the DOM
 - add and remove event listeners on the DOM
 - manipulate the DOM of a website

WHAT'S THE DOM?

A photograph showing a large audience from an elevated perspective, looking down at rows of people seated in white chairs. Many individuals are looking at their laptops or smartphones, suggesting a focus on digital devices and information.

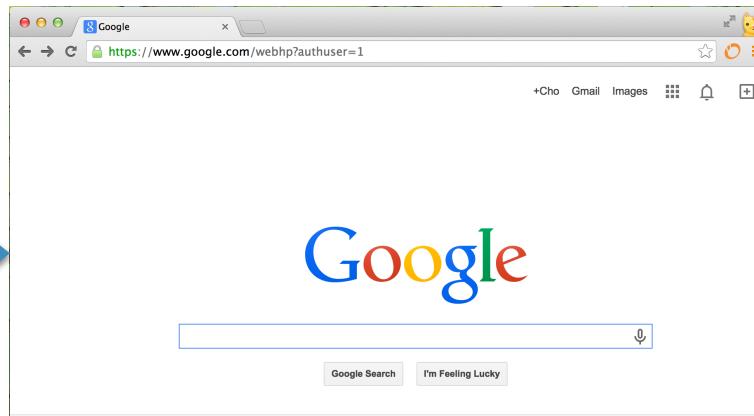
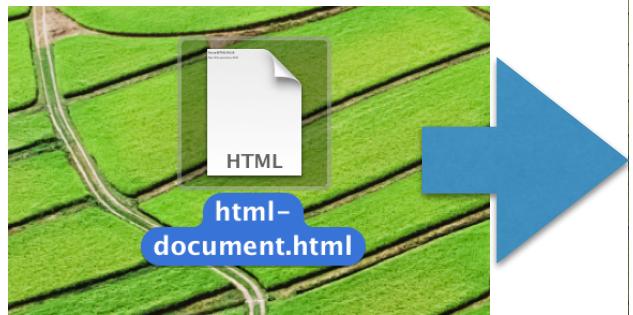
DOM: Page Load



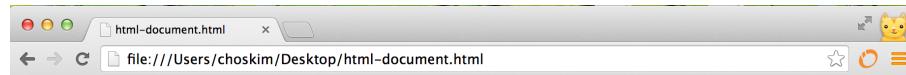
```
html-document.html x UNREGISTERED 29
1 <!DOCTYPE html>
2 <html lang="en">
3   <head>
4   </head>
5
6   <body>
7     <h1>I'm an HTML PAGE</h1>
8     <h2>That will be parsed into a DOM</h2>
9   </body>
10 </html>

Line 9, Column 10 Tab Size: 4 HTML
```

DOM: Page Load



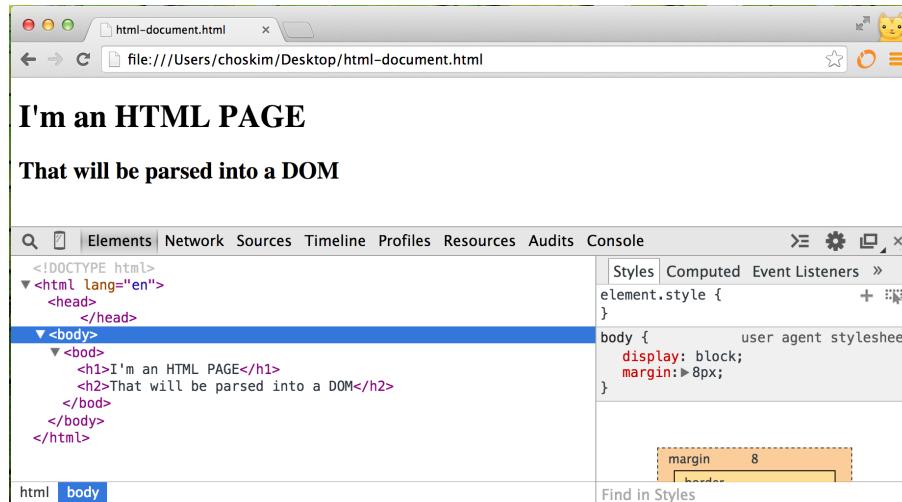
DOM: Page Load



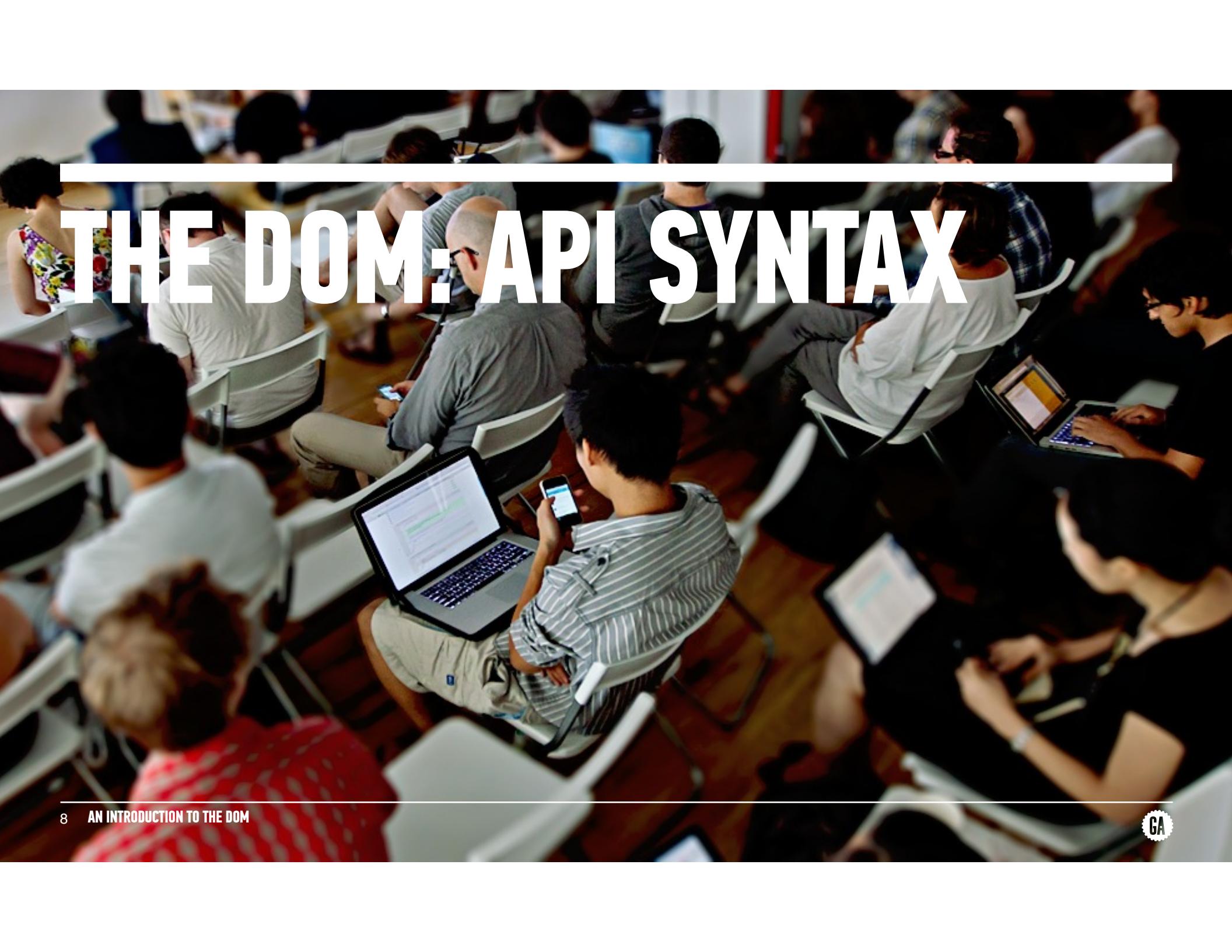
I'm an HTML PAGE

That will be parsed into a DOM

DOM: Page Load



THE DOM: API SYNTAX

A photograph showing a large group of people seated in rows, likely in a lecture hall or conference room. They are viewed from an elevated angle, looking down at their devices. Many are using laptops, while others have smartphones or tablets. The scene conveys a sense of a modern, technology-driven environment.

DOM: API

‣ Syntax

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: API

‣ Syntax

[document]

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: API

‣ Syntax

[document].

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: API

‣ Syntax

[document].[selector]

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: API

‣ Syntax

```
[document].[selector|[]]
```

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: API

‣ Syntax

```
[document].[selector|element]
```

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: API

‣ Syntax

```
[document].[selector|element].
```

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: API

‣ Syntax

```
[document].[selector | element].  
[CRUD]
```

```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

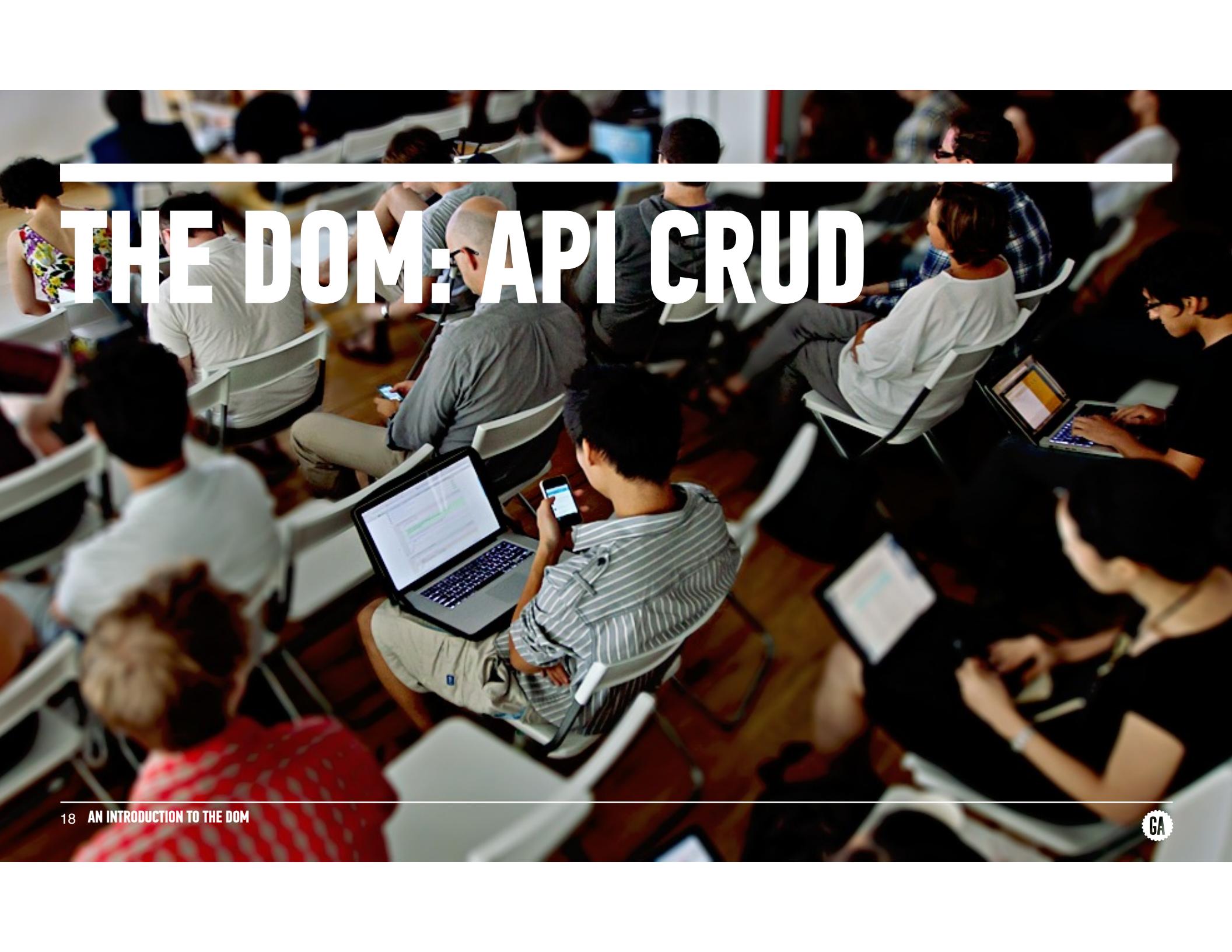
DOM: API

‣ Syntax

```
[document].[selector|element].  
[CRUD];
```

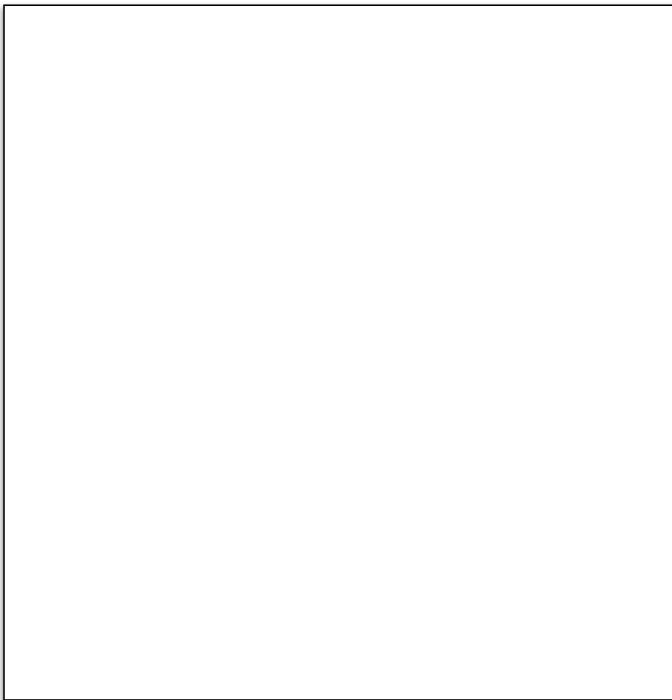
```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

THE DOM: API CRUD

A photograph showing a large group of people seated in rows, likely in an auditorium or lecture hall. They are viewed from an elevated angle, looking down at their devices. Many are using laptops, while others have smartphones or tablets. The scene suggests a technology-themed event or a classroom setting where digital interaction is the focus.

DOM: API

- Read in **CRUD**



```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: API

- Read in **CRUD**

document

```
<body>
<section>
<h1>my list</h1>
<ul>
<li>first</li>
<li>second</li>
<li>third</li>
</ul>
</section>
</body>
```

DOM: API

- Read in CRUD

```
document.querySelector('h1')
```

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: API

- Read in CRUD

```
document.querySelector('h1').te  
xtContent;
```

```
<body>  
<section>  
<h1>my list</h1>  
<ul>  
<li>first</li>  
<li>second</li>  
<li>third</li>  
</ul>  
</section>  
</body>
```

DOM: API

- Read in CRUD

```
// "my list"  
document.querySelector('h1').te  
xtContent;
```

```
<body>  
<section>  
<h1>my list</h1>  
<ul>  
<li>first</li>  
<li>second</li>  
<li>third</li>  
</ul>  
</section>  
</body>
```

DOM: API

‣ Read in CRUD

```
// "my list"  
document.querySelector('h1').te  
xtContent = "update my list";
```

```
<body>  
<section>  
<h1>my list</h1>  
<ul>  
<li>first</li>  
<li>second</li>  
<li>third</li>  
</ul>  
</section>  
</body>
```

DOM: API

‣ Read in CRUD

```
// "my list"  
document.querySelector('h1').te  
xtContent = "update my list";
```

```
<body>  
<section>  
  <h1>update my list<h1>  
  <ul>  
    <li>first</li>  
    <li>second</li>  
    <li>third</li>  
  </ul>  
</section>  
</body>
```

DOM: API

‣ Read in CRUD

```
// “update my list”
document.querySelector('h1').te
xtContent = “update my list”;
```

```
<body>
  <section>
    <h1>update my list<h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: API

- Read in **CRUD**

```
<body>
  <section>
    <h1>update my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: API

‣ Read in CRUD

document

```
<body>
<section>
  <h1>update my list</h1>
  <ul>
    <li>first</li>
    <li>second</li>
    <li>third</li>
  </ul>
</section>
</body>
```

DOM: API

‣ Read in CRUD

```
document.querySelector('li')
```

```
<body>
  <section>
    <h1>update my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: API

‣ Read in CRUD

```
document.querySelector('li').re  
move();
```

```
<body>  
<section>  
  <h1>update my list</h1>  
  <ul>  
    <li>first</li>  
    <li>second</li>  
    <li>third</li>  
  </ul>  
</section>  
</body>
```

DOM: API

‣ Read in CRUD

```
document.querySelector('li').re  
move();
```

```
<body>  
<section>  
  <h1>update my list</h1>  
  <ul>  
    <li>second</li>  
    <li>third</li>  
  </ul>  
</section>  
</body>
```

DOM: API

‣ Read in CRUD

```
// deletes first li element  
document.querySelector('li').re  
move();
```

```
<body>  
<section>  
  <h1>update my list</h1>  
  <ul>  
    <li>second</li>  
    <li>third</li>  
  </ul>  
</section>  
</body>
```

DOM: API

- Read in **CRUD**

```
<body>
  <section>
    <h1>update my list</h1>
    <ul>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: API

- Read in **CRUD**

document

```
<body>
<section>
<h1>update my list</h1>
<ul>
<li>second</li>
<li>third</li>
</ul>
</section>
</body>
```

DOM: API

‣ Read in CRUD

```
document.createElement('li');
```

```
<body>
  <section>
    <h1>update my list</h1>
    <ul>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

```
// <li></li>
```

DOM: API

‣ Read in CRUD

```
var newLi = document.  
  createElement('li');
```

```
<body>  
  <section>  
    <h1>update my list</h1>  
    <ul>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

```
// <li></li>
```

DOM: API

‣ Read in CRUD

```
var newLi = document.  
  createElement('li');
```

```
<body>  
  <section>  
    <h1>update my list</h1>  
    <ul>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

```
// newLie -> <li></li>
```

DOM: API

‣ Read in CRUD

```
var newLi = document.  
  createElement('li');  
  
newLi.textContent("fourth");
```

```
<body>  
  <section>  
    <h1>update my list</h1>  
    <ul>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

```
// newLie -> <li></li>
```

DOM: API

‣ Read in CRUD

```
var newLi = document.  
  createElement('li');  
  
newLi.textContent("fourth");
```

```
<body>  
  <section>  
    <h1>update my list</h1>  
    <ul>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>  
  
// newLie -> <li>fourth</li>
```

DOM: API

‣ Read in CRUD

```
var newLi = document.  
  createElement('li');  
  
newLi.textContent("fourth");  
  
document
```

```
<body>  
  <section>  
    <h1>update my list</h1>  
    <ul>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>  
  
// newLie -> <li>fourth</li>
```

DOM: API

‣ Read in CRUD

```
var newLi = document.  
  createElement('li');  
  
newLi.textContent("fourth");  
  
document.querySelector('ul');
```

```
<body>  
  <section>  
    <h1>update my list</h1>  
    <ul>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>  
  
// newLie -> <li>fourth</li>
```

DOM: API

‣ Read in CRUD

```
var newLi = document.  
  createElement('li');  
  
newLi.textContent("fourth");  
  
document.querySelector('ul').ap  
pendChild(newLi);
```

```
<body>  
  <section>  
    <h1>update my list</h1>  
    <ul>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

DOM: API

‣ Read in CRUD

```
var newLi = document.  
  createElement('li');  
  
newLi.textContent("fourth");  
  
document.querySelector('ul').ap  
pendChild(newLi);
```

```
<body>  
  <section>  
    <h1>update my list</h1>  
    <ul>  
      <li>second</li>  
      <li>third</li>  
      <li>fourth</li>  
    </ul>  
  </section>  
</body>
```

CODE: SORT MY DOM



CHO S. KIM, INSTRUCTOR
GENERAL ASSEMBLY



Code Exercise: Fix My DOM

- Use the DOM API and...
 - navigate to assignments/week-1/dom-exercises#1 of 3:Fix My DOM
 - read the instructions.

```
// firstFile
<body>
  <section>
    <h1>update my list</h1>
    <ul>
      <li>fir</li>
      <li></li>
      <li>third</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

```
// secondFile
<body>
  <section>
    <h1>update my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
      <li>fourth</li>
    </ul>
  </section>
</body>
```

THE DOM: EVENT LISTENERS

A photograph showing a large audience of people sitting in rows, likely in a lecture hall or conference room. Many individuals are looking down at their laptops or smartphones, illustrating the concept of event listeners in the DOM.

DOM: Event Listeners

‣ Syntax

[document]

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: Event Listeners

‣ Syntax

```
[document].
```

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: Event Listeners

‣ Syntax

```
[document].[element]
```

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: Event Listeners

‣ Syntax

```
[document].[element].
```

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: Event Listeners

‣ Syntax

```
[document].[element].  
[event-method]
```

```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

DOM: Event Listeners

‣ Syntax

```
[document].[element].  
[event-method]([event]);
```

```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

DOM: Event Listeners

‣ Syntax

```
[document].[element].  
[event-method]([event],  
[callback]);
```

```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

DOM: Event Listeners

‣ Syntax

```
[document].[element].  
[event-method]([event],  
[callback] | | [event]);
```

```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```



THE DOM: EVENT LISTENERS (ADD AND REMOVE)

DOM: Event Listeners

‣ Syntax

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: Event Listeners

‣ Syntax

document

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: Event Listeners

‣ Syntax

```
document.querySelector('h1');
```

```
<body>
  <section>
    <h1>my list</h1>
    <ul>
      <li>first</li>
      <li>second</li>
      <li>third</li>
    </ul>
  </section>
</body>
```

DOM: Event Listeners

‣ Syntax

```
var h1 = document.  
  querySelector('h1');
```

```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

DOM: Event Listeners

‣ Syntax

```
var h1 = document.  
  querySelector('h1');  
  
var myFunction = function() {  
  console.log("You clicked me");  
};
```

```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

DOM: Event Listeners

‣ Syntax

```
var h1 = document.  
  querySelector('h1');  
  
var myFunction = function() {  
  console.log("You clicked me");  
};  
  
h1.addEventListener();
```

```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

DOM: Event Listeners

‣ Syntax

```
var h1 = document.  
  querySelector('h1');  
  
var myFunction = function() {  
  console.log("You clicked me");  
};  
  
h1.addEventListener("click");
```

```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

DOM: Event Listeners

‣ Syntax

```
var h1 = document.  
  querySelector('h1');  
  
var myFunction = function() {  
  console.log("You clicked me");  
};  
  
h1.addEventListener("click",  
  myFunction);
```

```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

DOM: Event Listeners

‣ Syntax

```
var h1 = document.  
  querySelector('h1');  
  
var myFunction = function() {  
  console.log("You clicked me");  
};  
  
h1.addEventListener("click",  
  myFunction);  
  
h1.removeEventListener();
```

```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

DOM: Event Listeners

‣ Syntax

```
var h1 = document.  
  querySelector('h1');  
  
var myFunction = function() {  
  console.log("You clicked me");  
};  
  
h1.addEventListener("click",  
  myFunction);  
  
h1.removeEventListener("click"  
);
```

```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

DOM: Event Listeners

‣ Syntax

```
var h1 = document.  
  querySelector('h1');  
  
var myFunction = function() {  
  console.log("You clicked me");  
};  
  
h1.addEventListener("click",  
  myFunction);  
  
h1.removeEventListener("click",  
  myFunction);
```

```
<body>  
  <section>  
    <h1>my list</h1>  
    <ul>  
      <li>first</li>  
      <li>second</li>  
      <li>third</li>  
    </ul>  
  </section>  
</body>
```

CODE: TRAFFIC LIGHTS

CHO S. KIM, INSTRUCTOR
GENERAL ASSEMBLY



Code Exercise: Traffic Light

- Create an HTML page of a Traffic Light
 - Add an external stylesheet to add color to the stop signs
 - When hovering, change to correct color
 - When double click, make the color permanent

THE DOM: HACK IT

A photograph showing a large audience from an elevated perspective, looking down at a room full of people seated in rows. Many individuals are using laptops, tablets, or smartphones, suggesting a workshop or hackathon environment.

CODE: HACK IT



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GENERAL ASSEMBLY



I'm a celebrity!

The screenshot shows the homepage of People.com. At the top, there's a navigation bar with 'PEOPLE.COM' and 'PEOPLE PREMIUM'. A banner on the right says 'NEW! Exclusively for Our Digital Subscribers' with 'Sign In' and 'Learn about V.I.P.' buttons. Below the header, the 'People' logo is prominently displayed in blue. To its right are social media links ('Like 4.9m', 'Follow 5.8M'), a search bar, and a link to 'All Celebs'. A promotional banner for 'GET 4 FREE ISSUES!' featuring a person in a mask is also visible.

Below the main navigation, there's a secondary menu with links to 'HOME', 'NEWS', 'PHOTOS', 'STYLE', 'RED CARPET', 'VIDEO', 'ROYALS', 'COUNTRY', 'TV', 'BABIES', 'FOOD', 'PETS', '#UNFILTERED', and 'MAGAZINE'.

A pink banner in the center says 'JOIN PEOPLE AT THE HOLLYWOOD FILM AWARDS ON FRI. AT 7 PM E.T.'

The main content area features several news stories:

- What Gia Allemand's Boyfriend Wants People to Know About Suicide** (TOP STORY, 04:00PM EST)
- Man Makes Footloose Parody for His American Ninja Warrior Application** (VIDEO OF THE DAY, 02:55PM EST)
- The Godfather Mansion Hits the Market for Almost \$3 Million** (03:55PM EST)
- The Theory of Everything's Felicity Jones Answers All Your Burning Questions!**

On the right side, there's an advertisement for Vonage with the text 'There's more than one way to call the Philippines. We'll help you find yours.' and a 'SEE ALL THE WAYS' button. Below it, a section titled 'WHAT YOU ❤️ RIGHT NOW' shows a partial profile picture.

Code Exercise: Hack It

- Find a website on the Internet and...
 - Create a repository called “[firstName-lastName]-hack-it”
 - Take a snapshot of a page you want to modify on that website. Place this snapshot in the repository you created.
 - Use the DOM API to modify the DOM of that page.
 - Include yourself in the modified content.
 - Include your code and the URL of the page in the repository.
 - Take a snapshot of the modified page and include it in the repository
 - Push your code to your fork of sf-wdi-14; then submit a pull request

Objectives

- Students will be able to...
 - describe the purpose of the DOM
 - perform CRUD operations on the DOM
 - add and remove event listeners on the DOM
 - manipulate the DOM of a website

THANK YOU.

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