



Lesson #3

Links, Images

Introduction to Web Development

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Afghan Pathways Program | Viterbi School of Engineering

Links

Create hyperlinks.

Each URL consists of:

1. Destination (href attribute),
2. Name (text between <a> and).



```
<a href="https://www.usc.edu/">USC Website</a>
```

Result:



[USC Website](https://www.usc.edu/)

Links

Create hyperlinks.

Each URL consists of:

1. Destination (href attribute),
2. Name (text between `<a>` and ``).

Result:

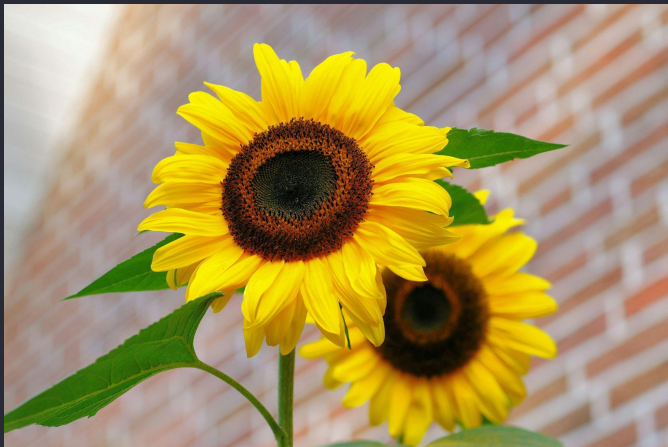
The [University of Southern California](https://www.usc.edu/) is a private research university located in Los Angeles, California.

```
<a href="https://www.usc.edu/">USC Website</a>
```

The ``University of Southern California`` is a private research university located in Los Angeles, California.

```
<h1>Hello World</h1>
```

```
<p>My name is <strong>Nayeon</strong>.</p>
```



```
<img>
```

attribute

attribute

```

```

Web Preview

<https://web.us.edusercontent.com/f7n1sg8srugdremu6pu4vhgck8/index.html>

Hello World

My name is Nayeon.

Web Safe Image Formats

1. Graphics Interchange Format (GIF)

- ✓ Supports animation.
- ? Low resolution & image quality.

2. Joint Photographic Experts Group (JPEG / JPG)

- ✓ Small file size.
- ? Lossy format, not suitable for text or crisp edges.

3. Portable Network Graphics (PNG)

- ✓ Supports transparency.
- ? Large file size when used for photographs.

4. Scalable Vector Graphics (SVG)

- ✓ Scalable for different screen sizes.
- ? No support for complex images / photographs.



USC



Image Tags

Define images in a document.

Each image consists of:

1. Source (`src` attribute),
2. Alternate text (`alt` attribute).

```

```

```

```

Image Tags

Define images in a document.

Each image consists of:

1. Source (`src` attribute),
2. Alternate text (`alt` attribute).

Absolute Path (hosted on a different server)

vs.

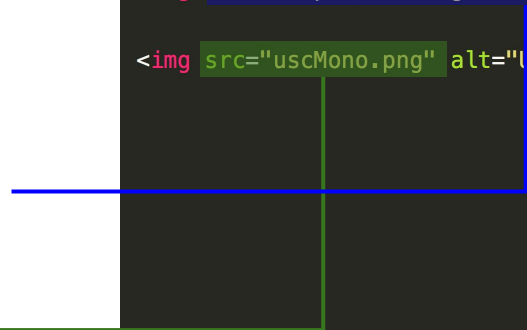
Local Path (hosted on the same server)

```

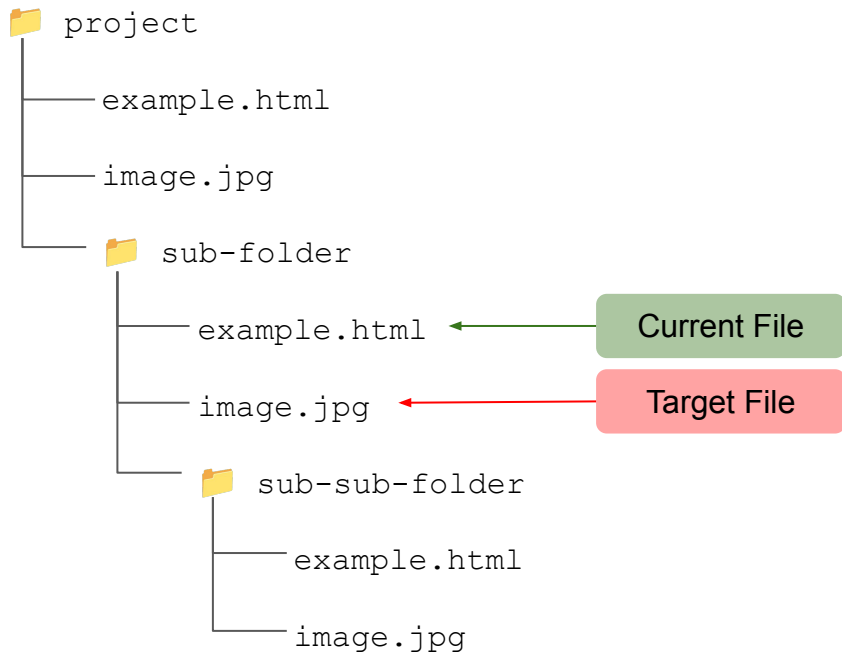
```

```

```



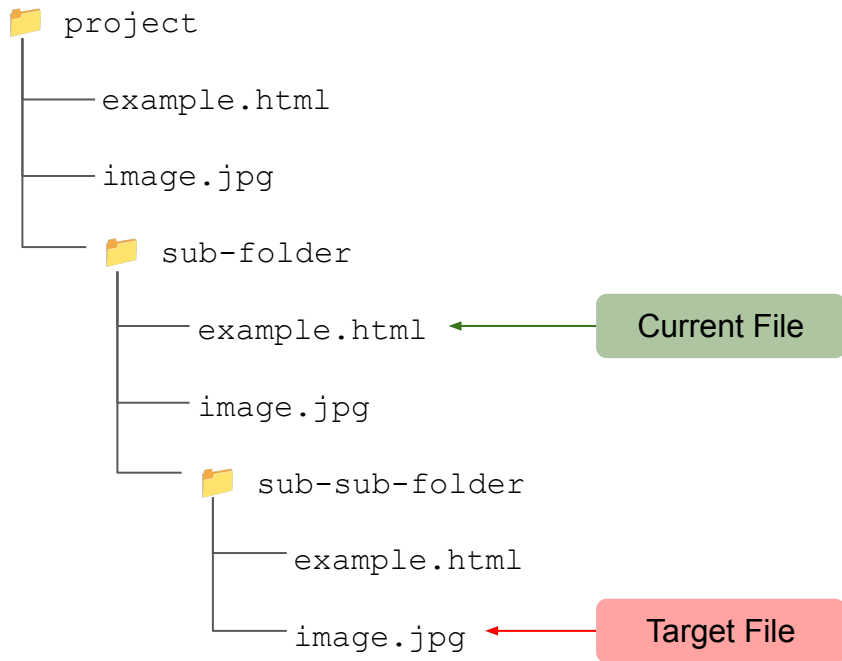
Relative File Paths



```

```


Relative File Paths



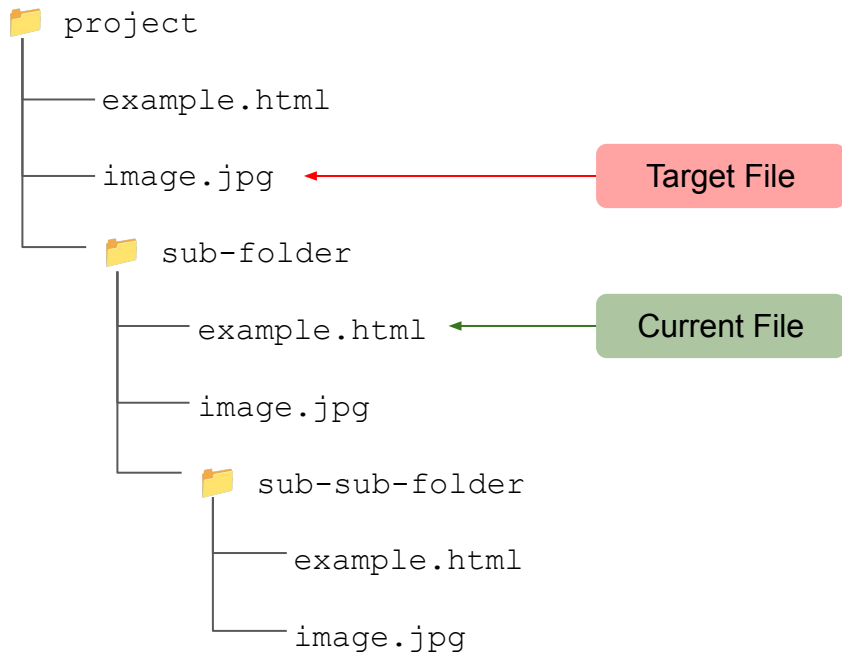
```

```

```

```

Relative File Paths



```

```

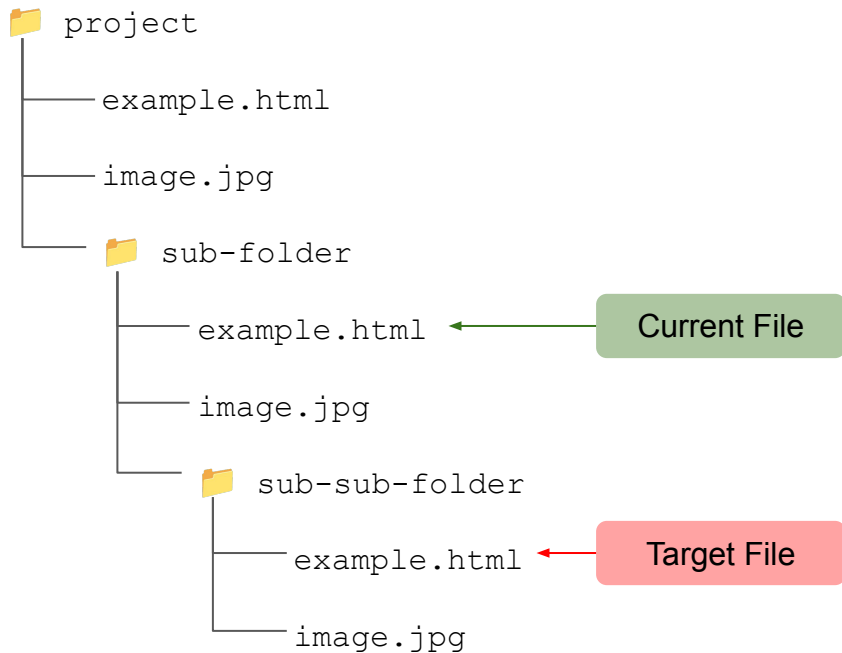
```

```

```

```

Relative File Paths



```

```

```

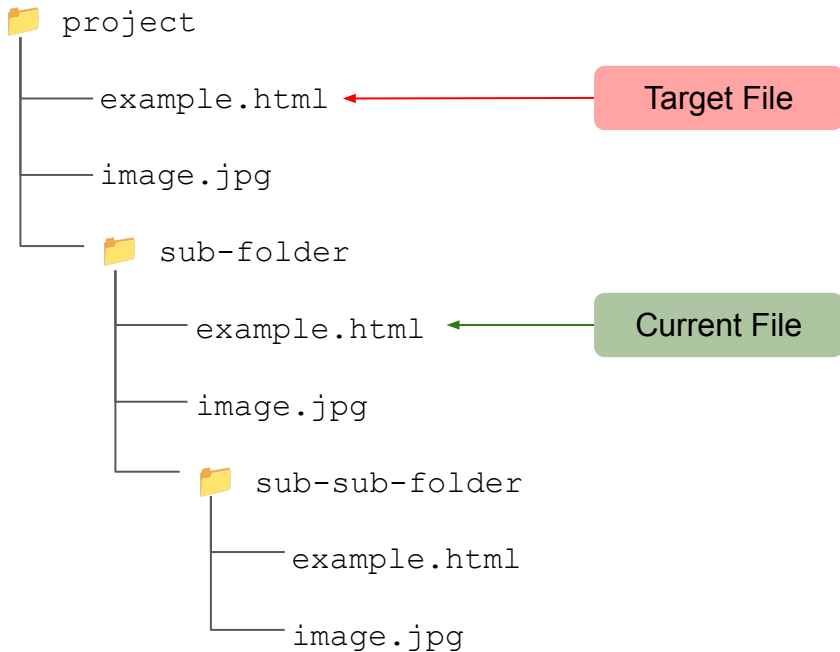
```

```

```

```
<a href="sub-sub-folder/example.html">Link to another page</a>
```

Relative File Paths



```

```

```

```

```

```

```
<a href="sub-sub-folder/example.html">Link to another page</a>
```

```
<a href="../example.html">Link to another page</a>
```

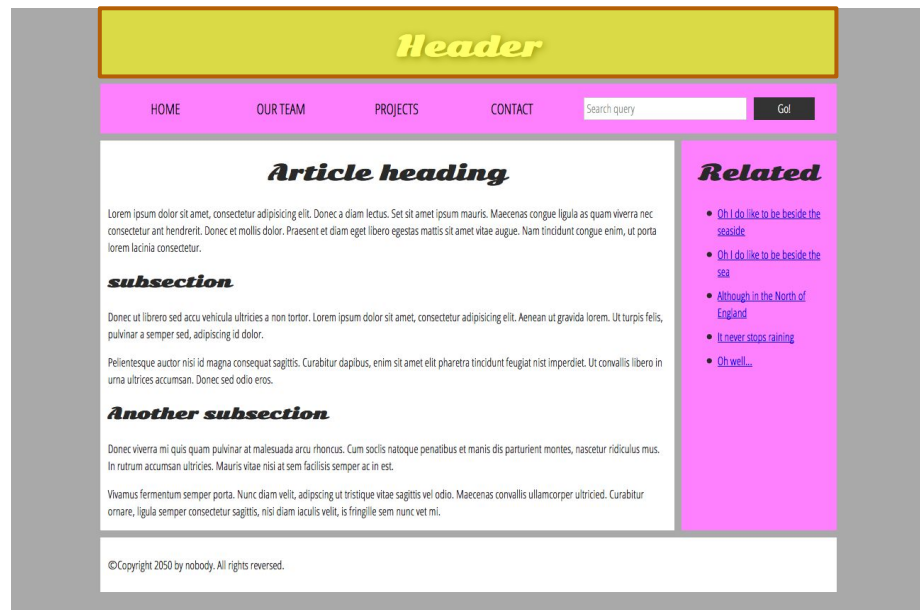
List of HTML tags

- There are many HTML tags that do different things. See below for a list of all HTML tags:
 - <https://developer.mozilla.org/en-US/docs/Web/HTML/Element>
 - <https://www.w3schools.com/tags/>

Semantic Tags

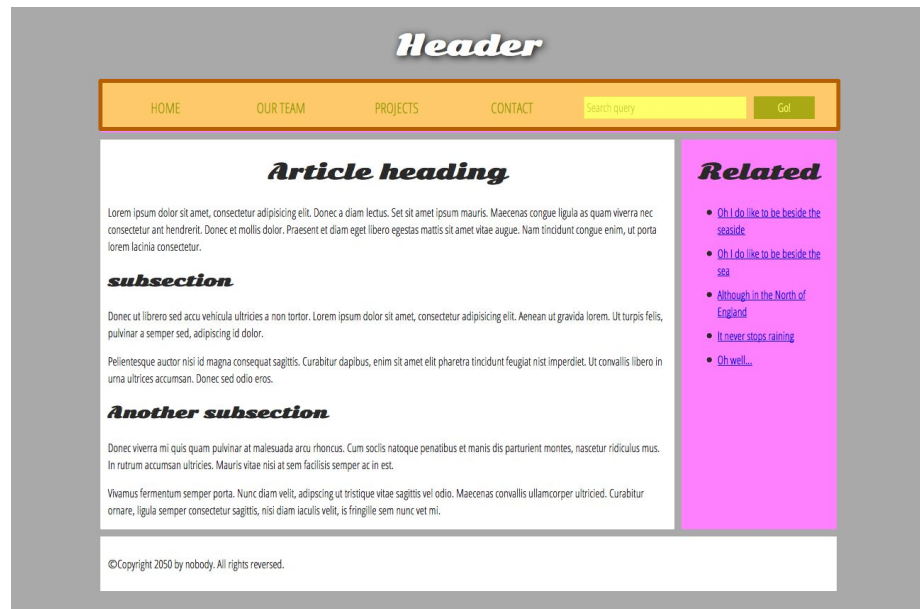
“Typical Website” Layout

1. Header - <header>



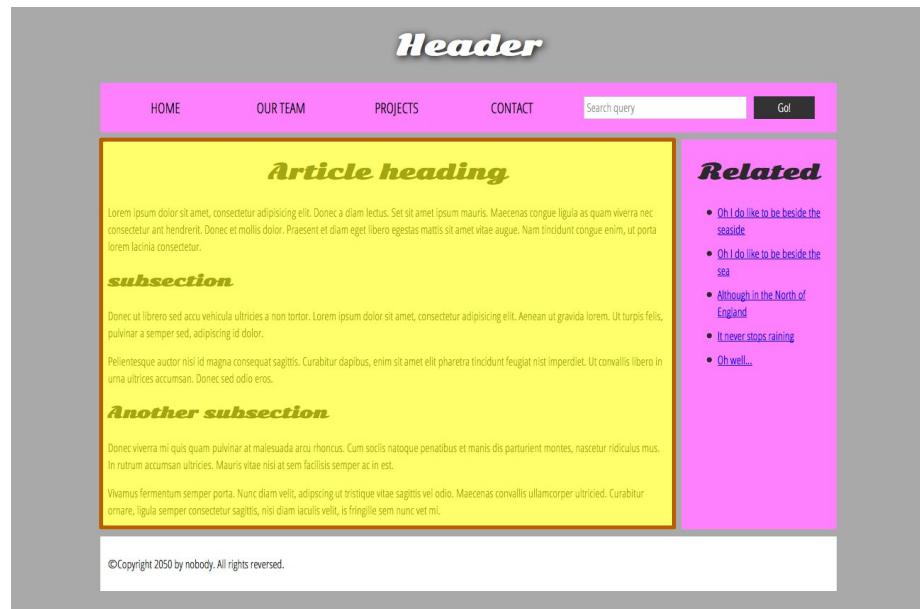
“Typical Website” Layout

1. Header - <header>
2. Navigation Bar - <nav>



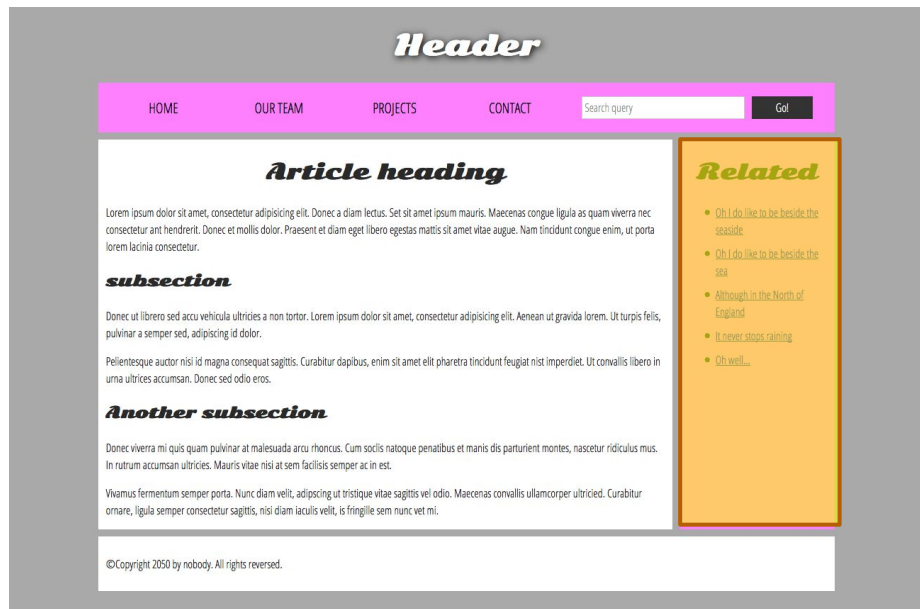
“Typical Website” Layout

1. Header - <header>
2. Navigation Bar - <nav>
3. Main Content - <main>



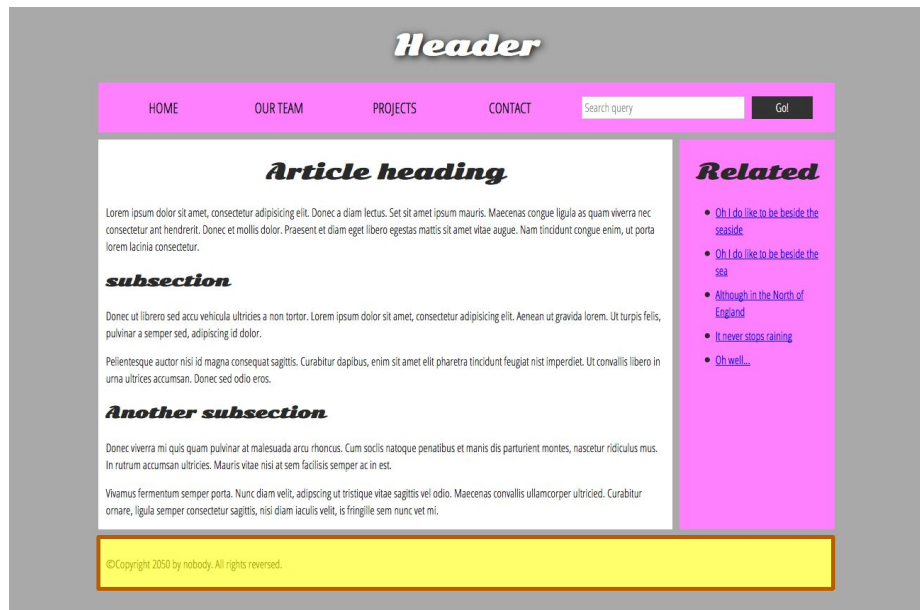
“Typical Website” Layout

1. Header - <header>
2. Navigation Bar - <nav>
3. Main Content - <main>
4. Sidebar - <aside> (usually inside <main>)



“Typical Website” Layout

1. Header - <header>
2. Navigation Bar - <nav>
3. Main Content - <main>
4. Sidebar - <aside>
5. Footer - <footer>



USC Homepage Layout

1. Header

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An innovative push for research


A **USC Libraries** initiative couples curators with scholars in three pilot areas: history of L.A. and the West, Holocaust and genocide studies, and LGBTQ history.



AI helps researcher deliver HIV info to homeless youth

Associate Professor Eric Rice needed a better way to identify peer-to-peer educators, so he teamed up with engineering Professor Milind Tambe to develop artificial intelligence that picks out the peer leaders based on the extent of their social networks.

[Read the full story at USC News](#)



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[Read the full story at USC News](#)



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Here's another reason to start the day with a cup of joe: A new study finds people who drink coffee appear to live longer. "If you like to drink coffee, drink up! If you're not a coffee drinker, then you need to consider if you should start," says V. Wendy Setiawan of the Keck School of Medicine of USC, senior author of the study.

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At 1:06 am on Sunday, July 16, 2017, it's 73° and mostly clear in Los Angeles.

Summer classes are in session. If you're taking a summer class, check its [session code](#), since start and end dates vary.

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University Park Campus: 213-740-4321
Health Sciences Campus: 323-442-1000



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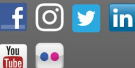
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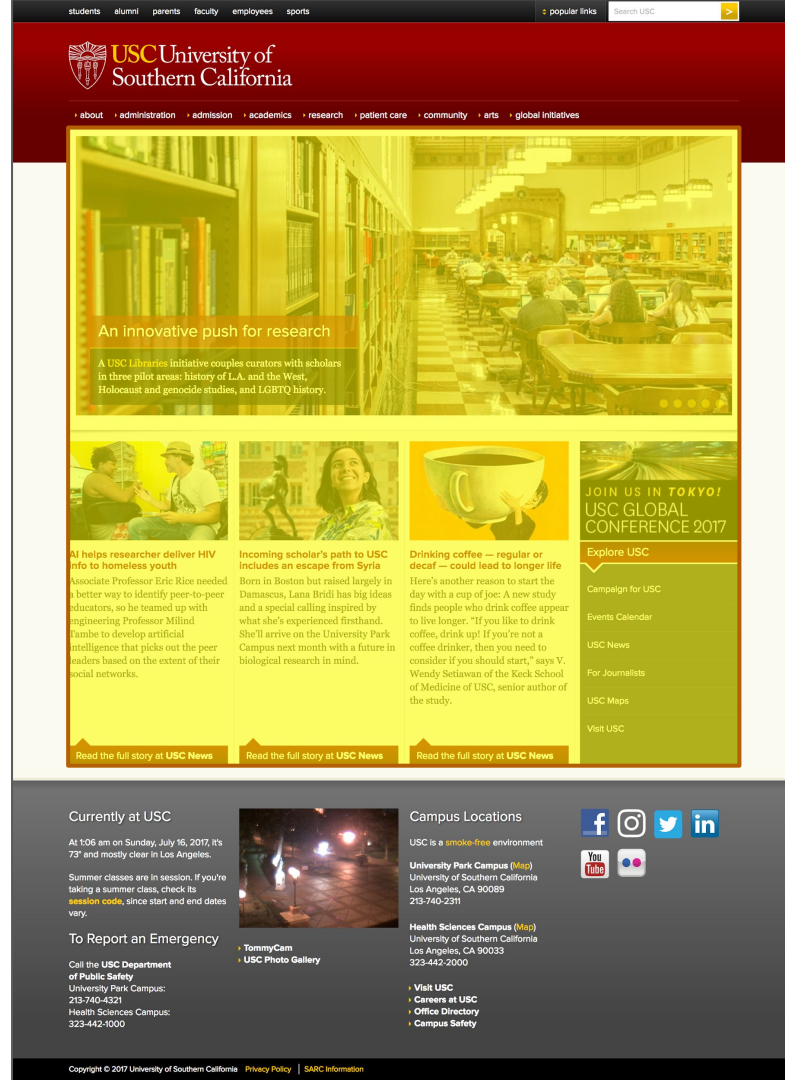
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USC Homepage Layout

1. Header
2. Main content



USC Homepage Layout

1. Header
2. Main content
3. Footer

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1. Header
2. Main content
3. Footer
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1. Header
2. Main content
3. Footer
4. Banner
5. Content Columns

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HTML Layout tags in detail:

- [<main>](#) is for content *unique to this page*. Use `<main>` only *once* per page, and put it directly inside [<body>](#). Ideally this shouldn't be nested within other elements.
- [<article>](#) encloses a block of related content that makes sense on its own without the rest of the page (e.g., a single blog post).
- [<section>](#) is similar to `<article>`, but it is more for grouping together a single part of the page that constitutes one single piece of functionality (e.g., a mini map, or a set of article headlines and summaries), or a theme. It's considered best practice to begin each section with a [heading](#); also note that you can break `<article>`s up into different `<section>`s, or `<section>`s up into different `<article>`s, depending on the context.
- [<aside>](#) contains content that is not directly related to the main content but can provide additional information indirectly related to it (glossary entries, author biography, related links, etc.).
- [<header>](#) represents a group of introductory content. If it is a child of [<body>](#) it defines the global header of a webpage, but if it's a child of an [<article>](#) or [<section>](#) it defines a specific header for that section (try not to confuse this with [titles and headings](#)).
- [<nav>](#) contains the main navigation functionality for the page. Secondary links, etc., would not go in the navigation.
- [<footer>](#) represents a group of end content for a page.

Ref: https://developer.mozilla.org/en-US/docs/Learn/HTML/Introduction_to_HTML/Document_and_website_structure

CSS

Inside a HTML file

- **HTML** (Hyper Text Markup Language) - used to **structure** the content of the page
- **CSS** (Cascading Stylesheet) - used to control the **look and feel** of the page
- Web **browsers** like Chrome, Safari, etc open the HTML file and render it as it is coded



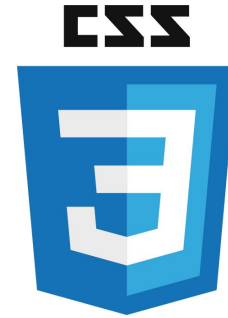
Web Technologies



HyperText Markup Language (HTML)

Creates elements on the page.

Tells browsers *what* to display.

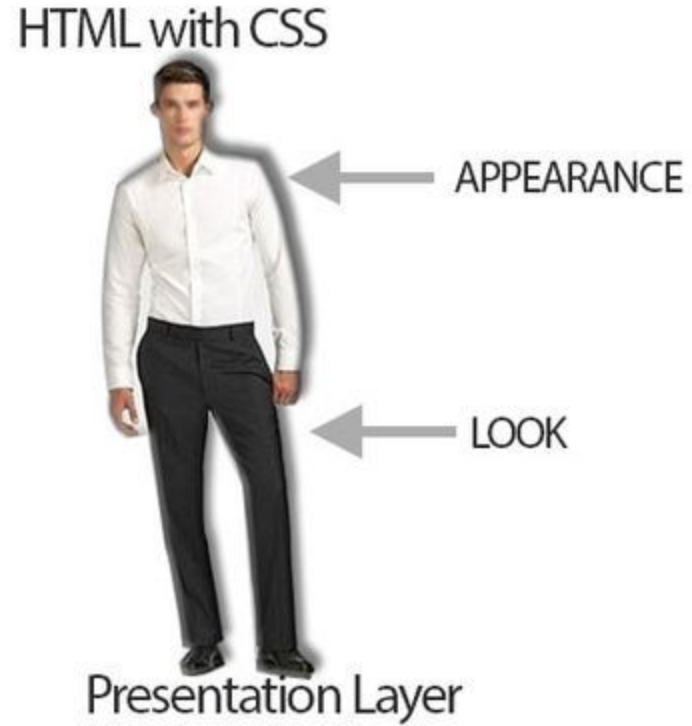
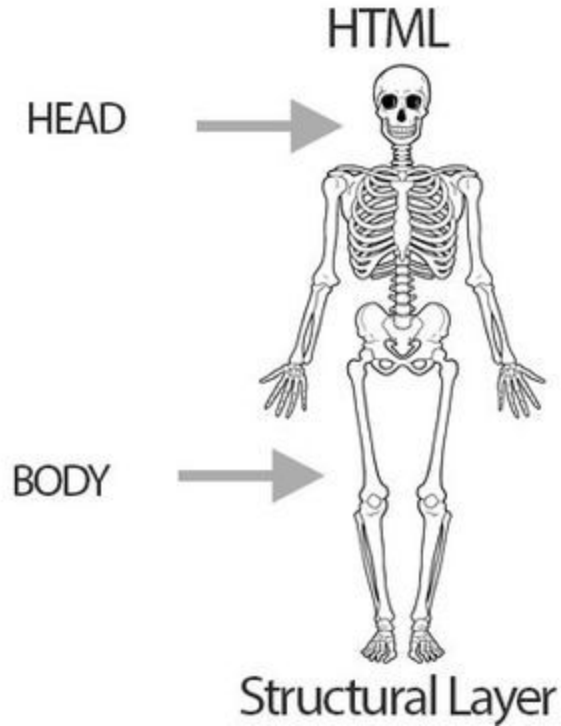


Cascading Style Sheets (CSS)

Defines element properties.

Tells browsers *how* to display elements.

Web Technologies



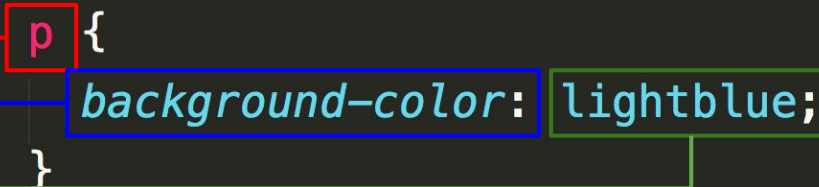
CSS Anatomy

Components:

1. CSS Selector

2. CSS Property

3. CSS Value



```
p {  
  background-color: lightblue;  
}
```

The diagram illustrates the components of a CSS rule. A red box highlights the selector 'p', a blue box highlights the property 'background-color:', and a green box highlights the value 'lightblue;'. Three leader lines connect the numbered list items to these components: a red line from '1. CSS Selector' to the 'p' box, a blue line from '2. CSS Property' to the 'background-color:' box, and a green line from '3. CSS Value' to the 'lightblue;' box.

CSS is a **rule based** language. We will be creating lots of rules for HTML tags to follow

How CSS works

Result

I am not throwin' away my **shot**

Hey yo, I'm just like my country

I'm young scrappy and hungry

I am not throwin' away my **shot**

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>A HTML Page</title>
5      <style>
6          p {
7              color: red;
8          }
9          p strong {
10             background-color: yellow;
11         }
12     </style>
13 </head>
14 <body>
15     <p>I am not throwin' away my <strong>shot</strong></p>
16     <p>Hey yo, I'm just like my country</p>
17     <p>I'm young scrappy and hungry</p>
18     <p>I am not throwin' away my <strong>shot</strong></p>
19 </body>
20 </html>
```

HTML Validators

- Sometimes the browser will show the right things but your HTML code could be incorrect.
- Use a validator like [https://validator.w3.org/#validate by input](https://validator.w3.org/#validate_by_input) to copy paste your code and check for correctness.